R2M CONFIGURATOR
Model: R2CON

Users Manual

Applicable Software Version 1.0

CONTENTS

1. GENERAL

In this manual, user is assumed that he is already familiar with operating Windows and terminology used in these operating systems.
If you need to know about particular operation or terminology on Windows, please refer to manuals provided with the system.

1.1 FEATURES OF R2CON

The model R2M can accept direct sensor inputs from thermocouples and other sensors, with independent sensor type and temperature range settings for each channel. It can be connected to a PC with RS-232-C cable included in the package of the R2CON. Available R2M models are:

R2M-2H3	Thermocouple inputs, 8 points
R2M-2G3	DC inputs, 8 points

The R2CON software is used to help you program input type, burnout action, cold junction compensation of model R2M.
General functions of the R2CON are as follows:

• COMMUNICATION CONFIGURATION

Parameters concerning Modbus communication such like node address or baud rate can be configured. For use of the R2M as PC Recorder, these settings are or have already been adjusted on the hardware in order to simplify their use.

• PARAMETERS CONFIGURATION FOR EACH CHANNEL

For model R2M-2H3, thermocouple type and temperature range per channel can be programmed.

• FILE MANAGING

The parameter configuration for each channel can be saved as a file on the PC. Therefore, you can configure a set of parameters without actually connecting the R2M to your PC.
Reading (downloading) parameter files helps you to configure multiple modules easily and accurately.

• CREATING AND MODIFYING PARAMETERS

Parameters displayed on the PC can be changed.
New parameter setting can be created.

• MONITORING

You can check analog input data using configured data.

• CALIBRATION

For model R2M-2H3 and -2G3, zero and span adjustments are available.
For model R2M-2H3, replacing cold junction compensation module (model: CJM) is available.

1.2 HARDWARE REQUIREMENTS

• DOS/V compatible PC with Windows 7 (32-bit / 64-bit) or Windows 10 (32-bit / 64-bit) appropriately installed.

2. GETTING STARTED

2.1 INSTALLING THE R2CON

The program, provided as compressed archive, can be downloaded at our web site.

Decompress the archive and execute 'setup.exe' to start up the R1CON installer program. Follow instructions on the Windows.

⚠ If you have already the R2CON program installed in your PC, remove it following the procedure explained in 2.2. before installing a new one.

2.2 UNINSTALLING THE R2CON

For Windows 7, open Control Panel > Uninstall a program, or Uninstall or change a program. Select the R2CON from the program list and click [Uninstall] button.

For Windows 10, open Settings from Start menu > Apps > Apps & features.
Select the R2CON from the program list and click [Uninstall] button.

2.3 CONNECTING THE R2M WITH THE PC

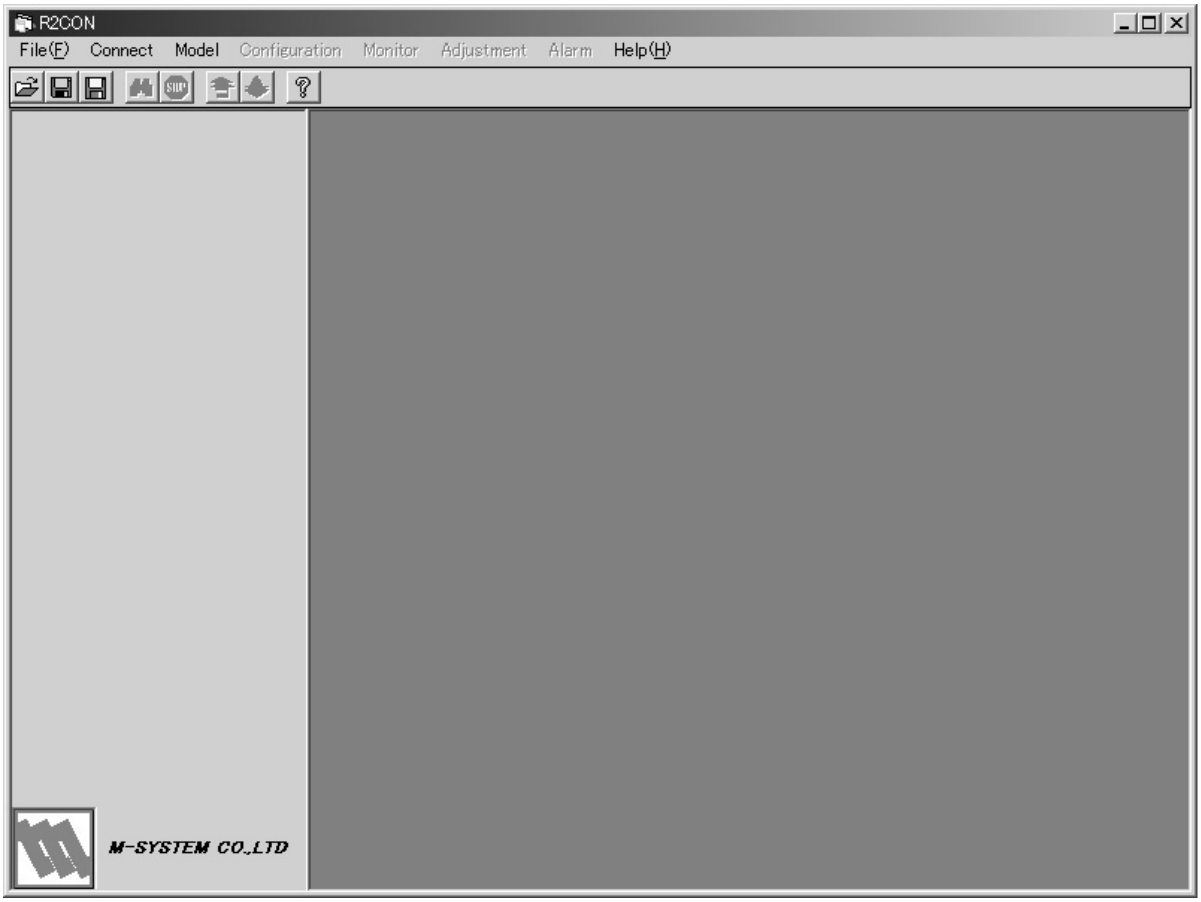
Connect the radio jack end of the non-isolated cable (included in the package of the R2CON) to Config. port at the rear of the R2M module, and its 9-pin D-sub connector end to COM port of the PC.

2.4 STARTING / QUITTING THE R2CON

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

2.4.1 STARTING THE R2CON

Press Start on the task bar and choose “R2CON” from Program menu. The main view appears on the screen as shown below.



2.4.2 ENDING THE R2CON

Choose [End] from [Files] menu to quit the program.

⚠ Clicking [X] button at the right end of the title bar does not end the program.

