47D Series Digital Panel Meters
PC CONFIGURATOR SOFTWARE
Model: 47DCFG

Users Manual

M·SYSTEM CO.,LTD.

CONTENTS

1. INTRODUCTION

1.1 GENERAL DESCRIPTION

M-System 47DCFG is used to program parameters for 47D Series Digital Panel Meters (referred hereunder as 'device'). The following major functions are available:

- Edit parameters
- Download parameters to the device, upload parameters from the device
- Save parameters as files, read parameters from files
- Compare parameters edited on the screen with the ones stored in the device

1.2 APPLICABLE DEVICES

The 47DCFG is applicable to the following products:

Function	47D Model	Symbol	Version
DC voltage/current input	47DV	**V**	1.00
Thermocouple input	47DT	**T**	1.00
RTD input	47DR	**R**	1.00
Potentiometer input	47DM	**M**	1.00
AC input	47DAC	**AC**	1.40

The lowest software version applicable to each hardware model is indicated in the above table. Confirm that the software you have is compatible with the hardware you have.

The latest version of the 47DCFG is downloadable at M-System's web site (www.m-system.co.jp) if you need higher version software.

In this manual, descriptions given with the above symbols are applied only to the models those symbols are assigned to. Other descriptions with no specific symbol are applied to all models.

1.3 PC & AUXILIARY DEVICES

The following PC performance is required for adequate operation of the 47DCFG.

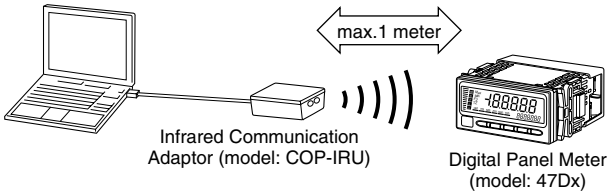
PC	IBM PC compatible
OS	Windows 2000 / XP / Vista (32 bits) The software may not operate adequately in certain conditions.
CPU	Must meet the relevant Windows' requirements.
Memory	Must meet the relevant Windows' requirements.
Network port	COM port (RS-232C), USB port (COM1 through COM16) or LAN port

A few options are available as for how to connect the device to the PC.

Port	Required Device/Cable Model No.
USB	COP-IRU, Infrared Communication Adaptor
RS-232C	R2K-1 or LK1, RS-232C/RS-485 Converter
LAN	72EM2-M4, Ethernet Communication Adaptor

■ SYSTEM CONFIGURATION EXAMPLES

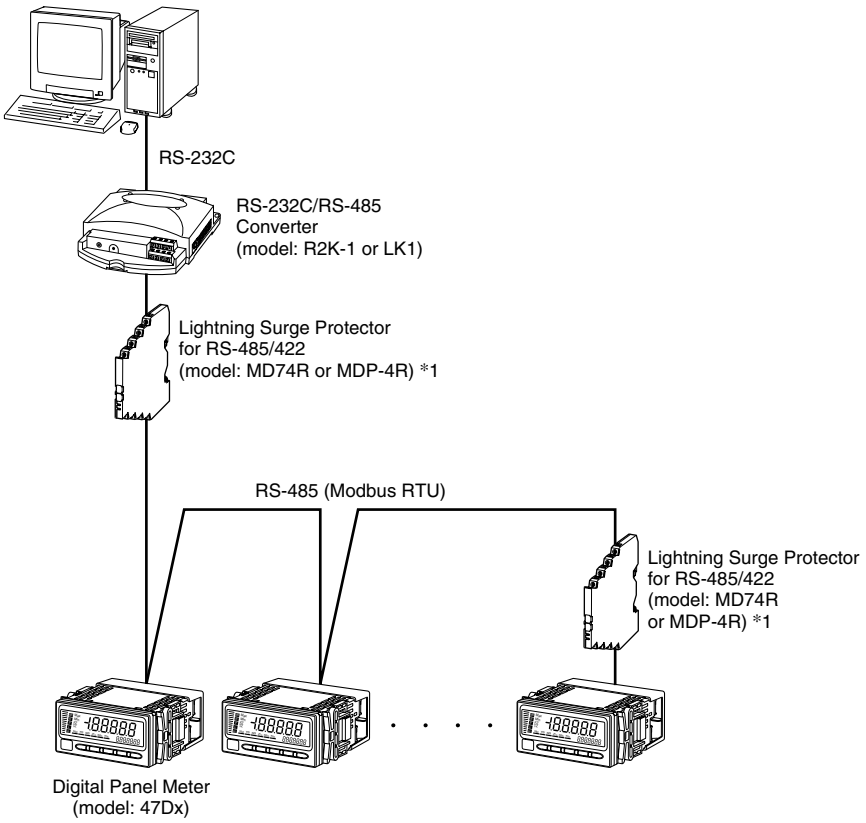
Infrared Port



Note 1. Hold down Alarm/↓ + Up buttons at once for ≥3 seconds to move on to Infrared Communication mode (IRU indicated).
Hold down Alarm/↓ or Scale/↑ button for 1 second to cancel the mode.
Analog output and Modbus functions are stopped while in this mode.

Note 2. The COP-IRU can communicate with single panel meter only. DO NOT turn more than one panel meter on to the infrared communication mode.

RS-232C / RS-485

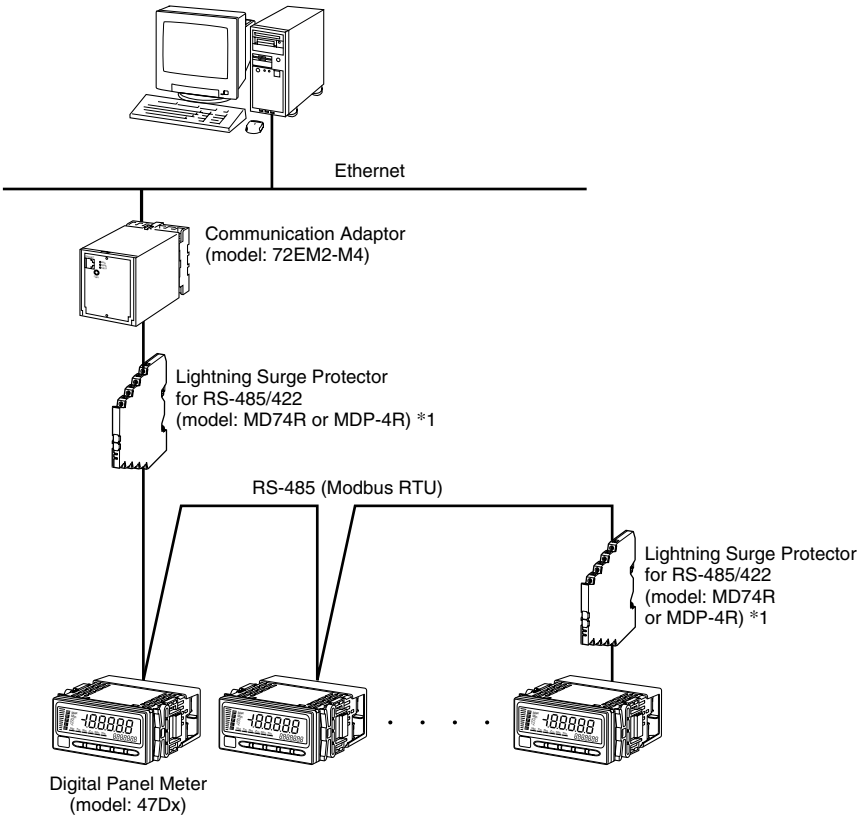


*1. Insert lightning surge protectors recommended in this example if necessary.

