# 73VR1100 PC CONFIGURATOR
## Software model: 73VR11BLD

# Users Manual

# Contents


**1. INTRODUCTION ..... 4**

1.1 GENERAL DESCRIPTIONS ..... 5
1.2 SYSTEM REQUIREMENTS ..... 5
1.3 INSTALLATION INSTRUCTIONS ..... 5
1.4 ACCESSING THE 73VR1100 DATA ..... 6
1.4.1 ETHERNET ..... 6
1.4.2 CF CARD ..... 6
1.5 HOW TO START UP & EXIT ..... 7

**2. SETTING ON THE 73VR11BLD ..... 8**

2.1 SYSTEM SETTING ..... 8
2.1.1 OPERATING MODE ..... 8
2.1.2 TEMPERATURE UNIT ..... 8
2.1.3 STORING MODE ..... 8
2.1.4 TYPE DOWNLOADS ..... 8
2.1.5 DATA CYCLE ..... 9
2.1.6 START MODE ..... 9
2.1.7 DATA STORING FORM ..... 9
2.1.8 DATA OVERWRITE ..... 9
2.1.9 SCREEN SAVER ..... 9
2.1.10 IP ADDRESS, SUBNET MASK, DEFAULT GATEWAY ..... 9
2.1.11 TOUCH PANEL BEEP ..... 10
2.1.12 FUNCTION CHANNEL ..... 10
2.2 DATA STORING METHOD ..... 11
2.2.1 STORING INTERVAL ..... 11
2.2.2 STORING SETTING ..... 11
2.3 DISPLAY SETTING ..... 16
2.3.1 CHART SPEED ..... 16
2.3.2 DISPLAY RATE ..... 16
2.3.3 GRAPH DIRECTION ..... 16
2.3.4 DIGITAL DISPLAY TYPE ..... 16
2.3.5 DIGITAL DISPLAY ..... 16
2.3.6 DATA FILE USED VOLUME SETTING ..... 17
2.3.7 DISPLAY PEN NUMBER ..... 17
2.3.8 DISPLAY PEN NUMBER (OV) ..... 17
2.3.9 AUTO PEN SWITCHING ..... 17
2.3.10 CHART COLOR ..... 17
2.4 STATION & NODE SETTING ..... 18
2.4.1 STATION NO. ..... 18
2.4.2 NODE NO. ..... 18
2.5 COMMENT ..... 19
2.5.1 GROUP ..... 19
2.6 INPUT PEN SETTING (INDIVIDUAL) ..... 21
2.6.1 COMMON SETTING ..... 21
2.6.2 DETAILED SETTING ..... 22

2.7 FUNCTION PEN SETTING (INDIVIDUAL) ....31
2.7.1 COMMON SETTING....31
2.7.2 DETAILED SETTING ....32
2.8 ALARM SETTING (INDIVIDUAL)....36
2.8.1 ANALOG ALARM....36
2.8.2 DISCRETE ALARM ....38
2.9 INPUT PEN SETTING (BUNDLE) ....40
2.10 FUNCTION PEN SETTING (BUNDLE)....40
2.11 ALARM SETTING (BUNDLE) ....41
2.12 SELECT DISPLAY PENS....41
2.13 GRAPHIC VIEW SETTING ....42
2.13.1 COMMON INFORMATION ....42
2.13.2 PAGE SETTING....42
2.13.3 PARTS SETTING....43

**3 FILE OPERATION ..... 46**
3.1 READ SETTING FILE ....46
3.2 WRITE SETTING FILE....46
3.3 EXPORT SETTING TO CSV ....47
3.4 CREATE CF DATA....48

**4. ONLINE OPERATION..... 49**
4.1 UPLOAD....49
4.2 DOWNLOAD (All)....49
4.3 DOWNLOAD (Runtime)....49
4.4 REMOTE START / STOP ....50

**APPENDIX – 1. CHANNEL NO. SYSTEMS FOR R1M-P4, R3/R5/R7 SERIES, 53U & IT60RE, ITx0SRE ..... 51**

**APPENDIX – 2. SETTING FILE FORMAT IN CSV ..... 54**

**APPENDIX – 3 SOFTWARE UPDATE HISTORY ..... 56**

# 1. INTRODUCTION

Thank you for choosing our Paperless Recorder.

The 73VR11BLD Users Manual will guide you through the software program views and functions. Please read this manual carefully to ensure the safe use before getting started.

The 73VR11BLD will help you easily and smoothly program parameters for the 73VR1100. It also enables remote setup of the 73VR1100 through Ethernet.

Note 1:

This software program corresponds to 73VR1100 ver. 6.00.x or later.

This users manual corresponds to 73VR11BLD ver. 2.00.x or later.

73VR11BLD (software) ver. 2.00.x or later is unavailable to 73VR1100 (module) ver. 5.04.x or earlier.

73VR11BLD (software) ver. 1.01.x or later is unavailable to 73VR1100 (module) ver. 5.01 or earlier.

Note 2:

Configuration files created with 73VR1100 ver. 5.xx or earlier cannot be read out with ver. 6.xx (If doing so, a failure may occur). In such a case, convert them with the builder software (73VR11BLD) ver.2.xx or later before use.

## 1.1 GENERAL DESCRIPTIONS

| | |
|---|---|
| Configuring the 73VR1100: | Storing setting, Display setting, Input pen setting, function pen setting.<br>Downloading a configuration (setup) file created on the 73VR11BLD to the 73VR1100.<br>Uploading a configuration file stored in the 73VR1100 to the 73VR11BLD.<br>Configuration files can be stored in a storage media such as a hard disk. |
| Remote operating: | Starting / stopping the 73VR1100 operation remotely. |
| Creating a data file: | Creating a data file in a CF Card |
| Exporting configurations to CSV: Configuration files created on the 73VR11BLD can be converted into CSV format. | |

## 1.2 SYSTEM REQUIREMENTS

The PC environment indicated below is recommended for use with the 73VR11BLD.

| | |
|---|---|
| OS | Windows 10 32-bit, 64-bit or Windows 11 64-bit<br>Note: Proper software functions may not be ensured under certain conditions. |
| Screen area | 1024 by 768 pixels or higher |
| Display color | 65000 colors (16-bit) |
| CD drive | Windows supported CD drive is used to install the software programs. |
| Card reader | Used to read/write the CF Card |
| Mouse | Windows supported |
| LAN card | LAN card required to connect to Ethernet (10BASE-T or 100BASE-TX cable) |

## 1.3 INSTALLATION INSTRUCTIONS

When you insert the CD-ROM (model: 73VRPAC2) into your CD drive, the Flash window will appear, where you are prompted to press Enter. With this, the 'Welcome to InstallShield Wizard' will appear. To proceed with the installation, press the program's Install button, and you are prompted to start installation by pressing the Next button successively, and finally press Finish to complete the installation.

If you already have the 73VR11BLD program installed on your PC, uninstall (remove) entirely before newly installing.

If the InstallShield Wizard does not appear automatically, please install manually using Add/Remove Programs in Control Panel in the following sequence.

**■ INSTALL**

1. Double-click the SETUP.exe in "73VR11BLD" folder of the CD-ROM
2. Follow the step-by-step instructions that will appear on dialog boxes.
3. When the installation is successfully completed, "73VR11BLD" will be added to the menu under Programs.

**■ REMOVE**

For Windows 10, open Settings from Start menu > Apps > Apps & features.

Select the 73VR11BLD from the program list and click [Uninstall] button.

Follow the instructions on the screen to uninstall the program.

For Windows 11, open Settings from Start menu > Apps > Installed apps.

Select the [...] of 73VR11BLD from the program list and click [Uninstall] button.

Follow the instructions on the screen to uninstall the program.

Note

1: "Run as administrator" is required.

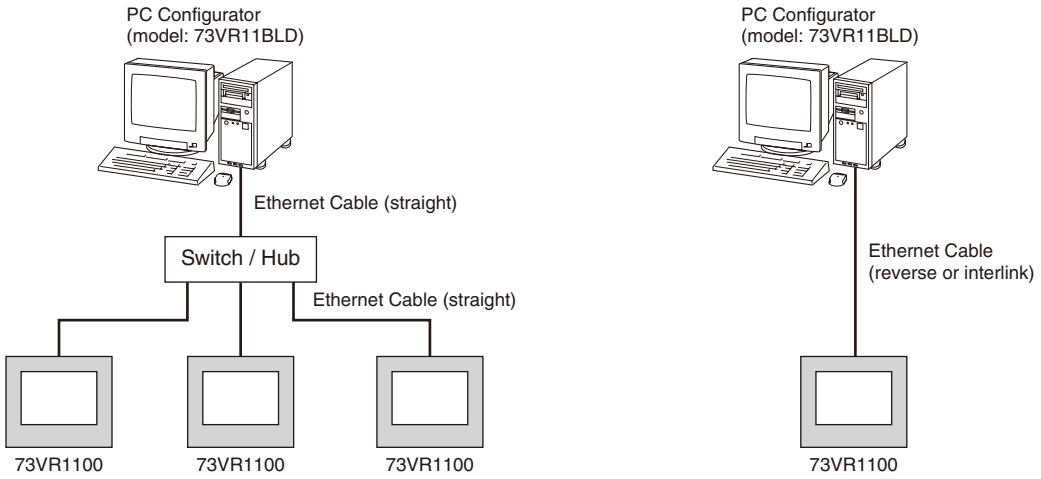
2: If the 'Install or run program' appears in AutoPlay dialog box, allow 73VRPAC2.EXE.

