R7xxx CONFIGURATOR
Model: R7CFG
Ver. 0.01.64

Users Manual

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1. GENERAL

This manual assumes that the user is familiar with basic operations of Windows and terminology used in the operating system.

For more information about particular operation or terminology on Windows, please refer to manuals provided with the system.

1.1 FEATURES OF R7CFG

The R7xxx Series are modular I/Os with open field networking capabilities, for such as MECHATROLINK-III, DeviceNet and Modbus. These remote I/O modules can be directly connected to a Windows PC via PC configurator cable (model: MCN-CON / COP-US, or a commercially available USB cable).

The R7CFG software is used to help program various parameters such as I/O scaling, zero/span adjustments to match the user's needs.

GENERAL FUNCTIONS OF R7CFG

• PARAMETERS CONFIGURATION FOR EACH CHANNEL

DC voltage/current range, sensor type, scaling and bias/gain settings are available for each channel.
For temperature input modules, scaled temperature range (0% and 100%) can be also programmed.

• FILE MANAGEMENT

Parameters can be saved as a file on the PC.
You can create and edit configuration sets on the PC without actually connecting to a hardware module.
Saved files can be opened on the PC and downloaded to multiple hardware modules.

• MONITORING

You can check analog I/O data using configured data.
For discrete I/O modules, ON/OFF status of each channel can be monitored.

1.2 PC REQUIREMENTS

The following PC performance is required for adequate operation of the R7CFG.

PC	IBM PC compatible
OS	Windows 10 (32-bit, 64-bit), Windows 11 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 (COM1 through COM16)

One of the following PC Configurator Cables is also required to connect the hardware module to the PC.

PC CONFIGURATOR CABLE	MODEL
MCN-CON or COP-US	R7F4DD, R7K4FE, R7K4FM, R7G4HML, R7G4FM, R7G4FML3, R7G4HML3, R7F4HEIP, R7F4HD, R7G4HH
Type A–Mini B USB cable (commercially available)	R7I4DECT, R7I4DML3, R7G4HEIP, R7I4DCIE, R7I4DEIP, R7G4JECT
Type A–Type C USB cable (commercially available)	R7F4HPN

1.3 APPLICABLE MODELS

The R7CFG is applicable to the following models of basic modules:

R7G4HML3-6-SV4	R7G4HML-6-SVF8N	R7F4HEIP-DC32
R7G4HML3-6-SVF4	R7G4HH-A-YVF4	R7F4DD-DA16
R7G4HML3-6-TS4	R7G4HH-A-SVF4	R7F4DD-DC16
R7G4HML3-6-PA1A	R7G4JECT-LC2	R7F4DD-DAC16
R7G4HML3-6-PA1A/A	R7K4DM-CT32	R7F4HD-DA32
R7G4HML3-6-PA1J	R7K4FE-6-DC16	R7F4HD-DC32
R7G4HML3-6-PA1J/A	R7I4DECT-1-DA32A	R7F4HD-DAC32
R7G4FM-DA16	R7I4DECT-1-DC32A	R7F4HPN-DA16
R7G4FML3-6-DA16	R7I4DECT-1-DAC32C	R7F4HPN-DC16
R7G4FML3-6-DC16	R7I4DECT-1-SVF8N	R7F4HPN-DAC16
R7G4FML3-B-DA16	R7I4DECT-1-SVSF8N	R7I4DML3-DA32
R7G4HML3-6-LC2	R7I4DECT-1-PA8A	R7I4DML3-DC32
R7G4HML3-6-LC2A	R7I4DECT-1-YVF4	R7I4DML3-DAC32
R7G4HML3-6-SVAF4	R7G4HEIP-6-DA16	R7I4DCIE-LC2
R7G4HML3-6-YVF4	R7G4HEIP-6-DC16	R7I4DEIP-DA32A
R7G4HML3-6-YSF4	R7F4HEIP-DA16	R7I4DEIP-DC32A
R7G4HML3-6-STYVS1	R7F4HEIP-DC16	R7I4DEIP-DAC32
R7G4HML-6-YVF4	R7F4HEIP-DAC16	R7K4FM-DA32
R7G4HML-6-SVF4	R7F4HEIP-DA32	

Note: The R7CFG is not applicable to the following models as there is no parameter to be configured using the R7CFG: R7K4FML3-6-DA32; R7K4FML3-6-DC32; R7K4FML3-6-DAC32; R7F4HML3-D-DAC32; and R7K4JML3-E-DAFC64.

2. GETTING STARTED

2.1 INSTALLING THE R7CFG

(1) Start up Windows.
(2) Go to our web site.
Download and save the R7CFG archive in your PC's local hard disk.
(3) Confirm the size and version number (instead of 'x' in the file name) of the downloaded archive.
R7CFG_Rx.zip
(4) Unzip R7CFG_Rx.zip to create an R7CFG folder.
(5) Start up 'setup.exe' in the folder and follow instructions of the installer.
Now the R7CFG program has been installed.

Caution !
If you have an R7CFG program already installed in your PC, follow the procedure in Section 2.2 to uninstall the program before installing a new one.

2.1.1 INSTALLING THE DRIVER SOFTWARE

An FTDI chip is used for R7 series modules.

When connecting these modules to the R7CFG via the USB port, the dedicated driver software needs to be installed on a PC.

A new serial port will be created by the installed driver software.
Select this port as a COM port.

With a PC connected to the Internet, the driver software will be automatically installed with the function of Windows Update when connecting to the module via a USB cable.

The driver software for the R7CFG is also downloadable from our web site.

2.2 UNINSTALLING THE R7CFG

(1) Go to Start Menu, click [Settings], and choose 'Apps' in 'Settings' menu.
>> 'Apps and features' are displayed.
(2) Choose 'R7CFG' among the list of installed applications.
(3) Click [Uninstall].
(4) 'Remove Programs From Your Computer' dialog box appears on the display. Click [OK].
>> All files installed with the R7CFG are removed.

2.3 CONNECTING THE R7 MODULE WITH THE PC

(1) Connect the configurator cable to a COM port (COM 1 through 16) on the PC.

(**Caution !**
The R7CFG may be shut down if the selected COM port is not available on the PC.
Reassign the COM port on the PC in advance if necessary.

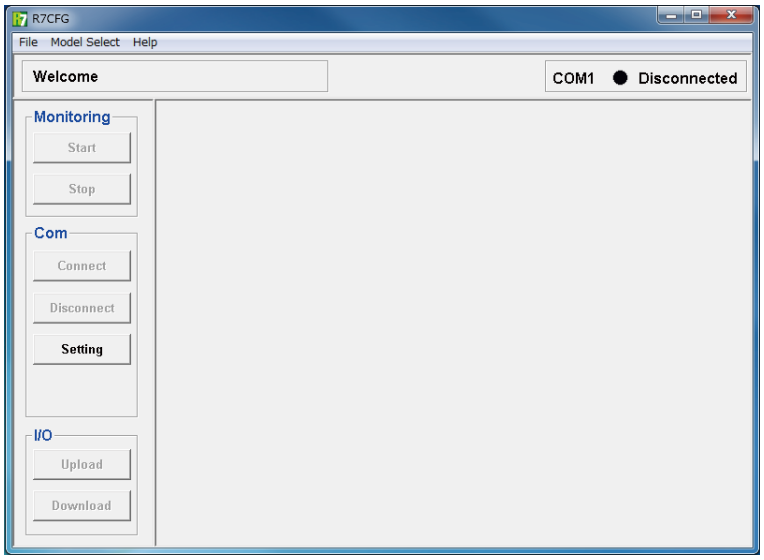
2) Connect the configurator cable to the configurator connector of the R7 module.

2.4 STARTING / ENDING THE R7CFG

Display images shown in this manual may change in detail when the software version is updated.

2.4.1 STARTING THE R7CFG

Click [Start] on the task bar and choose ‘R7CFG’ from ‘Program’ menu.
The main view appears on the screen as shown below.



2.4.2 ENDING THE R7CFG

Choose ‘Exit’ from ‘File’ menu on the menu bar to quit the program.

3. SCREENS AND OPERATIONS

The R7CFG main screen is composed of the following components:

(1) Menu bar
(2) Hardware information
(3) Communication information
(4) Control panel
(5) Monitoring view
(6) Configuration window

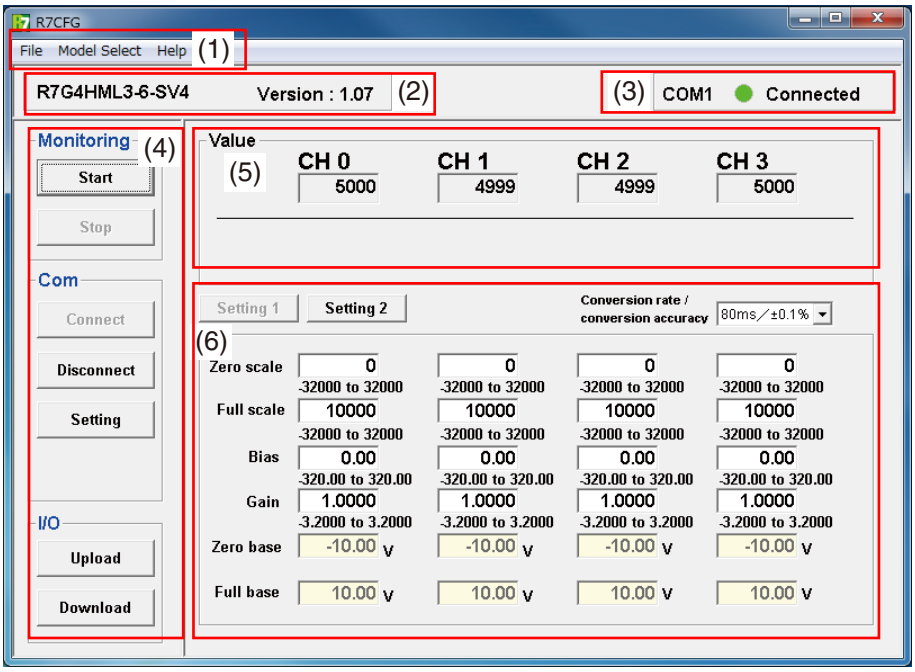


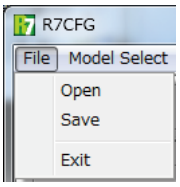
Figure 3. The R7CFG view.

3.1 MENU BAR

3.1.1 SAVING CONFIGURATION FILE

Parameters can be saved as a file on the PC.

(1) Click [Upload] button to read out the current configuration setting from the R7 module.
(2) Modify the configuration if necessary, and click [Download] in order to write the new setting to the R7 module.
(3) Choose 'Save' from 'File' menu.
Specify a file location and a file name to save the file.



3.1.2 READING/WRITING CONFIGURATION FILE

Saved files can be opened on the PC and downloaded to other R7 modules.

(1) Choose 'Open' from 'File' menu.
(2) Locate and open the file on the screen to read out the saved configuration setting.
(3) Modify the configuration if necessary, and click [Download] in order to write the new setting to the R7 module.

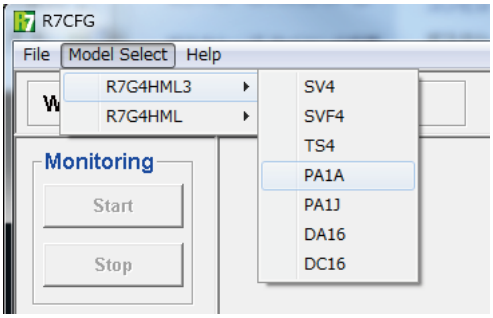
3.1.3 ENDING THE R7CFG

Choose 'Exit' from 'File' menu on the menu bar to quit the program.

3.1.4 HANDLING CONFIGURATION FILE OFF-LINE

You can create and edit a configuration file on the PC without actually connecting to a module.

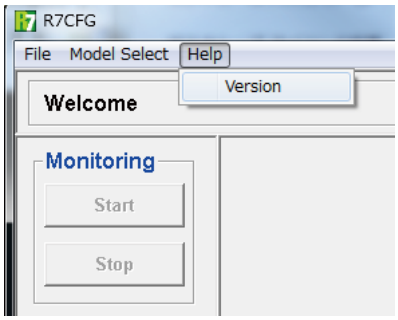
(1) Choose a desired basic module model from 'Model Select' menu.
(2) Modify the configuration if necessary.
(3) Choose 'Save' from 'File' menu.
Specify a file location and a file name to save the file.



Note: R7G4FML3-B-DA16 is an equivalent product to R7G4FML3-6-DA16, and thus setting files for R7G4FML3-6-DA16 can be downloaded to R7G4FML3-B-DA16.

3.1.5 VERSION INFORMATION

Choose 'Version' under 'Help' on the menu bar to show the R7CFG software version number.



3.2 HARDWARE INFORMATION

The model number and version number of the basic module are indicated.

