

R7X CONFIGURATOR

(model: R7CON)

Users Manual

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1. GENERAL

In this manual, user is assumed that he/she is already familiar with operating Windows and terminology used in the operating system.

If you need to know about particular operation or terminology on Windows, please refer to manuals provided with the system.

1.1. FEATURES OF R7CON

The R7 Series are modular I/Os with open field networking capabilities, such for CC-Link, DeviceNet and Modbus. These network modules can be directly connected to a Windows PC via PC configurator cable (model: MCN-CON or COP-US).

The R7CON software is used to help you program various parameters such as I/O scaling, zero/span adjustments to match the users' needs.

CAUTION !

For some units of R7 series, they don't have setting items such as scaling, zero/span setting.

Therefore, some units don't employ a connector for configurator. Refer to our web site for R7CON supported units.

General functions of the R7CON are as follows:

• PARAMETERS CONFIGURATION FOR EACH CHANNEL

I/O range scaling and zero/span adjustments 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. HARDWARE REQUIREMENTS

- DOS/V compatible PC with Windows XP, Windows 7 (32-bit, 64-bit) or Windows 10 (32-bit, 64-bit) appropriately installed.
- We supply PC configurator cable, model MCN-CON or COP-US.

2. GETTING STARTED

2.1. INSTALLING THE R7CON

- 1) Start up Windows.
- 2) Go to our web site. Download and save the R7CON archive in your PC's local hard disk.
- 3) Confirm the size and version number of the downloaded archive ('x' in the file name as shown below).
R7CON_Rx.exe or R7CON_Rx.zip
- 4) Double-click the file's icon and locate 'R7CON_Rx' folder.
- 5) Start up setup.exe in the folder and follow instructions on the screen.
Now the R7CON program has been installed.

Caution !

If you have already the R7CON program installed in your PC, remove it following the procedure explained in 2.2. before installing a new one.

2.2. UNINSTALLING THE R7CON

- 1) Click 'Start' on the task bar and choose Control Panel from Settings menu. (Double-click My Computer icon on the desktop and choose Control Panel.)
>> Control Panel appears on the display.
- 2) Double-click 'Add/Remove Programs.'
- >> 'Property' dialog box of Add/Remove Programs appears on the display.
- 3) Choose 'R7CON' among the list of installed applications.
- 4) Choose 'Add/Remove.'
- 5) 'Remove Programs From Your Computer' dialog box appears on the display. Click OK.
>> All files installed with the R7CON are removed.

2.3. CONNECTING THE R7 MODULE WITH THE PC

Connect the radio jack end of the non-isolated cable to Config. port at the front of the R7 module, and its 9-pin D-sub connector end to COM port of the PC.

The R7CON uses COM1 through COM8 among the PC's COM ports. Setting up COM ports may be needed depending upon the PC's setting.

2.4. STARTING / ENDING THE R7CON

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

2.4.1. STARTING THE R7CON

Click Start on the task bar and choose 'R7CON' from Program menu. The main view appears on the screen as shown to the right.

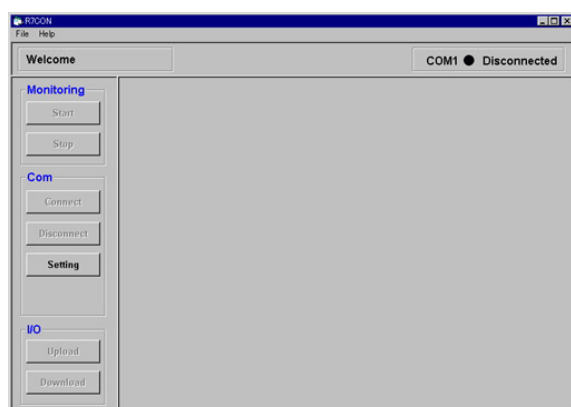


Figure 2.4.1. R7CON initial view.

2.4.2. ENDING THE R7CON

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

3. VIEWS AND OPERATIONS

The R7CON view is composed of the following components:

- 1) Menu bar
- 2) Hardware information
- 3) Communication information
- 4) Control panel
- 5) Value monitoring section
- 6) Configuration section

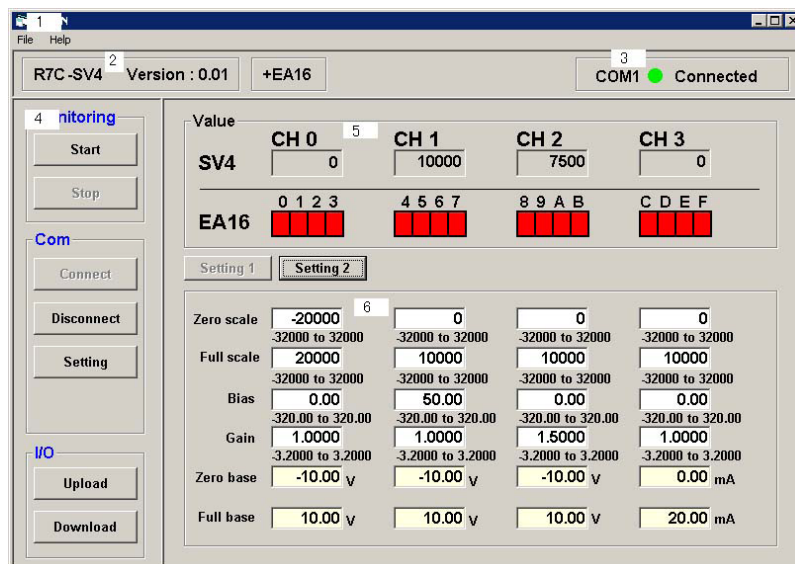


Figure 3. The R7CON view

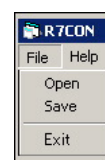
3.1. MENU BAR

3.1.1. SAVING CONFIGURATION FILE

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.

- 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 'Files' 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 multiple hardware modules.

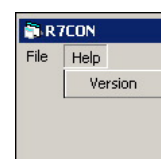
- 1) Choose 'Open' from 'Files' menu.
- 2) Locate and open the file on the screen to read out the saved configuration setting.
- 3) Modify the configuration if necessary, and click [Download] in order to write the new setting to the R7 module.

3.1.3. ENDING THE R7CON

Choose 'End' from 'Files' menu on the menu bar to quit the program.

3.1.4. VERSION INFORMATION

Choose 'Version' under 'Help' on the menu bar to show the R7CON software version number.



3.2. HARDWARE INFORMATION

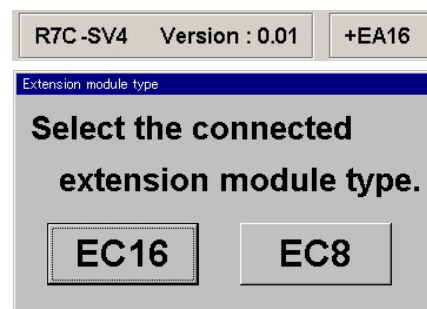
Hardware type and version numbers of the basic module are indicated. The extension module type is also indicated when one is connected.

An example is shown to the right.

When the DIP switch on the basic module is set to 'Extension,' Extension module type selection dialog box appears on the screen. Choose an appropriate model.

Caution !

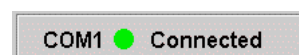
The extension module type is not indicated if the DIP switch on the basic module is set to 'No extension.'



3.3. COMMUNICATION INFORMATION

The COM port number to which the R7 module is connected is shown on the screen. When the device connection is established, the screen shows 'Connected' (example to the right).