3: If during installation 'An unidentified program wants access to your computer' appears in User Account Control dialog box, then allow SETUP.EXE.

## 1.4 ACCESSING THE 73VR1100 DATA

### 1.4.1 ETHERNET

A PC with the 73VR11BLD installed and the 73VR1100 can communicate through Ethernet. The 73VR1100 must be setup with an IP address in advance. Please refer to the 73VR1100 Users Manual to set the IP address.




#### ■ ETHERNET CABLE TYPE

When connecting the PC and the 73VR1100 via a switching hub, use Straight type cables.

When the 73VR1100 is directly connected to the PC, use a Reverse (interlink) type cable.

We recommend that you will choose connection with straight cables because the reverse cable connection may be unstable.

#### ■ CONFIRMING CONNECTION

If a Connect Error (Socket connector error!) is displayed during connecting procedure, you can use the PING command to check whether a connection is properly established with an input module.

Type the PING command at the MS-DOS prompt window, and in response to the command...

```
C:\WINDOWS > ping ***.***.***.***
```

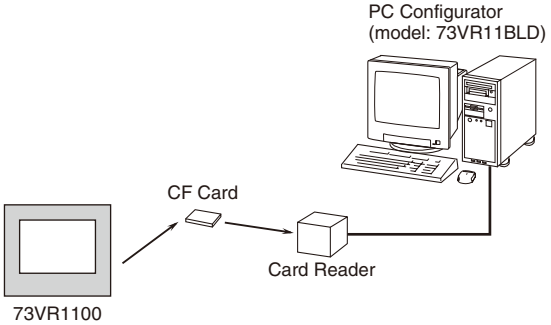
(For ***.***.***.***, enter the IP address in decimal format.)

```
ping ***.***.***.*** with 32 bytes of data:
Reply from ***.***.***.***:bytes = 32 time < 10ms TTL = 64
Reply from ***.***.***.***:bytes = 32 time < 10ms TTL = 64
Reply from ***.***.***.***:bytes = 32 time < 10ms TTL = 64
Reply from ***.***.***.***:bytes = 32 time < 10ms TTL = 64
Ping statistics for ***.***.***.***
Packets:Sent = 4, Received = 4, Lost = 0(0% loss)
```

...in response to the PING command, if a proper connection is established, the above response is returned. If a connection error takes place due to a wrong IP address you've typed, a 'time expired' notification will be shown.

### 1.4.2 CF CARD

In order to import data from a CF Card, a CF Card Reader is required.



## 1.5 HOW TO START UP & EXIT

Go to Programs > 73VR > 73VR11BLD, and then the 73VR1100 PC Configurator window shown in the figure below will appear. To terminate the program, press the Close button [X] on the right-top of the window.

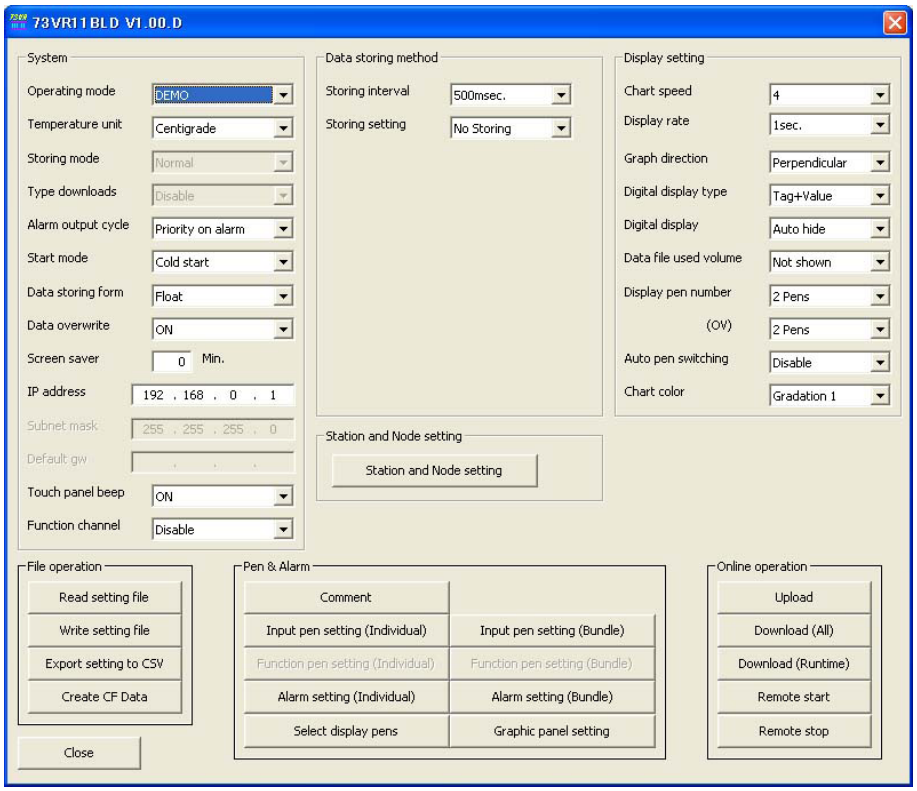



**Figure 1.5. Initial view.**

In order to quit the window, click [Close] button at the right-bottom.

### Caution !

DO NOT change the 73VR1100 configuration while the FTP convert command is executed on the 73VR Data Viewer (model: 73VRWV).

# 2. SETTING ON THE 73VR11BLD

## 2.1 SYSTEM SETTING

The System setting menu appears as below.

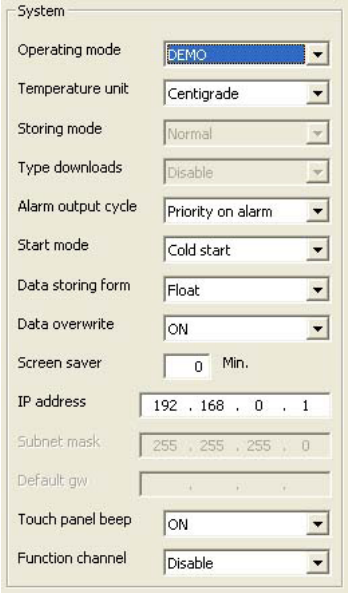



**Figure 2.1. System setting.**

### 2.1.1 OPERATING MODE

Choose among the following options.

| | | |
|---|---|---|
| DEMO | Demonstration mode | You can run the 73VR1100 program without actual signal input for learning, evaluation and demonstration when you choose DEMO. |
| Modbus RTU | RS-485 connection | Choose this option when you connect actual input signals to the 73VR1100 via RS-485. |
| Modbus/TCP | Ethernet connection | Choose this option when you connect actual input signals to the 73VR1100 via Ethernet. |

### 2.1.2 TEMPERATURE UNIT

Choose among the following options.

When the temperature unit for the R3, R5 and/or R7 modules is set to K (absolute temperature) by the PC Configurator Software, choose Centigrade on the 73VR1100.

| | |
|---|---|
| Centigrade | Centigrade (Celsius) |
| Fahrenheit | Fahrenheit |

### 2.1.3 STORING MODE

Choose among the following options when you have chosen Modbus/TCP operating mode.

| | |
|---|---|
| Normal | 500 msec. storing rate |
| High speed | 100 msec. storing rate |

### 2.1.4 TYPE DOWNLOADS

Choose Yes when you need to automatically configure ranges from the 73VR1100 for the field I/O modules (e.g. R1M-GH2) connected via a communication adaptor (e.g. 72EM2-M4).

When you have the following I/O modules, no downloading is available from the 73VR1100. Choose No for: R3, R5, R7 and 53U.

| | |
|---|---|
| Yes | Type downloading |
| No | No type downloading |

### 2.1.5 DATA CYCLE

The Data Cycle specifies the timing of alarm monitoring. Choose among the following options. Refer to the 73VR1100 Users Manual (EM-7399-C) to choose the most appropriate option

| | |
|---|---|
| Priority on alarm | Default (normal) setting. Priority is set to alarm monitoring. The 73VR1100 monitors alarm output status once after monitoring every node. |
| Priority on sampling | The 73VR1100 monitors alarm output status once after monitoring all nodes. |
| No alarm | No discrete output regardless of alarm setting. Priority is set to input signal monitoring. |

### 2.1.6 START MODE

Choose among the following options.

| | |
|---|---|
| Cold Start | At a restart, the 73VR1100 stands by showing the initial view. |
| Hot Start | At a restart, the 73VR1100 automatically starts recording. |

### 2.1.7 DATA STORING FORM

Choose among the following options.

| | | |
|---|---|---|
| Float | Floating point | 1 data size: 4 bytes |
| Short int | Short integer | Integer data multiplied by 10 (2-byte-long data) |

**WHICH FORM TO CHOOSE? -- EXAMPLE**

If you have selected Short integer, and when an input range 1 – 5V is converted in an engineering unit range of 0 – 10, the actual converted values are: 0 at 1V input, 0.25 at 1.1V. In this case, the 73VR1100 can store only one decimal place, and '0.25' is saved only as '0.2.' Likewise, the input 1.15V is converted into 0.275 in the engineering unit range, but is saved also as '0.2.' 1.1V and 1.15V inputs make no difference in the short integer form.

Choose Float if you want to make difference between 1.1V and 1.15V.

**CAUTION**

Choose Float to store the following data types: R1M-A1 (totalized pulse count), R1M-P4 (totalized pulse count), R3-PA4A, R3-PA4B, R3(S)-PA, R3-PA2 (position data), R3-WTU, R3-WT4(A/B), 53U.