3.3 COMMUNICATION INFORMATION

The COM port number to which the R7 module is connected is shown on the screen.
'Connected' is indicated when connection with the module is established (See the figure below).
'Disconnected' is indicated when connection with the module is severed.

3.4 CONTROL PANEL

On the left part of the main screen, various control buttons are available.

Group	Button	Function
Monitoring	Start	Starts monitoring of the system
	Stop	Stops monitoring of the system
Com	Connect	Connects to the COM port to establish communication with the R7 module.
	Disconnect	Disconnects from the COM port to sever communication with the R7 module.
	Setting	Sets the COM port number.
I/O	Upload	Starts uploading the configuration setting from the R7 module.
	Download	Starts downloading the configuration setting to the R7 module.

3.5 MONITORING VIEW

In the Monitoring view, current analog values and discrete signal status are displayed.

Data values are displayed for analog signals. See Figure 3.5a.

For thermocouple input modules, the field for indicating the burnout setting (upscale or downscale) and burnout status is also shown to the right of each value field, which is highlighted in light yellow in normal condition and in red when the burnout is detected. See Figure 3.5b.

For discrete signals, the indicators turn green at ON, and red at OFF. See Figure 3.5c.

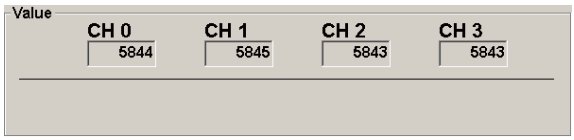


Figure 3.5a. Value monitoring, analog signals.

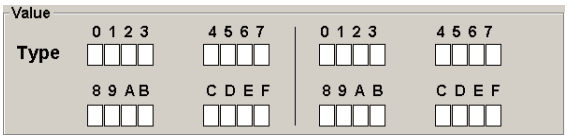


Figure 3.5c. Value monitoring, discrete signals.

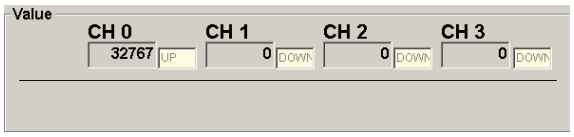


Figure 3.5b. Value monitoring, temperature signals.

3.6 CONFIGURATION WINDOW

Items displayed on the Configuration window vary depending on the model of the basic module.

Each item is displayed when the item is configurable for the module.

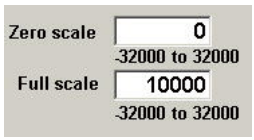
In case of many parameter items, the channel selection pull-down menu, [Setting 1], and [Setting 2] buttons are displayed for switching displayed items.

3.6.1 SCALING PER CHANNEL

Enter a value in each of the 'Zero scale' and 'Full scale' fields.

Selectable range: -32000 to 32000

Zero scale (0%) < Full scale (100%)



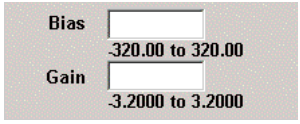
Click [Download] to apply the new setting.

3.6.2 SETTING BIAS & GAIN PER CHANNEL

Enter a value in each of the 'Bias' and 'Gain' fields.

Selectable range: -320.00 to 320.00 for Bias

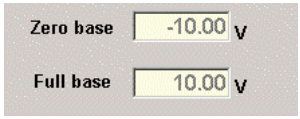
-3.2000 to 3.2000 for Gain



Click [Download] to apply the new setting.

3.6.3 CONFIRMING VOLTAGE/CURRENT RANGE PER CHANNEL

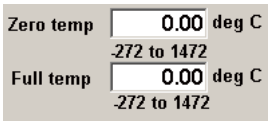
The voltage/current range selected on the hardware (DIP switch) is shown in the 'Zero base' and 'Full base' fields.



3.6.4 SETTING TEMPERATURE RANGE PER CHANNEL

Enter a value in each of the 'Zero temp' and 'Full temp' fields.

Selectable range: Shown below each field (varies depending on the sensor type)
Zero temp (0%) < Full temp (100%)



In case of a thermocouple input module, both 'Zero temp' and 'Full temp' values are set to '0.00' at default, and thus no scaling is applied and the module sends raw temperature data to the host PLC or PC.

Data in °C and in K is multiplied by 10, e.g. '105' for 10.5°C and transmitted, while data in °F is transmitted as is without multiplication.

In order to send scaled data to the host PLC or PC, set the temperature range and scaling values.

The 'Zero tem' value is scaled to 'Zero scale' and the 'Full temp' value to 'Full scale', and then the scaled data is sent.

At burnout, a scaled value equivalent to the highest or lowest temperature of the available input range of each thermocouple is transmitted.
The value is limited to 115% when the value exceeds 115% and limited to -15% when the value is below -15% of the scaled value.

Click [Download] to apply the new setting.

3.6.5 SETTING BURNOUT PROTECTION TYPE PER CHANNEL

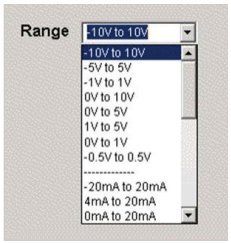
The burnout protection type setting selected on the hardware (DIP switch) is shown in the 'Burn Out' field.

UP: Upscale burnout
DOWN: Downscale burnout

Click [Download] to apply the new setting.

3.6.6 SETTING DC VOLTAGE/CURRENT RANGE PER CHANNEL

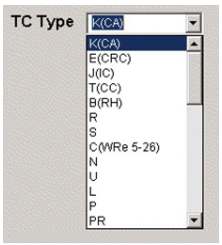
Select the voltage or current range from the pull-down menu.



Click [Download] to apply the new setting.

3.6.7 SETTING SENSOR TYPE PER CHANNEL

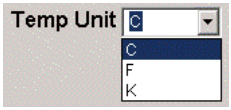
Select the sensor type from the pull-down menu.



Click [Download] to apply the new setting.

3.6.8 SETTING TEMPERATURE UNIT PER CHANNEL

Select the temperature unit from the pull-down menu.

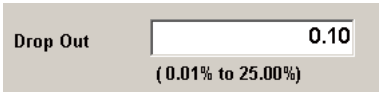


Click [Download] to apply the new setting.

3.6.9 SETTING DROP OUT PER CHANNEL

Enter a value in the 'Drop Out' field.

Selectable range: Shown below the field



Click [Download] to apply the new setting.

3.6.10 SETTING NUMBER OF TIMES OF AVERAGING

Select the number of times of averaging from the drop-down menu.

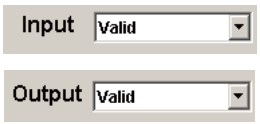
The setting value is used as denominator for averaging.

Selectable values: 1, 2, 4, 8, 16, 32, 64, 128, 256

Click [Download] to apply the new setting.

3.6.11 VALIDATING/INVALIDATING I/O TERMINAL PER CHANNEL

Select 'Valid' or 'Invalid' to validate or invalidate each of 'Input' and 'Output'.



Click [Download] to apply the new setting.

3.6.12 SETTING OUTPUT AT THE LOSS OF COMMUNICATION

Select 'Hold' or 'Clear' from the drop-down menu.

Hold: Holds the output prior to the interruption at the loss of communication

Clear: Resets output at the loss of communication

Click [Download] to apply the new setting.

3.6.13 SETTING OUTPUT CLEAR VALUE PER CHANNEL

Enter a value in the 'Output Clear Value' field.

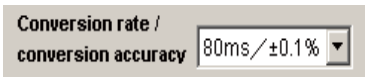
This setting value is set as the output value when the output value is to be reset at the loss of communication.

Selectable range: -15.00 to 115.00

Click [Download] to apply the new setting.

3.6.14 SETTING CONVERSION RATE/CONVERSION ACCURACY

Select the conversion rate / conversion accuracy from the drop-down menu.



Click [Download] to apply the new setting.

3.6.15 SETTING MEASUREMENT DATA TYPE

Select the data type from the drop-down menu.

Click [Download] to apply the new setting.

3.6.16 SETTING SPEED FREQUENCY RANGE FOR SPEED MEASUREMENT

Select the speed frequency range from the drop-down menu.

Click [Download] to apply the new setting.

3.6.17 SETTING COUNT MODE FOR POSITION MEASUREMENT

Select the position count mode from the drop-down menu.

Click [Download] to apply the new setting.

3.6.18 SETTING POSITION DATA TYPE

Select the position data type from the drop-down menu.

Click [Download] to apply the new setting.

3.6.19 SETTING NUMBER OF TIMES OF AVERAGING

Select 'Valid' or 'Invalid' to validate or invalidate the averaging function from the drop-down menu.

Click [Download] to apply the new setting.

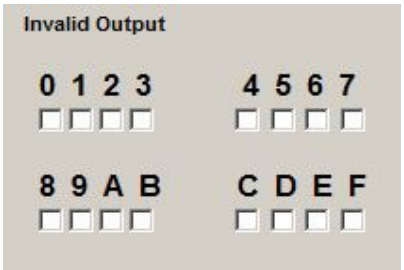
3.6.20 SETTING CONVERSION RATE

Select the conversion rate from the drop-down menu.

Click [Download] to apply the new setting.

3.6.21 INVALIDATING DISCRETE OUTPUT

Check or uncheck each terminal to invalidate or validate discrete output.



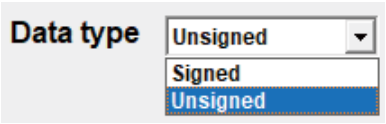
Click [Download] to apply the new setting.

3.6.22 DATA TYPE SETTING

Select ‘Signed’ or ‘Unsigned’ from the drop-down menu.

Unsigned: The range of scaling setting is 0 to 65535.

Signed: The range of scaling setting is -32768 to 32767.



Click [Download] to apply the new setting.

4. HOW TO USE THE R7CFG

Please refer to this section to start 'monitoring' and/or 'configuration' as soon as you have received the product. Follow the examples in the following subsections.

For more detailed explanations on functions of control buttons and parameter setting items, please refer to Section 3.

4.1 HOW TO START MONITORING

The monitoring procedure will be explained taking R7G4HML3-6-SV4 as an example.
The same procedure applies to other models as well.
Take the following steps to start monitoring.

(1) Connect the R7G4HML3-6-SV4 to the PC and turn on the power supply to the module.
(See 'Section 2.3 Connecting the R7 module with the PC.'

(2) Start up the R7CFG program and click [Setting] in 'Com' control panel.
>> The COM port setting dialog box appears.

(3) Choose one of the COM ports and click [OK].
>> When the module is properly connected and the network communication is established, 'COM#' indicator turns Green, and the hardware information is uploaded (Figure 4.1a).

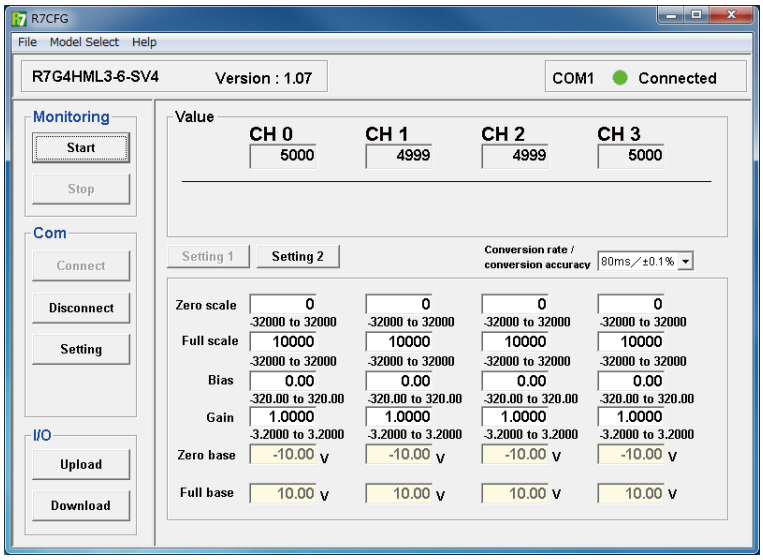


Figure 4.1a. Monitoring, initial view of the main screen.

>> If the connection has failed, an error message box appears on the screen (Figure 4.1b).
>> Confirm the COM port setting of the PC.

>> If the uploading has failed, an error message box appears on the screen (Figure 4.1c).
>> Confirm the hardware connection between the R7 module and the PC, and the power supply to the R7 module.

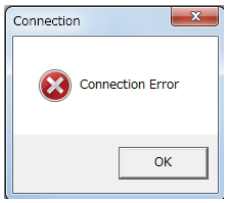


Figure 4.1b. Connection error message.

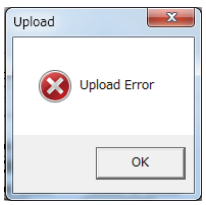


Figure 4.1c. Upload error message.

(4) Once a normal communication is established, click [Start] in 'Monitoring' control panel.
>> The 'COM#' indicator turns Amber (Figure 4.1d).