Set Modbus properties of the device as in the table below:

Modbus address	Assign independent address to each device.
Baud rate	Identical setting for all devices connected via the RS-232C/RS-485 Converter.
Parity bit	Identical setting for all devices connected via the RS-232C/RS-485 Converter.
Stop bit	Identical setting for all devices connected via the RS-232C/RS-485 Converter.

RS-485 / Ethernet



*1. Insert lightning surge protectors recommended in this example if necessary.

Set Modbus properties of the device as in the table below:

Modbus address	Assign independent address to each device.
Baud rate	19200 bps or 38400 bps: Set identical to the 72EM2-M4.
Parity bit	Odd
Stop bit	1 bit

Set the 72EM2-M4 as in the table below:

Baud rate	19200 bps or 38400 bps
Read timeout	500
Write timeout	2000

It is possible to have multiple masters (PCs in the above example) in this configuration, however, do not attempt to modify the device programming from more than one master at once. Such attempts may result in unexpected result in the programming.

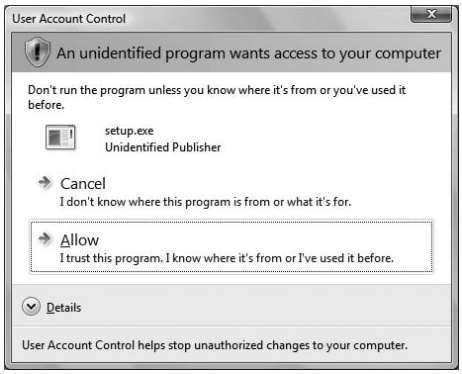
1.4 INSTALLING & DELETING THE PROGRAM

INSTALL

The program is provided as compressed archive. Decompress the archive and execute 'setup.exe' to start up the 47DCFG installer program. Follow instructions on the Windows.

For Windows 2000/XP, log on as administrator to start installation.

For Windows Vista, log on as administrator but you still need to clarify your administrative right before proceeding. When User Account Control window appears, choose 'Allow.'



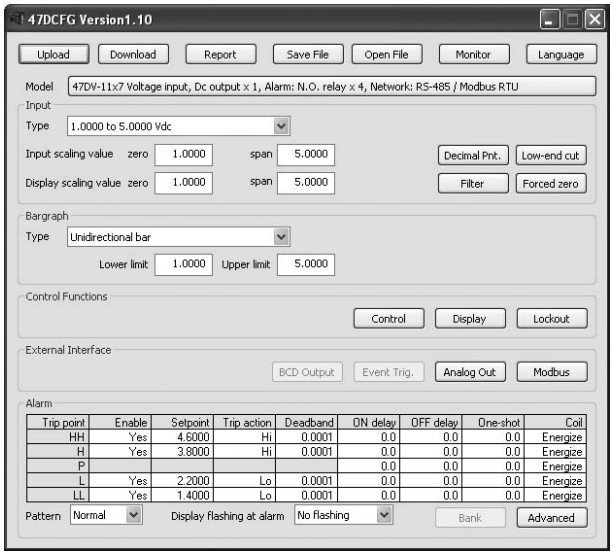
DELETE

Open Control Panel > Add/Remove Programs. Select the 47DCFG from the program list and click Delete button.

2. BASIC OPERATIONS

2.1 STARTING THE 47DCFG

Open Program > M-System > Configurator > 47D Series to start up the 47DCFG on the Windows PC. The following window appears on the screen.



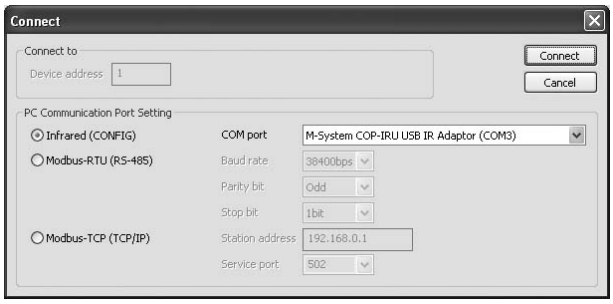
2.2 MODIFYING PARAMETERS

In order to modify parameters stored in the device, first (1) upload the device parameters, (2) modifying a part of or all of them on the screen, and then (3) download the new parameters to the device.

2.2.1 READING PARAMETERS FROM DEVICE (UPLOAD)

Clicking [Upload] opens the Connect dialog box.

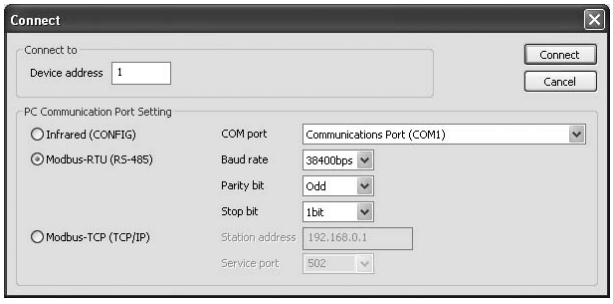
Infrared



Choose 'Infrared (CONFIG)' and specify the COM port.

In order to connect to the device via the Infrared Communication Adaptor, hold down [Alarm/↓] + [Up] buttons for 3 seconds or longer to switch the device to the infrared communication mode before starting uploading.

RS-485



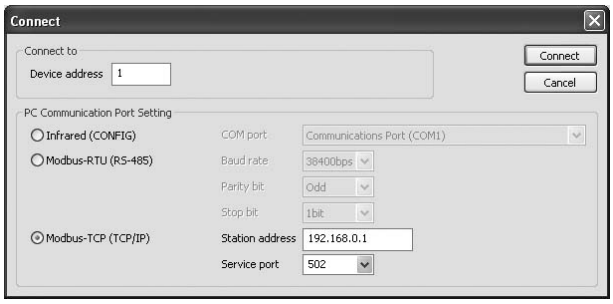
Choose Modbus-RTU (RS-485).