### 2.1.8 DATA OVERWRITE

Data can be overwritten when the data file is full.

| | |
|---|---|
| ON | The oldest data is replaced with a new data when the file capacity is full. |
| OFF | The 73VR1100 stops recording when the file capacity is full. |

### 2.1.9 SCREEN SAVER

The LCD display's backlight can be turned off when the screen is untouched for a specific time period. Enter a desired time in minutes to initiate the screen saver.

| | |
|---|---|
| Screen saver time setting | Selectable range: 0 to 99 (minutes)<br>The screensaver function is deactivated with the time set to zero (0). |

### 2.1.10 IP ADDRESS, SUBNET MASK, DEFAULT GATEWAY

In order to connect the 73VR1100 to a PC via Ethernet when using the 73VR11BLD (Builder), set an appropriate IP address.

Enter the IP address assigned to the 73VR1100.

| | |
|---|---|
| IP address | Factory default setting: 192.168.0.1 |

The subnet mask and the default gateway are given only for indication. They are not modifiable.

### 2.1.11 TOUCH PANEL BEEP

You can specify if you want a beep sound or not whenever you touch the screen of the 73VR1100.

| | |
|---|---|
| OFF | Beep sound is off. |
| ON | Beep sound is on. |

### 2.1.12 FUNCTION CHANNEL

Specify how many channels among the total channels (64 in High Speed mode, 128 in Normal mode) you want to use for Function pens.

| | |
|---|---|
| Disable | Function channels are not used. |
| 32 | 32 channels are for Function. |
| 64 | 64 channels are for Function. (Not selectable in High Speed mode) |

## 2.2 DATA STORING METHOD

The Data storing method setting menu appears as below.

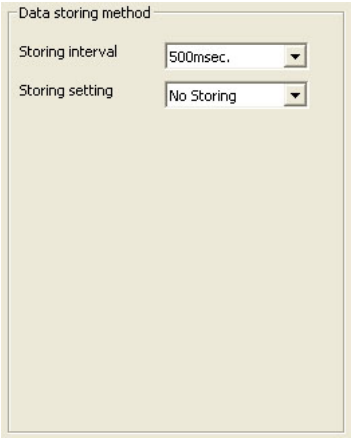



**Figure 2.2. Data storing method.**

### 2.2.1 STORING INTERVAL

The data is stored in time intervals preset as the Storing interval. Choose among the following options:

| | |
|---|---|
| 100msec. | 100 milliseconds (High Speed mode only) |
| 500msec. | 500 milliseconds |
| 1sec. | 1 second |
| 2sec. | 2 seconds |
| 5sec. | 5 seconds |
| 10sec. | 10 seconds |
| 1min. | 1 minute |
| 10min. | 10 minutes |

Total recording time in a CF Card depends upon the storing interval selection. Selecting greater storing interval allows longer recording time, though the data are more thinned, which may jeopardize the data accuracy.

**CAUTION !**

When the storing interval setting is changed, previously stored data are overwritten with new data.

### 2.2.2 STORING SETTING

There Five (5) storing modes as explained below:

| | | |
|---|---|---|
| No storing | No recording | Data is plotted on the chart or displayed on the digital meter or bargraph, but no data is stored in the CF Card. |
| Normal | Normal storing mode | Recording is manually initiated and stopped. Data is continuously stored while the recording is on. |
| Remote trigger | Remote trigger recording mode | Data is automatically recorded while the external trigger condition (analog or discrete input) is true. |
| Event recording | Event recording mode | The 73VR1100 detects an external event by trigger signal, and stores preset number of samples (max. 1200 respectively) before and after the moment of event. |
| Time specified | Store at defined time mode | Recording is automatically initiated and stopped at a predefined time. |

## REMOTE TRIGGER RECORDING

In the remote trigger recording mode, data is automatically stored while the external trigger condition (analog or discrete input) is true.

With an analog trigger, the signal are continuously compared with a preset threshold, and the 73VR1100 starts and stops recording when it is in a pre-determined condition (higher or lower than the threshold).

With a discrete trigger, the signal logic state is continuously monitored, and the 73VR1100 starts and stops recording when it is turned to a pre-determined state (ON or OFF).

### ■ Trigger Conditions for Analog

| | |
|---|---|
| Value > Threshold | Data is stored while the trigger input signal value is higher than the threshold setpoint. |
| Value < Threshold | Data is stored while the trigger input signal value is lower than the threshold setpoint. |
| Value ≥ Threshold | Data is stored while the trigger input signal value is equal to or higher than the threshold setpoint. |
| Value ≤ Threshold | Data is stored while the trigger input signal value is equal to or lower than the threshold setpoint. |

### ■ Trigger Conditions for Discrete

| | |
|---|---|
| ON | Data is stored while the trigger input signal logic is ON. |
| OFF | Data is stored while the trigger input signal logic is OFF. |

### How to Set the Remote Trigger Recording

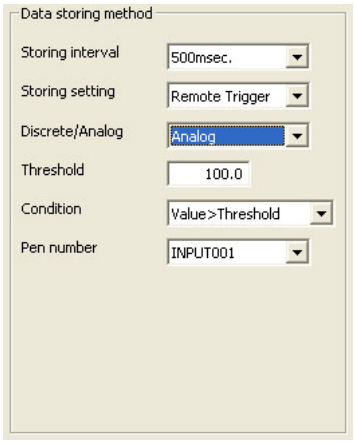



**Figure 2.2.2. Remote trigger setting, analog.**

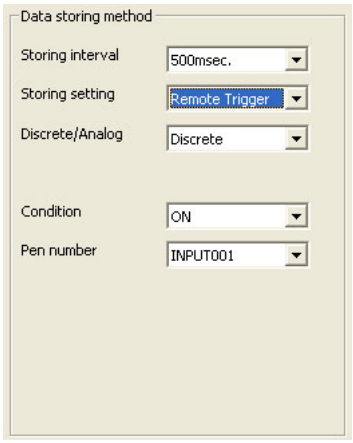



**Figure 2.2.2a. Remote trigger setting, discrete.**

1. Storing setting: Pull down the arrow to the right of Storing Field and select Remote trigger. Choosing the Remote trigger on the Data storing method view changes the subsequent menu items to those suitable for the remote trigger recording mode.
2. Discrete / Analog: Choose a type of trigger signal.

| | | |
|---|---|---|
| Discrete | Contact signal trigger | A discrete signal triggers recording. |
| Analog | Analog signal trigger | An analog signal triggers recording. |

3. Threshold: For analog signals, set a threshold in an engineering unit value.

| | |
|---|---|
| Threshold | Engineering unit value. Max. 6 digits including decimal point and minus (–) sign. 'e' is used to set an exponential value. |

4. Condition: Choose among the abovementioned options.
5. Pen number: Choose the tag name of the pen to be designated as trigger.

## EVENT RECORDING

In the event recording mode, the 73VR1100 detects an external event by trigger signal, and stores preset number of samples (max. 1200 respectively) before and after the moment of event.

With an analog trigger, the trigger signal is continuously compared with a preset threshold, and the 73VR1100 initiates recording when it is in a pre-determined condition (higher or lower than the threshold).

With a discrete trigger, the signal logic state is continuously monitored, and the 73VR1100 initiates recording when it is turned to a pre-determined state (ON or OFF).

### ■ Trigger Conditions for Analog

| | |
|---|---|
| Value > Threshold | Data recording is initiated when the trigger input signal value goes above the threshold setpoint. |
| Value < Threshold | Data recording is initiated when the trigger input signal value goes below the threshold setpoint. |
| Value ≥ Threshold | Data recording is initiated when the trigger input signal values is equal to or goes above the threshold setpoint. |
| Value ≤ Threshold | Data recording is initiated when the trigger input signal values is equal to or goes below the threshold setpoint. |

### ■ Trigger Conditions for Discrete

| | | |
|---|---|---|
| Up | Rising pulse edge | Data recording is initiated at a rising edge of the trigger input pulse. |
| Down | Sinking pulse edge | Data recording is initiated at a sinking edge of the trigger input pulse. |

### How to Set the Event Recording

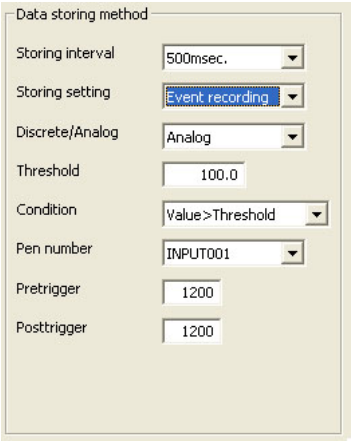



**Figure 2.2.2b. Event recording setting, analog.**

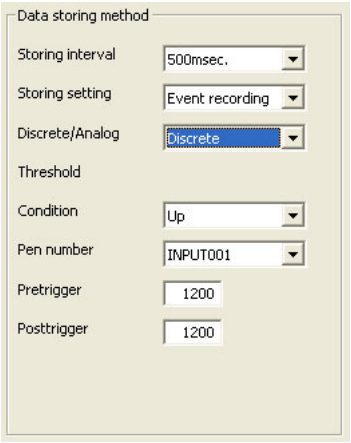



**Figure 2.2.2c. Event recording setting, discrete.**

1. Storing setting: Pull down the arrow to the right of Storing Field and select Event recording. Choosing the Event recording on the Data storing method view changes the subsequent menu items to those suitable for the event recording mode.
2. Discrete / Analog: Choose a type of trigger signal.

| | | |
|---|---|---|
| Discrete | Contact signal trigger | A discrete signal triggers recording. |
| Analog | Analog signal trigger | An analog signal triggers recording. |

3. Threshold: For analog signals, set a threshold in an engineering unit value.

| | |
|---|---|
| Threshold | Engineering unit value. Max. 6 digits including decimal point and minus (–) sign. 'e' is used to set an exponential value. |

4. Condition: Choose among the aforementioned options.
5. Pen number: Choose the tag name of the pen to be designated as trigger.