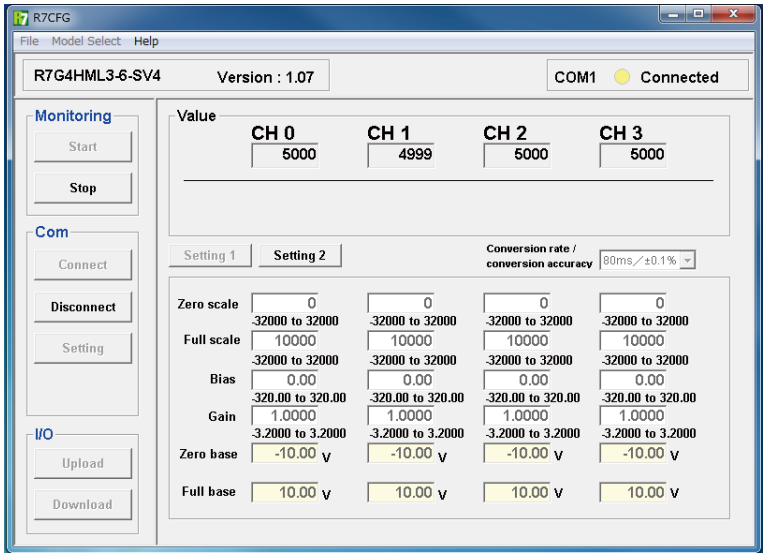


Figure 4.1d. Monitoring in progress

(5) In order to stop monitoring, click either [Stop] in 'Monitoring' control panel or [Disconnect] in 'Com' control panel.

4.2 HOW TO CONFIGURE THE R7 MODULE

The configuration procedure will be explained taking R7G4HML3-6-SV4 and R7G4HML3-6-TS4 as examples.

The same procedure applies to other models as well.

First, connect the R7G4HML3-6-SV4 and call up the R7CFG main screen following the procedure explained in 'Section 4.1 How to Start Monitoring.'
Initially, the main screen shows Input range of -10.00 to 10.00 V and 0 V (50%) input for all channels (CH 0 through CH 3).

4.2.1 CHANGING SCALE RANGE OF CH 0 TO '-20000 to +20000' FOR R7G4HML3-6-SV4

(1) Enter -20000 in the 'Zero scale' field, and 20000 in the 'Full scale' field.
(2) Click [Download].
>> The R7CFG automatically uploads the updated values from the R7 module.
The scale range has been changed and the 'Value' field for CH 0 should now show '0'.
>> Confirm the successful download.

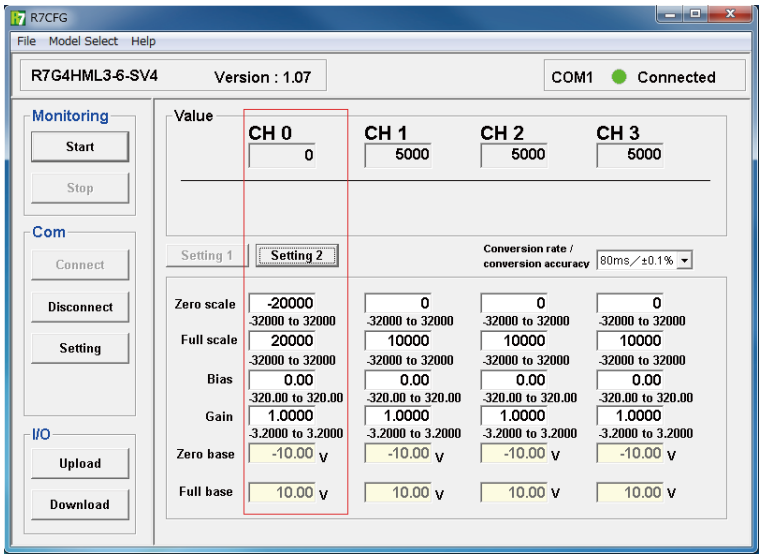


Figure 4.2.1. CH 0 data after changing the scale range

4.2.2 SETTING BIAS OF CH 1 FOR R7G4HML3-6-SV4

Initially, the main screen shows Input range of -10 to +10 V DC and Scale range of 0 to 10000.

(1) Input 0% of the input range -10 to +10 V DC (i.e. -10 V DC) and start monitoring.
(For details, please refer to 'Section 4.1 HOW TO START MONITORING'.)
When the value of CH 1 is 100, the error is calculated by: 100/10000*100=1.00[%].
(2) Enter -1.00 in the 'Bias' field.
(3) Click [Download].
>> The R7CFG automatically uploads the updated values from the R7 module.
The value for 'Bias' has been changed and the 'Value' field for CH 1 should now show '0'.
>> Confirm the successful download.

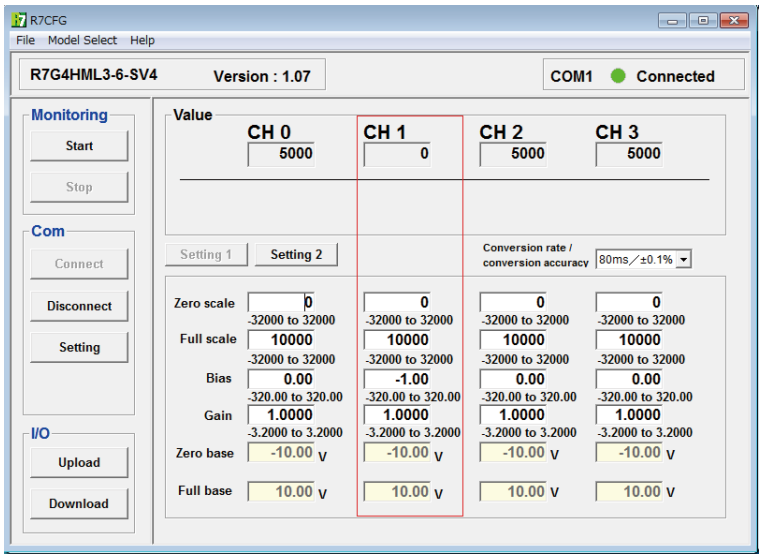


Figure 4.2.2. CH 1 data after setting the Bias

4.2.3 SETTING GAIN OF CH 1 FOR R7G4HML3-6-SV4

Initially, the main screen shows Input range of -10 to +10 V DC and Scale range of 0 to 10000.

(1) Input 100% of the input range -10 to +10 V DC (i.e. +10 V DC) and start monitoring.
(For details, please refer to 'Section 4.1 HOW TO START MONITORING'.)
When the value of CH 1 is 10100, the gain is calculated by: 10100/10000=0.9901.
(2) Enter 0.9901 in the 'Gain' field.
(3) Click [Download].
>> The R7CFG automatically uploads the updated value from the R7 module.
The value for 'Gain' has been changed and the 'Value' field for CH 1 should now show '10000'.
>> Confirm the successful download.

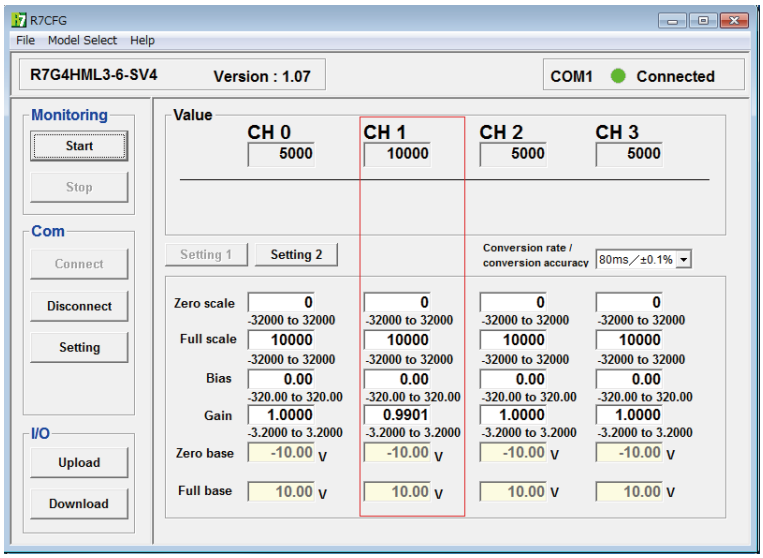


Figure 4.2.3. CH 1 data after setting the Gain

4.2.4 CHANGING INPUT RANGE OF CH 3 ONLY TO '0-20 mA' FOR R7G4HML3-6-SV4

(1) Click [Setting 2] button.
>> The Configuration section is now switched to the Range Setting view.
([Setting 1] and [Setting 2] buttons appear only for those models with many parameter items.)

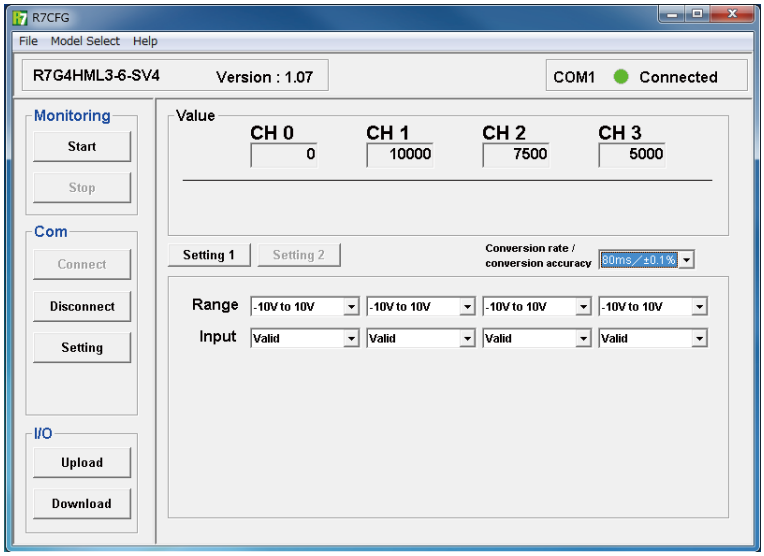
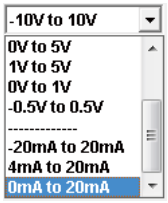


Figure 4.2.4a. The Range Setting View

(2) Click the down arrow at the right of the CH 3 'Range' setting field and select '0mA to 20mA.'



(3) Click [Download].
>> The R7CFG automatically uploads the updated value from the R7 module.
>> As the view automatically switches back to Setting 1, click [Setting 2] button again and confirm the successful download (CH 3 'Range' field now shows '0mA to 20mA.')
(4) Click [Disconnect] to close the COM port.
(5) Turn off the power supply to the R7 module.
(6) Turn on the power supply to the R7 module and connect to the R7CFG to show the main screen.
>> Confirm that CH 3 range has been changed to '0-20 mA.'

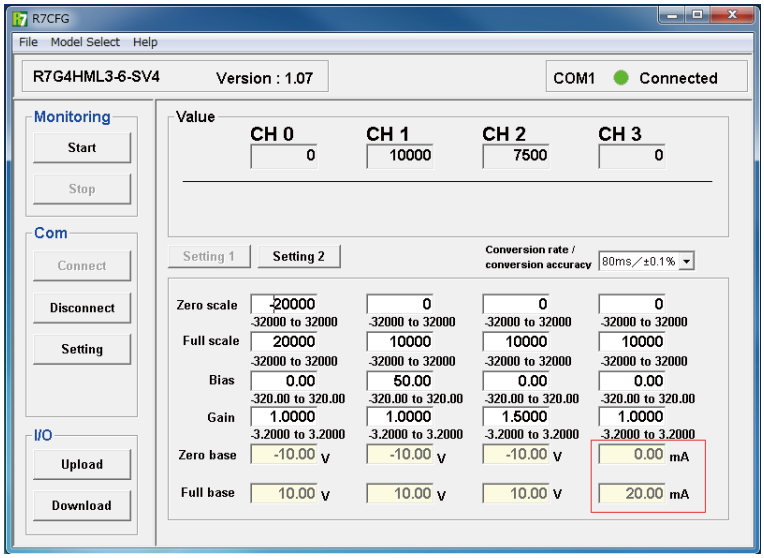


Figure 4.2.4b. CH 3 data after changing input range

4.2.5 CHANGING SENSOR OF CH 0 ONLY TO 'T THERMOCOUPLE' FOR R7G4HML3-6-TS4

First, connect the R7G4HML3-6-TS4 and call up the R7CFG main screen following the procedure explained in 'Section 4.1 HOW TO START MONITORING'.

Initially, the main screen should show K thermocouple and opencircuit input (burnout state) for all channels (CH 0 through CH 3).