Specify the relevant device address. Specify also the COM port and Modbus communication parameters depending upon the network configuration and the device's communication parameters.

Reference. 47D Series factory default setting.

Device address	1
Baud rate	38400
Parity bit	Odd
Stop bit	1 bit

Ethernet



Choose Modbus-TCP (TCP/IP).

Specify the IP address (Station address) and Service port (Standard Modbus TCP port number is '502').

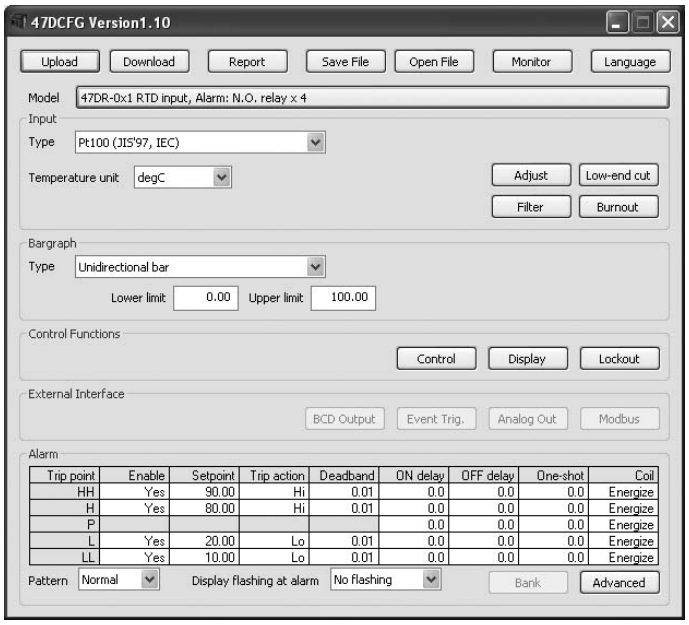
Once all parameters confirmed, click [Connect] to start reading parameters stored in the connected device to show them on the screen.

If an error message appears, confirm the hardware connection and network configuration and its parameters to retry.

2.2.2 MODIFYING PARAMETERS ON THE SCREEN

The initial window shows only basic parameters on the screen. Buttons such as [Control], [Display] and [Lockout] are used to go into more detailed settings for respective categories.

In the example shown below, the device input has been changed to: RTD input, 0 to 100°C range, with quad alarm outputs.



1) Choose 47DR-0x1 from Model.
2) Choose Pt100 (JIS '97, IEC) from Input Type.
3) Specify 0 as Bargraph Lower limit, 100 as Upper limit.
4) Set alarm setpoints: 10°C for LL, 20°C for L, 80°C for H and 90°C for HH.

Detailed description on each parameter and control button are given in the later pages of this manual.

2.2.3 WRITING PARAMETERS TO DEVICE (DOWNLOAD)

Clicking [Download] opens the Connect dialog box just as [Upload] button did. Specify relevant parameters and click [Connect] to start downloading new parameters.

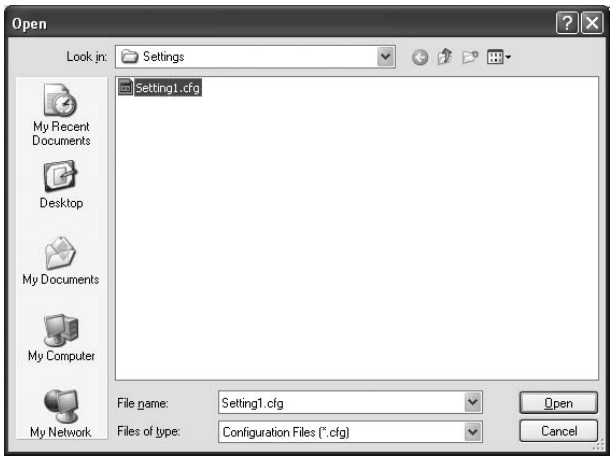
Caution !
Modbus parameters are not enabled by downloading. The device must be restarted (power supply turned off and on).

2.3 SAVING FILES

Parameter set on the screen can be saved as a file on the hard disk. A file can be called up on the screen. You can store backup setting data by utilizing these functions in combination with [Upload] [Download] functions.

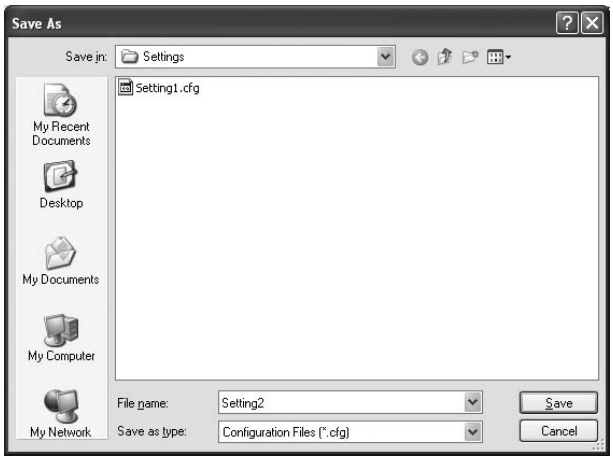
2.3.1 READING PARAMETERS SAVED AS FILE

Clicking [Open File] calls up the Windows-standard Open dialog box. Select a parameter file to show a stored parameter setting.



2.3.2 SAVING PARAMETERS IN A FILE

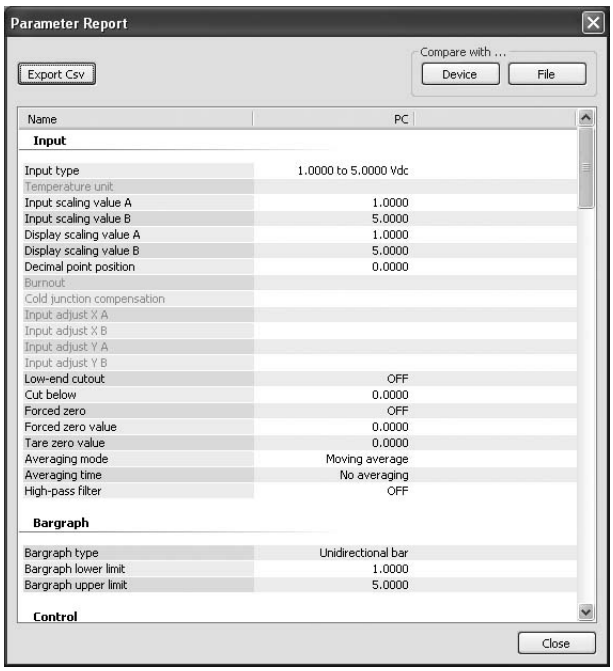
Clicking [Save File] calls up the Windows-standard Save As dialog box. Enter a desired file name to File Name field and click [Save] to store a parameter setting.