6. Pretrigger / Posttrigger: Specify numbers of samples to be stored before (Pretrigger) and after (Posttrigger) the event respectively.

| | | |
|---|---|---|
| Pretrigger | Number of pretrigger samples | Max. 1200 samples. Pretrigger recording is NOT applicable with the storing intervals set to 2 seconds or longer. |
| Posttrigger | Number of posttrigger samples | Max. 1200 samples. |

**STORE AT A DEFINED TIME MODE**

In the store at a defined time mode, recording is automatically initiated and stopped at a predefined time.

Choose either 'One Time Only' or 'Every Day' under Condition option.

| | |
|---|---|
| One Time Only | Data is stored once at a predefined time. Specify Year-Month-Day and Hour-Min-Sec. to start the recording and the time duration. |
| Every Day | The 73VR1100 runs recording once per day at a predefined time. Specify Hour-Min-Sec. to start the recording and the time duration. |

**How to Set the Store-at-a-Defined-Time Mode**

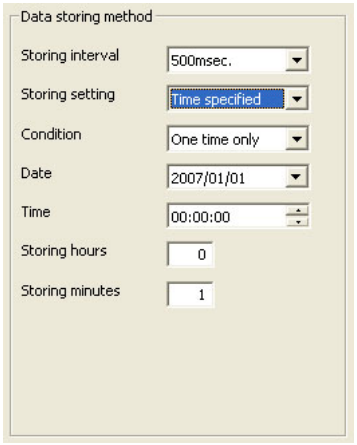



**Figure 2.2.2d. Store at a defined time, one day only.**

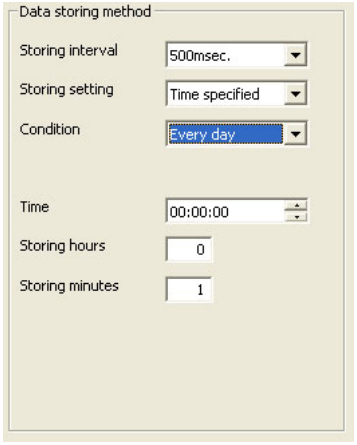



**Figure 2.2.2e. Store at a defined time, every day.**

1. Storing setting: Pull down the arrow to the right of Storing Field and select Time Specified. Choosing the Time Specified recording on the Data storing method view changes the subsequent menu items to those suitable for the storing mode.
2. Specify when you want to start recording (Date / time) and the time duration (Storing hours / min). With Every day setting, 'Date' is not indicated.

| | |
|---|---|
| Date and/or time | Specify date and/or time to start recording. |
| Storing hours / min | Specify time duration of a recording. 'Hours' selectable between 0 and 23, 'Minutes' selectable between 0 and 59. |

### How to Specify Date

You can either directly enter the date in the data fields, or use a calendar appearing on the screen when you click the arrow to the right of the Date field.

In order to change Year, click on the year description on top, and use UP/DOWN selector appearing to the right.

In order to change Month, click the arrows on top to go forward or back month by month, or alternatively, click the month description to open the options to choose.

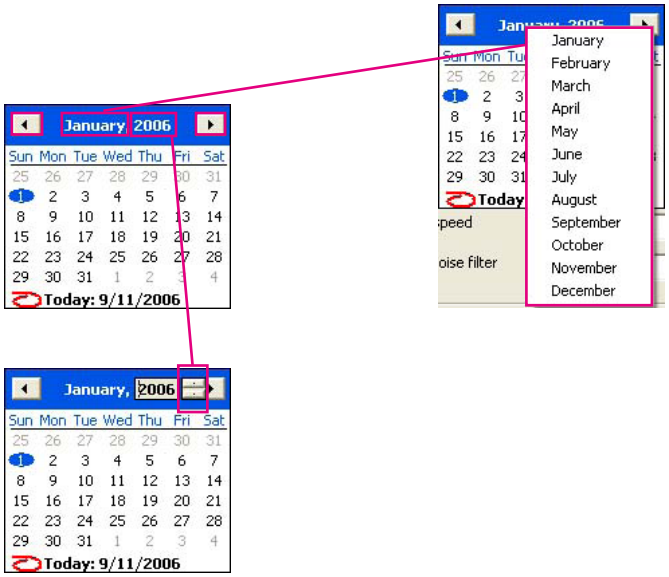



**Figure 2.3.2f. Calendar.**

## 2.3 DISPLAY SETTING

The Display setting menu appears as below.

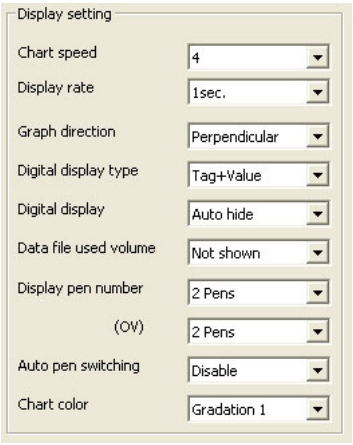



**Figure 2.3. Display setting.**

### 2.3.1 CHART SPEED

Choose among the options in the table below. The numbers show how many pixels are used for one sample data. For example, if you choose '4,' one sample is plotted 4 pixels further than the previous one, and two sample points are connected to create a trend graph.

The chart speed options may be limited when certain storing intervals are selected. Refer to the table below.

| STORING INTERVAL / CHART SPEED | 4 | 1 | 1/5 | 1/32 | 1/160 | 1/480 | 1/960 |
|---|---|---|---|---|---|---|---|
| 100 msec. | Yes | Yes | Yes | Yes | No | No | No |
| ≥ 500 msec. | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

### 2.3.2 DISPLAY RATE

Choose among the following options:

| | |
|---|---|
| 1 sec. | Display values updated by every 1 second |
| 2 sec. | Display values updated by every 2 seconds |
| 5 sec. | Display values updated by every 5 seconds |

### 2.3.3 GRAPH DIRECTION

You can specify if you want to show the chart in the perpendicular direction or the horizontal direction. Choose among the following options:

| | |
|---|---|
| Perpendicular | Perpendicular direction |
| Horizontal | Horizontal direction |

### 2.3.4 DIGITAL DISPLAY TYPE

Choose among the following options:

| | |
|---|---|
| Tag + Value | The momentary value and the tag name of the data plotted on the screen. |
| Tag | The tag name of the data plotted on the screen. |
| Value | The momentary value of the data plotted on the screen. |

### 2.3.5 DIGITAL DISPLAY

Choose among the following options:

| | |
|---|---|
| Auto hide | Digital display is automatically hidden in 30 seconds after it appears on the screen. Touch the area of the display to call it up. |
| Continuous | Digital display remains on the screen. |

### 2.3.6 DATA FILE USED VOLUME SETTING

The Overview and the Bargraph view can show a bargraph how much volume of the data file has been used.

| | |
|---|---|
| Not shown | Data file used volume bargraph is not shown. |
| Show | Data file used volume bargraph is shown. |

### 2.3.7 DISPLAY PEN NUMBER

You can specify how many pens you want to show on the Trend and Bargraph views. Choose from 2, 4, 6 and 8.

### 2.3.8 DISPLAY PEN NUMBER (OV)

You can specify how many pens you want to show on the Overview. Choose from 2, 4, 6, 8 and 16.

### 2.3.9 AUTO PEN SWITCHING

You can automatically switch the pens on the enlarged digital display on the screen.

| | |
|---|---|
| Enable | Once the enlarged digital display is activated on the screen, pens are automatically switched from one to another. |
| Disable | Digital display remains on the same pen when the enlarged digital display is activated. |

### 2.3.10 CHART COLOR

You can specify different color and style for the chart. Choose among the following options: Gradation 1, Gradation 2, Plain (Light), Plain (Dark), Plain (White).

## 2.4 STATION & NODE SETTING

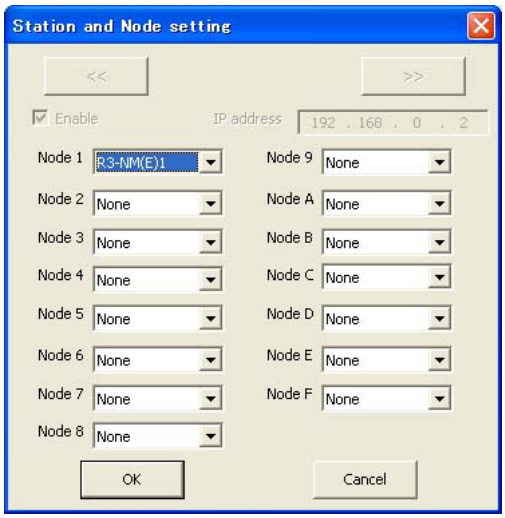



**Figure 2.4. Station and Node setting.**

### 2.4.1 STATION NO.

When Modbus RTU is selected for connection, Station No. setting is not necessary.

1. Choose Station No. and check Enable.
2. Enter IP address of the connected device (R3-NE1, R5-NE1, R7E, IT60RE, ITx0SRE or 72EM2-M4).

**Note**

Use the R3CON PC Configurator to set an IP address for the R3-NE1.