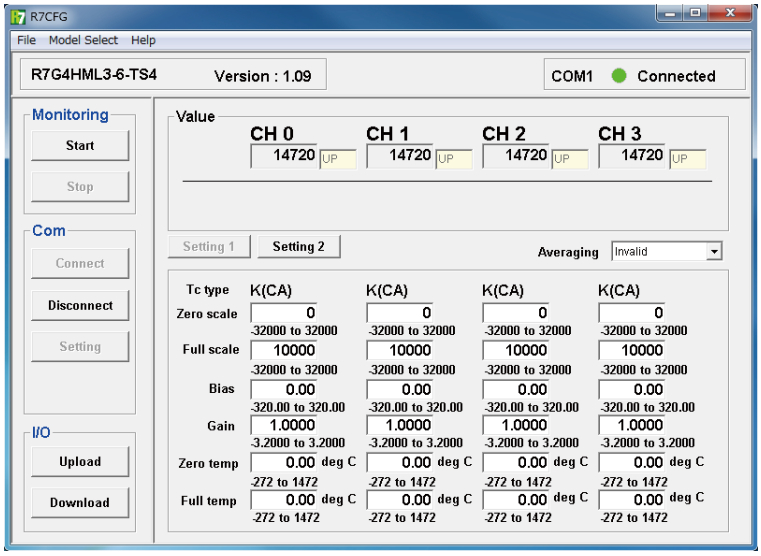


Figure 4.2.5a. R7G4HML3-6-TS4 initial view of the Configuration window

(1) Click [Setting 2] button.
>> The Configuration section is now switched to the TC Type and Temp Unit Setting view.

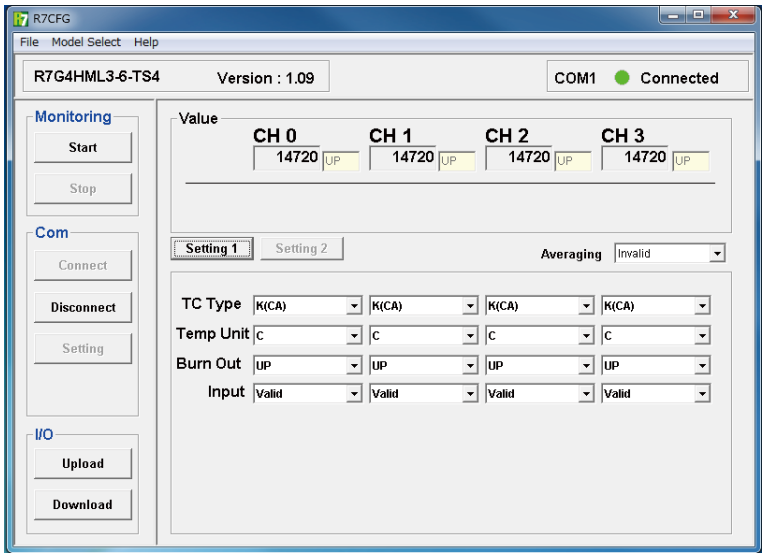
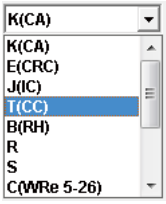


Figure 4.2.5b. TC Type and Temp Unit Setting view

(2) Click the down arrow at the right of the CH 0 'TC Type' setting field and select 'T'.



(3) Click [Download].
>> The R7CFG automatically uploads the updated value from the R7 module.
>> As the view automatically switches back to Setting 1, click [Setting 2] button again and confirm the successful download (CH 0 'TC Type' field now shows 'T.')

(4) Click [Disconnect] to close the COM port.

(5) Turn off the power supply to the R7 module.

(6) Turn on the power supply to the R7 module and connect to the R7CFG to show the main screen.
>> Confirm that CH 0 TC type has been changed to 'T.'

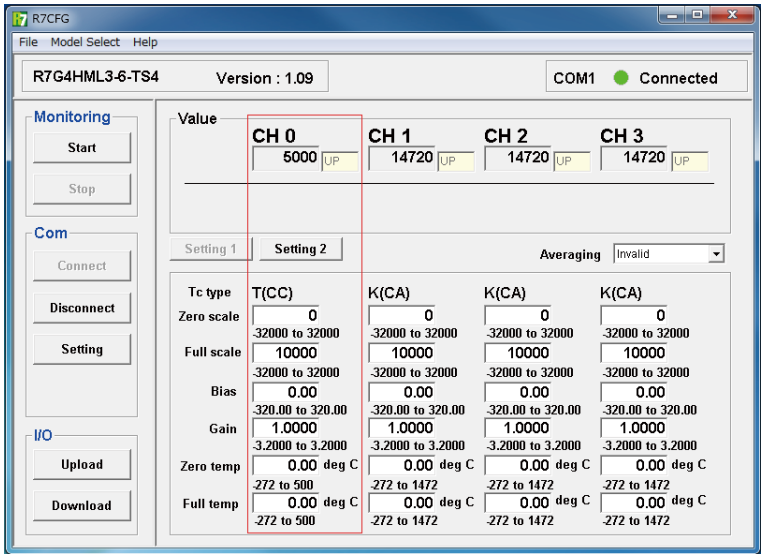


Figure 4.2.5c. CH 0 data after changing TC type

4.2.6 CHANGING TEMPERATURE UNIT OF CH 1 ONLY TO 'FAHRENHEIT' FOR R7G4HML3-6-TS4

(1) Click [Setting 2] button.
>> The Configuration section is now switched to the TC Type and Temp Unit Setting view. (See Figure 4.2.5b.)
(2) Click the down arrow at the right of the CH 1 'Temp Unit' setting field and select 'F'.
(3) Click [Download].
>> The R7CFG automatically uploads the updated value from the R7 module.
The 'Value' field for CH 1 should now show '2682'.
>> Confirm that the unit of 'Zero temp' and 'Full Temp' in CH1 has been changed to "degF".

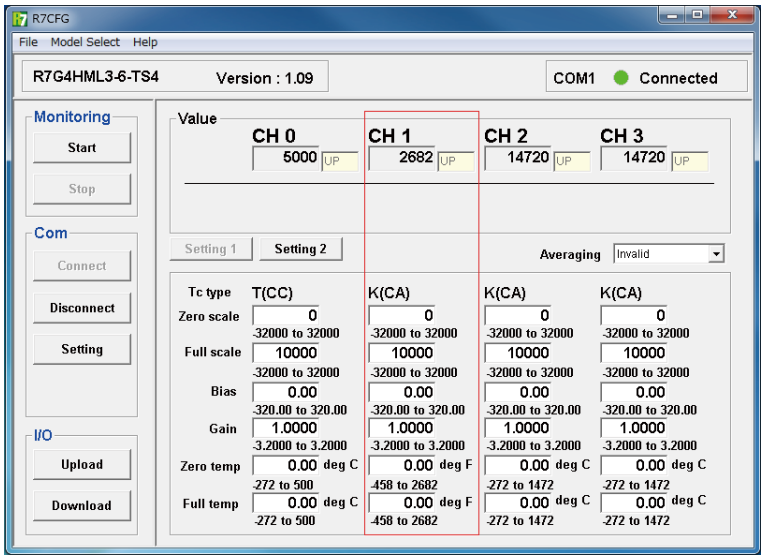


Figure 4.2.6. CH 1 data after changing temperature unit

4.3 SETTING ITEMS FOR R7G4HML3-6-PA1

When the firmware version is V1.11 or later, the model is displayed as R7G4HML3-6-PA1x/A.

First, connect the R7G4HML3-6-PA1 and call up the R7CFG main screen following the procedure explained in 'Section 4.1 HOW TO START MONITORING'.

The below is the initial view of the main screen.

The view is changeable between Speed Data and Position Data by clicking [DISPLAY SPEED DATA] or [DISPLAY POSITION DATA] button.

Also, the displayed setting items can be switched by clicking [Setting 1], [Setting 2], [Alarm], or [Latch/Reset] button in each of [DISPLAY SPEED DATA] and [DISPLAY POSITION DATA] views.

■ POSITION DATA 'SETTING 1' VIEW AND SETTING ITEMS

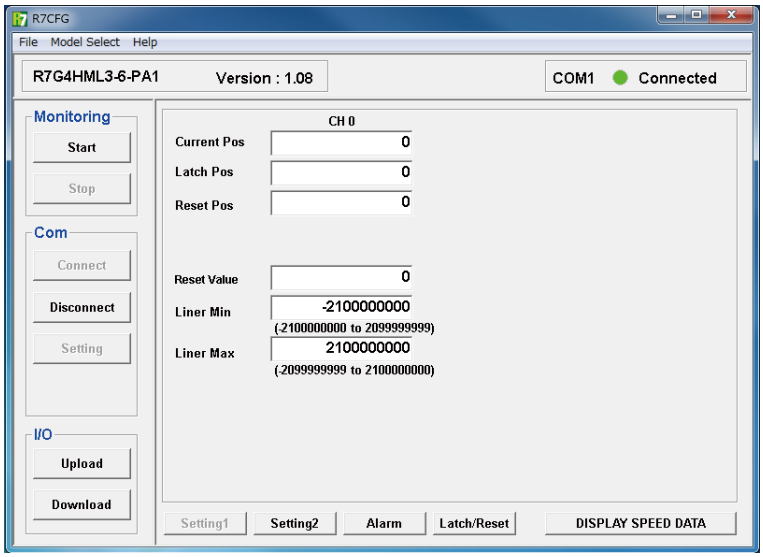


Figure 4.3a. Position Data Setting 1 view of R7G4HML3-6-PA1

Current Pos	Current position (totalized value)
Latch Pos	Latched position
Reset Pos	Position at receiving Reset signal
Reset Value	Specify Preset position at Reset receiving or power on (min. to max.)
Liner Min	Specify Minimum totalized value (-2 100 000 000 to 2 099 999 999)
Liner Max	Specify Maximum totalized value (-2 099 999 999 to 2 100 000 000)

Note: When either Liner Min or Liner Max is changed, initialize 'Current Pos' and 'Reset Value' by pressing [Request] for 'Reset' and 'Reset Data Clear' button in the Latch and Reset Setting view (Figure 4.3e).

■ SPEED DATA ‘SETTING 1’ VIEW AND SETTING ITEMS

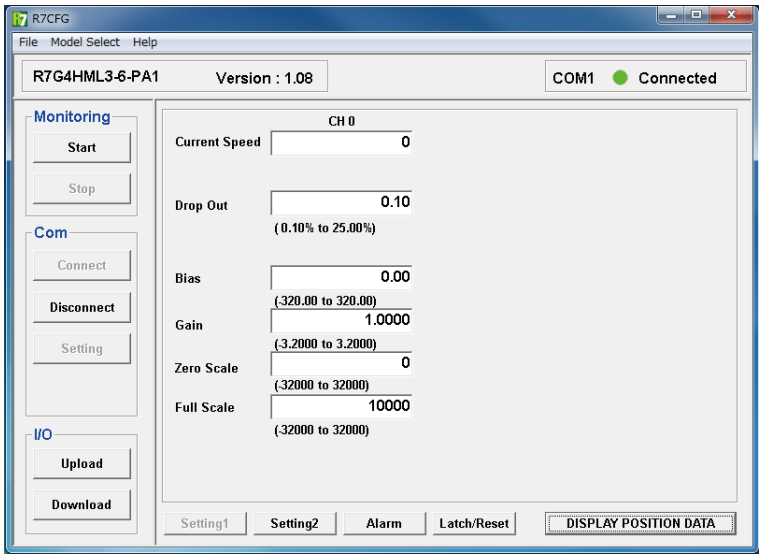


Figure 4.3b. Speed Data Setting 1 view of R7G4HML3-6-PA1

Current Speed	Current speed (scaled value)
Drop Out	Specify a value for ‘Drop Out’ adjustment (low-end cutout) in percentage (0.10 to 50.00)
Bias	Specify a value for ‘Bias’ in percentage (-320.00 to 320.00)
Gain	Specify a value for ‘Gain’ (-3.2000 to 3.2000)
Zero Scale	Specify 0% scaling value (-32000 to 32000)
Full Scale	Specify 100% scaling value (-32000 to 32000)