When the device connection is severed, it shows 'Disconnected.'



3.4. CONTROL PANEL

On the left part of the view, 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. VALUE MONITORING

In 'Value' section, current analog values and discrete signal status are displayed. The upper part shows data of the basic module, while the lower part shows data of the extension module.

Caution !

The lower part is not indicated if the DIP switch on the basic module is set to 'No extension.'

Data values are displayed for analog signals. For temperature input modules, the burnout indicator is also added to the right. The indicator shows the burnout setting (upscale or downscale) on the light yellow field. When the burnout is detected, it turns red.

For discrete signals, the indicators turns green at ON, red at OFF.

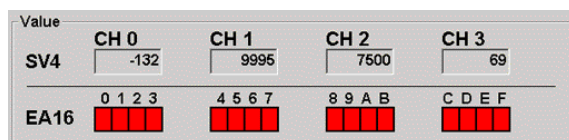


Figure 3.5a. Value monitoring, analog signals.

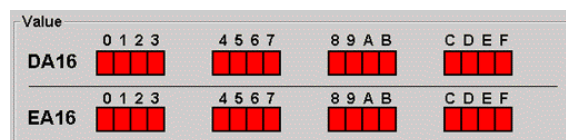


Figure 3.5c. Value monitoring, discrete signals.

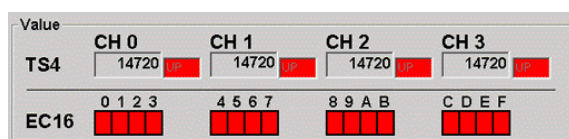


Figure 3.5b. Value monitoring, temperature signals.

3.6. CONFIGURATION

Items appearing on the Configuration section depend upon basic module types. Some module types have two views: Setting 1, Setting 2, switched by these buttons (See to the right).

Setting 1 Setting 2

3.6.1. SCALING

The Zero Scale/Full Scale fields are shown for modules selectable with these settings (See to the right).

Selectable range: -32000 to 32000

(Set the zero/full scale range as 0 – 60000 for CT input type modules)

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

Click [Download] to apply the new setting.

Zero scale	0	Zero scale	0
	-32000 to 32000		0 to 60000
Full scale	10000	Full scale	10000
	-32000 to 32000		0 to 60000

3.6.2. SETTING BIAS & GAIN

The Bias/Gain fields are shown for modules selectable with these settings (See to the right).

Selectable range: -320.00 to 320.00 for Bias

-3.2000 to 3.2000 for Gain

Click [Download] to apply the new setting.

Bias	-320.00 to 320.00
Gain	-3.2000 to 3.2000

3.6.3. CONFIRMING VOLTAGE/CURRENT RANGE

The voltage/current range selected on the hardware (DIP switch) is shown in the Zero Base/Full Base fields (See to the right).

Zero base	-10.00 V
Full base	10.00 V

3.6.4. SETTING TEMPERATURE RANGE

The Zero Temp/Full Temp fields are shown for modules selectable with temperature range settings (See to the right).

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

When both zero and full temperature values are set to '0.00,' no scaling is applied.

The temperature input module then sends raw temperature data.

Data in °C and in K is multiplied by 10, i.e. '105' for 10.5°C so that one decimal place can be converted. For those in °F, no multiplication is executed.

Click [Download] to apply the new setting.

3.6.5. CONFIRMING BURNOUT TYPE

The burnout type selected on the hardware (DIP switch) is shown in the BurnOut Direction field (See to the right).

UP: Upscale burnout

DOWN: Downscale burnout

3.6.6. SETTING OUTPUT HOLD FOR THE EXTENSION MODULE

The Output Hold/Clear selector is shown for basic modules selectable with an extension module (See to the right).

The output operation in case that the host communication is lost can be specified:

Output Hold: The output at the moment of communication loss is held.

Output Clear: The output is reset to off.

Click [Download] to apply the new setting.

Caution !

The R7CON sets the output hold function for extension modules. For basic modules such like the R7x-YS2 or the R7x-YV2, the function is selected with the DIP switches on those modules.

3.6.7. SELECTING INDEPENDENT DC VOLTAGE/CURRENT RANGES PER CHANNEL

The range selector is shown for basic modules selectable with DC voltage/current ranges (See to the right: R7x-SV4 (left) and R7x-YV2 (right)).

Click [Download] to apply the new setting.

Caution !

Selected range is applied only when 'PC Configuration' is selected with the DIP switches on the basic module.

3.6.8. SELECTING INDEPENDENT SENSOR TYPES PER CHANNEL

The sensor type selector is shown for basic modules selectable with sensor types (See to the right: Thermocouple (left) and RTD (right)).

Click [Download] to apply the new setting.

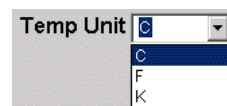
Caution !

Selected sensor type is applied only when 'PC Configuration' is selected with the DIP switches on the basic module.

3.6.9. SELECTING TEMPERATURE UNIT PER CHANNEL

The temperature unit selector is shown for basic modules selectable with temperature input (See to the right).

Click [Download] to apply the new setting.



Temp Unit
C
F
K

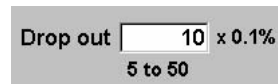
3.6.10. SELECTING DROP OUT PER CHANNEL

The drop out value is shown in the Drop Out field for those basic modules selectable with Drop Out (See to the right)

With “×0.1%”, the drop out is operable.

Selectable range: 0.5 – 5.0% (setting value: 5 – 50)

Click [Download] to apply the new setting.



Drop out × 0.1%
5 to 50

3.6.11. SELECTING STARTUP TIMER PER CHANNEL

The Startup Timer value is shown in the Startup Timer field for those basic modules selectable with Startup Timer (See to the right)

With “×0.1sec”, the basic module starts operating.

Selectable range: 0 – 60.0 seconds (setting value: 0 – 600)

Click [Download] to apply the new setting.



Startup timer
 × 0.1sec
0 to 600

4. HOW TO USE THE R7CON

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

For more detailed explanations including functions of each control button and parameter settings, please refer to Section ["3. VIEWS AND OPERATIONS" on page 6](#).

4.1. HOW TO START MONITORING

The following example is applicable for the R7x-SV4. Similar procedure is used for other models.

1) Connect the R7x-SV4 to the PC and turn on the power supply to the module. (See 'Section ["2.3. CONNECTING THE R7 MODULE WITH THE PC" on page 5](#). Connecting the R7 module with the PC.'

2) Start up the R7CON 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 hardware is properly connected and the network communication is established, 'COM#' indicator turns to Green, and the hardware information is uploaded (Figure 4.1a).

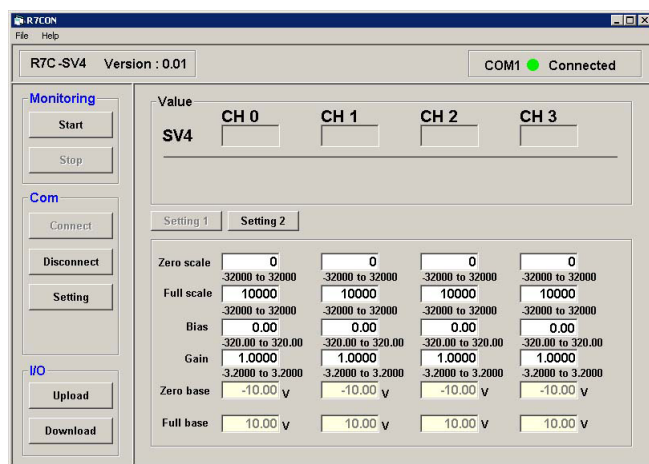


Figure 4.1a. Monitoring, initial state

>> If the connection is not established, an error message box appears on the screen (Figure 4.1b).