3. HOW TO USE THE R2CON

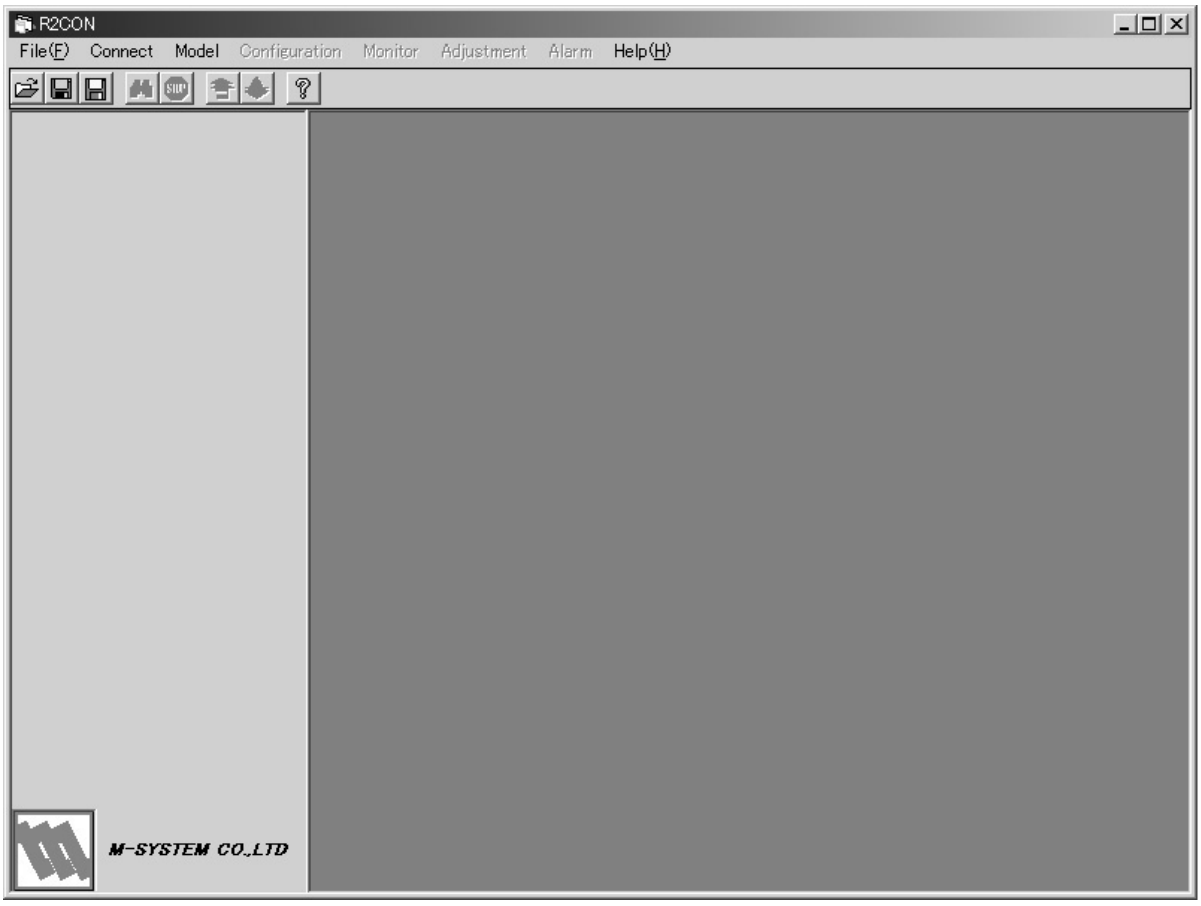
The R2CON can be used on-line or off-line (the R2M connected or disconnected to/from communication line. In this section, the following procedures are explained with examples.

3.1 ON-LINE OPERATION

1) Starting up the R2CON program
2) Connecting to the communication line
3) Confirming the hardware type and current setting
4) Modifying parameters
5) Downloading the parameters to the R2M
6) Confirming new configuration
7) Monitoring
8) Closing the communication line

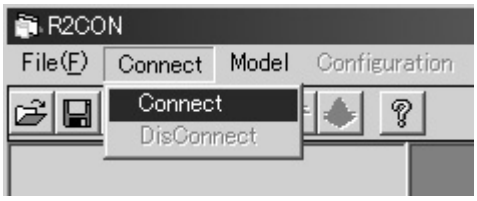
3.1.1 STARTING UP THE R2CON PROGRAM

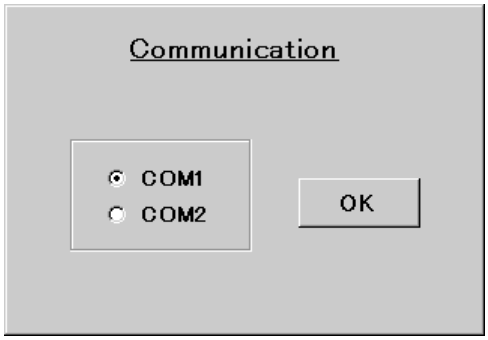
Press Start on the task bar and choose “R2CON” from Program menu. The main view appears on the screen as shown below.



3.1.2 CONNECTING TO THE COMMUNICATION LINE

Connecting the R2M module to the communication line.
Choose [Connect] from [Connect] on the menu bar and the following dialog box appears on the screen.
Confirm that the power is supplied to the R2M and that the configurator jack of the R2M and the COM1 port of the PC is firmly connected with the attached cable.