■ SPEED DATA ‘SETTING 2’ VIEW AND SETTING ITEMS

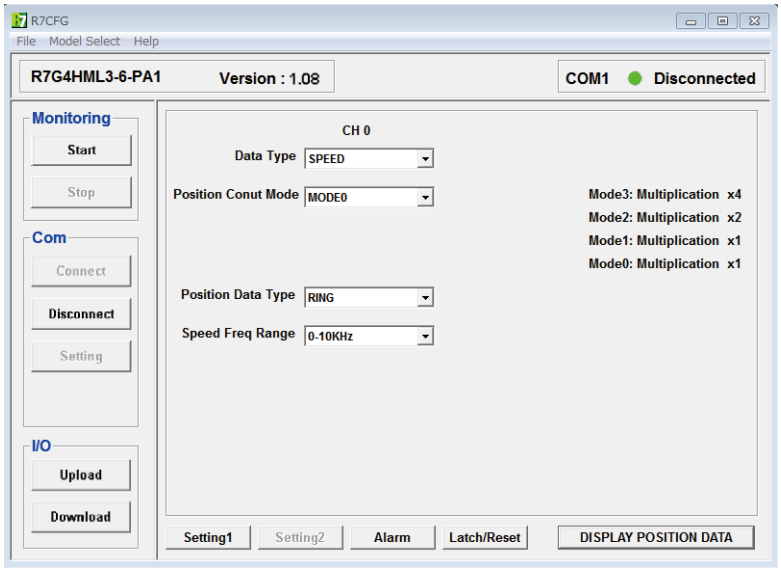


Figure 4.3c. Speed Data Setting 2 view of R7G4HML3-6-PA1

Data Type	Speed Data / Position Data
Position Count Mode	Mode0: 1 multiplication (A, B phase) / Mode0: 1 multiplication (A phase) Mode2: 2 multiplication / Mode3: 4 multiplication
Position Data Type	Ring / Linear
Speed Freq. Range	0 – 100kHz / 0 – 10kHz / 0 – 1kHz / 0 – 100Hz 0 – 10Hz / 0 – 1Hz / 0 – 0.1Hz

■ 'ALARM' SETTING VIEW AND SETTING ITEMS

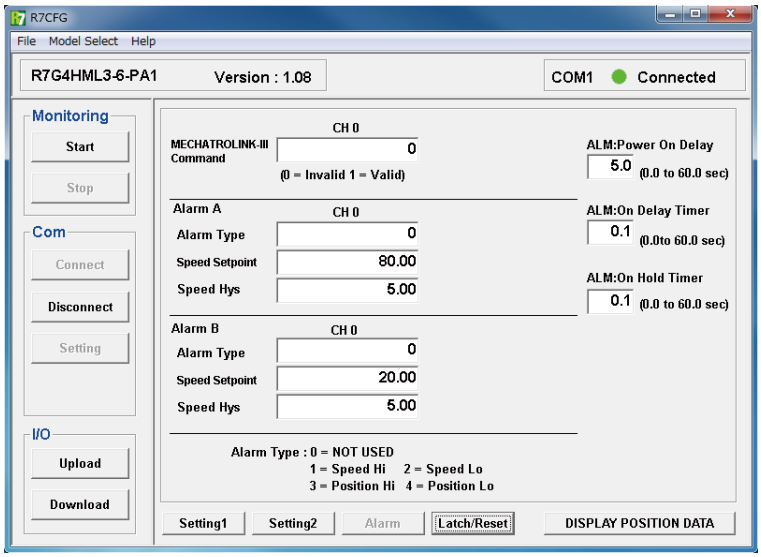


Figure 4.3d. Alarm Setting view

MECHATROLINK-III Command*	Alarm setting via MECHATROLINK-III 0: Invalid / 1: Valid
Alarm Type*	Alarm trip operation type setting 0: NOT USED 1: Speed High 2: Speed Low 3: Position High 4: Position Low
Position Setpoint / Speed Setpoint	Setpoint setting. Hi alarm (Lo alarm) turns on when the input value is more (less) than the setpoint. • Position Setpoint LINER: Hi Setpoint: Min to [Max−1]; Lo Setpoint: [Min+1] to Max RING: Hi Setpoint: 0 to 4 294 967 294; Lo Setpoint: 1 to 4 294 967 295 • Speed Setpoint: -15.00 to 115.00%
Position Hys / Speed Hys	Hysteresis (deadband) setting Hi alarm turns off when the input value is under the preset hysteresis value deducted from the setpoint value. Lo alarm turns off when the input value is over the preset hysteresis value added to the setpoint value. • Position Hys LINER: < [Max – Min]; [Hi Setpoint – Hysteresis] > Min; [Lo Setpoint + Hysteresis] < Max RING: 0 to 4,294,967,295; [Hi Setpoint – Hysteresis] > 0; [Lo Setpoint + Hysteresis] < 4 294 967 295 • Speed Hys: 0.00 to 115.00%
ALM: Power On Delay	Power on delay time setting (0.0 to 60.0 sec.) Prohibits alarm tripping during this period after power on.
ALM: On Delay Timer	Alarm trip delay time setting (0.0 to 60.0 sec.) The alarm is tripped if the alarm condition continues for the delay time.
ALM: On Hold Timer	Alarm holding time setting (0.0 to 60.0 sec.) Once tripped, the alarm is held for the set holding time even when the alarm condition is canceled before such time elapses.

*MECHATROLINK-III Command and Alarm Type are set independently.
When the system is operated with only MECHATROLINK-III Command, set 'Alarm Type' to '0: NOT USED'.

■ ‘LATCH/RESET’ SETTING VIEW AND SETTING ITEMS

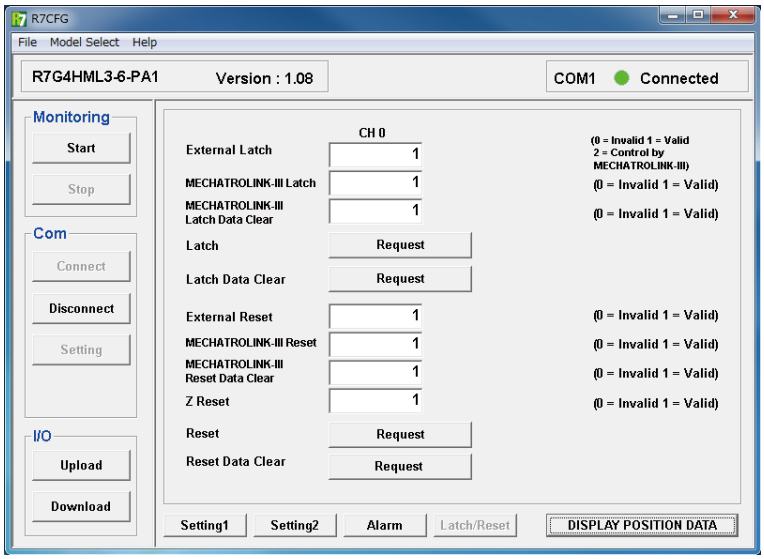


Figure 4.3e. Latch and Reset Setting view

External Latch	Latch via external discrete input 0: Invalid / 1: Valid / 2: Command via MECHATROLINK-III
MECHATROLINK-III Latch	Latch command via MECHATROLINK-III 0: Invalid / 1: Valid
MECHATROLINK-III Latch Data Clear	Latch Data Clear command via MECHATROLINK-III 0: Invalid / 1: Valid
Latch	Click [Request] to latch
Latch Data Clear	Click [Request] to clear latch data
External Reset	Reset via external discrete input 0: Invalid / 1: Valid
MECHATROLINK-III Reset	Reset command via MECHATROLINK-III 0: Invalid / 1: Valid
MECHATROLINK-III Reset Data Clear	Reset Data Clear command via MECHATROLINK-III 0: Invalid / 1: Valid
Z Reset	Reset via external Z phase 0: Invalid / 1: Valid
Z Reset / Z Latch*	Reset or latch via external Z phase 0: Invalid / 1: Reset / 2: Latch*
Reset	Click [Request] to reset
Reset Data Clear	Click [Request] to clear reset data

Caution: ‘Reset’ function is disabled in Speed mode.

* Selectable when the firmware version of R7G4HML3-6-PA1 is V1.11 or later.

4.4 SETTING ITEMS FOR R7G4HML3-6-LC2, LC2A, R7I4DCIE-LC2 AND R7G4JECT-LC2

First, connect the R7G4HML3-6-LC2, LC2A, R7I4DCIE-LC2 or R7G4JECT-LC2 and call up the R7CFG main screen following the procedure explained in 'Section 4.1 HOW TO START MONITORING'.

The below is the initial view of the main screen.

The displayed setting items can be switched by clicking [Setting 1] or [Setting 2] button.

■ 'SETTING 1' VIEW AND SETTING ITEMS FOR R7G4HML3-6-LC2, LC2A

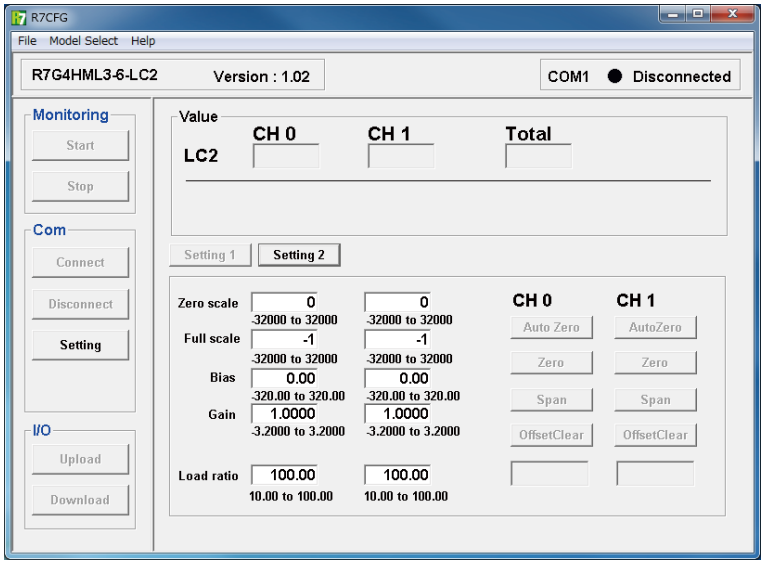


Figure 4.4a. Setting 1, Scale Range Setting view of R7G4HML3-6-LC2, LC2A, R7I4DCIE-LC2 and R7G4JECT-LC2

Zero Scale	0% scaling value (-32000 to 32000)
Full Scale	100% scaling value (-32000 to 32000)
Bias	Specify a value for 'Bias' in percentage (-320.00 to 320.00)
Gain	Specify a value for 'Gain' (-3.2000 to 3.2000)
Load ratio	Specify load ratio for strain gauge 10.00, 100.00
Auto Zero	Offset current input value to 0.00%
Zero	Set current input value as zero (0.00%)
Span	Set current input value as span (100.00%) Span is calculated from load ratio when load ratio is set.
Offset Clear	Clear current offset value

Adjust 'Auto Zero' after performing Zero and Span adjustments.

■ ‘SETTING 2’ VIEW AND SETTING ITEMS FOR R7G4HML3-6-LC2, LC2A

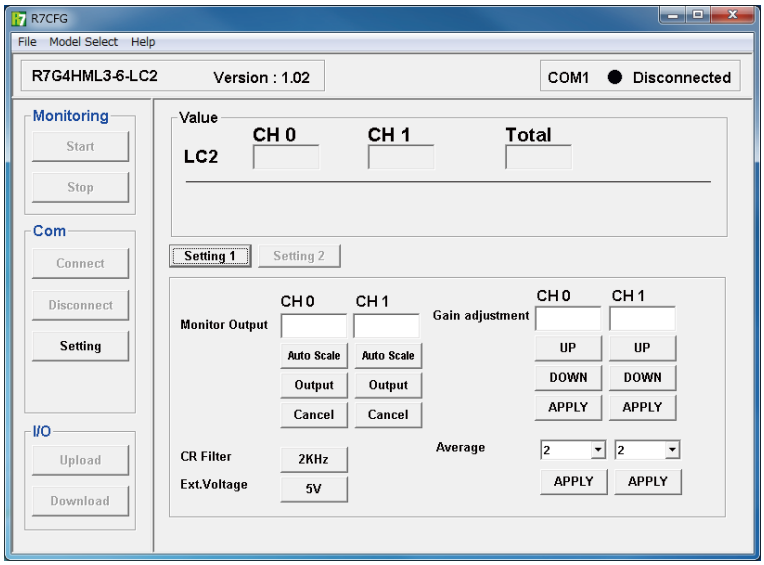


Figure 4.4b. Setting 2 view of R7G4HML3-6-LC2, LC2A, R7I4DCIE-LC2 and R7G4JECT-LC2

Monitor Output	Specify desired output value with scaling value. Click [Auto Scale] to scale the current value to the set value. Click [Output] to output the set value. Click [Cancel] to clear the monitor output.
Gain adjustment	Determine the gain watching the output voltage so that desired output is obtained. [UP]: Change gain to +0.0001 [DOWN]: Change gain to -0.0001 [APPLY]: Validate the data
CR Filter	Specify CR filter for input. Select from among 2kHz and 2Hz (For LC2/F1, 1Hz and 2Hz). Press the value button to switch the value.
Ext. Voltage	Specify external voltage for sensor. Select between 5V and 2.5V. Press the value button to switch the value.
Average	Specify the number of times of averaging for input value. Selectable from among 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024. Press [APPLY] to validate the number of times of averaging.

Click [Auto Scale] or [APPLY] button to save data.
[Download] button in the ‘I/O control panel’ at the left side of the view does NOT save items shown above.
For CR Filter and Ext. Voltage, pressing the value buttons saves data.

Caution !
For R7G4HML3-6-LC2A, ‘Ext. Voltage’ is not available.