>> Confirm the COM port setting of the PC.

>> If the uploading is 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.

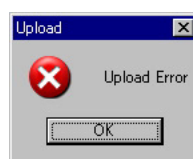


Figure 4.1c. Upload error message.

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

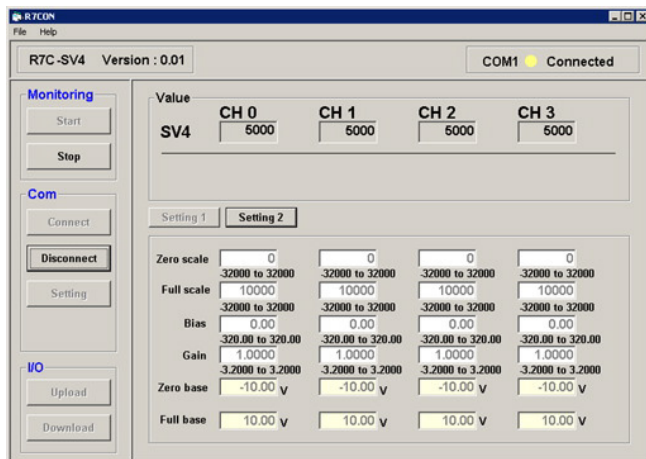


Figure 4.1d. Monitoring started.

- 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 following examples re applicable for the R7x-SV4 and the R7x-TS4. Similar procedure is used for other models.

First, connect the R7x-SV4 and call up the R7CON initial view following the procedure explained in 'Section ["4.1. HOW TO START MONITORING" on page 11.](#) How to Start Monitoring.' The initial view should show -10.00 to 10.00 V range and 0V (50%) input for all channels (CH 0 through CH 3).

4.2.1. SCALING THE DATA RANGE TO '-20000 to +20000' FOR CH 0 OF THE R7x-SV4

- 1) Enter -20000 to 'Zero Scale' field, 20000 to 'Full Scale' field.
- 2) Click [Download].
 - >> The R7CON automatically uploads the updated value from the R7 module. The Value field for CH 0 should now show '0.'
 - >> Confirm the successful download.

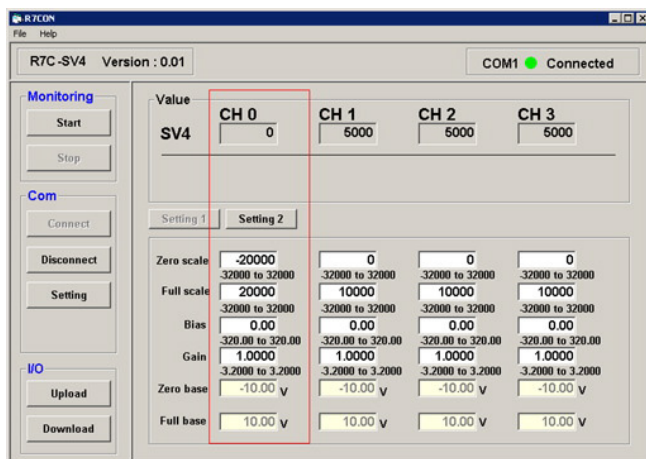


Figure 4.2.1. CH 0 data range has been successfully modified

4.2.2. SETTING THE BIAS TO '+50.00' FOR CH 1 OF THE R7x-SV4

- 1) Enter 50.00 to 'Bias' field.
- 2) Click [Download].
 - >> The R7CON automatically uploads the updated value from the R7 module. The Value field for CH 1 should now show '10000.'
 - >> Confirm the successful download.

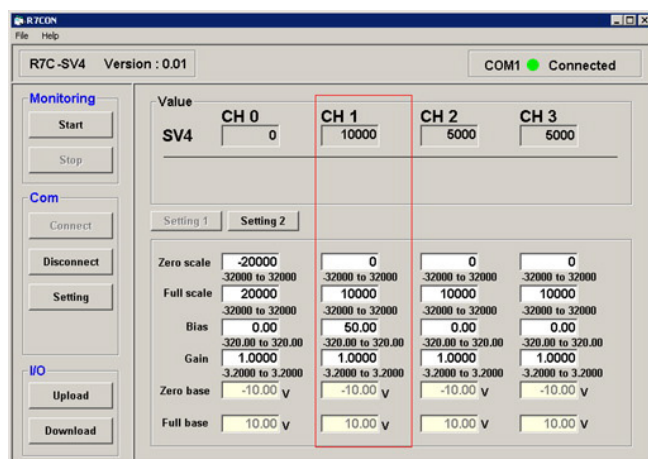


Figure 4.2.2. CH 1 bias has been successfully modified

4.2.3. SETTING THE GAIN TO '+1.5000' FOR CH 2 OF THE R7x-SV4

- 1) Enter 1.5000 to 'Gain' field.
- 2) Click [Download].
 - >> The R7CON automatically uploads the updated value from the R7 module. The Value field for CH 2 should now show '7500.'
 - >> Confirm the successful download.

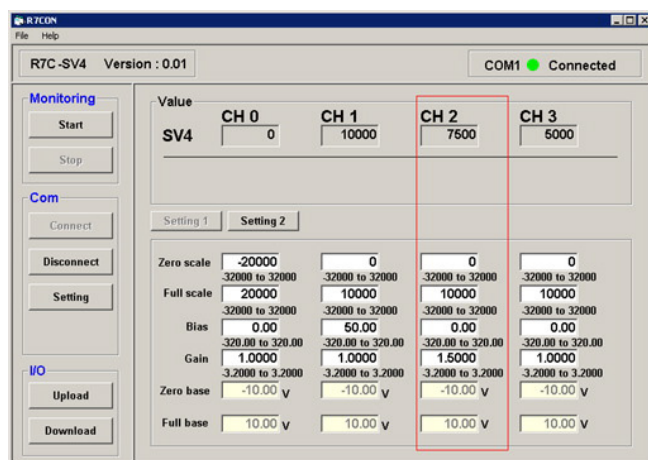


Figure 4.2.3. CH 2 gain has been successfully modified

4.2.4. MODIFYING THE INPUT RANGE TO '0-20 mA' FOR CH 3 OF THE R7x-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 available with more than one view of the Configuration section.)

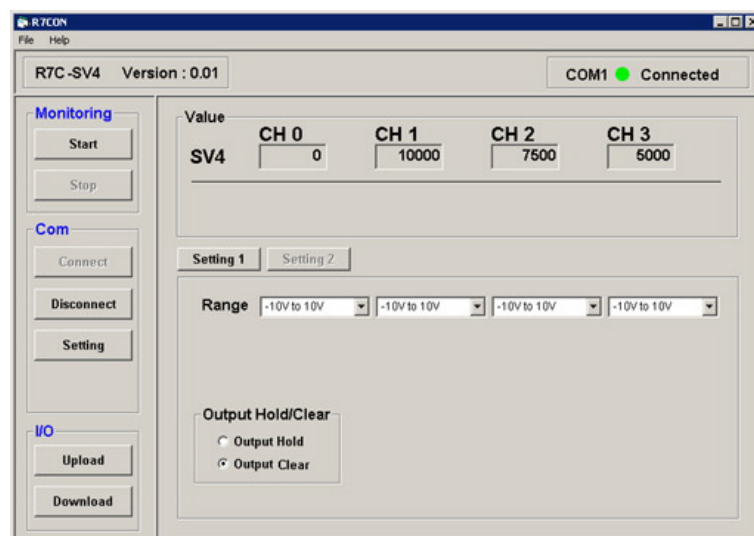


Figure 4.2.4a. The configuration section switched to the Range Setting.