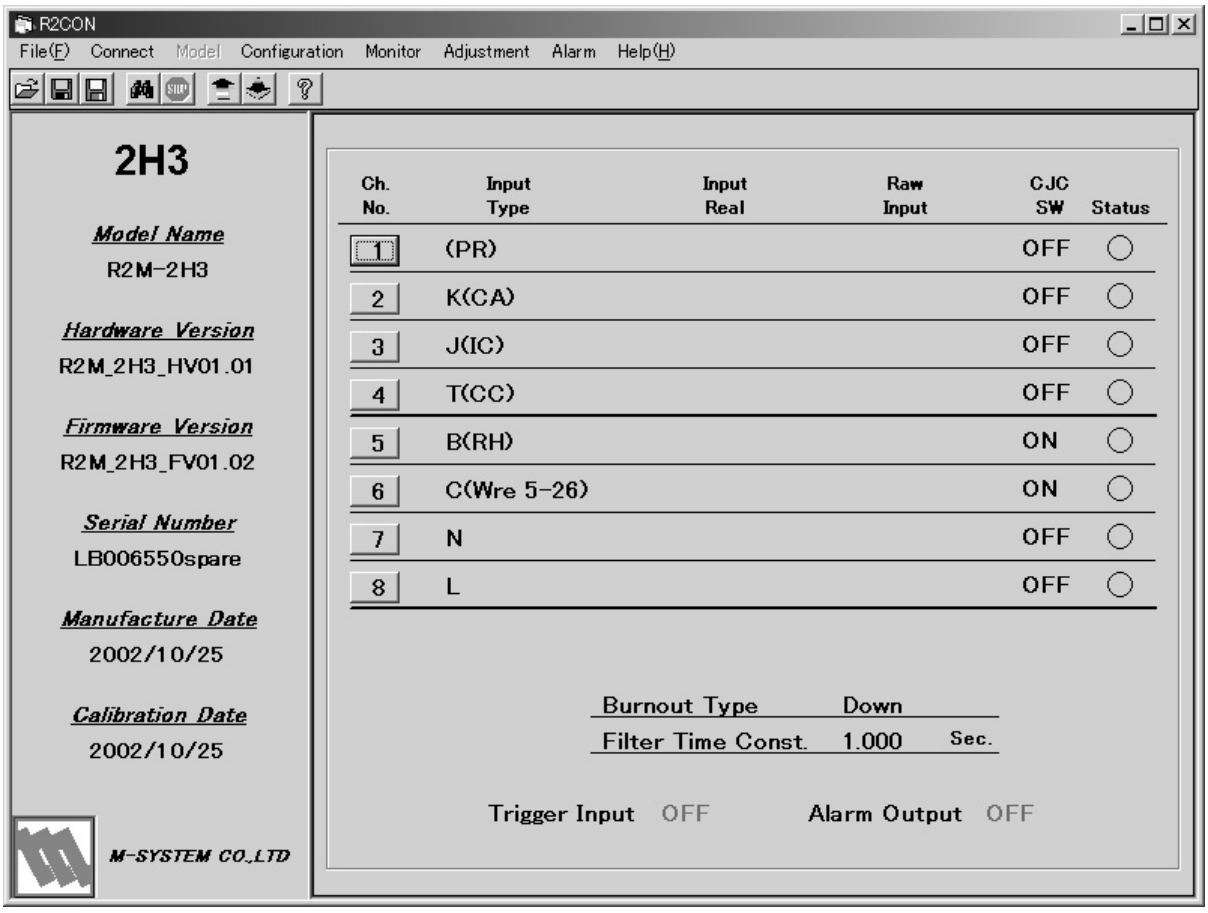
Choose COM1 (See left) and click OK.
With the communication line established, the version No. of the hardware and current parameter setting are displayed.

⚠ If a message appears saying that the connection is unsuccessful, confirm again the connection between the R2M and PC, and the COM1 port driver status on the PC.

Only COM1 and COM2 can be specified as standard. In order to use COM3 and other communication ports, change the port numbers following instructions in the appendix.

3.1.3 CONFIRMING THE HARDWARE TYPE & CURRENT SETTING

With the communication line established, the type No. and version No. of the hardware (left) and current parameter setting (right) are displayed on the screen. The example below and the following explanation is one with model R2M-2H3.

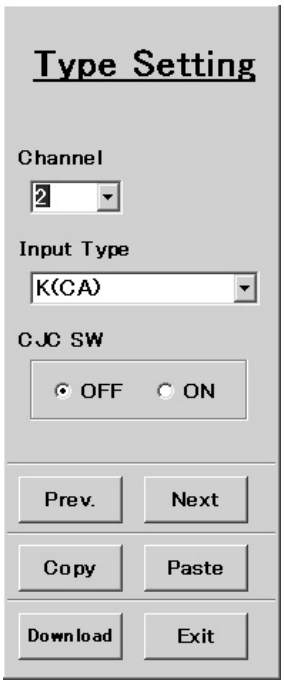


3.1.4 MODIFYING PARAMETERS

Click a channel No. button on the right window and Type Setting window appears as shown below.

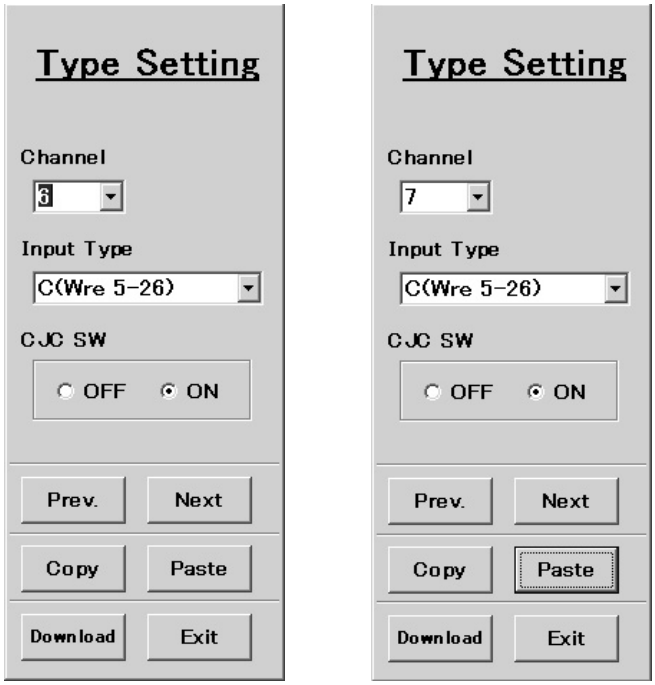
Modifying [Input Type] of Ch. 2 from "K(CA)" to "E(CRC)"

Choose "2" from [Channel] pull-down menu.
Choose "E(CRC)" from [Input Type].
Confirm the new setting at Ch. 2 on the right window.