2.4 CHECKING PARAMETERS : REPORT

2.4.1 LISTING UP PARAMETERS

Clicking [Report] opens Parameter Report window showing all parameters presently edited on the screen.



Name	PC
Input	
Input type	1.0000 to 5.0000 Vdc
Temperature unit	
Input scaling value A	1.0000
Input scaling value B	5.0000
Display scaling value A	1.0000
Display scaling value B	5.0000
Decimal point position	0.0000
Burnout	
Cold junction compensation	
Input adjust X A	
Input adjust X B	
Input adjust Y A	
Input adjust Y B	
Low-end cutout	OFF
Cut below	0.0000
Forced zero	OFF
Forced zero value	0.0000
Tare zero value	0.0000
Averaging mode	Moving average
Averaging time	No averaging
High-pass filter	OFF
Bargraph	
Bargraph type	Unidirectional bar
Bargraph lower limit	1.0000
Bargraph upper limit	5.0000
Control	

2.4.2 COMPARING PARAMETERS

Parameters presently edited on the screen and those stored in the connected device or in a file can be compared side by side.

Click [Device] in order to upload the parameters in the device, or [File] to upload those in a file. Parameters are compared and listed on the screen side by side.

The rows showing differences between two sets of parameters are highlighted in red background. Cells for matching parameters are filled in white, those for parameters not supported by the selected/connected device are filled in grey.

The total number of non-matching cases is mentioned at the bottom.

2.4.3 EXPORTING CSV FILE

The parameter list can be exported as a CSV text format file for use in another application software such as Microsoft Excel.

Click [Export Csv] button at the top left of the screen and go through standard Windows Save As procedure.

The CSV file is formatted as in the following:

- Each row for one parameter
- Each row (parameter) consists of 3 or 4 separated data.
- Data is arranged in order of ‘Parameter group,’ ‘Parameter identification,’ ‘Parameter edited’ and ‘Parameter to compare.’ If you have not uploaded a parameter set for comparing, ‘Parameter to compare’ is not exported.

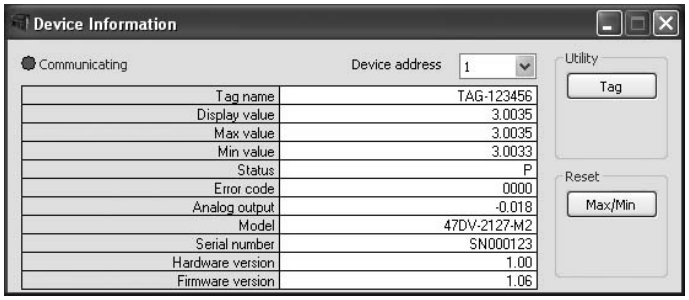
[Example]

```
“Input”,”Input type”,”Pt100 (JIS’97, IEC)”
“Input”,”Temperature unit”,”degC”
“Input”,”Input scaling value A”,””
                ⋮
                ⋮
```

2.5 MONITORING DEVICE STATUS : MONITOR

Device property information, status and reading values can be displayed on the PC screen.

Clicking [Monitor] opens the Connect dialog box. Specify the relevant device address, COM port and Modbus communication parameters and click [Connect].



When normal communication is maintained, the indicator lamp at the top left shows blue with the message 'Communicating.' In a communication error, the lamp turns red with the message 'Communication Error.'

The table below the lamp shows device properties and status information updated continuously.

Tag name	Tag name
Display value	Reading value currently on the display
Max value	Maximum reading value
Min value	Minimum reading value
Status	HH, H, P, L, LL : Measured signal is in respective zones. S.over : Scaling overflow S.under : Scaling underflow Burnout : Sensor wire breakdown Loop test : Loop test mode Disable AO : Analog output indefinite
Error code	0000 : Normal Any other codes may indicate malfunction of the device. In such event, (1) Restart up the device (2) Initialize the device (Refer to the device's operating manual.) If the device still shows other than 0000 after (1) and (2), the device may need repair at the factory.
Analog output	DC voltage/current value
Model	Model number
Serial number	Serial number
Hardware version	Hardware version number
Firmware version	Firmware version number

Display value, Max value, Min value and Analog output are indefinite and Not indicated during the infrared communication mode.

Utility

Clicking [Tag] button opens Tag name setting dialog box. Max. 16 characters in Unicode.

Reset

Clicking [Max/Min] button resets the Max/Min display value.

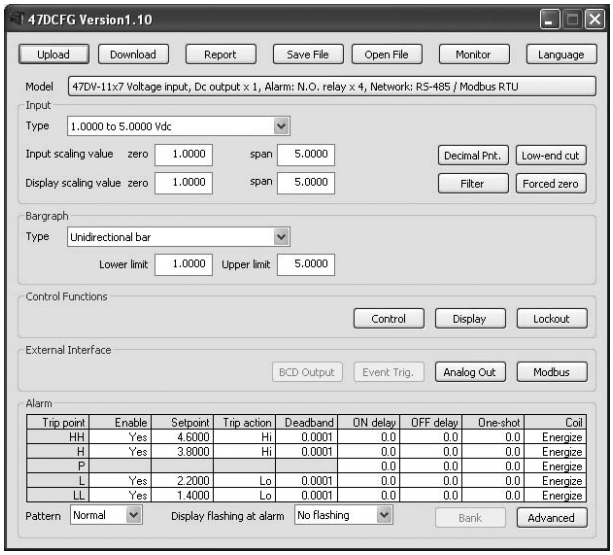
2.6 SWITCHING LANGUAGE : LANGUAGE

Click [Language] to switch the display language between English and Japanese.

The program starts up in English mode as initial state when the OS is other than Japanese version. You can switch to Japanese only when the OS supports Japanese language.

3. BASIC PARAMETERS

The initial window when you start up the 47DCFG contains basic parameters as described below.



3.1 INPUT PARAMETERS

DC input engineering unit

Apply the same unit for Input scaling value as the one selected in Type setting.

Display scaling value

For the 47DV, 47DM and the 47DAC, the display scaling value is converted proportionally to the input scaling value using Zero and Span values to determined the entire span. Decimal point position is independently selectable from the scaling values.

For the 47DT and the 47DR, the temperature value with two decimal places is used to determine the scaling range converted into the analog output. On the display, the decimal point position is independently selected.

Actual display reading

Forced zero, tare adjustment, low-end cutout, round off low-digit reading and display refreshing rate are applied to the scaled range.