2) Click the right arrow on the CH 3 Range setting field. Pull down the menu selections and choose '0mA to 20mA.'

3) Click [Download].

>> The R7CON automatically uploads the updated value from the R7 module.

>> The view is automatically switched 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 and set the DIP switches to 'PC Configuration.'

This hardware setting is necessary when different input ranges are to be selected for each channel.

6) Turn on the power supply to the R7 module and connect to the R7CON to show the initial view.

>> Confirm that CH 3 range has been modified to '0-20 mA.'

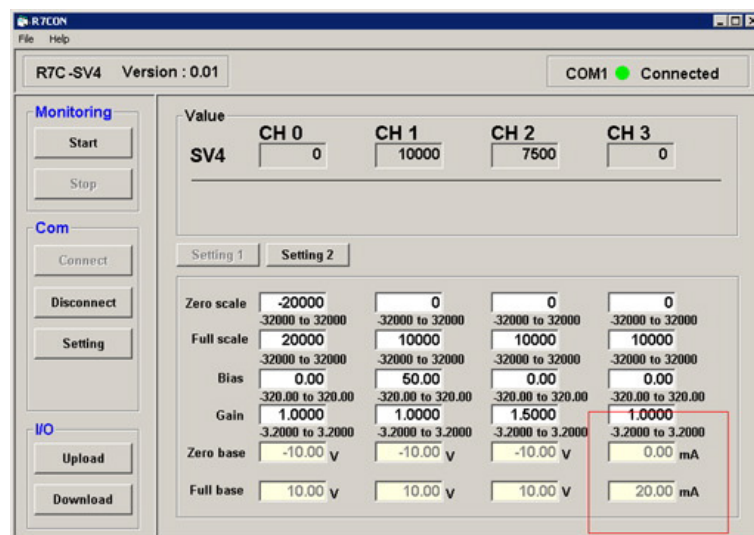


Figure 4.2.4b. CH 3 input range has been successfully modified.

4.2.5. MODIFYING THE SENSOR TO 'T THERMOCOUPLE' FOR CH 0 OF THE R7x-TS4

First, connect the R7x-TS4 and call up the R7CON initial view following the procedure explained in 'Section [4.1. HOW TO START MONITORING](#) on page 11. How to Start Monitoring.' The initial view should show K thermocouple and opencircuit input (burnout) for all channels (CH 0 through CH 3).

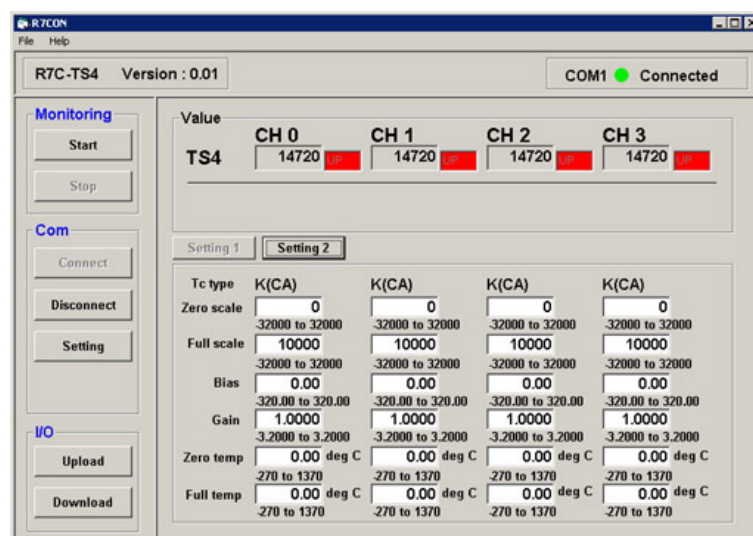


Figure 4.2.5a. The R7x-TS4 configuration, initial view.

1) Click [Setting 2] button.

>> The Configuration section is now switched to the TC Type and Temp Unit Setting view.

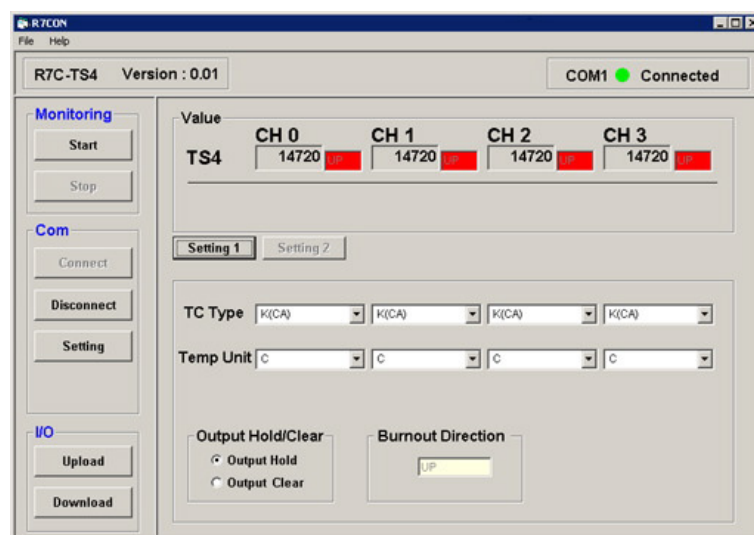


Figure 4.2.5b. The configuration section switched to the TC Type and Temp Unit Setting.

2) Click the right arrow on the CH 0 TC Type setting field. Pull down the menu selections and choose 'T.'

3) Click [Download].

>> The R7CON automatically uploads the updated value from the R7 module.

>> The view is automatically switched 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 and set the DIP switches to 'PC Configuration.'

This hardware setting is necessary when different input types are to be selected for each channel.

- 6) Turn on the power supply to the R7 module and connect to the R7CON to show the initial view.
 >> Confirm that CH 0 TC type has been modified to 'T'.

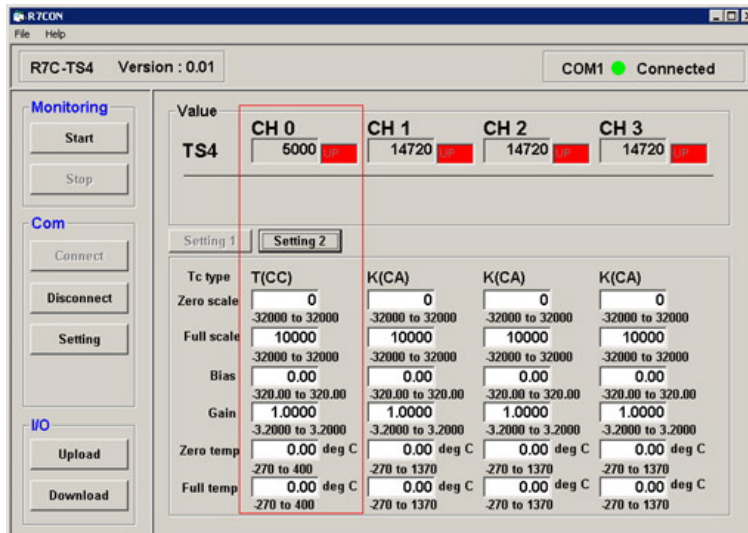


Figure 4.2.5c. CH 0 TC type has been successfully modified.