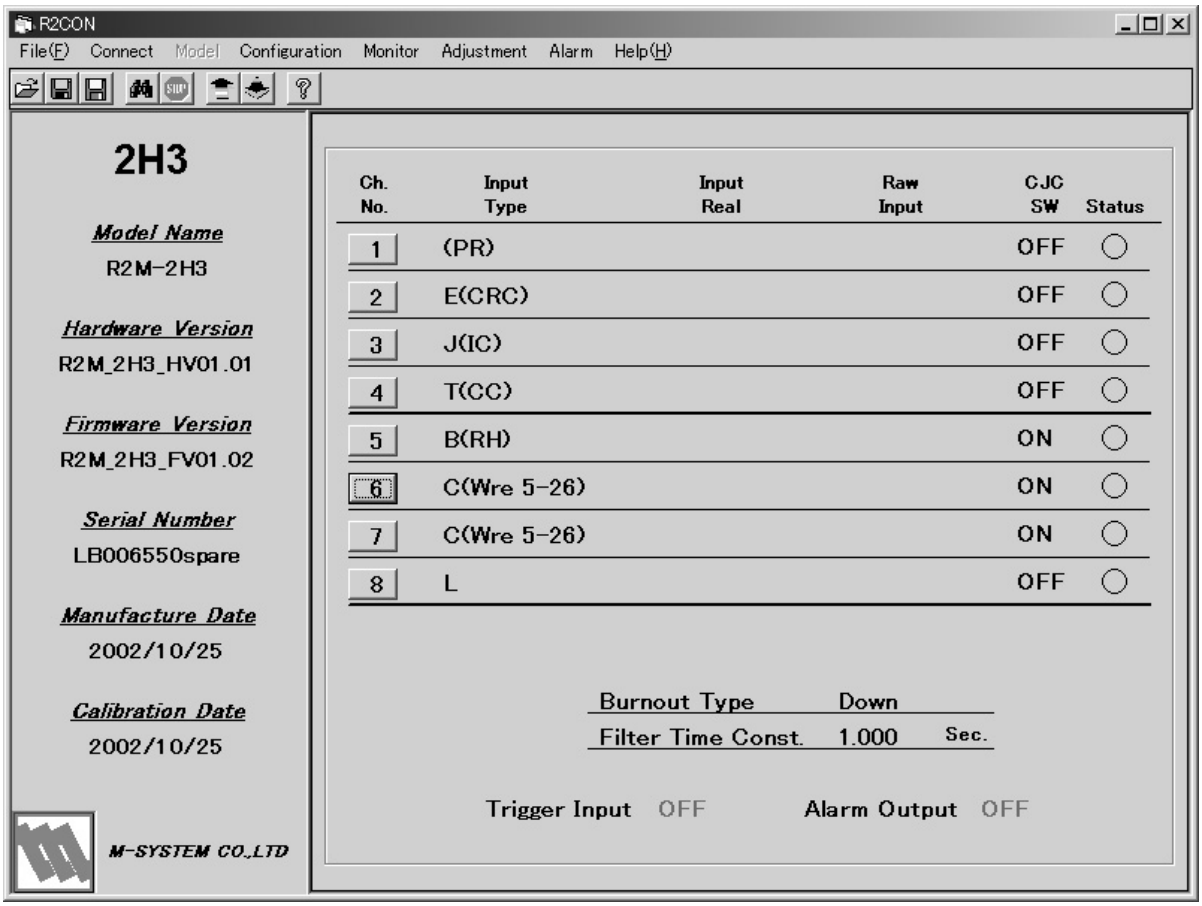


Applying the setting of Ch. 6 to Ch. 7

Choose "6" from [Channel] pull-down menu.
Press < Copy > button. Then press < Next > button and confirm that the window shows current setting of Ch. 7.
Press < Paste > button and confirm the new setting on the dialog box.



Confirm the new setting at Ch. 7 on the right window.
Pressing < Exit > button closes the dialog box. The figure below shows the result of the above modification.



3.1.5 DOWNLOADING PARAMETERS TO THE R2M

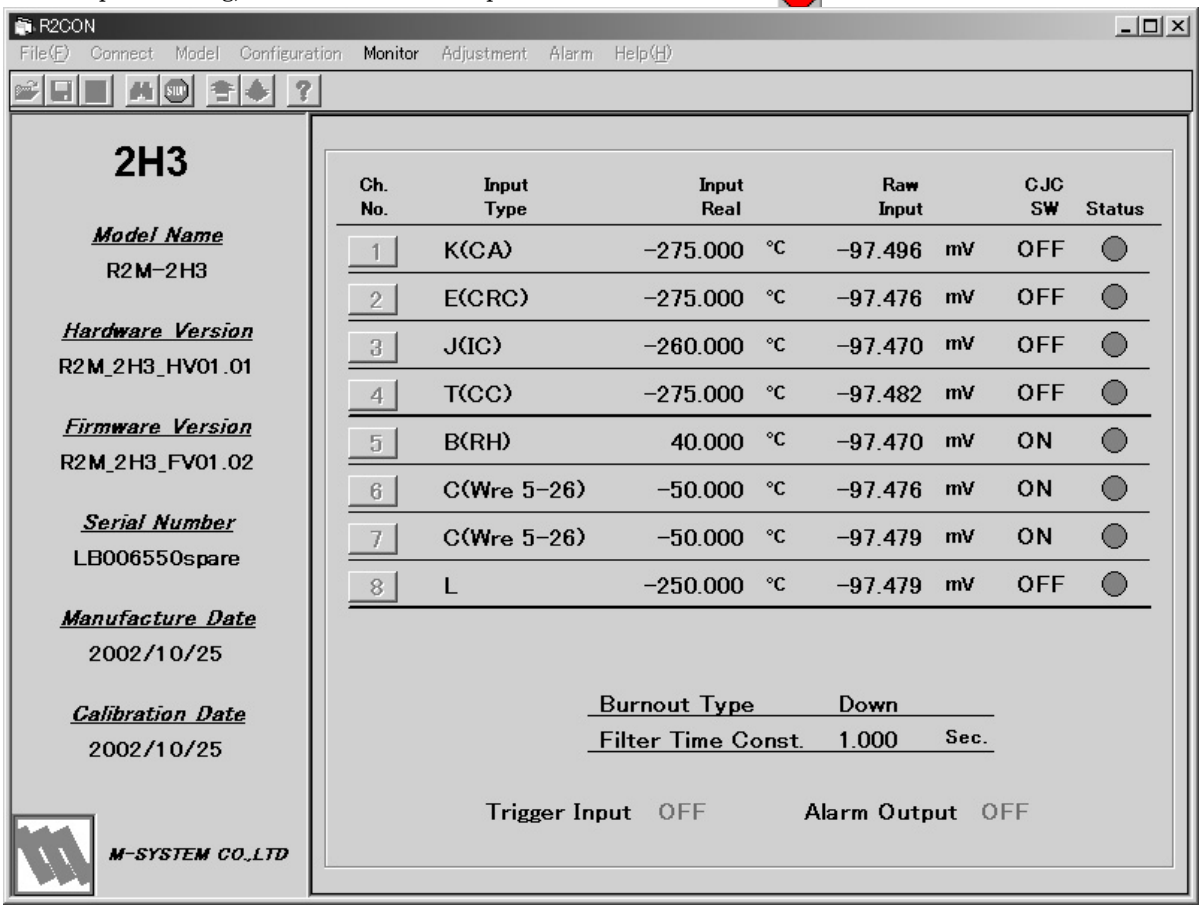
For downloading the parameters for all channels, choose [Configuration] – [Download] or click <  > button.
For downloading the parameters for single channel, click < Download > in [Type Setting] dialog box of that channel.

3.1.6 CONFIRMING NEW CONFIGURATION

The R2CON automatically uploads the configuration after every downloading. Therefore you can confirm that new configuration has been applied by comparing the currently displayed setting with applied changes.

3.1.7 MONITORING

You can monitor analog input values on the display. Choose [Monitor] – [Start] from the menu bar or click < > tool button.
In order to stop monitoring, choose [Monitor] – [Stop] from the menu or click < > tool button.



