

**R5 Series Remote I/O**  
**R5X PC CONFIGURATOR**  
**Model: R5CON**

**Users Manual**

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# 1. GENERAL

In this manual, user is assumed that he/she is already familiar with operating Windows 7 or Windows 10 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 R5CON

The R5 Series are isolated, modular I/Os with open field networking capabilities, such for DeviceNet and Profibus. These network modules can be directly connected to a Windows PC via PC Configurator Cable.

The R5CON software is used to help you program various parameters such as I/O scaling, zero/span adjustments to match the users' needs.

General functions of the R5CON are as follows:

### ■ PARAMETERS CONFIGURATION FOR EACH CHANNEL

I/O range scaling and zero/span adjustments are available for each I/O module.

For temperature input modules, actual temperature range can be also programmed per each command.

For T/C input of the model R5(T)-TS (Ver 1.00 or higher), overrange limits (0% and 100% of the scaled range) can be applied.

When the input goes below 0% or above 100%, 0% and 100% data respectively are sent to the host PLC or PC.

### ■ FILE MANAGING

The parameter configuration for each module can be saved as a file on the PC. Therefore, you can configure a set of parameters without actually connecting the R5x to your PC.

Reading (downloading) parameter files to the network module and each I/O module helps you to configure multiple modules easily and accurately.

### ■ 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 7 (32-bit, 64-bit) or Windows 10 (32-bit, 64-bit) appropriately installed.
- PC configurator cable, model MCN-CON or COP-US

## 1.3 INSTALLING THE R5CON

- (1) Start up Windows.
- (2) Go to our web site. Download and save the R5CON 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). R5CON\_Rx.exe or R5CON\_Rx.zip
- (4) Double-click the file's icon and locate 'R5CON\_Rx' folder.
- (5) Start up setup.exe in the folder and follow instructions on the screen. Now the R5CON program has been installed.

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### CAUTION !

If you have already the R5CON program installed in your PC, remove it following the procedure explained in "1.4 UNINSTALLING THE R5CON" before installing a new one.

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#### 1.4 UNINSTALLING THE R5CON

- (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 'Uninstall a program' or 'Program and feature'.  
    >> 'Property' dialog box of Programs and feature appears on the display.
- (3) Choose 'R5CON' 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 R5CON are removed.

#### For Windows 10

- (1) Click on START button at the lower left of the display to show a list of programs.
- (2) Locate R5CON on the list, and right-click on it, then select Uninstall.

## 2. BASIC OPERATIONS

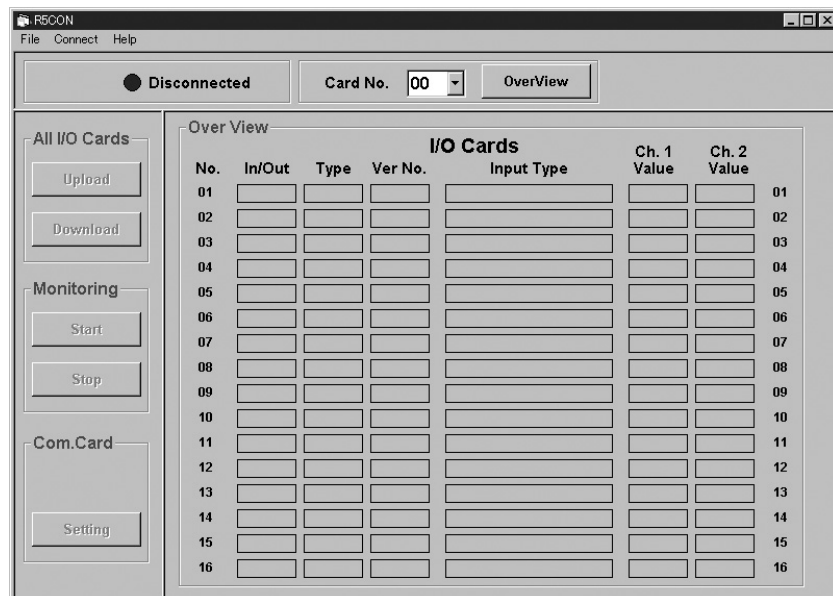
Connect the R5 network module to the PC with PC configurator cable. Confirm the hardware connection in order to write the setting data to the network module and each I/O module.