4.2.6. MODIFYING THE TEMPERATURE UNIT TO 'FAHRENHEIT' FOR CH 1 OF THE R7x-TS4

- 1) Click [Setting 2] button.
 >> The Configuration section is now switched to the TC Type and Temp Unit Setting view.
- 2) Click the right arrow on the CH 1 Temp Unit setting field. Pull down the menu selections and choose 'F'.
- 3) Click [Download].
 >> The R7CON automatically uploads the updated value from the R7 module. The Value field for CH 1 should now show '2682'.
 >> Confirm the successful download.

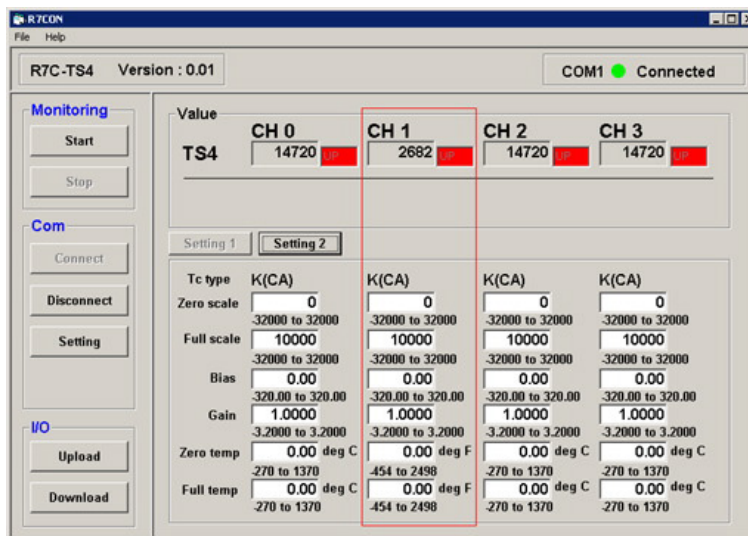


Figure 4.2.6. CH 1 temperature unit has been successfully modified.

4.3. HOW TO CONFIGURE THE R7X-CT4E

First, connect the R7x-CT4E and call up the R7CON initial view following the procedure explained in 'Section ["4.1. HOW TO START MONITORING" on page 11](#). How to Start Monitoring.' The initial view should show 0 to 600A range and 0% input for all channels (CH 0 through CH 3).

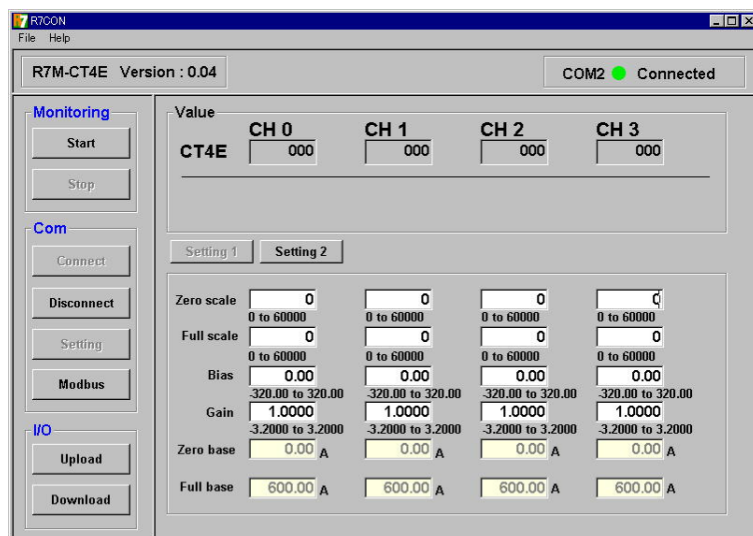


Figure 4.3.1. R7M-CT4E initial state view (factory default)

The display value is 0.00 A - 600.00 A for digital value 0 - 60000.

• HOW TO MODIFY THE DISPLAY VALUE

Refer to 'Section ["3.6.1. SCALING" on page 8](#). Scaling' and change the setting as zero<full.

>> Click [Download] to apply the new setting.

>> Then the setting is downloaded to the R7M-CT4E.

• HOW TO MAKE THE FINE ADJUSTMENTS

Refer to the 'Section ["3.6.2. SETTING BIAS & GAIN" on page 8](#). Setting Bias and gain.'

4.3.1. MODIFYING THE SENSOR OF THE R7M-CT4E CH3 TO CLSE-20

- 1) The connection of each channel's sensor is available individually using the DIP SW installed on the R7M-CT4E.
Set: SW1-5: ON; SW1-6: ON; SW1-7: ON; SW1-8: ON
- 2) Connect the R7CON and click on "Setting2" on the center of the initial view.
>> Modifying the sensor view is displayed (figure 4.3.1-1)
- 3) Set the range in the "Dropdown list" menu.
Select the range of 0 - 200 for the CLSE-20 example.
- 4) Click [Download] to apply the new setting.
>> The R7CON automatically uploads the updated value from the R7 module. The Value field should be now as shown on the figure below (4.3.1-3)
>> Confirm the successful download.

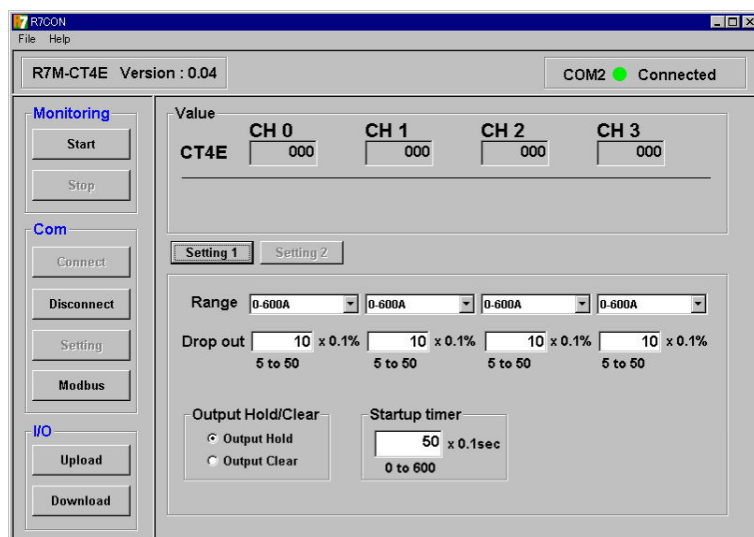


Figure 4.3.1-1. Modifying the sensor view

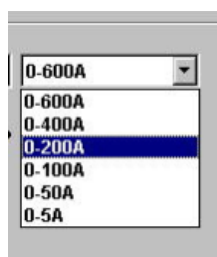


Figure 4.3.1-2. Selecting range for CLSE-20

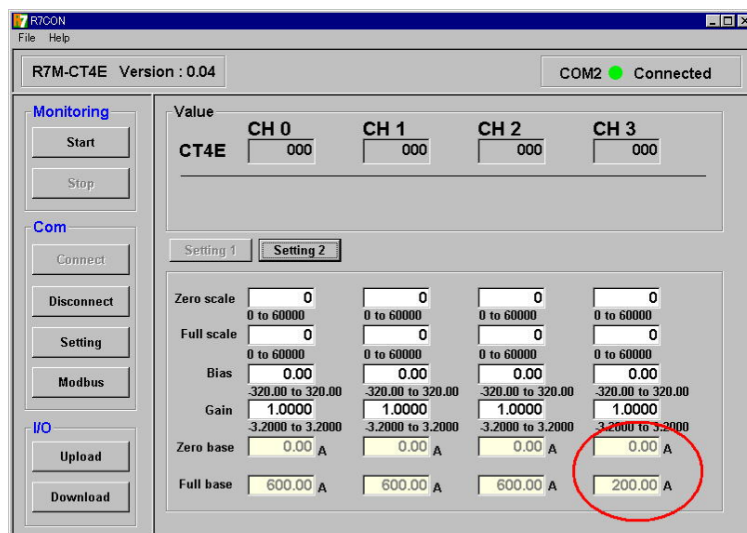


Figure 4.3.1-3. Zero/full setting for CLSE-20 has been successfully modified.