3.1.8 CLOSING THE COMMUNICATION LINE

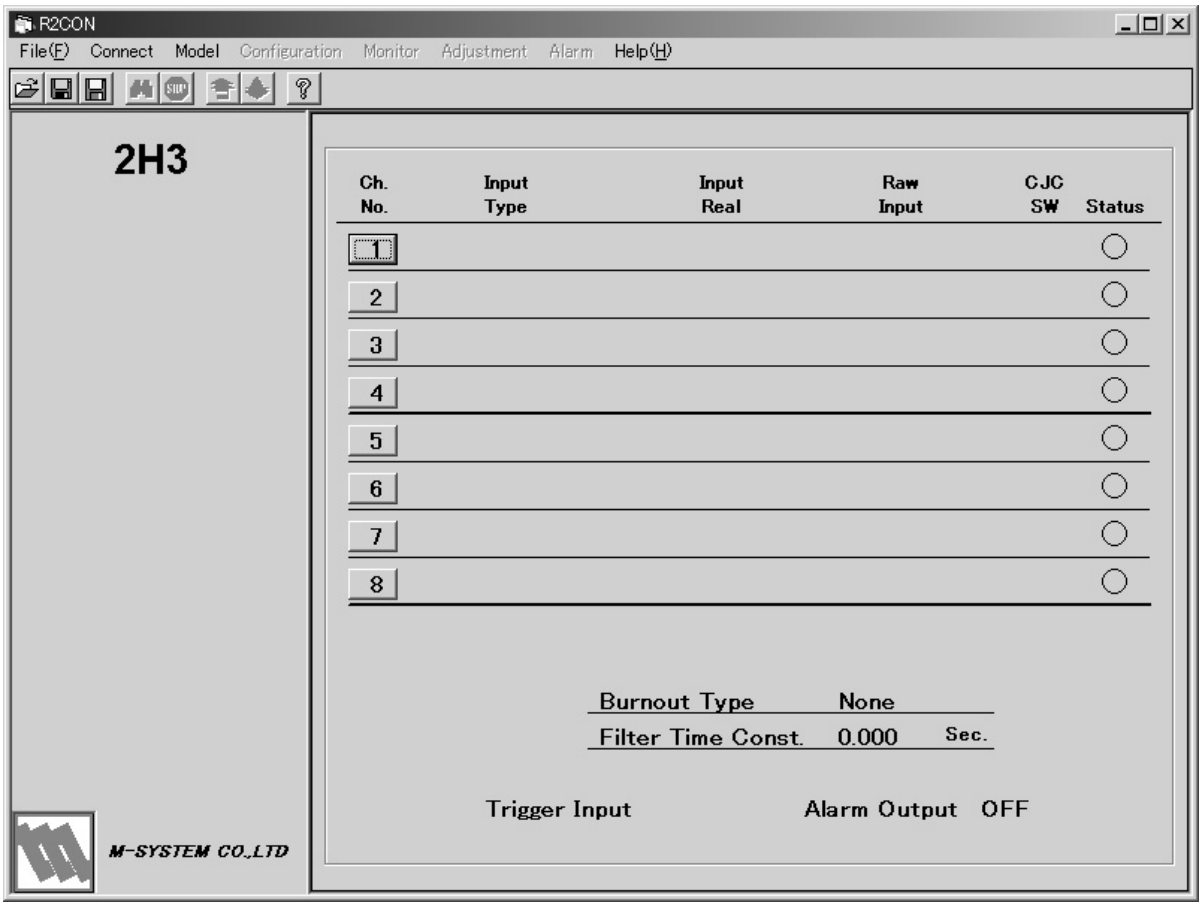
Disconnecting the R2M module to the communication line.
Choose [Dicconnect] from [Connect] on the menu bar.

3.2 OFF-LINE OPERATION

1) Selecting the hardware type
2) Creating or modifying parameters
3) Saving parameter files

3.2.1 SELECTING THE HARDWARE TYPE

When creating a new parameter file, choose the hardware type from [Model] pull-down menu.
If you want to modify an existing file, choose [File] – [Open] from the menu bar and select the file name.
The following window appears when type 2H3 is selected for a new file.

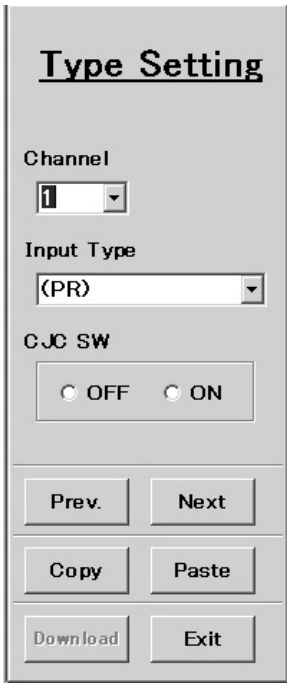


3.2.2 CREATING OR MODIFYING PARAMETERS

Click a channel No. button on the right window and Type Setting window appears as shown below.

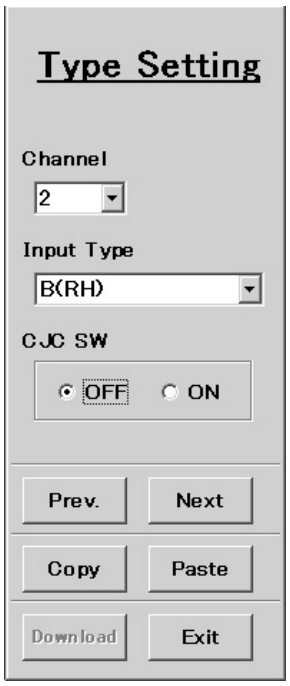
Specifying [Input Type] of Ch. 1 as "E(CRC)" and [CJC SW] to "ON" (CJC enable)

Choose "1" from [Channel] pull-down menu.
Choose "E(CRC)" from [Input Type] and "ON" from [CJC SW].
Confirm the new setting at Ch. 1 on the right window.