### 2.1 STARTING / QUITTING THE R5CON

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

#### ■ STARTING THE R5CON

Press [Start] on the task bar and choose [R5CON] from [Program] menu. The main view appears on the screen as shown below.



#### ■ QUITTING THE R5CON

Choose [Exit] from [File] menu to quit the program.

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#### CAUTION !

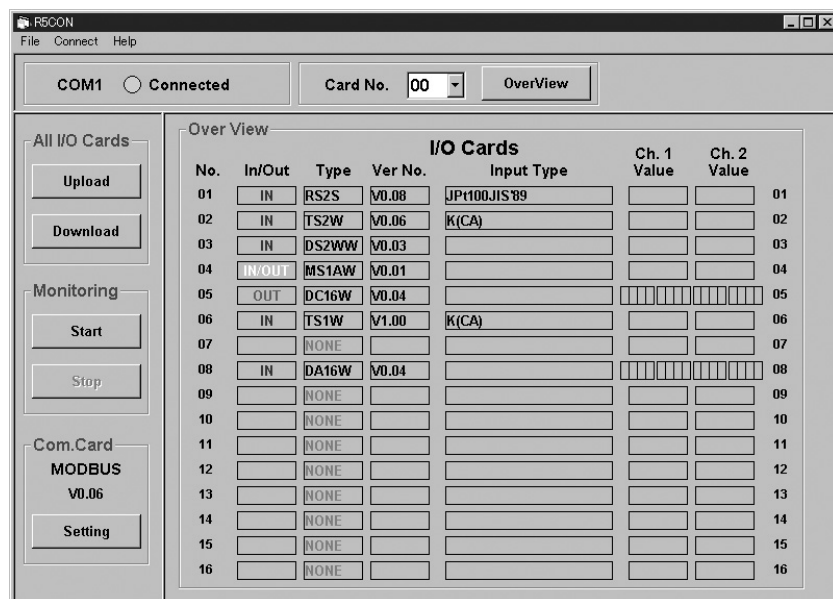
Clicking [X] button at the right end of the title bar does not end the program.

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## 2.2 VIEW COMPONENTS AND FUNCTIONS

The R5CON view is composed of the menu bar at the top, the control panels below it and on the left, and the main frame including various pop-up windows.

In this section, functions of menu bar and various buttons, and of each frame are explained.



### ■ MENU BAR

Menu	Submenu	Function
File	Open	Reading the specified file and displaying its contents.
	Save	Saving the parameters as a file.
	Exit	Quitting the R5CON program.
Connect	Connect	Connecting to the communication line.
	Disconnect	Disconnecting from the communication line.

### ■ CONTROL PANEL

<Card No.> list	Shows the selectable card numbers. Click the arrow at the right to choose a card number in order to switch the main frame from Overview to the detail view for the selected card (module).
<OverView> button	Shows the hardware configuration. Click this button to switch the main frame back to Overview from each card's detail view.
<Upload> button	Starts uploading I/O module's information.
<Download> button	Starts downloading I/O module's information to the network module.
<Start> button	Starts monitoring of the system.
<Stop> button	Stops monitoring of the system.
<Setting> button	Opens up the Com. card Settings view.
<Ethernet Setting> button	Opens up the Ethernet Settings view for the R5-NE1 module. (Available only when the R5-NE1 module is connected.)