Unless otherwise specified, the display scaling values are selectable within the ranges as follows:

Type	Decimal point position	Selectable display range
V M	00000	-20000 to 100000
A C	0000.0	-2000.0 to 10000.0
	000.00	-200.00 to 1000.00
	00.000	-20.000 to 100.000
	0.0000	-2.0000 to 10.0000
T R	N/A	-999.99 to 9999.99

3.2 MODEL

Choose an appropriate device type to be configured on the 47DCFG.

3.3 INPUT

Choose an input signal type and scaled range.

Type

Selection / Range			
Type	**V**	47DV-1	1 to 5 Vdc
			-5 to +5 Vdc
			-20 to +20 Vdc
			-200 to +200 Vdc
		47DV-2	4 to 20 mAdc
			0 to 20 mAdc
			-20 to +20 mAdc
			-200 to +200 mAdc
	T	(PR), K (CA) 1, K (CA) 2, E (CRC), J (IC) 1, J (IC) 2, T (CC), B (RH), R, S C (WRe5-26), N, U, L	
	R	JPt 100 (JIS '89), Pt 100 (JIS '89), Pt 100 (JIS '97, IEC), Pt 50 (JIS '81), Pt 1000	
	AC	47DAC-1	0 to 0.2 Vac
			0 to 2 Vac
			0 to 20 Vac
			0 to 200 Vac
		47DAC-2	0 to 0.2 mAac
			0 to 2 mAac
			0 to 20 mAac
			0 to 200 mAac

Input scaling value Zero, Span V AC / Display scaling value Zero, Span V M AC

Specify lower-limit and upper-limit input values and display values for each point.

For example, when choosing 4.000 mA for Input scaling value Zero, 20.000 mA for Input scaling value Span, 0.00 for Display scaling value Zero and 100.00 for Display scaling value Span, the display shows 0.00 at 4 mA input signal and 100.00 at 20 mA.

Decimal point position V M AC

Selection / Range	
Decimal point position	00000
	0000.0
	000.00
	00.000
	0.0000

Low-end cutout

Selection / Range		
Low-end cutout	OFF	Low-end cutout function disabled
	ON	Low-end cutout function enabled
	By absolute value	Low-end cutout applied to the absolute values of input signal
Cut below	0 ... 999 **V M AC**	
	0 ... 9.99 **T R**	

Filter, Average

Selection / Range	
Averaging mode	Simple average Moving average
Averaging time	No averaging, 2 samples, 4 samples, 8 samples, 16 samples, 32 samples, 64 samples, 128 samples, 256 samples, 512 samples

Filter, High-pass filter

Selection / Range	
High-pass filter	OFF ON

Forced zero V M AC

Forced zero and tare adjustment can be controlled from the PC. Present Forced zero value and/or Tare adjust. value are indicated on the window. When you set particular values in the fields and enable the forced zero/tare adjustment, the display is reset in reference to these values and continues. Tare adjustment is added in reference to Forced zero.

Selection / Range		
Forced zero	OFF	Forced zero function disabled
	Forced zero ON	Forced zero function enabled
	Tare adjust ON	Tare adjustment function enabled

Temperature unit T R

Selection / Range		
Temperature unit	degC	Celsius
	degF	Fahrenheit

Burnout T R

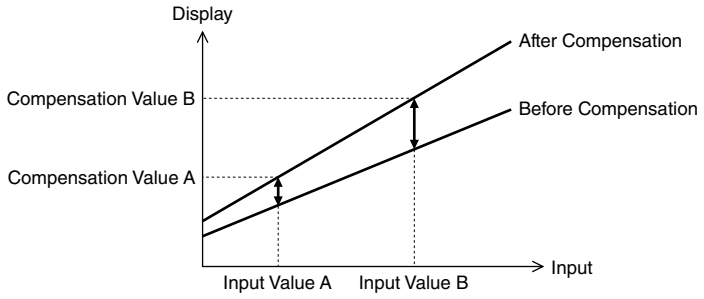
Selection / Range		
Burnout	Downscale	Display reading and analog output goes to the lower limit
	Upscale	Display reading and analog output goes to the upper limit

Cold junction compensation T

Selection / Range	
Cold junction compensation	Enable Disable

Input compensation T R

Input compensation can be applied to a temperature sensor. The input signal is adjusted using Input values A and B, and Compensation value A and B. No compensation is executed when A and B values are identical.



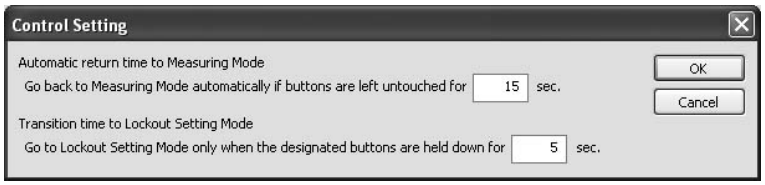
3.4 BARGRAPH

Type, Lower limit, Upper limit

Selection / Range		
Type	No bargraph	No bargraph indication
	Unidirectional bar	LCD segments turn on in single direction from the lower limit toward the upper limit.
	Unidirectional bar, reverse LCD	Same as above, but LCD is reversed (ON→OFF, OFF→ON).
	Bidirectional bar	LCD segments turn on in both directions from the middle point between the lower and upper limits.
	Bidirectional bar, reverse LCD	Same as above, but LCD is reversed (ON→OFF, OFF→ON).
Lower limit		Specify the display scaling value matching the lower limit.
Upper limit		Specify the display scaling value matching the upper limit.

3.5 CONTROL

Clicking [Control] button opens Control Setting window.



Automatic return time to Measuring Mode

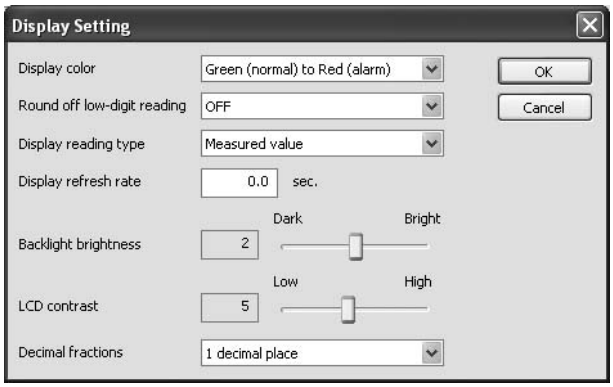
The main/sub displays go back to Measuring Mode automatically if the front buttons are left untouched for the specified seconds. Select between 0 and 99 seconds. Specify 0 when you want only manual controls to go back to Measuring Mode.

Transition time to Lockout Setting Mode

The main/sub displays go to Lockout Setting Mode only when the designated buttons are held down for the specified seconds. Select between 0 and 99 seconds.

3.6 DISPLAY

Clicking [Display] button opens Display Setting window.