Use the R5CON PC Configurator to set an IP address for the R5-NE1.

Use the R7CON PC Configurator to set an IP address for the R7E.

Use the ITCFG PC Configurator to set an IP address for the IT60RE, ITx0SRE.

Use a web browser to set an IP address for the 72EM2-M4. Refer to the instruction manual for the 72EM2-M4.

### 2.4.2 NODE NO.

Choose I/O devices connected to each station.

With High Speed mode, only Node 1 is selectable, with the R3-NE1 as its input device.

With Normal mode, specify Node 1 through Node F.

Be sure to set this part correctly since it will affect other settings for input pens and alarms.

Be sure to specify 'None' for the nodes without any I/O.

1. With Modbus/TCP connection, choose Station No. and check Enable.
2. Choose I/O device connected to each node.

   When the 72EM2-M4 is used, specify those connected to it.

   In order to count pulses at rising edges with the R1M-P4, choose R1M-P4(–). In order to count pulses at sinking edges with the R1M-P4, choose R1M-P4(+).

   With R5 series, choose R5-NM(E)11 for Data Allocation Mode 1, R5-NM(E)12 for Data Allocation Mode 2.

## 2.5 COMMENT

You can set up a list of comments to be used on the Trend view.

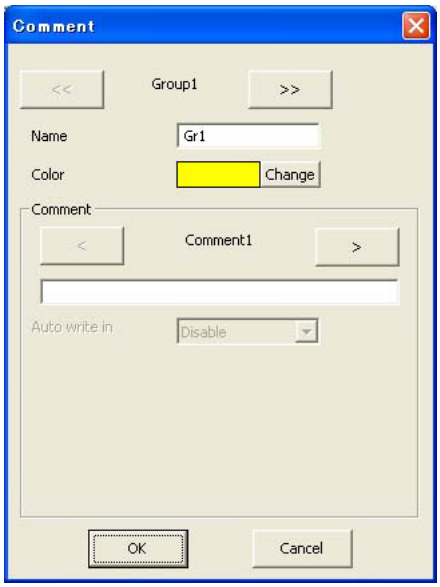



**Figure 2.5. Comment.**

### 2.5.1 GROUP

The maximum of 7 groups of 8 comments can be created. The 7th group is for free comment entry during recording. Use [ << ] and [ >> ] buttons to move between groups.

DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

**Name**

| | |
|---|---|
| Name | Max. 10 characters |

**Color**

A specific color is applied to each group. Comments are shown in this color in the Trend view and also in the Comment History.

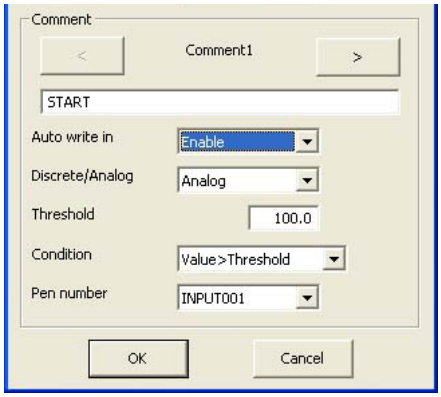
**Comment**

Use [ < ] and [ > ] buttons to move between comments. Max. 8 comments are selectable.

| | |
|---|---|
| Comment | Max. 30 characters |

### Auto write in

You can automatically write predetermined comments when certain preset conditions are true.




| | |
|---|---|
| Enable | Comment is automatically written in. Specify conditions. |
| Disable | Comment is manually written in, either by choosing from the list or by entering a free comment. |

### Discrete/Analog

Specify the signal type (analog or discrete) that you want to use to trigger the automatic comment entry.

### Threshold

Specify the threshold value for analog trigger signal.

| | |
|---|---|
| Threshold | Max. 6 digits including a decimal point and minus sign |

### Condition

For analog trigger signal, the following conditions can be used to trigger the comment entry.

| | |
|---|---|
| Value > Threshold | The comment is written in when the subject pen signal goes above the analog trigger signal value. |
| Value < Threshold | The comment is written in when the subject pen signal goes below the analog trigger signal value. |
| Value ≥ Threshold | The comment is written in when the subject pen signal is equal to or goes above the analog trigger signal value. |
| Value ≤ Threshold | The comment is written in when the subject pen signal is equal to or goes below the analog trigger signal value. |

For discrete trigger signal, the following conditions can be used to trigger the comment entry.

| | |
|---|---|
| Up | The comment is written in when the subject pen signal turns from OFF to ON. |
| Down | The comment is written in when the subject pen signal turns from ON to OFF. |

### Pen number

Choose the tag name for the pen used as the trigger signal.

**Caution !**

Number of comment written per 1 sampling

- When writing comment occurs per every sampling, be sure to set not more than 5 points for writing comment per 1 sampling.

## 2.6 INPUT PEN SETTING (INDIVIDUAL)

Pressing Input Pen Setting (Individual) button under Setting buttons opens the window shown in Figure 2.6.

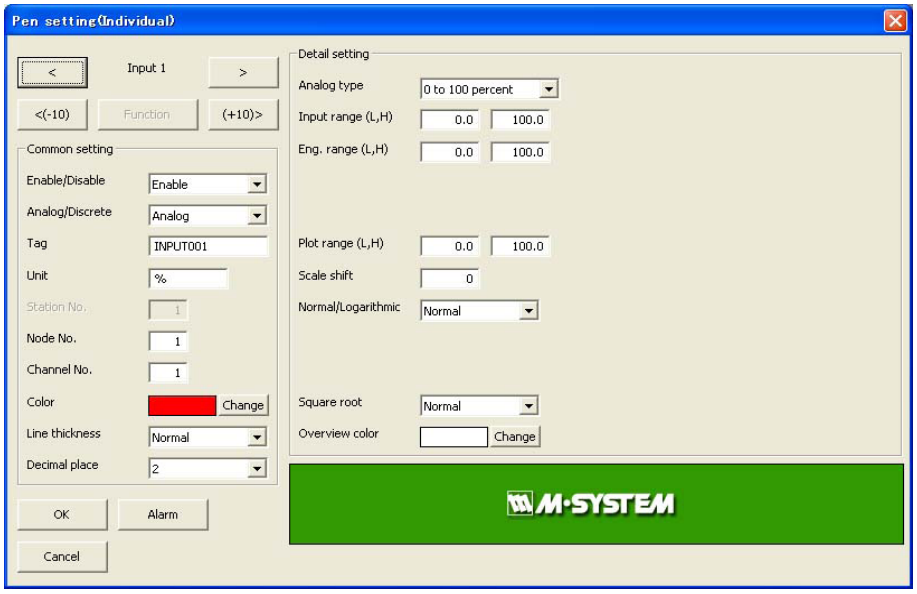



**Figure 2.6. Input pen setting (Individual).**

### 2.6.1 COMMON SETTING

#### Enable / Disable

Enable / Disable the recording. The pen's input data is stored when this selection is set to Enable.

#### Analog / Discrete

Choose Analog or Discrete signal for the pen so that the rest of the setting will be appropriately arranged.

#### Tag

Enter a desired tag name.

DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

| | |
|---|---|
| Tag name | Max. 8 characters |

#### Unit

Enter a desired unit name.

DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

| | |
|---|---|
| Unit | Max. 4 characters |

#### Station No., Node No., Channel No.

Touching the current selection of each item opens an alphanumeric key-panel. Identify the input signal for the pen.

When Modbus RTU is selected for connection, Station No. setting is not necessary.

The R1M-P4, R3 and R5 series, and the 53U use different channel numbering systems. Refer to Appendix – 1 for detailed information.

#### Color

Choose a desired color from the palette.

#### Line thickness

This setting is selectable even during recording.

| | |
|---|---|
| Normal | Normal line (1 pixel) |
| Thick | Thick line (3 pixels) |

### Decimal place

Specify how many decimal places you want to show on the digital indicators and the scale. Choose among 0, 1, 2 and 3. For thermocouple and RTD input with the R3 and R5 series, only '0' or '1' is selectable. For COUNT, COUNT16 or COUNT32 input, only '0' is selectable.

Plot range with decimal place on the scale

Plot range in an engineering unit can be indicated on the scale in Trend and Bargraph views. For example, when the lower range is set to 0, and the upper range is set to 1000, the scale shows 10 divisions (0, 100, 200, ... 900, 1000). How many decimal places are to be shown depends upon the 'Decimal place' setting. For example, when '2' decimals are selected, the scale shows two decimal places.

With the horizontal chart setting, only one decimal place is selectable.

## 2.6.2 DETAILED SETTING

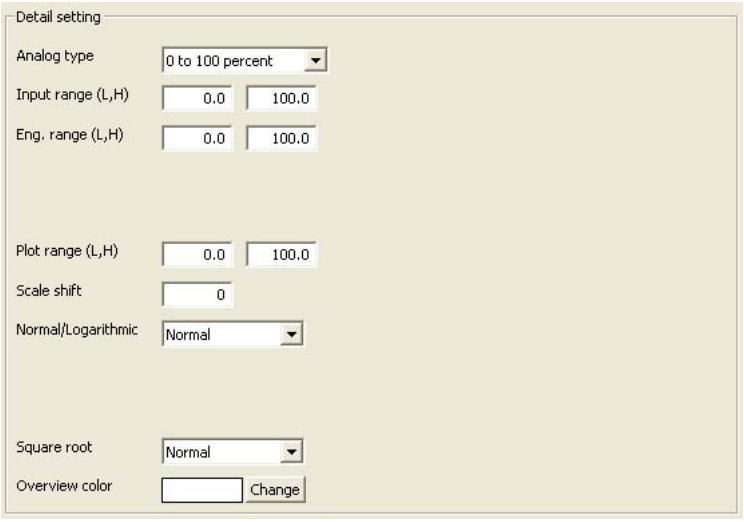



**Figure 2.6.2. Detailed setting, analog.**

### Analog type

Selectable signal types and input ranges are as shown in the tables in the following page.