4.4. HOW TO CONFIGURE R7HL-PA2S

First, connect the R7HL-PA2S and call up the R7CON initial view following the procedure explained in ‘Section ["4.1. HOW TO START MONITORING" on page 11](#). How to Start Monitoring.

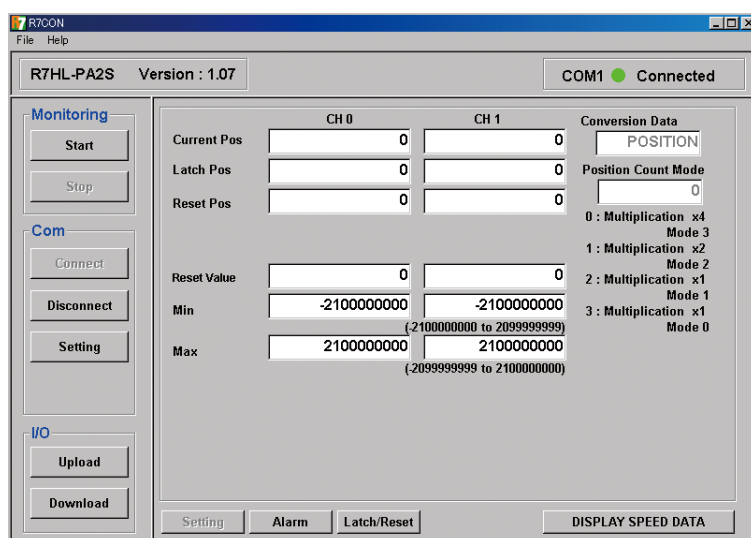


Figure 4.4-1 Initial view of R7HL-PA2S in Position data mode

Since the “Conversion Data” “Frequency Range” “Position Count Mode” and “Position Data Type” are set with DIP SW on the R7 body, R7CON cannot set them. When the setting is changed, turn off the power and turn it on again. The view is changeable between “Speed data” and “Position data” with [DISPLAY SPEED DATA] or [DISPLAY POSITION DATA].

Conversion Data	POSITION: Position data SPEED: Speed data
Frequency Range	Frequency range of Speed data
Position Count Mode	0: Quad multiplication (4 counts / 1 pulse) (Mode 3) 1: Double multiplication (2 counts / 1 pulse) (Mode 2) 2: No multiplication (1 count / 1 pulse) (Mode 1) 3: No multiplication (1 count / 1 pulse) (Mode 0)
Position Data Type	Counting method of Position data (“Linear mode” or “Ring mode”)
Current Pos	Current position (totalized value)
Latch Pos	Latched position
Reset Pos	Position at receiving Reset signal
Reset Value	Preset position at Reset receiving or power on (min. to max.)
Min	Minimum totalized value (-2 100 000 000 to 2 100 000 000)
Max	Maximum totalized value (-2 100 000 000 to 2 100 000 000)

Note: When one of Max or Min is changed, the Current Position is cleared and the position is stored as Reset Pos.
When the both of Max and Min are changed, the Current Position is cleared. However, the Reset Value is stored as Reset Pos.

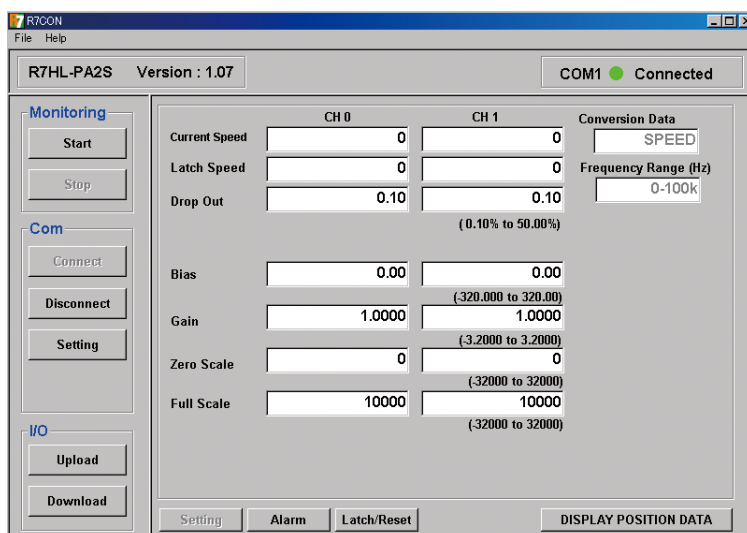


Figure 4.4-2 Initial view of R7HL-PA2S in Speed data mode

Current Speed	Current speed (scaled value)
Latch Speed	Speed at latched moment
Drop Out	Specifies input value of drop out in percentage (low-end cutout) (0.10 to 50.00)
Bias	Specifies bias in percentage (-320.00 to 320.00)
Gain	Specifies gain (-3.2000 to 3.2000)
Zero Scale	0% scaling value (-32000 to 32000)
Full Scale	100% scaling value (-32000 to 32000)

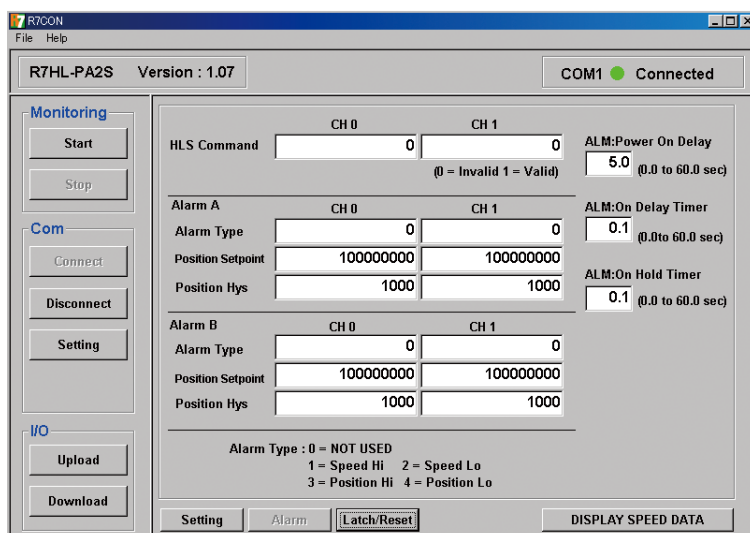


Figure 4.4-3 View of Alarm Setting

HLS Command*	Alarm setting via Hi-speed Link System 0: Disable / 1: Enable
Alarm Type*	Alarm trip operation type setting 0: Disable alarm 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: Min to Max; Speed Setpoint: -15.00 to 115.00 %)
Positon 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: < (Max – Min); Speed Hys: 0.00 to 115.00 %)
ALM: Power On Delay	Power on delay time setting Prohibits alarm tripping during this period after power on.
ALM: On Delay Timer	Alarm trip delay time setting The alarm is tripped if the alarm condition continues for the delay time.
ALM: On Hold Timer	Alarm holding time setting Once tripped, the alarm is held for the hold time duration even when the alarm condition is cancelled before such time elapses.