## OVERVIEW

Over View						
I/O Cards						
No.	In/Out	Type	Ver No.	Input Type	Ch. 1 Value	Ch. 2 Value
01	IN	RS2S	V0.08	JP1100JISB9	2360	2360
02	IN	TS2W	V0.06	K(CA)	5200	32767
03		NONE				
04	IN/OUT	MS1AW	V0.01		10008	
05	OUT	DC16W	V0.04			
06	IN	TS1W	V1.00	K(CA)	5280	
07		NONE				
08	IN	DA16W	V0.04			
09		NONE				
10		NONE				
11		NONE				
12		NONE				
13		NONE				
14		NONE				
15		NONE				
16		NONE				

Item	Function	Selection	Detail
No.	Slot No. (1 to 16)	----	----
In/Out	Input or Output	IN	Input card (module)
		OUT	Output card (module)
		IN/OUT	1 input / 1 re-transmitted output card (module)
Ver. No.	Software version	----	----
Input Type	Type of thermocouple and RTD	----	----
Type	I/O Card (Module) Type	None	No card mounted
		Model No.	One of the Model No. mounted
Ch. 1 Value	Analog I/O value for Ch. 1	Decimal data	Shows data sent to the host PLC. Refer to the relevant descriptions in the data sheet of respective modules. Scaled range if specified so.
Ch. 2 Value	Analog I/O value for Ch. 2		
Indicators	Discrete I/O status	Green	OFF
	Ch. 1 (left) to Ch. 16 (right)	Red	ON

## 2.3 CONNECTING/DISCONNECTING THE COMMUNICATION LINE

### ■ CONNECTING

Connecting the R5 network module to the communication line.

Choose [Connect] from [Connect] on the menu bar and the COM Port Setting window pops up on the screen.



Confirm that the power is supplied to the R5 modules and that the configurator jack of the R5 network module and the COM port of the PC is firmly connected with the attached cable.

Choose an appropriate COM port No. (COM1 through COM8) and click OK.

With the communication line established, the communication status lamp turns to green and the COM port No. is shown.



### ■ DISCONNECTING

Choose [Disconnect] from [Connect] on the menu bar.



## 3. VIEWS & FUNCTIONS PARTICULAR TO MODULES

### 3.1 ANALOG I/O MODULE

SV2W

Card No.  Card Type  Version No.

**Ch. 1**

Zero scale ( -32000 --- 32000 )

Full scale ( -32000 --- 32000 )

Bias [Zero adj.] ( -320.00 --- 320.00 )

Gain [Span adj.] ( -3.2000 --- 3.2000 )

Zero base  v

Full base  v

Value

**Ch. 2**

Zero scale ( -32000 --- 32000 )

Full scale ( -32000 --- 32000 )

Bias [Zero adj.] ( -320.00 --- 320.00 )

Gain [Span adj.] ( -3.2000 --- 3.2000 )

Zero base  v

Full base  v

Value

<Upload> button      Uploading the current setting for the I/O module to the window.

<Download> button      Downloading the setting on the current display to the R5 module.

Item	Function	Selectable Range (must be used within this range)
Card No.	Shows Slot No.	
Card Type	Shows I/O module hardware type	
Version No.	Shows firmware version No.	
Zero Scale	Enter 0% scaling value	-32000 to 32000
Full Scale	Enter 100% scaling value	-32000 to 32000
Bias [Zero Adj.]	Enter fine 0% adjustment value (bias)	-320.00 to 320.00
Gain [Span Adj.]	Enter fine 100% adjustment value (gain)	-3.2000 to 3.2000
Zero Base	Shows 0% input value in engineering unit	Selected range
Full Base	Shows 100% input value in engineering unit	Selected range
Value	Shows the current uploaded value of the scaled range.	

### 3.2 THERMOCOUPLE & RTD INPUT MODULE

<Upload> button      Uploading the current setting for the I/O module to the window.

<Download> button    Downloading the setting on the current display to the R5 module.