Display color

Selection / Range		
Display color	Green (normal) to Red (alarm)	The main display shows green characters in normal (P) zone, red in alarm zones (LL, L, H, HH).
	Green	Green characters
	Red (normal) to Green (alarm)	The main display shows red characters in normal (P) zone, green in alarm zones (LL, L, H, HH).
	Red	Red characters

Round off low-digit reading

Selection / Range		
Round off low-digit reading	OFF	No round off
	2	The lowest digit shows only 2, 4, 6, 8 or 0.
	5	The lowest digit shows only 5 or 0
	10	The lowest digit shows always 0.

Display reading type

Specify which display reading you prefer when the device is started up or when it shifts from the setting mode to the measuring mode.

Selection / Range	
Display reading type	Measured value
	Maximum value
	Minimum value

Display refresh rate

Specify between 0.0 and 99.9 seconds. The display is refreshed in the fastest possible rate (approx. 0.05 second) when 0.0 is specified.

Backlight brightness

Specify between 1 and 3. The backlight is darkest at 1, brightest at 3.

LCD Contrast

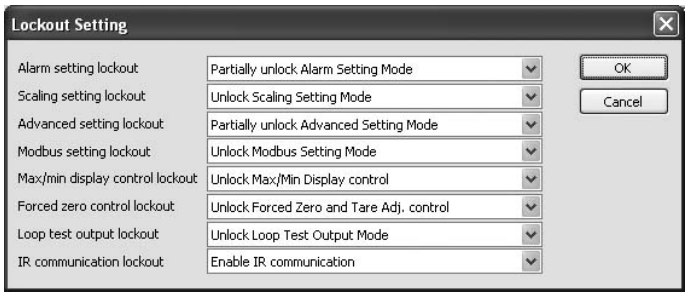
Specify between 1 and 10. The contrast is lowest at 1, highest at 10.

Decimal fractions (for temperature input) T R

Selection / Range	
Decimal fractions	No fractions
	1 decimal place
	2 decimal places (Selectable only with °C and RTD setting)

3.7 LOCKOUT

Clicking [Lockout] button opens Lockout Setting window.



Alarm setting lockout

Selection / Range	
Alarm setting lockout	Completely unlock Alarm Setting Mode Partially unlock Alarm Setting Mode Lock Alarm Setting Mode

Scaling setting lockout

Selection / Range	
Scaling setting lockout	Unlock Scaling Setting Mode Lock Scaling Setting Mode

Advanced setting lockout

Selection / Range	
Advanced setting lockout	Completely unlock Advanced Setting Mode Partially unlock Advanced Setting Mode Lock Advanced Setting Mode

Modbus setting lockout

Selection / Range	
Modbus setting lockout	Unlock Modbus Setting Mode Lock Modbus Setting Mode

Max/min display control lockout

Selection / Range	
Max/min display control lockout	Unlock Max/Min Display control Lock Max/Min Display reset Lock Max/Min Display control

Forced zero control lockout V M AC

Selection / Range	
Forced zero control lockout	Unlock Forced Zero and Tare Adj. control Unlock Forced Zero control / Lock Tare Adj. control Lock Forced Zero and Tare Adj. control

Loop test output lockout

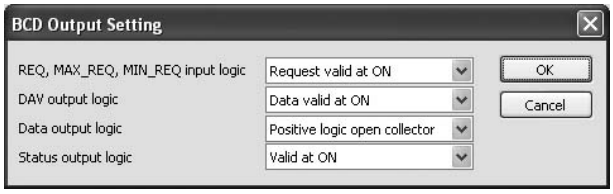
Selection / Range	
Loop test output lockout	Unlock Loop Test Output Mode Lock Loop Test Output Mode

4. EXTERNAL INTERFACE

External device connections are selected by model suffix code. Those not equipped in the device cannot be edited.

4.1 BCD OUTPUT

Clicking [BCD Output] button opens BCD Output Setting window as shown below.



REQ, MAX_REQ, MIN_REQ input logic

Selection / Range	
REQ, MAX_REQ, MIN_REQ input logic	
	Request valid at OFF
	Request valid at ON

DAV output logic

Selection / Range	
DAV output logic	Data valid at OFF
	Data valid at ON

Data output logic

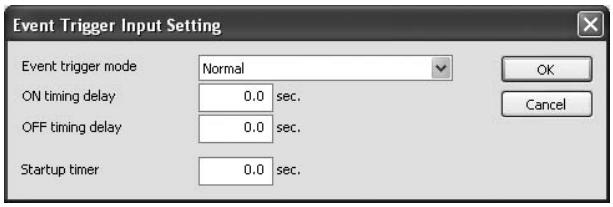
Selection / Range	
Data output logic	Negative logic open collector
	Positive logic open collector

Status output logic

Selection / Range	
Status output logic	Valid at OFF
	Valid at ON

4.2 EVENT TRIGGER INPUT

Clicking [Event Trig.] button opens Event Trigger Input Setting window as shown below.



Event trigger mode

Selection / Range	
Event trigger mode	Normal Sampling hold Peak hold Valley (bottom) hold Peak-to-peak hold

ON timing delay

*Specify the delay time for the sinking pulse edge of TIMING signal. Selectable within 0.0 to 999.9 seconds.

OFF timing delay

*Specify the delay time for the rising pulse edge of TIMING signal. Selectable within 0.0 to 999.9 seconds.

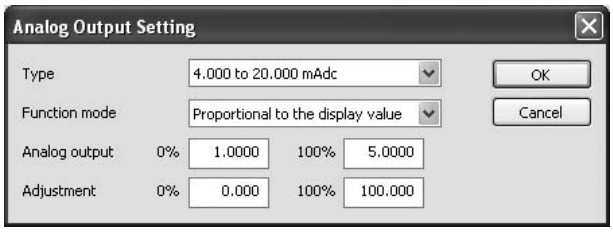
Startup timer

*Specify the waiting time from the sinking pulse edge of S-TMR to start measuring. Selectable within 0.0 to 99.9 seconds.

*All logical inputs in the above are in the negative logic (ON at low signal, factory default).

4.3 ANALOG OUTPUT

Clicking [Analog Out] button opens Analog Output Setting window as shown below.



Type

Choose among the following ranges.

Selection / Range	
Type	0 to 5 Vdc -5 to +5 Vdc -10 to +10 Vdc 0 to 20 mAdc 4 to 20 mAdc

Analog output function mode

Selection / Range	
Analog output function mode	Proportional to the display value Proportional to the scaling value

Forced zero, tare adjustment, low-end cutout, display refreshing rate, round off low-digit reading functions are applied to the display value, thus affecting the analog output when the mode is set to 'Proportional to the display value.' The input signal directly affects the analog output with 'Proportional to the scaling value' setting.