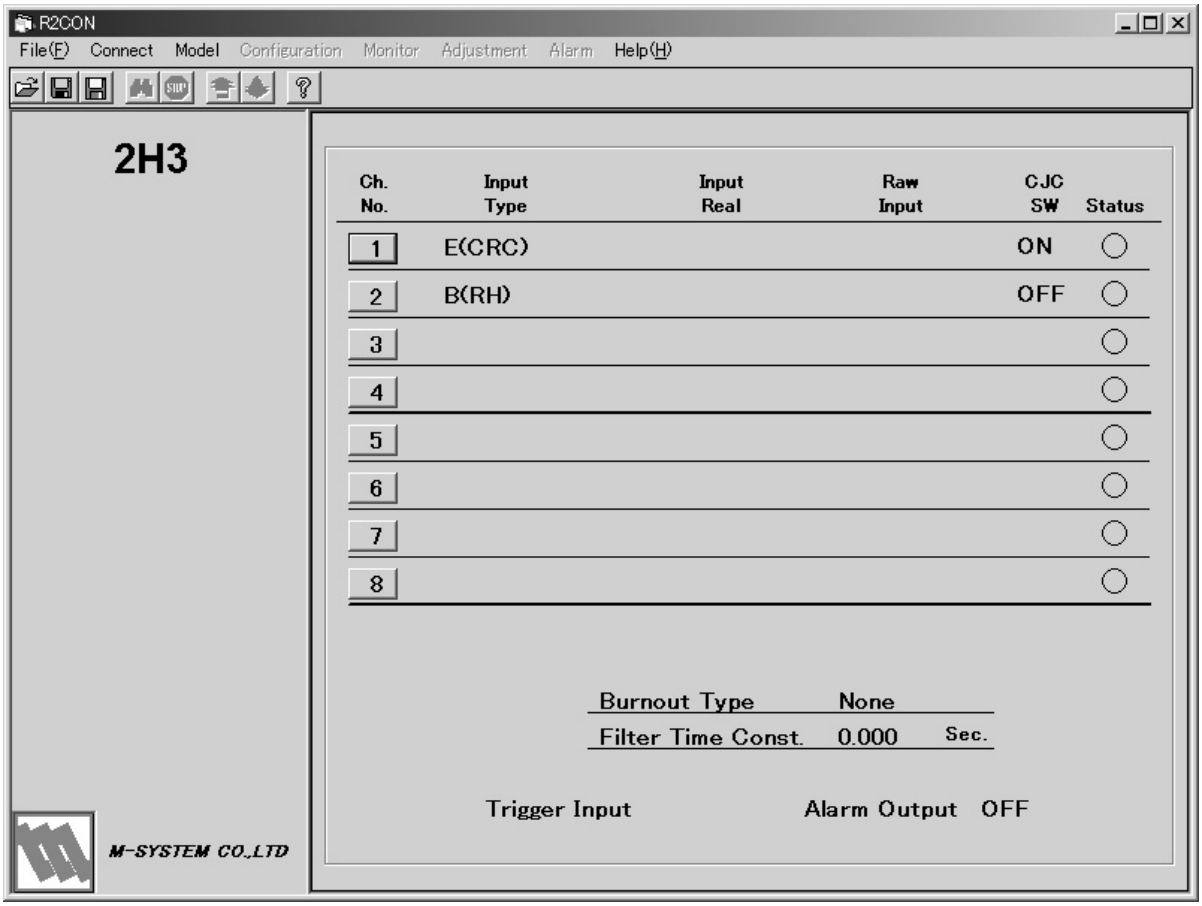


Specifying [Input Type] of Ch. 2 as "B(RH)" and [CJC SW] to "OFF" (CJC disable)

Click < Next > button and Type Setting dialog box for Ch. 2 appears.
Choose "B(RH)" from [Input Type] and "OFF" from [CJC SW].
Confirm the new setting at Ch. 2 on the right window.



Pressing < Exit > button closes the dialog box. The figure below shows the result of the above modification.



3.2.3 SAVING PARAMETER FILES

Choose [Save as] from [File] pull-down menu, or click < > button and specify a file name.

4. VIEWS AND OPERATIONS

The R2CON view is composed of the menu bar and tool buttons at the top, the hardware type and version information window at the left, and the configuration window for each channel with several popping-up sub-windows at the right.

4.1 MENU BAR

Menu	Submeu	Function
File	Open	Reading the specified file and displaying its contents.
	Save	Saving the configuration of all the channels as the current file.
	Save as	Saving the configuration of the all the channels as a new file.
	End	Quitting the R2CON program.
Connect	Connect	Connecting to the communication line.
	DisConnect	Disconnecting from the communication line.
Model	2H3	Displaying the configuration window for type 2H3.
	2G3	Displaying the configuration window for type 2G3.
Configuration	Modbus	Opening the Modbus Communication Parameter Setting window.
	Burnout Type	Opening the Burnout Type Setting window.
	Filter Time Const.	Opening the Filter Time Constant Setting window.
	CJM	Used when replacing the Cold Junction Compensation sensor.
	Upload	Uploading the configuration.
	Download	Downloading the configuration.
Monitor	Start	Starting monitoring of input signals.
	Stop	Stopping monitoring of input signals.
Adjustment	Zero/Span	Opening the Zero/Span Adjustments window.
Alarm	Alarm out	Opening the Alarm Output Setting window.
Help	Index	Not available
	Contents	Not available
	Version	Indicating Version No. of the R2CON.

4.2 TOOL BUTTONS

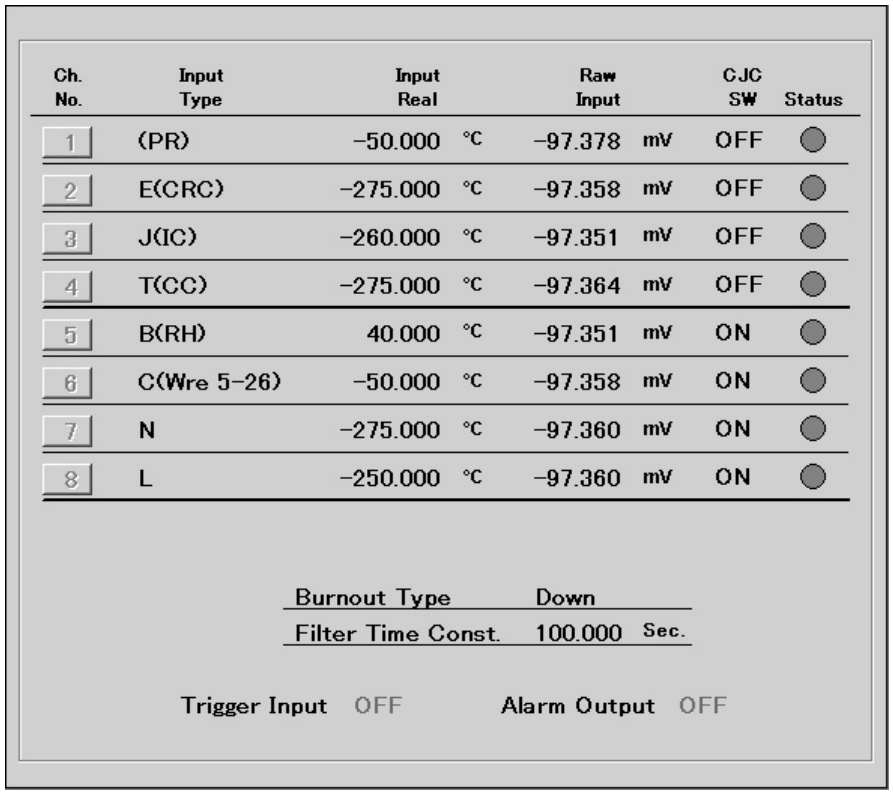
Name (from left to right)	Function
Open File	Reading the specified file and displaying its contents.
Save	Saving the configuration of all the channels as the current file.
Save as	Saving the configuration of the all the channels as a new file.
Start	Starting monitoring of input signals.
Stop	Stopping monitoring of input signals.
Upload	Uploading the configuration.
Download	Downloading the configuration.
Help	Not available.