Item	Function	Selectable Range (must be used within this range)
Card No.	Shows Slot No.	
Card Type	Shows I/O module hardware type	
Version No.	Shows firmware version No.	
Input Type	Shows T/C or RTD input type setting	
Burnout	Shows the burnout type setting	
Zero Scale	Enter 0% scaling value	-32000 to 32000
Full Scale	Enter 100% scaling value	-32000 to 32000
Bias [Zero Adj.]	Enter fine 0% adjustment value (bias)	-320.00 to 320.00
Gain [Span Adj.]	Enter fine 100% adjustment value (gain)	-3.2000 to 3.2000
Zero Base	Enter 0% temperature. (factory setting = 0)	As shown on the display
Full Base	Enter 100% temperature. (factory setting = 0)	As shown on the display
Value	Shows the current uploaded temperature value.	
Limit (R5-TS V1.00 or higher)	Check the box to limit the input range within Zero Scale and Full Scale when scaling is set. When no scaling is set and/or when the check box is not selected, the input range is limited within -15 to +115%.	

#### CAUTION !

If both Zero Scale and Full Scale values are equal, Scaling is processed assuming Zero Scale = 0, Full Scale = 10000.

Scaling is disabled when both Zero Base and Full Base values are equal.

In such a case, raw data is sent by: with °C temperature unit, multiplying raw data by 10 (e.g. 255 if 25.5°C); and with °F temperature unit, truncating raw data to an integer (e.g. 135 if 135.4°F).

### 3.3 CT & PT : AC CURRENT / VOLTAGE INPUT MODULE

CT2W

Card No.  Card Type  Version No.

Ch. 1

Zero scale ( -32000 --- 32000 )

Full scale ( -32000 --- 32000 )

Bias [Zero adj.] ( -320.00 --- 320.00 )

Gain [Span adj.] ( -3.2000 --- 3.2000 )

Zero base ( 0.00 --- 5.00 )  
 A

Full base ( 0.00 --- 5.00 )  
 A

Value

Ch. 2

Zero scale ( -32000 --- 32000 )

Full scale ( -32000 --- 32000 )

Bias [Zero adj.] ( -320.00 --- 320.00 )

Gain [Span adj.] ( -3.2000 --- 3.2000 )

Zero base ( 0.00 --- 5.00 )  
 A

Full base ( 0.00 --- 5.00 )  
 A

Value

<Upload> button      Uploading the current setting for the I/O module to the window.

<Download> button      Downloading the setting on the current display to the R5 module.

Item	Function	Selectable Range (must be used within this range)
Card No.	Shows Slot No.	
Card Type	Shows I/O module hardware type	
Version No.	Shows firmware version No.	
Zero Scale	Enter 0% scaling value	-32000 to 32000
Full Scale	Enter 100% scaling value	-32000 to 32000
Bias [Zero Adj.]	Enter fine 0% adjustment value (bias)	-320.00 to 320.00
Gain [Span Adj.]	Enter fine 100% adjustment value (gain)	-3.2000 to 3.2000
Zero Base	Enter 0% current (CT) or voltage (PT).	Selected range
Full Base	Enter 100% current (CT) or voltage (PT).	Selected range
Value	Shows the current uploaded value of the scaled range.	

### 3.4 DISCRETE INPUT MODULE

DA16S

Card No.  Card Type  Version No.

**DI Data**

Ch. 1 <input type="text" value="OFF"/>	Ch. 9 <input type="text" value="OFF"/>
Ch. 2 <input type="text" value="OFF"/>	Ch. 10 <input type="text" value="OFF"/>
Ch. 3 <input type="text" value="OFF"/>	Ch. 11 <input type="text" value="OFF"/>
Ch. 4 <input type="text" value="OFF"/>	Ch. 12 <input type="text" value="OFF"/>
Ch. 5 <input type="text" value="OFF"/>	Ch. 13 <input type="text" value="OFF"/>
Ch. 6 <input type="text" value="OFF"/>	Ch. 14 <input type="text" value="OFF"/>
Ch. 7 <input type="text" value="OFF"/>	Ch. 15 <input type="text" value="OFF"/>
Ch. 8 <input type="text" value="OFF"/>	Ch. 16 <input type="text" value="OFF"/>

Item	Function
Card No.	Shows Slot No.
Card Type	Shows I/O module hardware type
Version No.	Shows I/O module's firmware version No.
DI Data	Shows current input data status

### 3.5 DISCRETE OUTPUT MODULE

DC16W

Card No.  Card Type  Version No.