Analog output 0%, 100%

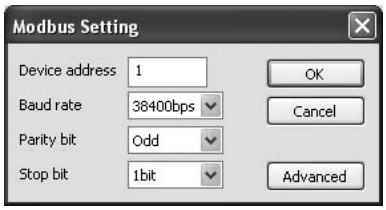
Specify the display scaling/temperature values matching 0% and 100% analog outputs.

Adjustment 0%, 100%

Output range can be adjusted between -5.000 and +105.000% of the selected output type. 0% value + 5% ≤ 100% value.

4.4 MODBUS

Clicking [Modbus] button opens Modbus Setting window as shown below:



Changes in Modbus related parameters are not applied by just downloading, but by turning off and on the power supply or restarting the device.

4.4.1 BASIC SETTING

Device address

Specify between 1 and 247.

Baud rate

Selection / Range
1200 bps
2400 bps
4800 bps
9600 bps
19200 bps
38400 bps

Parity bit

Selection / Range
None
Odd
Even

Stop bit

Selection / Range
1 bit
2 bits

4.4.2 ADVANCED SETTING

Clicking [Advanced] button in Modbus Setting window as shown below:

Long register

32-bit word register assignment:

Selection / Range	
Normal (low first)	Lower-digit word assigned to the lower address
Swap (high first)	Higher-digit word assigned to the lower address

Protocol operation timer

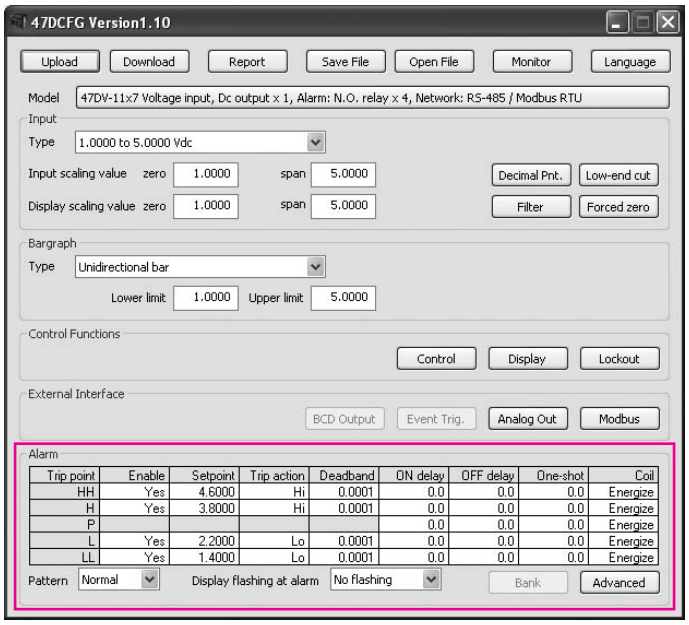
t1.5 and t3.5 timers are specified as 1.5 and 3.5 characters times in Modbus standard specifications. These parameters should not be changed unless specifically recommended by M-System' customer support.

t1.5 is selectable between 0.1 and (t3.5 – 0.1) character times.

t3.5 is selectable between (t1.5 + 0.1) and 6.0 character times.

4.5 ALARM

All setpoints can be set and indicated regardless of alarm output options.



4.5.1 BASIC SETTING

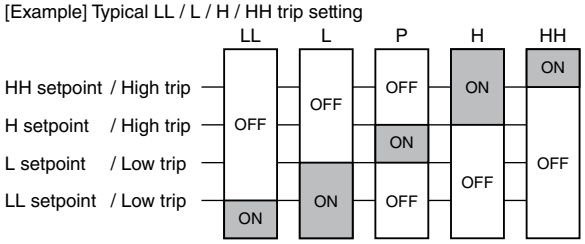
Bank 1 alarm parameters are indicated on the main window when the bank switching in Advanced setting is set to 'Disable' or 'Enabled by Modbus.' Specified bank parameters are indicated with 'Enabled by front button control' setting, but no with 'Enabled by Modbus.'

Pattern

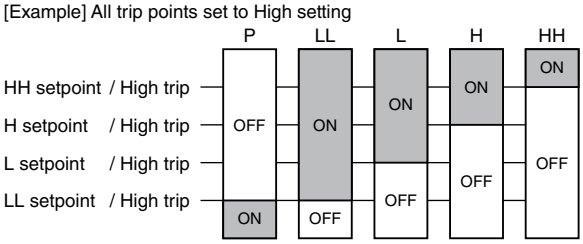
Normal and Zone patterns are selectable.

In 'Normal' setting, alarm is tripped according to the setpoint and the trip action (direction) setting.

[Example] Typical LL / L / H / HH trip setting

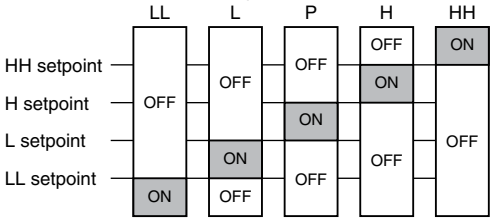


[Example] All trip points set to High setting



In 'Zone' setting, alarm is tripped between each setpoint.

[Example] Typical zone setting



Alarm trip action setting is disregarded with zone alarm.
If a setpoint is set to invalid, no output is provided for the zones adjoining the invalid zone (e.g. P and L are not provided with L set to invalid)

Display flashing at alarm

The displays can be either still or flashing in specified time intervals.

Selection / Range
No flashing
1 sec.
0.5 sec.
0.3 sec.

Enable

Each setpoint can be enabled or disabled.

Setpoint

Threshold values to trip alarms.

Selection / Range	
Setpoint	-20000 to 100000 (scaling value) V M AC -999.99 to 9999.99 (temperature) T R

Trip action

This setting is disregarded with Zone pattern.

Selection / Range	
Hi	Alarm trips when the scaling value goes above the setpoint.
Lo	Alarm trips when the scaling value goes below the setpoint.

Deadband (hysteresis)

The alarm trips when the scaling value crosses across the setpoint, but untrips only when it has passed through the setpoint by the deadband value. Selectable between 0 and 9999 for the 47DV, 47DM and the 47DAC, between 0 and 99.99 for the 47DT and 47DR.

ON delay, OFF delay

Alarm trip from OFF to ON and ON to OFF can be set with independent delay time period between 0.0 and 99.9 seconds. If the alarm status is cancelled before the specified time period, the alarm never trips, and the elapsed time is reset.

One-shot

Alarm output is usually ON while the alarm condition is on. With the one-shot output setting, the output is on only for the specified time period. One-shot time (ON time) is selectable between 0 and 999.9 seconds. Specifying 0.0 cancels the one-shot output function.