* HLS Command and Alarm Type are set independently. When the system is operated with only HLS command, set Alarm Type disable (0).

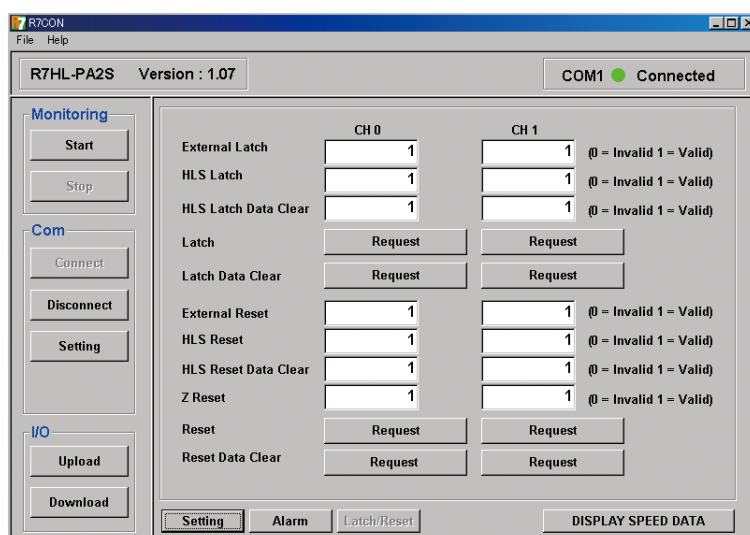


Figure 4.4-4 View of Latch and Reset setting

External Latch	Latch via external discrete input 0: Disable / 1: Enable
HLS Latch	Latch command via Hi-speed Link System 0: Disable / 1: Enable
HLS Latch Data Clear	Latch Data Clear command via Hi-speed Link System 0: Disable / 1: Enable
Latch	Click [Request] to latch
Latch Data Clear	Click [Request] to clear latch data
External Reset	Reset via external discrete input 0: Disable / 1: Enable
HLS Reset	Reset command via Hi-speed Link System 0: Disable / 1: Enable
HLS Reset Data Clear	Reset Data Clear command via Hi-speed Link System 0: Disable / 1: Enable
Z Reset	Reset via external Z phase 0: Disable / 1: Enable
Reset	Click [Request] to latch
Reset Data Clear	Click [Request] to clear latch data

Caution: Reset is not available for Speed mode.

4.5. HOW TO CONFIGURE R7X-LC2

First, connect the R7x-LC2 and call up the R7CON initial view following the procedure explained in ‘Section ["4.1. HOW TO START MONITORING" on page 11](#). How to Start Monitoring.

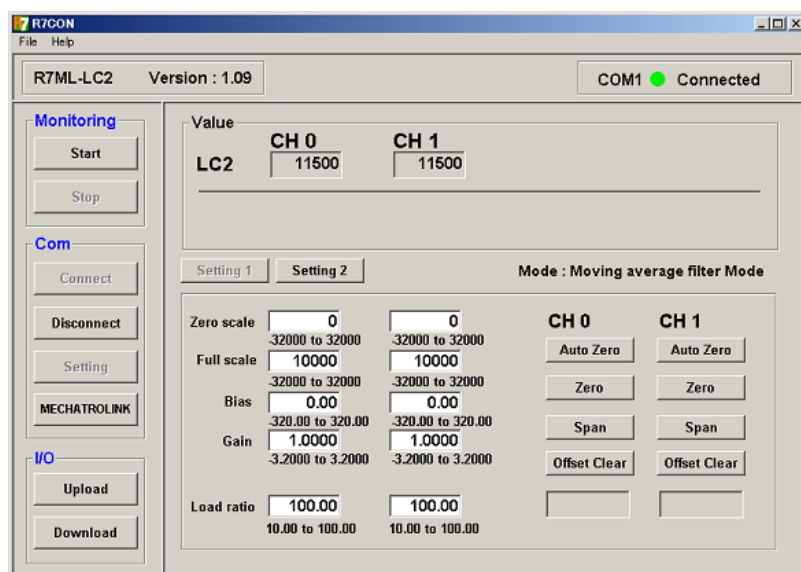


Figure 4.5-1 Initial view of R7ML-LC2

Regarding Scaling setting, refer to the ‘Section ["3.6.1. SCALING" on page 8](#). SCALING.’ Regarding Bias and Gain setting, refer to the ‘Section ["3.6.2. SETTING BIAS & GAIN" on page 8](#). SETTING BIAS & GAIN.’

Load ratio	Load ratio for strain gauge. (10.00 to 100.00)
Auto Zero	Set present input value to 0.00% (Offset)
Zero	Recognize present input value as Zero (0.00%).
Span	Recognize present input value as Span (100.00%). When Load ratio is set, Span is calculated from Load ratio value.
Offset Clear	Clear the offset value setting to '0'.

Carry out Auto Zero after performing Zero and Span.

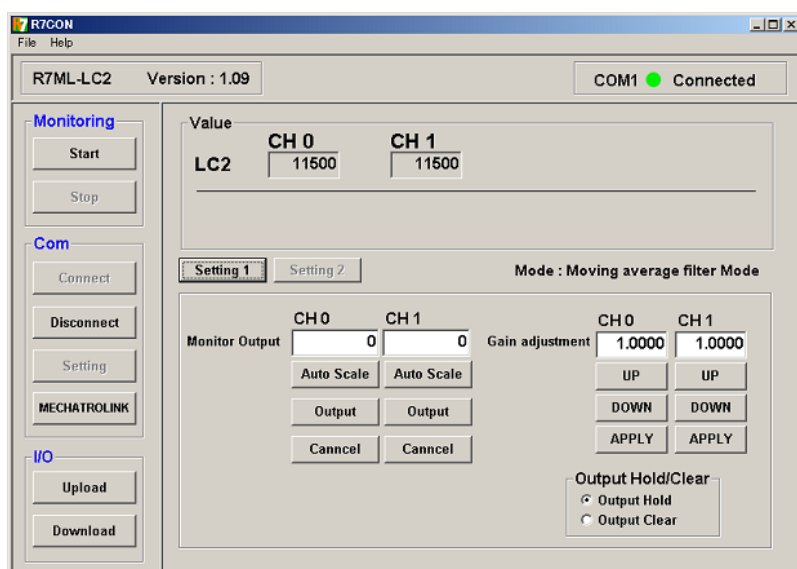


Figure 4.5-2 Setting view 2 of R7ML-LC2

Following items are available to be set.

Monitor Output	Auto Scale	Scale value at present input value is set. Enter desired value in the text box. Clicking [Auto Scale] enables to set full scale value automatically. Note: Be sure to perform while input is applied.
	Output	Enter desired value (%) in the text box. Clicking [Output] enables to output from terminal. The unit moves from measuring mode to monitor output mode.
	Cancel	Clicking [Cancel] enables to return the unit to measuring mode.
Gain Adjustment	Adjust the output. Determine the Gain so that it becomes desired output while monitoring the output voltage. [UP] Gain increments 0.0001. [DOWN] Gain decrements 0.0001. [APPLY] The data is determined.	

Be sure that these items are not saved with 'I/O → Download' in the left side of the screen. As mentioned above, clicking [Auto Scale] or [APPLY] button enables to save the data.