**DO Data**

Ch. 1 <input type="text" value="OFF"/>	Ch. 9 <input type="text" value="OFF"/>
Ch. 2 <input type="text" value="OFF"/>	Ch. 10 <input type="text" value="OFF"/>
Ch. 3 <input type="text" value="OFF"/>	Ch. 11 <input type="text" value="OFF"/>
Ch. 4 <input type="text" value="OFF"/>	Ch. 12 <input type="text" value="OFF"/>
Ch. 5 <input type="text" value="OFF"/>	Ch. 13 <input type="text" value="OFF"/>
Ch. 6 <input type="text" value="OFF"/>	Ch. 14 <input type="text" value="OFF"/>
Ch. 7 <input type="text" value="OFF"/>	Ch. 15 <input type="text" value="OFF"/>
Ch. 8 <input type="text" value="OFF"/>	Ch. 16 <input type="text" value="OFF"/>

Item	Function
Card No.	Shows Slot No.
Card Type	Shows I/O module hardware type
Version No.	Shows I/O module's firmware version No.
DO Data	Shows current output data status

### 3.6 TOTALIZED PULSE I/O MODULE

PA2W

Card No.  Card Type  Version No.

Ch. 1

Count

Span ( 100 --- 60000 )

Ch. 2

Count

Span ( 100 --- 60000 )

<Upload> button      Uploading the current setting for the I/O module to the window.

<Download> button    Downloading the setting on the current display to the R5 module.

Item	Function	Selectable Range (must be used within this range)
Card No.	Shows Slot No.	
Card Type	Shows I/O module hardware type	
Version No.	Shows firmware version No.	
Count	Shows the present totalized count, 16 bits (decimal)	
Span	Enter the maximum count limit.	100 to 60000

# 4. NETWORK MODULE

## 4.1 ETHERNET SETTINGS

With the Ethernet Interface Module (model: R5-NE1) connected, click <Ethernet Settings> button.

- <Upload> button      Reading the current setting from the R5 module and showing on the window.
- <Download> button      Writing the setting on the current display to the R5 module.
- <Exit> button      Close the window.

Item	Function	Selectable Range (must be used within this range)
IP Address	Enter IP Address	0 to 255 (integer)
Subnet Mask	Enter Subnet Mask	0 to 255 (integer)
MAC Address	Shows MAC Address	
TCP Socket	Enter TCP Socket Port No. to each port (1 thr. 4) Modbus/TCP port number is 502.	502
Linger	Enter time to close TCP Socket. (factory set to 1800) TCP Socket closed after no communication (Set 1800 for 180.0 sec.) for the preset time. This function is selectable with the R5-NE1 Ver 0.04 or higher. 'CNG' is indicated on the screen when the version is lower than 0.04.	0 to 32767 (integer)

### CAUTION !

Ethernet settings, once set, are enabled only after the power supply to the R5 network module is turned off and on.

## 4.2 COMMUNICATION TIMEOUT

Timeout means the time interval for the network module to recognize interrupt communication when the network module terminates communication with the host PLC or PC, or the latter interrupt communication with the former.

- (1)Enter a value between 0 and 32767. In order to set to 30 seconds, enter 300. (Factory setting = 3 seconds)
- (2)Click [Download].

## 5. SAVING & READING PARAMETERS

### 5.1 SAVING PARAMETERS

Parameters stored in I/O modules can be saved in a file.

- (1)Open the Overview.
- (2)Click [File] - [Save] on the menu bar.
- (3)Specify a location and a file name to save.

### 5.2 READING PARAMETERS

Click [Open] in the pulled-down menu.

The PC Program reads the saved parameters but are not downloaded automatically to each module. <Download> on the Overview.

- (1)Click [File] - [Open].
- (2)Locate the file and open it.
- (3)Execute <Download> on the Overview.
- (4)After changes have been applied, <Download> again.