Coil

Specifies whether the relay coil is energized or de-energized at alarm. The actual relay actions in alarm, non-alarm conditions and when the power is removed are explained in the table below.

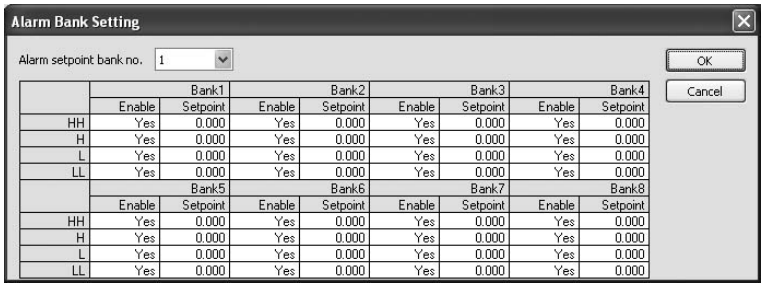
	N.O. Contact		**N.C. Contact**	
Coil status	Energized	De-energized	Energized	De-energized
Alarm tripped	Closed	Open	Open	Closed
Alarm untripped	Open	Closed	Closed	Open
Power supply removed	Open	Open	Closed	Closed

4.5.2 BANK

Multiple sets of alarm setpoints can be saved in the bank and switched by operating the front control buttons or by remote communications. At the maximum of 8 banks can be set.

In order to use this function, Bank switching must be enabled by the front button control or by Modbus in Advanced setting.

Clicking [Bank] button opens Alarm Bank Setting window.



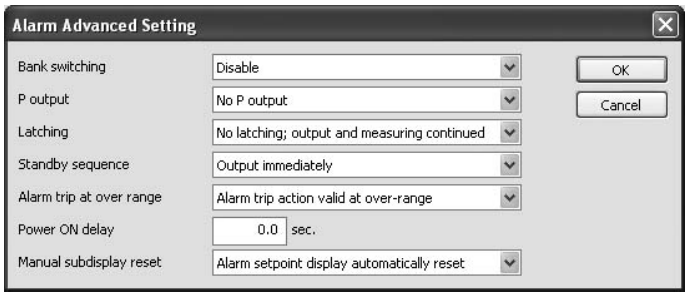
Alarm setpoint bank No.

Bank No. is selected between 1 and 8.

The selected bank is indicated on the main window when the bank switching is set to 'Enabled by front button control', but not when it is set to 'Enabled by Modbus.'

4.5.3 ADVANCED SETTING

Clicking [Advanced] button opens Advanced Setting window.



Bank switching

Selection / Range	
Bank switching	Disable Enabled by front button control Enabled by Modbus

P output

Selection / Range	
P output	No P output Alarm output LL Alarm output L Alarm output H Alarm output HH

Latching

Display value, analog output and alarm output may be held (latched) until reset once an alarm is tripped.

Selection / Range	
Latching	No latching; output and measuring continued Output latched / measuring continued Output and measuring latched

Standby sequence

Display value, analog output and alarm output may not be immediately provided after the power is turned on, until the input signals comes into P output zone.

Selection / Range	
Standby sequence	Output immediately Output standing by

Alarm trip at over-range

Alarm functions may be or may not be continued when the input signal is in the over-range. Burnout status is incl uded as an over-range for temperature input.

Selection / Range	
Alarm trip at over-range	Alarm trip action valid at over-range No alarm trip action at over-range

Power ON delay

Display value, analog output and alarm output may not be immediately provided after the power is turned on. Specify between 0.0 and 999.9 seconds.

Manual subdisplay reset

The sub display can show the alarm setpoints in turn for confirmation and modification during operating with the front control buttons. The display can be set to return to normal state when the buttons are left untouched for a specific time period.

Selection / Range	
Manual subdisplay reset	Alarm setpoint display automatically reset Alarm setpoint display manually reset

M-SYSTEM WARRANTY

1. What is covered.

M-System Co., Ltd. ("M-System") warrants, only to the original purchaser of new M-System products purchased directly from M-System, or from M-System's authorized distributors or resellers, for its own use not for resale, that the M-System products shall be free from defects in materials and workmanship and shall conform to the specifications set forth in the product catalogue applicable to the M-System products for the Warranty Period (see Paragraph 5 below for the Warranty Period of each product).

THE ABOVE WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THE M-SYSTEM PRODUCTS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

2. What is not covered.

This warranty does not cover any M-System product which has been: (1) modified, altered or subjected to abuse, misuse, negligence or accident; (2) improperly installed or installed in conjunction with any equipment for which it was not designed; or (3) damaged or destroyed by disasters such as fire, flood, lightning or earthquake.

In no event shall M-System be liable for any special, incidental, consequential or other damages, costs or expenses (including, but not limited to, loss of time, loss of profits, inconvenience or loss of use of any equipment).

3. Remedies.

If a defective product is returned to M-System in accordance with the procedures described below, M-System will, at its sole option and expense, either: (1) repair the defective product; (2) replace the defective product; or (3) refund the purchase price for the defective product paid by the purchaser. Except as otherwise provided by applicable state law, these remedies constitute the purchaser's sole and exclusive remedies and M-System's sole and exclusive obligation under this warranty.

4. Warranty Procedure.

If the purchaser discovers a failure of the M-System products to conform to the terms of this warranty within the Warranty Period, the purchaser must promptly (and, in any event not more than 30 days after the discovery of such failure) notify the relevant party as described below either by telephone or in writing at the below address to obtain an Authorized Return (AR) number and return the defective product to the relevant party. The designated AR number should be marked on the outside of the return package and on all correspondence related to the defective product. The purchaser shall return, at purchaser's expense, defective products only upon receiving an AR number. In order to avoid processing delays, the purchaser must include: copies of the original purchase order and sales invoice; the purchaser's name, address and phone number; the model and serial numbers of the returned product; and a detailed description of the alleged defect.

5. Warranty Period.

Signal Conditioner:	36 months from the date of purchase.
M-Rester:	12 months from the date of purchase.
Valve Actuator:	18 months from the date of shipment from M-System or 12 months from the date of its installation, whichever comes first.
Other Products:	36 months from the date of purchase.

M-SYSTEM CO., LTD.
5-2-55, Minamitsumori, Nishinari-ku,
Osaka 557-0063 JAPAN
Phone: (06) 6659-8201
Fax: (06) 6659-8510
E-mail: info@m-system.co.jp

M·SYSTEM CO.,LTD.
5-2-55, Minamitsumori, Nishinari-ku, Osaka 557-0063 JAPAN
Tel: +81-6-6659-8201 Fax: +81-6-6659-8510
http://www.m-system.co.jp
E-mail: info@m-system.co.jp