For R7G4HML3-6-LC2/F1, after selecting [LC2/F1] from [Model Select] in the menu bar, press [Connect] button to enable communication.

■ ‘SETTING 3’ VIEW AND SETTING ITEMS (ONLY FOR R7G4JECT-LC2)

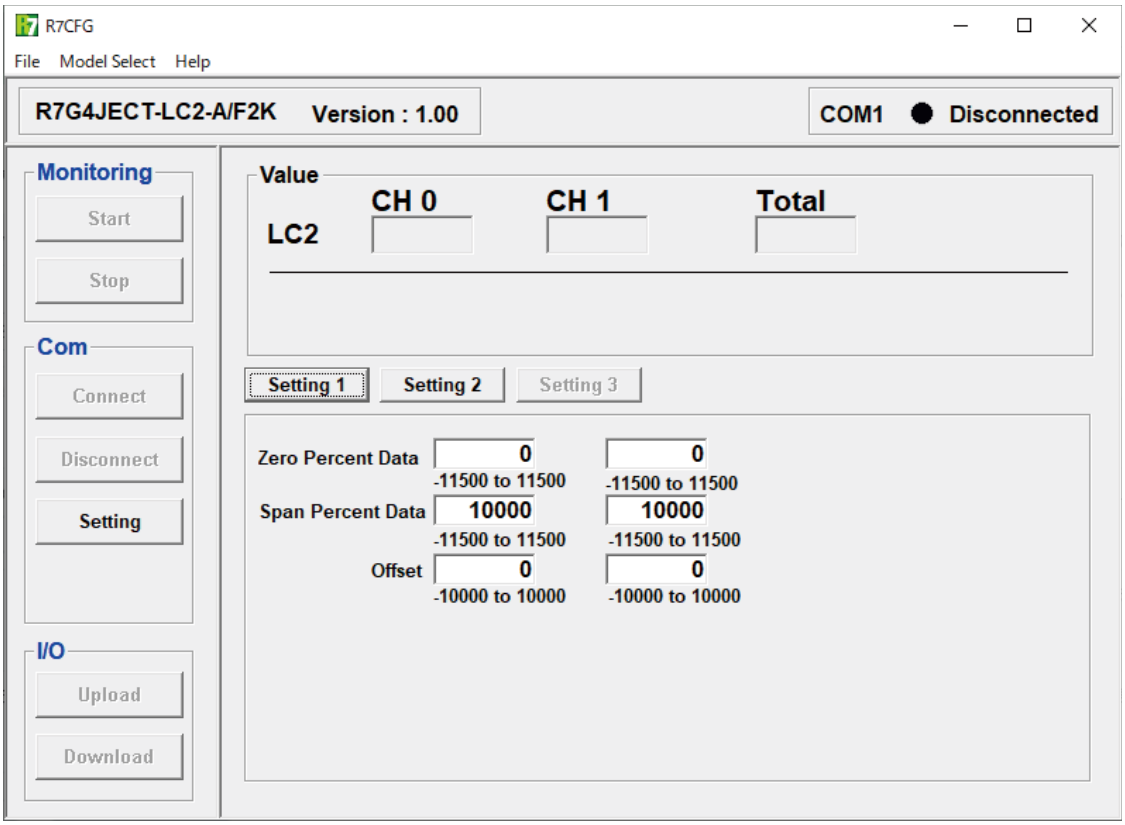


Figure 4.4c. Initial view of R7G4JECT-LC2

Zero Percent Data	By setting the zero% data, user zero adjustment value is calculated depending on the default setting value and written.
Span Percent Data	By setting the span% data, user span adjustment value is calculated depending on the default setting value and written.
Offset	Set an arbitrary offset.

Zero% data and span% data are used for replacing the unit.

With the unit A that was installed initially, adjust the zero point with the sensor in no-load condition and the span point with the sensor in 100% load condition. Then, load the zero% data and span% data.

After replacing with another unit B, set the zero% data and span% data of the unit A with this function. Then, it is possible to operate with the same zero and span adjustment values as unit A without adjusting the zero and span points.

4.5 SETTING ITEMS FOR R7G4HML3-6-STYVS1

First, connect the R7G4HML3-6-STYVS1 and call up the R7CFG main screen following the procedure explained in 'Section 4.1 HOW TO START MONITORING'.

The below is the initial view of the main screen.

The displayed setting items can be switched by clicking [Setting 1], [Setting 2], or [Setting 3] button.

■ 'SETTING 1' VIEW AND SETTING ITEMS FOR R7G4HML3-6-STYVS1

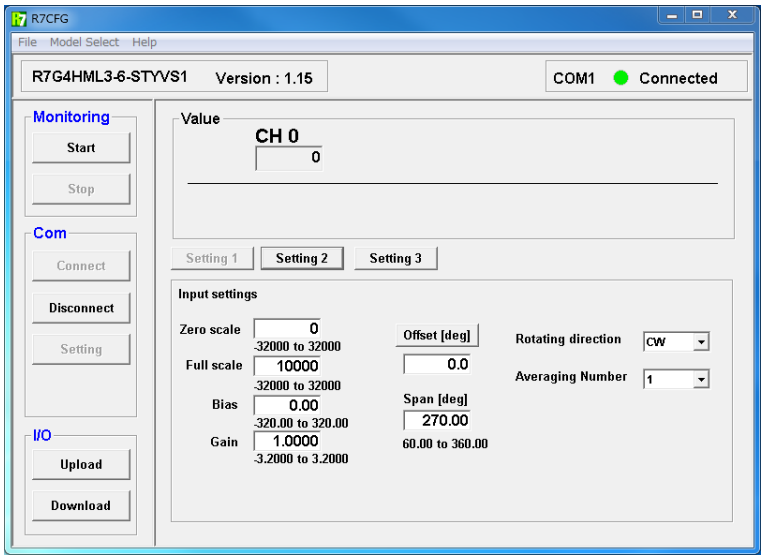


Figure 4.5a. Setting 1, Scale Range Setting view of R7G4HML3-6-STYVS1

Zero Scale	Specify 0% scaling value (-32000 to 32000)
Full Scale	Specify 100% scaling value (-32000 to 32000)
Bias	Specify a value for 'Bias' in percentage (-320.00 to 320.00)
Gain	Specify a value for 'Gain' (-3.2000 to 3.2000)
Offset	Shows the current angle offset in deg. Press [Offset] to offset input value to '0'.
Span	Set angle span in deg. (60.00 to 360.00)
Rotating Direction	Set rotating direction. CW or CCW.
Averaging Number	Set the number of times of averaging. (1, 2, 4, 8, 16, 32, 64, 128, 256)

The view is switched to setting 2 view by clicking [Setting 2] button.

■ ‘SETTING 2’ VIEW AND SETTING ITEMS FOR R7G4HML3-6-STYVS1

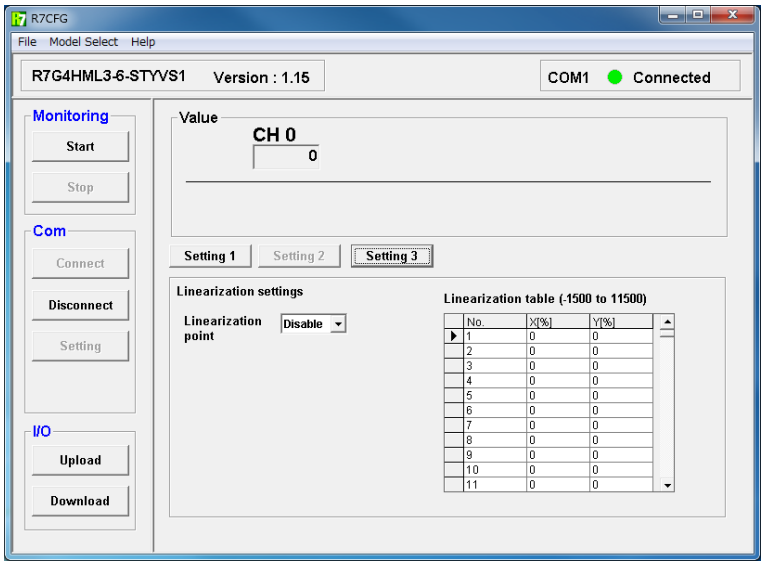


Figure 4.5b. Setting 2 view of R7G4HML3-6-STYVS1

Linearization Point	Set the number of linearization points (3 to 32) for a line chart. Select [Disable] to disable linearization function.
Linearization Table	Set linearization points for X-axis and Y-axis in integer of hundredfold percentage value (-1500 to 11500). Set X-axis values so that No.1 < No.2 < No.3 … For detailed information, refer to the instruction manual for the module.

The view is switched to setting 3 view by clicking [Setting 3] button.

■ ‘SETTING 3’ VIEW AND SETTING ITEMS FOR R7G4HML3-6-STYVS1

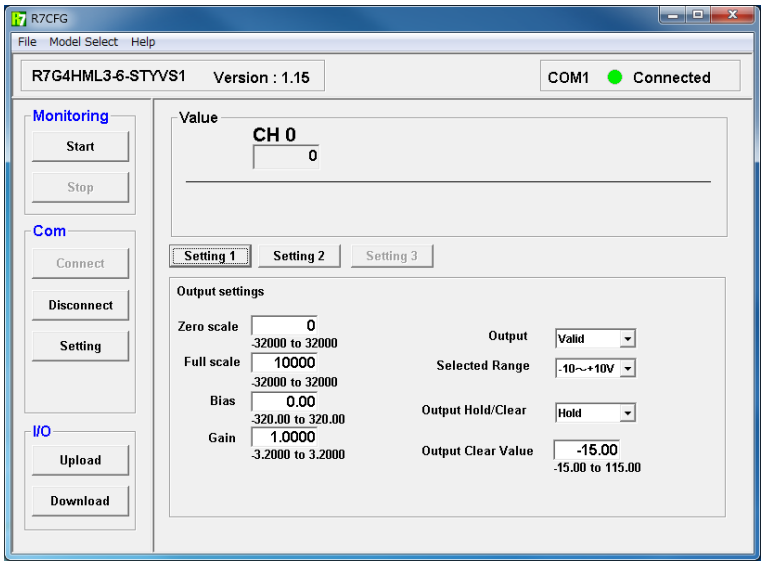


Figure 4.5c. Setting 3 view of R7G4HML3-6-STYVS1

Zero Scale	Specify 0% scaling value (-32000 to 32000)
Full Scale	Specify 100% scaling value (-32000 to 32000)
Bias	Specify a value for ‘Bias’ in percentage (-320.00 to 320.00)
Gain	Specify a value for ‘Gain’ (-3.2000 to 3.2000)
Output	[Valid]: output enable [Invalid]: output disable
Selected Range	Output range settings. Choose among followings: ‘-10 to +10V’; ‘-5 to +5V’; ‘0 to 10V’; ‘0 to 5V’; ‘1 to 5V’; and ‘4 to 20mA’
Output Hold/Clear	Set output function at the loss of communication. [Hold]: Hold the output at the loss of communication. [Clear]: Set the output to output clear value at the loss of communication.
Output Clear Value	Specify a value in percentage (-15.00 to 115.00)

4.6 SETTING ITEMS FOR R7I4DECT-1-PA8A

First, connect the R7I4DECT-1-PA8A and call up the R7CFG main screen following the procedure explained in 'Section 4.1 HOW TO START MONITORING'.

The below is the initial view of the main screen.

The displayed setting items can be switched by clicking [Setting 1] or [Setting 2] button.

■ 'SETTING 1' VIEW AND SETTING ITEMS FOR R7I4DECT-1-PA8A

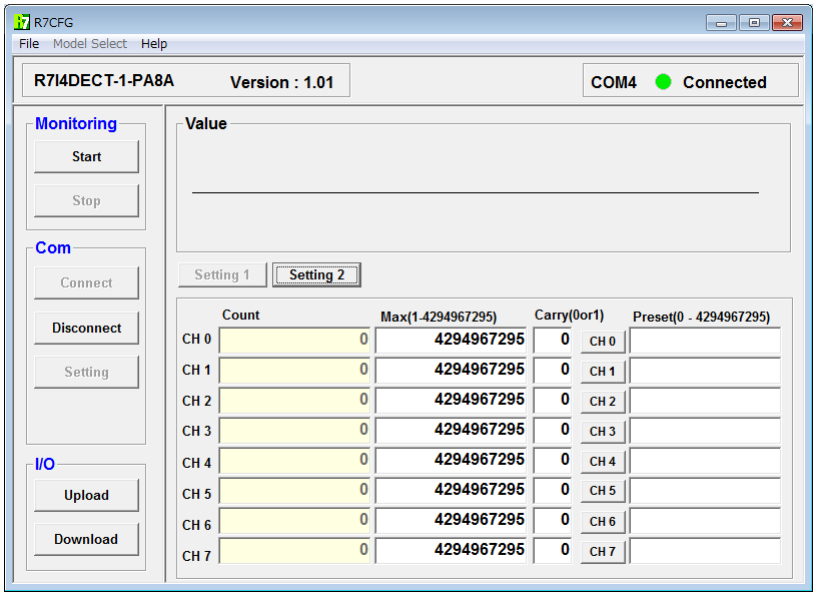


Figure 4.6a. Setting 1 view of R7I4DECT-1-PA8A

Count	Accumulated pulse count	Shows the accumulated pulse count at present (1 to 4294967295)
Max	Maximum accumulated pulse count	Specify the upper limit value for accumulated pulse count (1 to 4294967295) Set to a value larger than the accumulated pulse count at present.
Carry	Overflow reset value	The value to reset to when the accumulated count pulse has exceeded the upper limit value. (0 or 1)
Preset	Preset pulse count	The accumulated pulse count at present can be changed to a desired value. (value between 'Carry' and 'Max') Enter a value in the text box and press [CH x] button on the left.