4.3 HARDWARE TYPE & VERSION INFORMATION WINDOW

Name	Function
Model Name	Model No. of the R2M
Hardware Version	Hardware version No.
Firmware Version	Firmware version No.
Serial Number	Serial No. of the R2M
Manufacture Date	Manufacturing date of the R2M
Calibration Date	Date of latest calibration

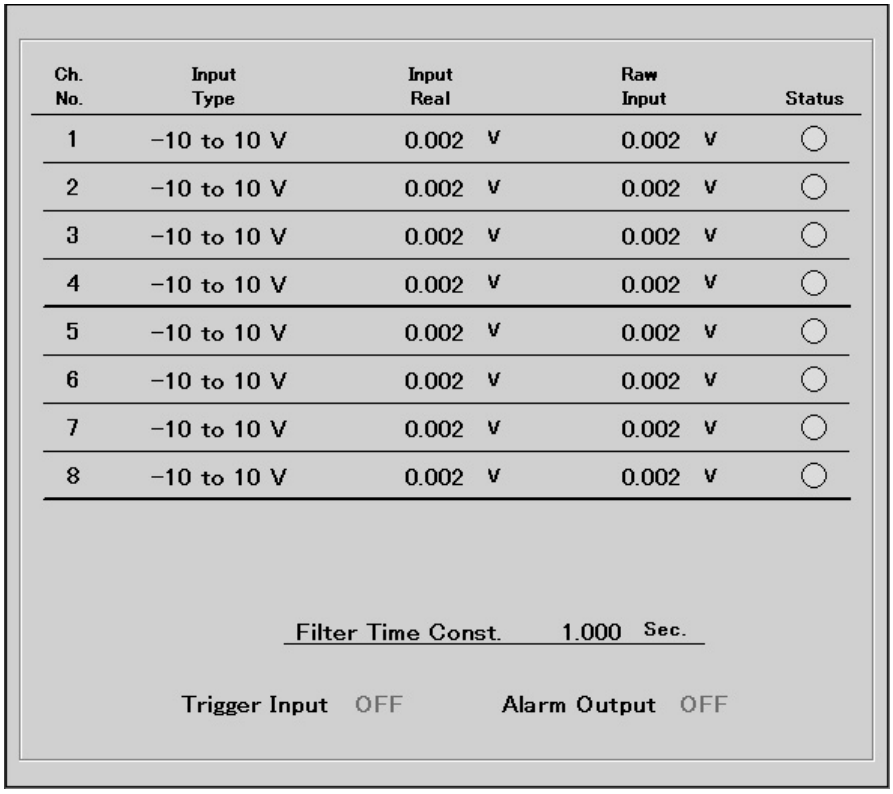
4.4 CONFIGURATION WINDOW FOR EACH CHANNEL

4.4.1 Model R2M-2H3



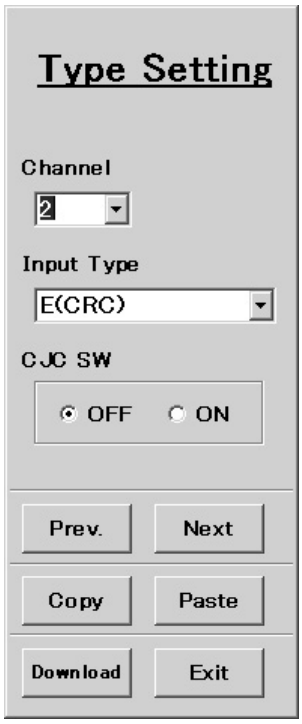
Name	Function
Ch. No.	Channel No.
Input Type	Input Type
Input Real	Input value in engineering unit
Raw input	Input voltage before conversion
CJC SW	Enable/disable the cold junction compensation
Status	Analog input status Green ON: Normal input Red ON: Abnormal input (out of range)
Burnout Type	Burnout protection action
Filter Time Const.	Time constant for the input fileter
Trigger Input	Trigger input status
Alarm Output	Alarm output status

4.4.2 Model R1M-2G3



Name	Function
Ch. No.	Channel No.
Input Type	Input Type
Input Real	Input value in engineering unit
Raw input	Input voltage before conversion
Status	Analog input status
Filter Time Const.	Time constant for the input fileter
Trigger Input	Trigger input status
Alarm Output	Alarm output status

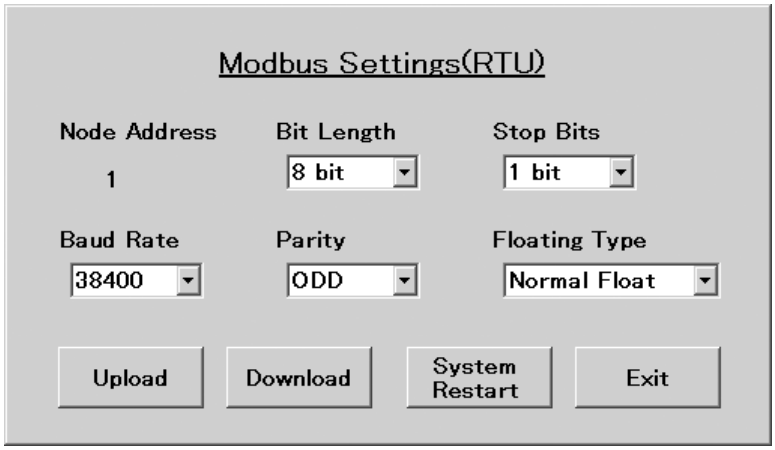
4.5 CONFIGURATION SUB-WINDOWS
4.5.1 TYPE SETTING



< Prev. > button	Move to the previous channel.
< Next > button	Move to the next channel.
< Copy > button	Copy the setting on the current display.
< Paste > button	Paste the copied setting.
< Download > button	Downloading the setting on the current display to the R2M module.
< Exit > button	Close the window.

Function	Selection
Channel	1 – 8
Input Type	(PR) K (CA) E (CRC) J (IC) T (CC) B (RH) R S C (WRe 5-26) N U L P (Platinel II)
CJC SW	Enable/disable CJC

4.5.2 MODBUS COMMUNICATION SETTINGS

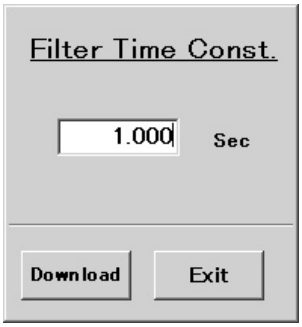


Function	Selection
Node Address	Displaying the current node address setting.
Baud Rate	9600 / 19200 / 38400 (default)
Bit Length	8 bit
Parity	NONE / ODD (default) / EVEN
Stop Bits	1 bit (default) / 2 bit
Floating Type	Normal Float (default) / Swapped Float

4.5.3 BURNOUT TYPE SETTINGS

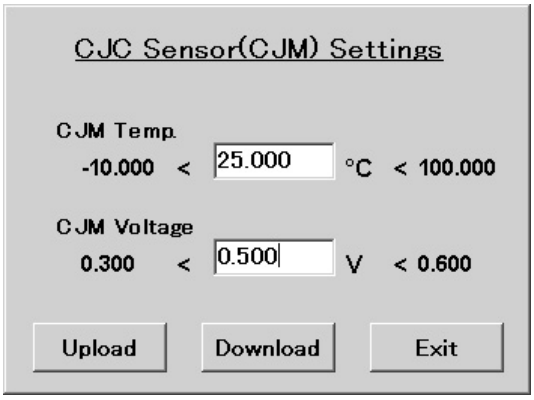
Function	Selection
Burnout Type	None
	Upscale
	Downscale