Pull down and choose from the selection list (selections limited to the input device selected for the node).

### Input range

Selectable signal types and input ranges are as shown in the tables in the following page. For DC input, choose the upper and lower range values (0% and 100%) within the measurable range. For temperature input, the input range is equal to the measurable range, thus fixed.

'e' can be used to input an exponential value such as '1e9.' Entering 'e' in any other way (e.g. '1ee') will not be recognized as a numeral.

| | |
|---|---|
| Input range | Max. 6 digits including a decimal point and minus sign |

## ■ MULTI POWER MONITOR 53U INPUT TYPES

| DEVICE TYPE | PARAMETER | ANALOG TYPE ID | RANGE (UNIT) |
|---|---|---|---|
| 53U | Current | I | 0 to 2e9 (mA) |
| | Voltage | U | 0.00 to 2.00e7 (V) |
| | Active power | P | -2e9 to 2e9 (W) |
| | Reactive power | Q | -2e9 to 2e9 (var) |
| | Apparent power | S | 0 to 2e9 (VA) |
| | Power factor | PF | -1.00 to 1.00 |
| | Frequency | F | 0 or 40.00 to 70.00 (Hz) |
| | Phase direction | DIR | 0 or 1 |
| | Active energy | EP | 0 to 1.0e8 (kWh) |
| | Reactive energy | EQ | 0 to 1.0e8 (kvarh) |
| | Apparent energy | ES | 0 to 1.0e8 (kVAh) |
| | Energy count time | TIMER | 0 to 1.0e8 (hours) |
| | Harmonic distortion | THD | 0 to 999.9 (%) |
| | | HD | 0 to 999.9 (%) |

## ■ PC RECORDER R1M, R1MS AND INPUT TYPES

| MODEL | I/O TYPE | SELECTIONS | DEFAULT | USABLE RANGE | | NOTE |
|---|---|---|---|---|---|---|
| R1M-GH2 | DC input | -20 – 20 V | 0 – 20 V | -22.7 – 22.7 V | | ATT SW ON |
| | | -5 – 5 V | 1 – 5 V | -5.6 – 5.6 V | | ATT SW ON |
| | | -1 – 1 V | 0 – 1 V | -1.4 – 1.4 V | | ATT SW ON |
| | | -800 – 800 mV | 0 – 800 mV | -860 – 860 mV | | |
| | | -200 – 200 mV | 0 – 200 mV | -215 – 215 mV | | |
| | | -50 – 50 mV | 0 – 50 mV | -53 – 53 mV | | |
| | | -10 – 10 mV | 0 – 10 mV | -13.4 – 13.4 mV | | |
| R2M-2G3 | DC input | -10 – 10 V | 0 – 10 V | -10 – 10 V | | |
| R1MS-GH3 | DC input | -10 – 10 V | 0 – 10 V | -10 – 10 V | | |
| | | | | °C | °F | |
| R1M-GH2 | T/C input | (PR) | | 0 – 1770 | 32 – 3218 | |
| R2M-2H3 | | K (CA) | | -270 – 1370 | -454 – 2498 | |
| R1MS-GH3 | | E (CRC) | | -270 – 1000 | -454 – 1832 | |
| | | J (IC) | | -210 – 1200 | -346 – 2192 | |
| | | T (CC) | | -270 – 400 | -454 – 752 | |
| | | B (RH) | | 100 – 1820 | 212 – 3308 | |
| | | R | | -50 – 1760 | -58 – 3200 | |
| | | S | | -50 – 1760 | -58 – 3200 | |
| | | C (WRe 5-26) | | 0 – 2320 | 32 – 4208 | |
| | | N | | -270 – 1300 | -454 – 2372 | |
| | | U | | -200 – 600 | -328 – 1112 | |
| | | L | | -200 – 900 | -328 – 1652 | |
| | | P (Platinel II) | | 0 – 1395 | 32 – 2543 | |
| R1M-J3 | RTD input | JPt 100 (JIS '89) | | -200 – 500 | -328 – 932 | |
| | | Pt 100 (JIS '89) | | -200 – 660 | -328 – 1220 | |
| | | Pt 100 (JIS '97, IEC) | | -200 – 850 | -328 – 1562 | |
| | | Pt 50 Ω (JIS '81) | | -200 – 649 | -328 – 1200 | |
| | | Ni 508.4 Ω | | -50 – 280 | -58 – 536 | |
| | | Pt 1000 | | -200 – 850 | -328 – 1562 | |
| | POT input | 0 – 100 Ω | 0 – 100 % | 0 – 100 % | | |
| | | 0 – 500 Ω | 0 – 100 % | 0 – 100 % | | |
| | | 0 – 1 kΩ | 0 – 100 % | 0 – 100 % | | |
| | | 0 – 10 kΩ | 0 – 100 % | 0 – 100 % | | |
| R1M-D1 | DO | | | | | |
| R1M-P4 | DO | | | | | |
| R1M-A1 | DI | | | | | |
| R1M-P4 | DI | | | | | |
| R1M-P4 | Counter | COUNT | 0 – 1e9 | 0 – 1e9 | | |
| | | PULSE | 0 – 10000 | 0 – 10000 | | |
| R1M-A1C1 | Counter | COUNT | 0 – 1e9 | 0 – 1e9 | | |

■ **PC RECORDER RZMS-U9**

| MODEL | I/O TYPE | SELECTIONS | DEFAULT | USABLE RANGE | | NOTE |
|---|---|---|---|---|---|---|
| RZMS-U9 | DC input | -60 – 60 mV | 0 – 60 mV | -60 – 60 mV | | |
| | | -125 – 125 mV | 0 – 125 mV | -125 – 125mV | | |
| | | -250 – 250 mV | 0 – 250 mV | 250 – 250 mV | | |
| | | -500 – 500 mV | 0 – 500 mV | -500 – 500 mV | | |
| | | -1000 – 1000 mV | 0 – 1000 mV | -1000 – 1000 mV | | |
| | | -3 – 3 V | 0 – 3 V | -3 – 3 V | | |
| | | -6 – 6 V | 0 – 6 V | -6 – 6 V | | |
| | | -12 – 12 V | 0 – 12 V | -12 – 12 V | | |
| | T/C input | | | °C | °F | |
| | | (PR) | | 0 – 1770 | 32 – 3218 | |
| | | K (CA) | | -270 – 1370 | -454 – 2498 | |
| | | E (CRC) | | -270 – 1000 | -454 – 1832 | |
| | | J (IC) | | -210 – 1200 | -346 – 2192 | |
| | | T (CC) | | -270 – 400 | -454 – 752 | |
| | | B (RH) | | 100 – 1820 | 212 – 3308 | |
| | | R | | -50 – 1760 | -58 – 3200 | |
| | | S | | -50 – 1760 | -58 – 3200 | |
| | | C (WRe 5-26) | | 0 – 2320 | 32 – 4208 | |
| | | N | | -270 – 1300 | -454 – 2372 | |
| | | U | | -200 – 600 | -328 – 1112 | |
| | | L | | -200 – 900 | -328 – 1652 | |
| | | P (Platinel II) | | 0 – 1395 | 32 – 2543 | |
| | RTD input | JPt 100 (JIS '89) | | -200 – 510 | -328 – 950 | |
| | | Pt 100 (JIS '89) | | -200 – 660 | -328 – 1220 | |
| | | Pt 100 (JIS '97, IEC) | | -200 – 850 | -328 – 1562 | |
| | | Pt 50 Ω (JIS '81) | | -200 – 649 | -328 – 1200 | |
| | | Ni 508.4 Ω | | -50 – 280 | -58 – 536 | |
| | | Ni 100 | | -80 – 260 | -112 – 500 | |
| | | Ni 120 | | -80 – 260 | -112 – 500 | |
| | | Ni-Fe 604 | | -200 – 200 | -328 – 392 | |
| | | Pt 200 | | -200 – 850 | -328 – 1562 | |
| | | Pt 300 | | -200 – 850 | -328 – 1562 | |
| | | Pt 400 | | -200 – 850 | -328 – 1562 | |
| | | Pt 500 | | -200 – 850 | -328 – 1562 | |
| | | Pt 1000 | | -200 – 850 | -328 – 1562 | |
| | | Cu 10 @25°C | | -50 – 250 | -58 – 482 | |
| | POT input | POT200 | 0 – 100 % | 0 – 100 % | | |
| | | POT500 | 0 – 100 % | 0 – 100 % | | |
| | | POT5k | 0 – 100 % | 0 – 100 % | | |