■ ‘SETTING 2’ VIEW AND SETTING ITEMS FOR R7I4DECT-1-PA8A

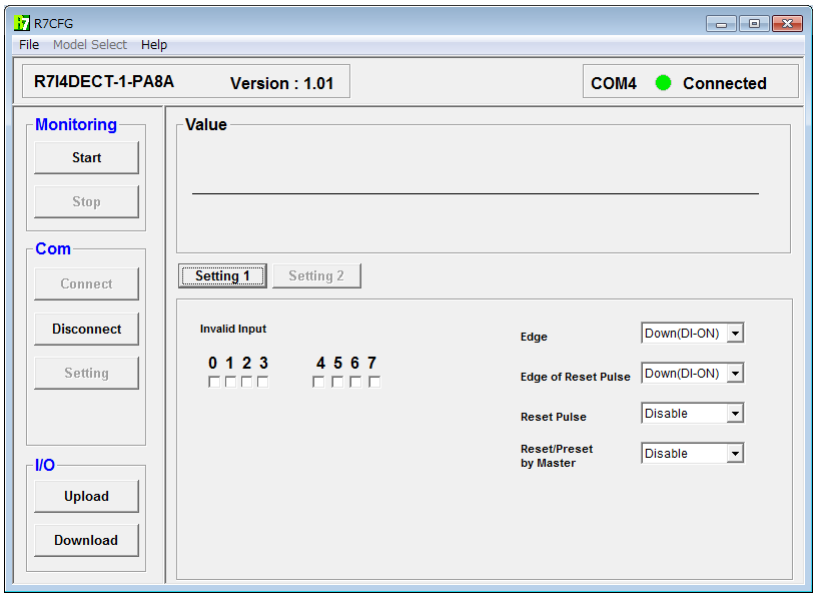


Figure 4.6b. Setting 2 view of R7I4DECT-1-PA8A

Invalid input	Unused channels	Check channels so that input values of the checked channels are always displayed as 0.
Edge	Edge direction for counting pulses	Select the edge direction between: Falling edge (DI-ON); and Rising edge (DI-OFF)
Edge of Reset Pulse	Edge direction for resetting pulse count by reset terminal	Select the edge direction between: Falling edge (DI-ON); and Rising edge (DI-OFF)
Reset pulse	Enabling or disabling pulse count reset by reset terminal	Select ‘enable’ or ‘disable’.
Reset / Preset by Master	Enabling or disabling pulse count reset / preset by master	Select ‘enable’ or ‘disable’.

4.7 SETTING ITEMS FOR R7G4FM-DA16 AND R7K4FM-DA32

First, connect the R7G4FM-DA16 or R7K4FM-DA32 and call up the R7CFG main screen following the procedure explained in 'Section 4.1 HOW TO START MONITORING'.

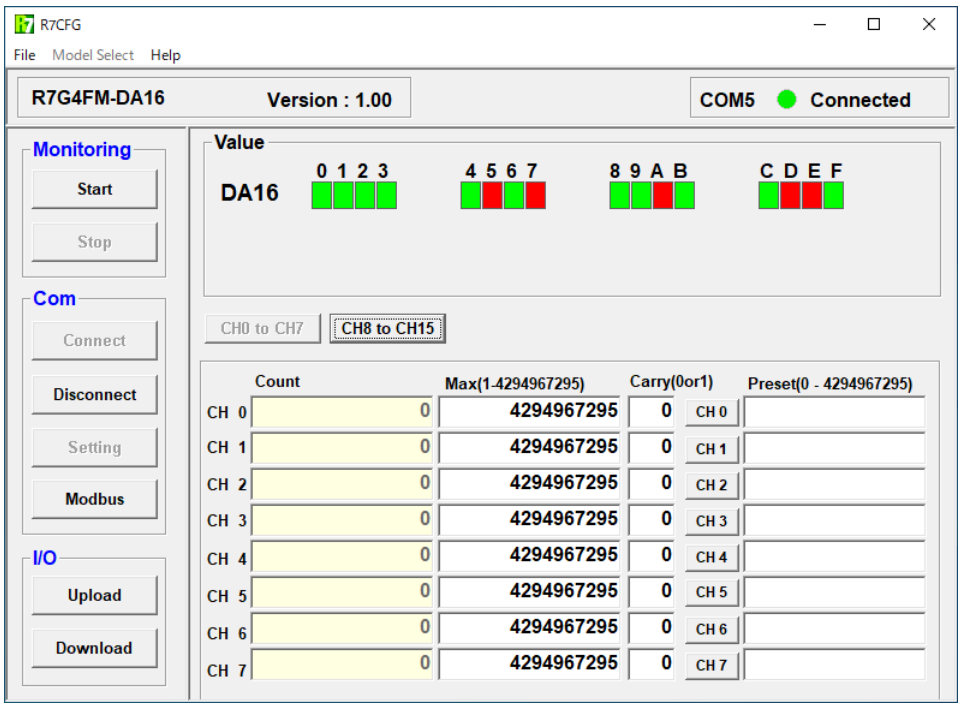


Figure 4.7a. Setting view of R7G4FM-DA16

"CHx to CHx" buttons are used to switch setting channels.

Count	No. of totalized pulse	Displays current No. of totalized pulse (0 to 4294967295)
Max	Max. No. of totalized pulse	Set maximum value of totalized pulse (1 to 4294967295) Be sure to set the value larger than "Count".
Carry	Overflow reset value	Set the overflow reset value (0 or 1)
Preset	Preset value	Set any value for current No. of totalized pulse (Carry to Max) Enter the value to text box, then click "CHx" button at left side.

4.8 HOW TO OUTPUT SIMULATED SIGNAL

The procedure for outputting simulated signals will be explained taking R7G4HML-6-YVF4 as an example.

The same procedure applies to other models as well.

First, connect the R7G4HML-6-YVF4 and call up the R7CFG Monitoring view following the procedure explained in 'Section 4.1 How to Start Monitoring'.

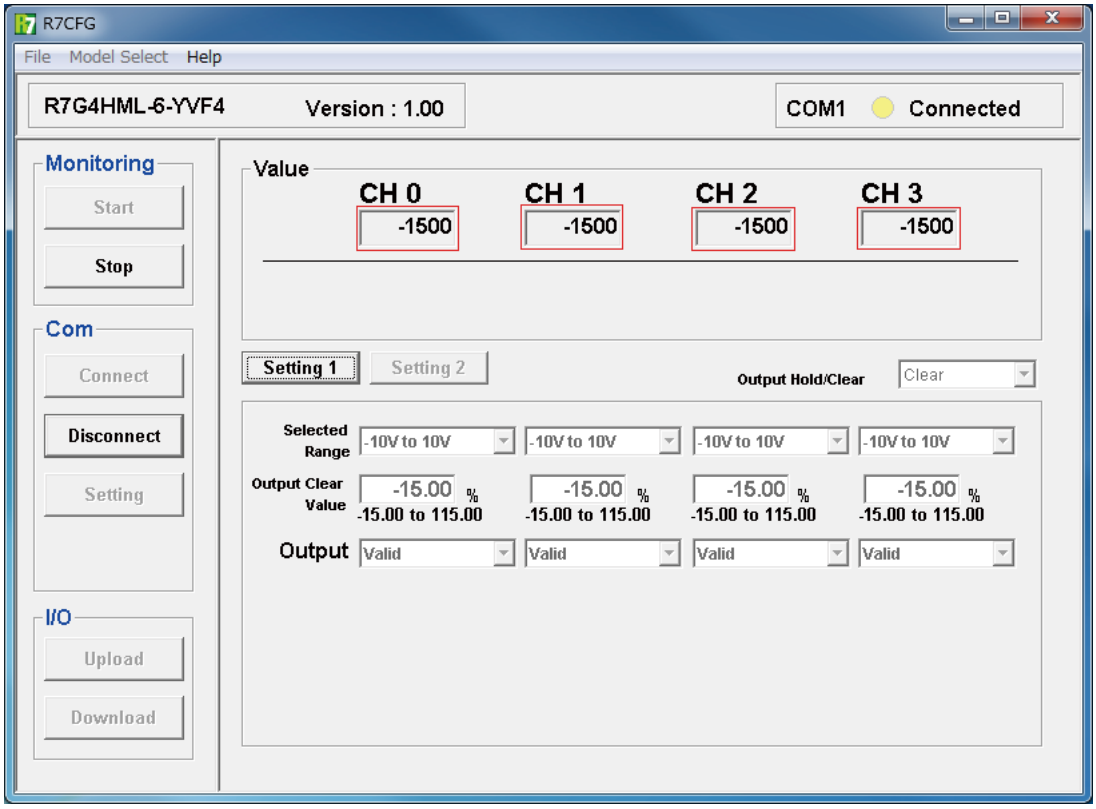


Figure 4.8a. Monitoring view

While monitoring is in progress, click any of the value fields marked with red squares on the Monitoring view (Figure 4.8a) to display 'Change Value' view as shown below.

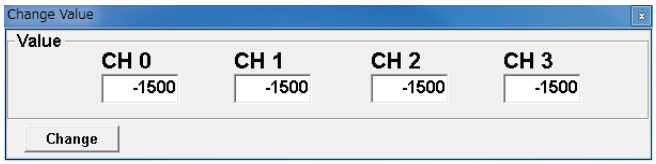


Figure 4.8b. Simulated Output Setting view

Change values for simulated output as necessary and click [Change] button.

Selectable range: -32000 to 32000

>> The new output value(s) is applied and data in the 'Value' section of the Monitoring view (Figure 4.4a) is updated.

Caution !

Simulated signal output is invalid while the fieldbus is active (communicating with the host PCL, etc.).

In order to stop simulated signal output, click [x] button.

Caution !

The output value remains to be the one last updated.

5. MODULE-SPECIFIC FUNCTIONS

In this section, functions specific to particular module types are described.

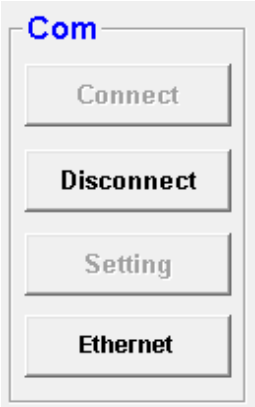
Be sure to turn off and on the power supply to the R7 module when the functions have been set or the settings have been changed.

5.1 COMMUNICATION SETTING CONTROL BUTTON

R7 series support various field bus protocols.

When settings specific to a particular communication protocol are required, the communication setting button for the protocol is displayed as shown below. The below is the 'Com' control panel in case of Ethernet.

Click the button (e.g. Ethernet) to display a setting screen corresponding to the protocol.



The following tabel is a correspondance tabel of R7 series and communication protocol.

Series	Communication setting button
R7xxxE, R7xxxEIP	Ethernet
R7xxxD	DeviceNet®
R7xxxCIE	CC-Link IE Field

DeviceNet is registered trademark of ODVA.