4.5.4 FILTER TIME CONSTANT SETTINGS



Function	Selection
Filter Time Const.	Time constant for the filter in seconds

4.5.5 COLD JUNCTION COMPENSATION SETTINGS



Function	Selection
CJM Temp.	Reference junction temperature in °C
CJM Voltage	Reference junction voltage

4.5.6 ZERO/SPAN ADJUSTMENTS

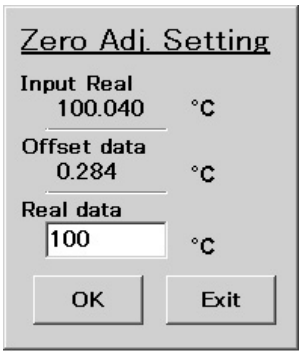
Zero and span adjustments are available independently for each channel. First set Zero and go to Span. < Reset > button clears both of zero and span adjustments automatically.

⚠ If you have changed the Input Type for a channel, the zero and span adjustments for this channel are reset.

ZERO/SPAN

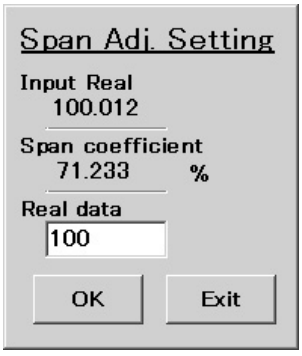
< Prev. > button	Move to the previous channel.
< Next > button	Move to the next channel.
< Zero > button	Opening the Zero Adjustment window.
< Span > button	Opening the Span Adjustment window.
< Reset > button	Resetting the current zero/span adjustments.
< Exit > button	Close the window.

ZERO ADJUSTMENT



Name	Function
Input Real	Input value in engineering unit
Offset Data	Offset value of the zero point
Real Data	Real value of the zero point

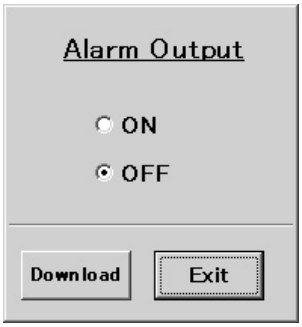
SPAN ADJUSTMENT



Name	Function
Input Real	Input value in engineering unit
Span Coefficient	Calculated gain
Real Data	Real value of the span point

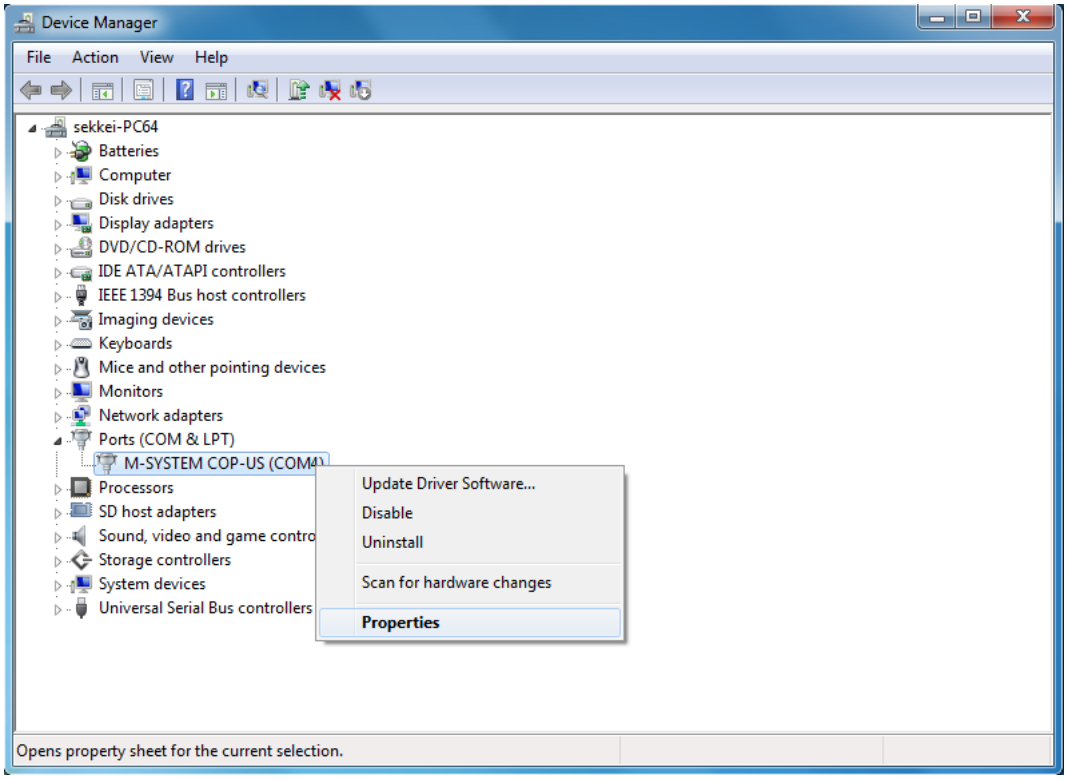
4.5.7 ALARM OUTPUT

You can confirm the current status of alarm output on this dialog box and forcibly turn the relay on and off in order to testing.



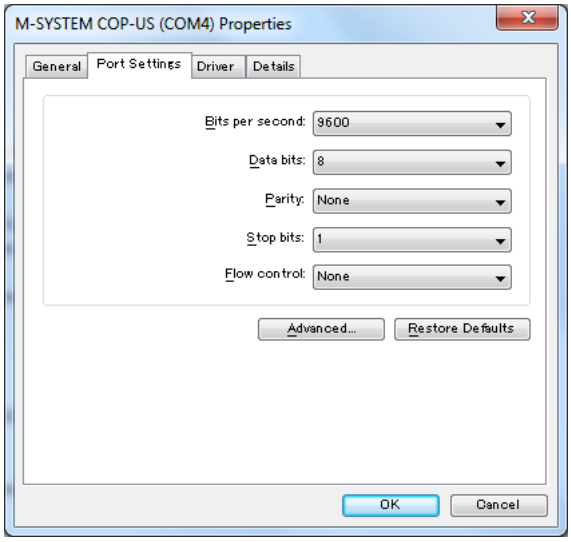
APPENDIX - 1. HOW TO CHANGE THE COM PORT NUMBERS

1) Open Control Panel and double-click System icon and press System Properties in the System dialog box. Choose Hardware tub – Device Manager (View examples with Windows 7).



2) Locate the COM port under Port (COM & LPT) of which you wish to change the number and show its properties by clicking it with the right mouse button.

3) Press Advanced button under Port Setting tub.



4) Choose a desired COM Port number and press OK.