■ **REMOTE I/O R3 SERIES INPUT TYPES**

| MODEL | I/O TYPE | SELECTIONS | INPUT RANGE | |
|---|---|---|---|---|
| | | | °C | °F |
| R3-TSx | Thermocouple input | (PR) | 0 – 1760 | -62 – 3200 |
| | | K (CA) | -270 – 1370 | -454 – 2498 |
| | | E (CRC) | -270 – 1000 | -454 – 1832 |
| | | J (IC) | -210 – 1200 | -346 – 2192 |
| | | T (CC) | -270 – 400 | -454 – 752 |
| | | B (RH) | 100 – 1820 | 212 – 3308 |
| | | R | -50 – 1768 | -58 – 3214 |
| | | S | -50 – 1768 | -58 – 3214 |
| | | C (WRe 5-26) | 0 – 2315 | 32 – 4199 |
| | | N | -270 – 1300 | -454 – 2372 |
| | | U | -200 – 600 | -328 – 1112 |
| | | L | -200 – 900 | -328 – 1652 |
| | | P (Platinel II) | 0 – 1395 | 32 – 2543 |
| R3-RS4, R3(Y)-RS8 | RTD input | Pt 100 (JIS '97, IEC) | -200 – 850 | -328 – 1562 |
| | | Pt 100 (JIS '89) | -200 – 660 | -328 – 1220 |
| | | JPt 100 (JIS '89) | 200 – 510 | -328 – 950 |
| | | Pt 50 Ω (JIS '81) | -200 – 649 | -328 – 1200 |
| | | Ni 100 | -80 – 250 | -112 – 482 |
| | | Cu 10 @25°C | 50 – 250 | -58 – 482 |
| | | Pt 1000 *1 | -200 – 850 | -328 – 1562 |
| | | Ni 508.4 Ω *1 | -50 – 200 | -58 – 392 |
| | | Cu 50 | -50 – 150 | -58 – 302 |
| | | Ni 1000 *1 | -56 – 152 | -68 – 305 |
| R3-RS4A, R3(Y)-RS8x | | 0 to 100 percent *2 | 0 to 100 percent | |
| R3-SV4, R3(Y)-SV8, R3(Y)-SV8N, R3(Y)-SV16N | DC voltage input | 0 to 100 percent | 0 to 100 percent | |
| R3-SV4B, R3-SV8B | DC voltage input | 0 to 100 percent | 0 to 100 percent | |
| R3-SV4C, R3-SV8C | DC voltage input | 0 to 100 percent | 0 to 100 percent | |
| R3(Y)-DSx | 4 – 20mA input with excitation | 0 to 100 percent | 0 to 100 percent | |
| R3-SS4, R3(Y/S)-SS8(N), R3(Y)-SS16N | DC current input | 0 to 100 percent | 0 to 100 percent | |
| R3-US4 | DC voltage, potentiometer input | 0 to 100 percent | 0 to 100 percent | |
| | Thermocouple, RTD | US4 (Temp.) *3 | Refer to the specifications | |
| R3(Y)-MSx | Potentiometer input | 0 to 100 percent | 0 to 100 percent | |
| R3-CT4 | CT input | 0 to 100 percent | 0 to 100 percent | |
| R3-CTxA | AC current input with clamp-on current sensor | 0 to 100 percent *4 | 0 to 100 percent | |
| R3-CTxB | AC current input with clamp-on current sensor | 0 to 100 percent *4 | 0 to 100 percent | |
| R3-CTxC | AC current input with clamp-on current sensor | 0 to 100 percent | 0 to 100 percent | |
| R3-PT4 | AC voltage input | 0 to 100 percent | 0 to 100 percent | |
| R3-CZ4 | Zero-phase current input | 0 to 100 percent | 0 to 100 percent | |
| R3-WTU | Multi power input | 0 to 100 percent *5 | 0 to 100 percent | |
| | | COUNT32 *6 | 0 – 1e8 | |
| R3-WT4, R3-WT4A R3-WT4B | AC power input | COUNT16 | 0 – 10000 | |
| | | COUNT32 *6 | 0 – 1e8 | |

| | | | |
|---|---|---|---|
| R3-PA2 | Speed data | COUNT16 | 0 – 10000 |
| | Position data | COUNT32 *6 | 0 – 1e8 |
| R3-PA4 | High speed pulse input | COUNT16 | 0 – 10000 |
| R3(Y)-PA16 | Totalized pulse input | COUNT16 *7 | 0 – 10000 |
| R3-PA4A, R3-PA4B, R3(S)-PA8 | | COUNT32 *6 | 0 – 1e8 |
| R3-LC2 | Strain gauge input | 0 to 100 percent | 0 to 100 percent |
| R3-GC1, R3-GM1, R3-GE1, R3-GD1, R3-GFL1 | Gateway | 0 to 100 percent | 0 to 100 percent |
| | | COUNT16 | 0 – 10000 |
| | | COUNT32 *8 | 0 – 1e8 |
| R3-Ax4/8 | Alarm | COUNT16 *9 | -32768 – 32767 |

*1. Not selectable with the R3(Y)-RS8

*2. When the unit is Fahrenheit, set scaling to 10 times the value of data.

*3. When measuring temperature with R3-US4, set the input type to “US4 (Temp)” regardless the sensor type (T/C or RTD). In that case, the 73VR1100 does not show the temperature range on the screen. Refer to the R3-US4 instruction manual for the temperature range.

*4. When input range is greater than 100A, set the scaling 0 – 10000 with R3CON PC configurator. For the detail, refer to its manual.

*5. 16-bit data must be set between -32768 and 32767 with the R3CON. Since 16-bit energy data cannot be reset to 0 when it over flows, totalized pulse functions cannot be applicable.

*6. 32-bit data must be set 1e8 with the R3CON. For I/O modules with other length-data, refer to the instruction manuals.

*7. The maximum totalized pulse of the R3(Y)-PA16 can be set up to 32767 with the R3CON PC configurator. If the 73VR1100 receives a value greater than 32767, it makes an error.

*8. COUNT32 data consists of 2 channel data. Set the module to send the lower significant data first, and higher significant data second.

*9. Recodes each alarm as 16-bit two’s complement integer.

## ■ REMOTE I/O R5 SERIES INPUT TYPES

| MODEL | I/O TYPE | SELECTIONS | USABLE RANGE | |
|---|---|---|---|---|
| | | | °C | °F |
| R5-TS<br>R5T-TS | Thermocouple input | (PR) | 0 – 1760 | -62 – 3200 |
| | | K (CA) | -270 – 1370 | -454 – 2498 |
| | | E (CRC) | -270 – 1000 | -454 – 1832 |
| | | J (IC) | -210 – 1200 | -346 – 2192 |
| | | T (CC) | -270 – 400 | -454 – 752 |
| | | B (RH) | 100 – 1820 | 212 – 3308 |
| | | R | -50 – 1768 | -58 – 3214 |
| | | S | -50 – 1768 | -58 – 3214 |
| | | C (WRe 5-26) | 0 – 2315 | 32 – 4199 |
| | | N | -270 – 1300 | -454 – 2372 |
| | | U | -200 – 600 | -328 – 1112 |
| | | L | -200 – 900 | -328 – 1652 |
| | | P (Platinel II) | 0 – 1395 | 32 – 2543 |
| R5-RS<br>R5T-RS | RTD input | Cu 10 @25°C | -50 – 250 | -58 – 482 |
| | | Cu 50 | -50 – 150 | -38 – 302 |
| | | JPt 100 (JIS '89) | -200 – 510 | -328 – 950 |
| | | Pt 100 (JIS '89) | -200 – 660 | -328 – 1220 |
| | | Pt 100 (JIS '97, IEC) | -200 – 850 | -328 – 1562 |
| | | Pt 1000 | -200 – 850 | -328 – 1562 |
| | | Pt 50 Ω (JIS '81) | -200 – 649 | -328 – 1200 |
| | | Ni 100 | -80 – 250 | -112 – 482 |
| | | Ni 508.4 Ω | -50 – 200 | -58 – 392 |

| MODEL | I/O TYPE | SELECTIONS | INPUT RANGE |
|---|---|---|---|
| R5-SV<br>R5T-SV | DC voltage input | 0 to 100 percent | 0 – 100% |
| R5-DS<br>R5T-DS | 4 – 20mA DC input (100 Ω) | | |
| R5-MS | Potentiometer input | 0 to 100 percent | 0 – 100% |
| R5T-PT | AC voltage input | | |
| R5T-CTx | CT and AC current input* | | |

* For the models R5T-CTA or R5T-CTB, set the scaling 0 to 10000 with the R5x PC Configurator (model: R5CON).

■ **REMOTE I/O R7M/R7E INPUT TYPES**

| MODEL | I/O TYPE | ANALOG TYPE | SELECTIONS | USABLE RANGE |
|---|---|---|---|---|
| R7M-SV4<br>R7E-SV4 | DC current/voltage input | 0 to 100 percent | 0 to 100 percent | -10 – +10V DC |
| | | | | -5 – +5V DC |
| | | | | -1 – +1V DC |
| | | | | 0 – 10V DC |
| | | | | 0 – 5V DC |
| | | | | 1 – 5V DC |
| | | | | 0 – 1V DC |
| | | | | -0.5 – +0.5V DC |
| | | | | -20 – +20mA DC |
| | | | | 4 – 20mA DC |
| | | | | -0 – 20mA DC |
| R7M-TS4<br>R7E-TS4 | Thermocouple input | K (CA) | Same as the usable range | -272 – +1472 °C |
| | | E (CRC) | | -272 – +1020 °C |
| | | J (IC) | | -260 – +1300 °C |
| | | T (CC) | | -270 – +500 °C |
| | | B (RH) | | 24 – 1920 °C |
| | | R | | -100 – +1860 °C |
| | | S | | -100 – +1860 °C |
| | | C (WRe 5-26) | | -52 – +2416 °C |
| | | N | | -272 – +1400 °C |
| | | U | | -252 – +600 °C |
| | | L | | -252 – +1000 °C |
| | | P (Platinel II) | | -52 – +1496 °C |
| | | (PR) | | -52 – +1860 °C |
| R7M-RS4<br>R7E-RS4 | RTD | Pt 100 (JIS '97, IEC) | | -240 – +900 °C |
| | | Pt 100 (JIS '89) | | -240 – +900 °C |
| | | JPt 100 (JIS '89) | | -236 – +560 °C |
| | | Pt 50 Ω (JIS '81) | | -236 – +700 °C |
| | | Ni 100 | | -100 – +252 °C |
| | | Cu 10 @25°C | | -212 – +312 °C |
| | | Cu 50 | | -100 – +200 °C |
| R7M-CT4E<br>R7E-CT4E | AC current input with clamp-on current sensor | 0 to 100 percent | 0 to 100 percent | CLSE-60 (0 – 600A)*1 |
| | | | | CLSE-40 (0 – 400A)*1 |
| | | | | CLSE-20 (0 – 200A)*1 |
| | | | | CLSE-10 (0 – 100A) |
| | | | | CLSE-05 (0 – 50A) |
| | | | | CLSE-R5 (0 – 5A) |
| R7M-MS4<br>R7E-MS4 | Potentiometer input | 0 to 100 percent | 0 to 100 percent | 100 – 20 kΩ (total resistance) |

*1. Set the scaling 0 – 10000 with R7CON PC configurator.