4.6. HOW TO CONFIGURE R7X-MS4

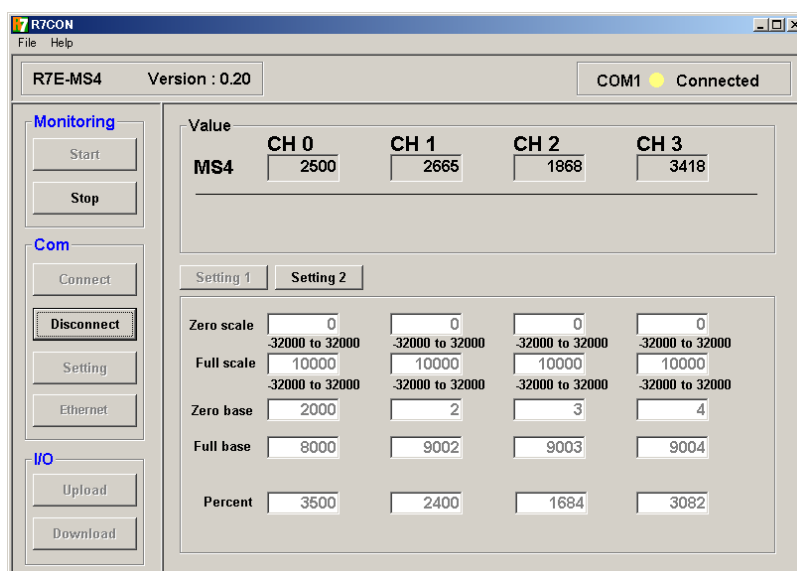


Figure 4.6 Setting view of R7E-MS4

ITEM	DESCRIPTION	AVAILABLE RANGE (Use in these range)
Value	The Scaling value set with Zero scale / Full scale is displayed. The value to be sent to PLC etc. is indicated.	—
Zero scale	0% scaling value. Enter the value into the text box.	-32000 to +32000 (integer)
Full scale	100% scaling value. Enter the value into the text box.	-32000 to +32000 (integer)
Zero base	Enter input value (% x 100) for 0%. Enter with reading from percent value.	0 to 10000 (integer)
Full base	Enter input value (% x 100) for 100%. Enter with reading from percent value.	0 to 10000 (integer)
Percent	The input value not affected by Zero base / Full base is displayed. Potentiometer input is indicated with 0 to 10000.	—

• POTENTIOMETER INPUT SETTING PROCEDURE

- 1) Connect the potentiometer to the input.
- 2) Set 0% position and 100% position.
Set potentiometer input to 0% position. Read the potentiometer value, enter it to Zero base. Set potentiometer input to 100% position. Read the potentiometer value, enter it to Full base.
- 3) Set Scaling value.
Enter the value for 0% position into Zero scale. Enter the value for 100% position into Full scale.
- 4) Write the setting data.
Perform above steps 1) through 3) for each channel. Click [Download] button.
- 5) Confirm the input
While vary the potentiometer input, confirm that 'Value' is changed with setting Scaling value.

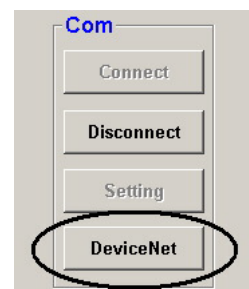
CAUTION !

The 'Percent' data shows the potentiometer input in percent. This value is not affected by Scaling value, Zero base or Full base value. Zero base and Full base are set to 0, 10000 respectively as factory default.

5. SETTINGS PARTICULAR TO NETWORK PROTOCOL

5.1. NETWORK SETTING BUTTON

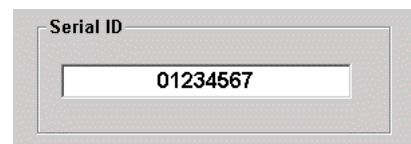
When there are settings particular to the network protocol of the connected R7 module, a button with the network name is added below 'Setting' button under Com setting section.



5.2. SETTING SERIAL ID : R7D SERIES

A designation to identify each module can be specified. More details, please refer to the instruction manual for the R7D basic module.

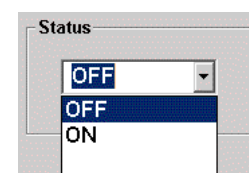
- 1) Enter at the maximum of eight (8) alphanumerical characters.
- 2) Click [Download].



5.3. ADDING STATUS DATA : R7D SERIES

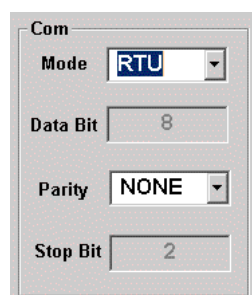
A status bit can be added at the end of the data stream sent from the R7D module to the host PLC. More details, please refer to the instruction manual for the R7D basic module.

- 1) Click the right arrow on the Status setting field. Pull down the menu selections and choose 'ON' to add the status bit, 'OFF' to cancel the status bit.
- 2) Click [Download].



5.4. SETTING MODBUS PARAMETERS : R7M SERIES

Two (2) parameters among four (4) available for Modbus are selectable for the R7M modules.



Parameter	Function	Selections
Mode	Modbus data format	RTU or ASCII
Data Bit	Data length	7 bits or 8 bits Automatically selected according to the mode (8 bits for RTU, 7 bits for ASCII)
Parity	Parity type	None, Odd or Even
Stop Bit	Stop bit length	1 bit or 2 bits Automatically selected according to the parity type (2 bits for None, 1 bit for Odd/Even)

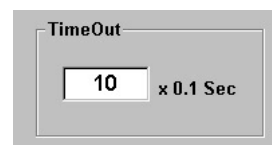
- 1) Click the right arrow on each selectable setting field. Pull down the menu selections and choose.
- 2) Click [Download].

5.5. COMMUNICATION TIMEOUT

Timeout means the time interval for the R7 module to initiate the output hold function when the R7 module terminates communication with the host PLC or PC, or the latter interrupts communication with the former.

During the 'Timeout' time, the R7 holds the output prior to the interruption, until the output is reset (clear) or held according to the 'Output Hold/Clear' setting after the specified time has been elapsed.

- 1) Enter a value between 0 and 32000. In order to set to 30 seconds, enter 300.
- 2) Click [Download].



Example. Model R7D-DC16x

Output Hold/Clear setting = Clear (SW1-4 = OFF)

Timeout = 10 seconds (set to '100')

Operating flow according to these settings will be as follows:

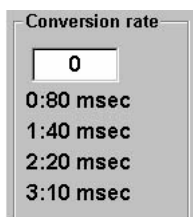
- 1) The PLC and the R7D-DC16x is in communication, with CH X ON.
- 2) Communication between the PLC and the R7D-DC16x is interrupted.
- 3) CH X remains ON for 10 seconds.
- 4) CH X turns OFF.

5.6. CONVERSION RATE (R7HL-SV4, R7FN-SV4)

(See to the right)

Step 1. Select conversion rate: 0: 80 msec, 1: 40 msec, 2: 20 msec, 3: 10 msec

Step 2. Click on [Download] button.

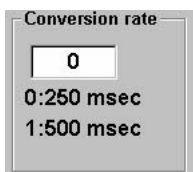


5.7. CONVERSION RATE (R7HL-TS4, R7HL-RS4, R7FN-TS4, R7FN-RS4)

(See to the right)

Step 1. Select conversion rate: 0: 250 msec, 1: 500 msec

Step 2. Click on [Download] button.



5.8. AVERAGING (R7HL-SVF4, R7FN-SVF4)

(See to the right)

Step 1. Select an averaging frequency.

Step 2. Click on [Download] button.