5.2 ETHERNET SETTING (R7xxxE series, R7xxxEIP series)

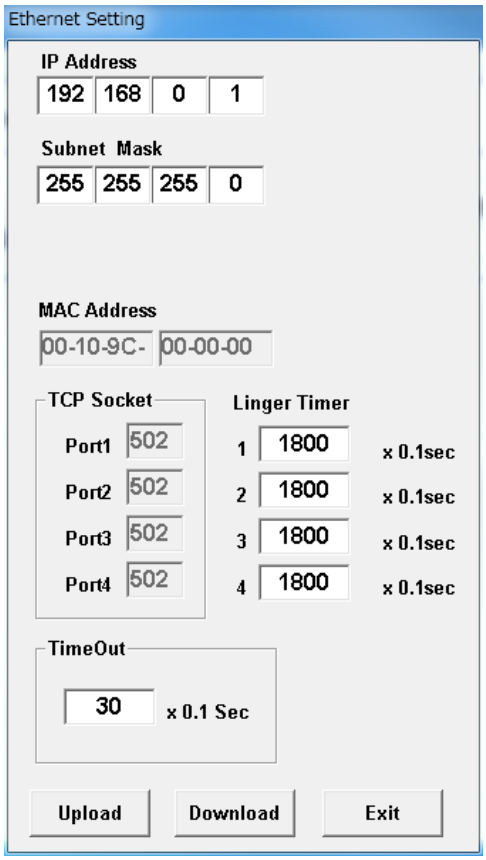


Figure 5.2a.Ethernet Setting view of R7xxxxE series

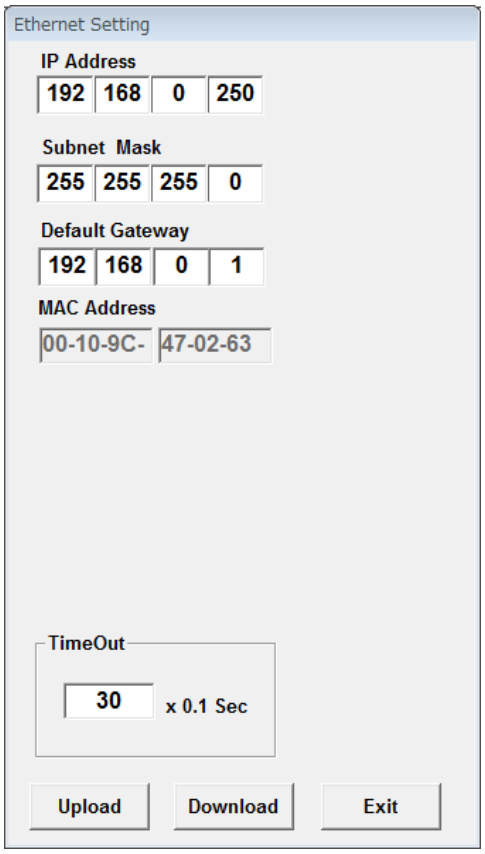


Figure 5.2b.Ethernet Setting view of R7xxxEIP series

IP Address	Enter values for IP address in the text boxes.	0 to 255 (integer)
Subnet Mask	Enter values for Subnet Mask in the text boxes.	0 to 255 (integer)
Default Gateway	Enter values for Default Gateway in the text boxes.	0 to 255 (integer)
MAC Address	Shows MAC Address	–
TCP Socket	Enter a value for TCP Socket Port No. of each of ports 1 through 4.	0 or integer greater than 0 Set '502' for Modbus/TCP.
Linger	Set the linger time for monitoring no communication. TCP socket is closed after no communication is detected for the preset time.	0 to 32767 (integer)
Timeout	Time period from when the TCP socket is closed until the output hold function operates.	0 to 32767 (integer)

Caution !
When the above setting is complete, turn off and on the power supply to validate the setting.

Caution !
Available setting items vary depending on the model.
Only available items are displayed.

5.3 DEVICENET SETTING (R7xxxD series)

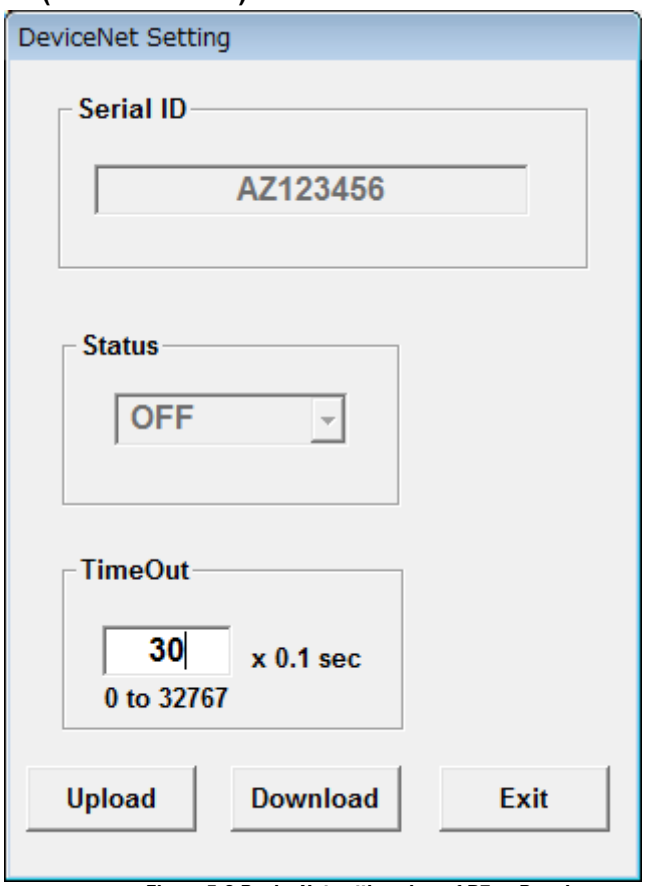


Figure 5.3 DeviceNet setting view of R7xxxD series

Serial ID	Serial No. Displays the module's serial number.	Not configurable
Status	Adding status data "ON" to with, "OFF" to without	Set from the module's DIP switch. Not configurable from this configuration software.
TimeOut	The time interval to initiate the output hold function when the R7 module terminates communication with the host PLC or PC.	Integer of 0 to 32767

Note 1. Timeout is valid for the modules have output function.

DO NOT configure while the module only have input function is connected.

Note 2. Serial ID is consisted with 32-bit data, and the format is as following.

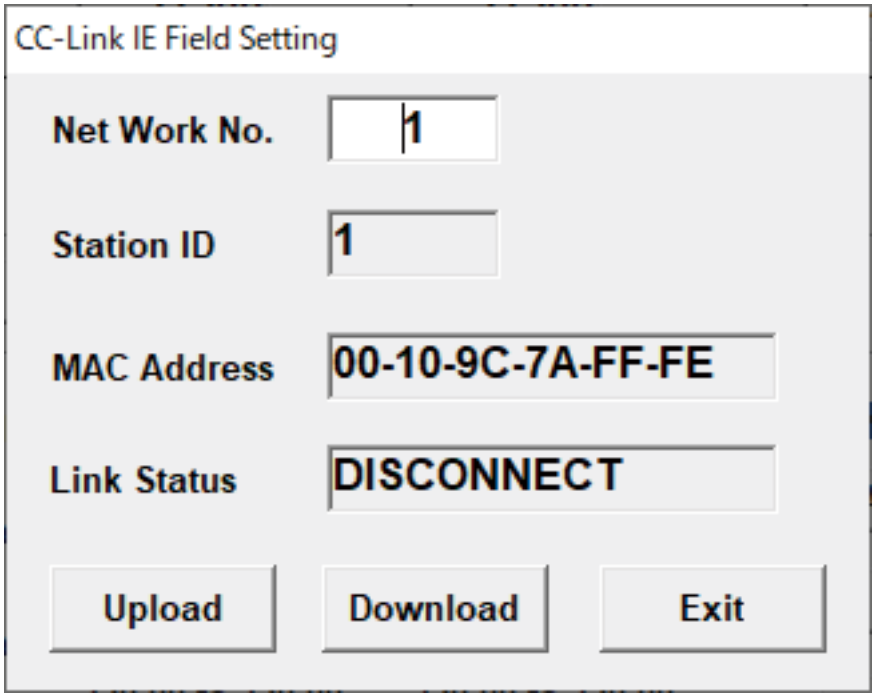
Data format of Serial ID

6-bit	6-bit	20-bit
First digit (0 to 9, A to Z)	Second digit (0 to 9, A to Z)	Third to 8th digit (000000 to 999999)

Conversion table for the first and second digits of Serial ID

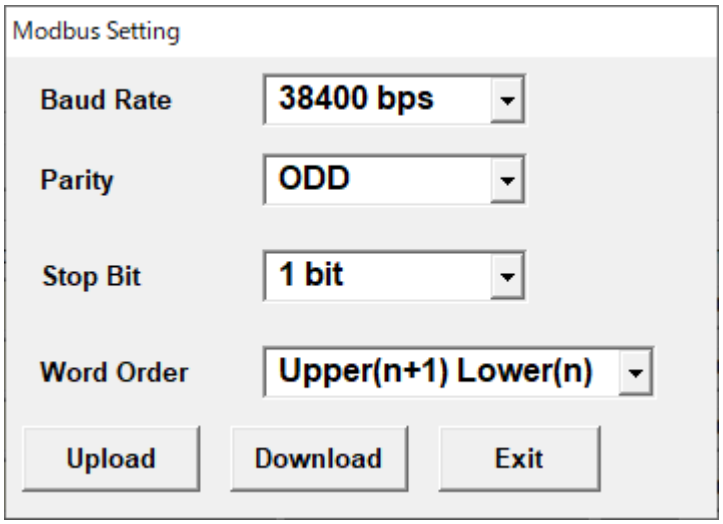
CHARACTER	VALUE
0	0
1	1
:	:
9	9
A	10
B	11
:	:
Z	35

5.4 CC-Link IE- Field SETTING (R7xxxCIE series)



Net Work No.	Net Work No. Sets the network number.	Integer of 1 to 239
Station ID	Displayes the station ID set for the R7xxxCIE.	Not configurable
MAC Address	Displays MAC address	–
Link Status	Displays link status at upload.	CYCLIC: cyclick communication TOKEN-PASS: token-pass DISCONNECT: communication is not established

5.5 Modbus COMMUNICATION SETTING (R7xxxM series)



Baud Rate	Displays baud rate	38400 bps 19200 bps 9600 bps 4800 bps
Parity	Displays parity bit	ODD EVEN NONE
Stop Bit	Displays stop bit	1 bit / 2 bit
Word Order	Displays data order of 32-bit No. of totalized pulse e.g. When No. of totalized pulse is 999999 (0x000F423F), following data are set for each address n and n+1.	Upper(n+1) Lower(n) Lower(n+1) Upper(n+1)

SETTING	n	n+1
Upper(n+1) Lower (n)	0x423F	0x000F
Upper(n) Lower (n+1)	0x000F	0x423F

6. OTHERS

6.1 VERSION HISTORY

Ver.0.01.03	First Edition
Ver.0.01.06	R7G4HML3-6-LC2 was supported.
Ver.0.01.07	R7G4HML-6-SVF4 was supported.
Ver.0.01.08	R7G4HML3-6-YVF4 was supported.
Ver.0.01.09	R7G4HML3-6-LC2A was supported, conversion rate is added.
Ver.0.01.10	Bug fixed. Some settings are not reflected with a specific operation of R7G4HML3-6-PA1.
Ver.0.01.14	R7G4HML3-6-YSF4 was supported.
Ver.0.01.15	Corrected the typo for the display of R7G4HML3-6-YSF4.
Ver.0.01.17	R7G4HML3-6-STYVS1 was supported.
Ver.0.01.18	R7G4HH-A-YVF4 and R7G4HH-A-SVF4 were supported.
Ver.0.01.21	R7G4HML3-6-PA1x/A was supported.
Ver.0.01.22	R7G4FML3-B-DA16 was supported.
Ver.0.01.23	R7G4HEIP-6-DA16 and R7G4HEIP-6-DC16 were supported.
Ver.0.01.25	R7I4DECT-1-DAC32C and R7I4DECT-1-SVF8N were supported.
Ver.0.01.30	R7I4DECT-1-PA8A was supported.
Ver.0.01.32	R7I4DECT-1-DA32A was supported.
Ver.0.01.33	R7I4DECT-1-SVSF8N was supported.
Ver.0.01.34	R7I4DECT-1-DC32A was supported.
Ver.0.01.37	R7F4HEIP-DA16, R7F4HEIP-DC16, and R7F4HEIP-DAC16 were supported.
Ver.0.01.39	R7I4DECT-1-YVF4 was supported.
Ver.0.01.40	Bug fixed. Download problem of R7I4DECT-1-SVSF8N and R7I4DECT-1-SVF8N.
Ver.0.01.41	R7F4DD-DA16, R7F4DD-DC16, R7F4DD-DAC16, R7F4HD-DA32, R7F4HD-DC32, R7F4HD-DAC32 were supported.
Ver.0.01.48	R7I4DML3-DA32, R7I4DML3-DC32, R7I4DML3-DAC32 were supported.
Ver.0.01.49	R7I4DCIE-LC2 was supported.
Ver.0.01.53	R7G4FM-DA16 and R7K4FM-DA32 were supported.
Ver.0.01.56	Corrected the typo.
Ver.0.01.57	R7G4JECT-LC2 and R7G4HML3-6-SVAF4 were supported.
Ver.0.01.58	R7F4HEIP-DC32, R7F4HEIP-DA32, R7I4DEIP-DAC32 were supported.
Ver.0.01.59	Added the function of R7G4JECT-LC2.
Ver.0.01.63	R7I4DEIP-DA32A and R7I4DEIP-DC32A were supported.
Ver.0.01.64	R7F4HPN-DA16, R7F4HPN-DC16, R7F4HPN-DAC16 were supported.