**Eng. Range**

Set up physical representation of the upper and lower input range values. This setting determines the momentary value unit displayed on the digital displays while recording. For a temperature input, this setting is greyed out.

'e' can be used to input an exponential value such as '1e9.' Entering 'e' in any other way (e.g. '1ee') will not be recognized as a numeral.

| | |
|---|---|
| Eng. range | Max. 6 digits including a decimal point and minus sign |

Caution !

The maximum data range handled by the 73VR1100 is from -1 x $10^{10}$ to 1 x $10^{10}$. Engineering range must be within these limits. Any input out of this range is handled as errors.

Note

The engineering range setting for the R1M-P4 is used to reset the count by preset counts. The lower range value is used as reset value, the upper range value is used as the maximum limit. When the count reaches the upper range value, it is reset and restart at the lower range value.

**Plot position**

Determines the display range on the chart when 'Normal' is selected at 'Normal / Log.' Log's detailed setting including the display range is conducted in the Exp. scale.

Set up the upper and lower display range values. It is usually the same as the engineering unit range, but is set to a different range when you want to enlarge a part of the range to view details.

'e' can be used to input an exponential value such as '1e9.' Entering 'e' in any other way (e.g. '1ee') will not be recognized as a numeral.

| | |
|---|---|
| Plot position | Max. 6 digits including a decimal and minus sign |

**Scale shift**

Plot positions can be shifted in parallel on the trend chart. This function is useful when multiple graphs are overlapping. You can separate the plot positions while no other data is changed.

With the analog type set to PF, this setting is not available.

| | |
|---|---|
| Scale shift | Selectable within -100 to 100% |

**Normal / Log**

When Normal plotting is selected, the plot area is divided equally. When Logarithmic is selected, the plot area is divided in specified scale of exponents of 10.

For Logarithmic plotting, specify the lower limit of exponent in 'Logarithmic Plot Position Exponent' field within -9 to 8, and how many divisions you wish to have in 'Exponential Scale' among 10, 5, 4, 2, and 1.

For the 53U, only Normal plotting is selectable.

**Square Root**

Input data is square-root-extracted when this setting is enabled.

For the 53U, this function is not available.

**Overview Color**

Specify the bargraph color for the pen in the Overview. Use the color palette.

**DISCRETE INPUT**


**Figure 2.6.2a. Detailed setting, discrete.**

### OFF Description, ON Description

Short description for ON (1) and OFF (0) status can be specified.

DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

| | |
|---|---|
| OFF description | Max. 5 characters |
| ON description | Max. 5 characters |

## 2.7 FUNCTION PEN SETTING (INDIVIDUAL)

Pressing Function Pen Setting (Individual) button under Setting buttons opens a pen setting window just like the Input Pen setting, but with Function pen selectors as shown in Figure 2.7. Function Pen Setting (Individual) button is selectable only when 32 or 64 points are specified as the Function channel in System setting.

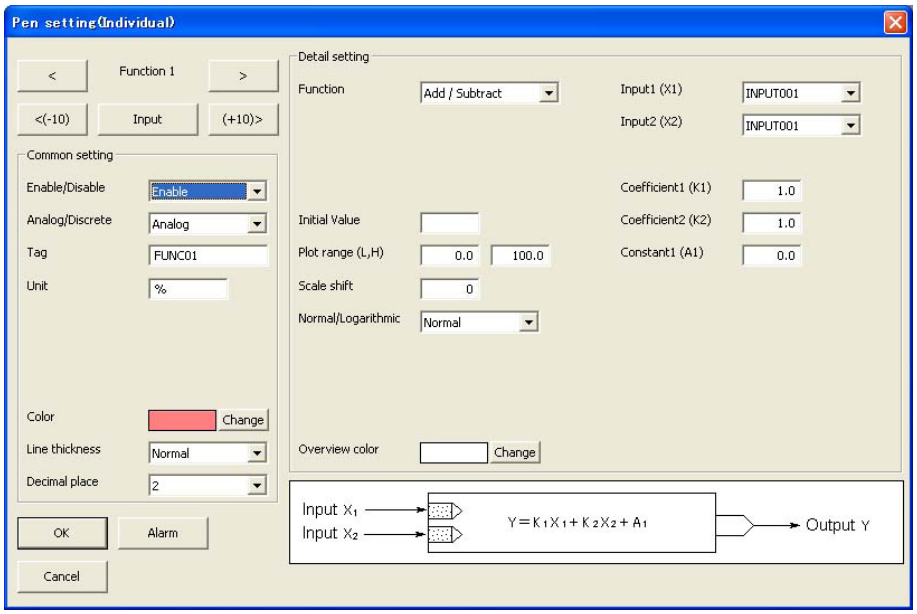



**Figure 2.7. Function pen setting (Individual).**

### 2.7.1 COMMON SETTING

#### Enable / Disable

Enable / Disable the recording. The pen's function data is stored when this selection is set to Enable.

#### Analog / Discrete

Choose Analog or Discrete signal for the pen so that the rest of the setting will be appropriately arranged.

#### Tag

Enter a desired tag name.

DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

| | |
|---|---|
| Tag name | Max. 8 characters |

#### Unit

Enter a desired unit name.

DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

| | |
|---|---|
| Unit | Max. 4 characters |

#### Color

Choose a desired color from the palette.

#### Line thickness

| | |
|---|---|
| Normal | Normal line |
| Thick | Thick line |

#### Decimal place

Specify how many decimal places you want to show on the digital indicators and the scale. Choose among 0, 1, 2 and 3.

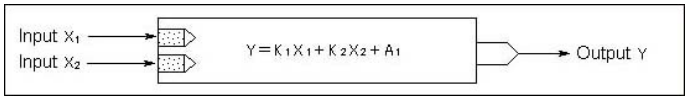
### 2.7.2 DETAILED SETTING

Selectable operating functions are as shown in the table below.

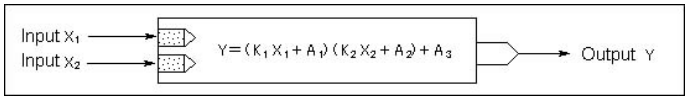
| | | |
|---|---|---|
| Arithmetic | Addition | K1X1 + K2X2 + A1 |
| | Multiplication | (K1X1+A1) (K2X2+A2) + A3 |
| | Division | (K1X1+A1) / (K2X2+A2) + A3 |
| Logical | AND | X1 ∧ X2 |
| | OR | X1 ∨ X2 |
| | NOT | ¬ X1 |
| | XOR | X1 ^ X2 |
| Math | Square root | Square root extraction K1 √ X1 |
| | Power | Power $X1^{A1}$ |
| Accumulation | | Analog accumulation, pulse accumulation |
| Peak hold | Peak hold (max) | Maximum value hold |
| | Peak hold (min) | Minimum value hold |
| Filter | First order lag | Time constant is a response time for a step input (0 to 100%) to reach 63%. |
| | Moving average | Multiple samples of input data are averaged. |
| F value calculation | | Typically used to calculate the sterilization or disinfection time in predefined conditions |

When you choose a type of operating functions, function blocks appear at the bottom of the window.

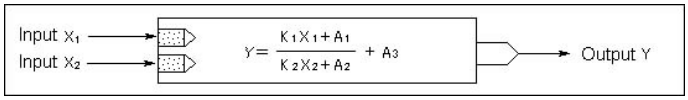
**Addition / Subtraction**



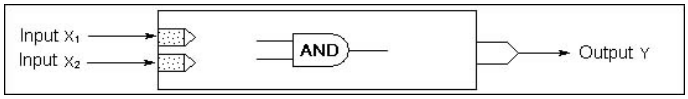

**Multiplication**



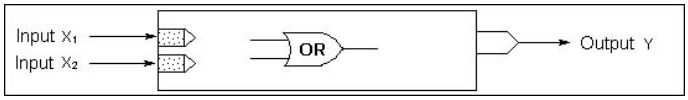

**Division**



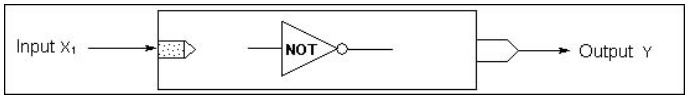

**AND**



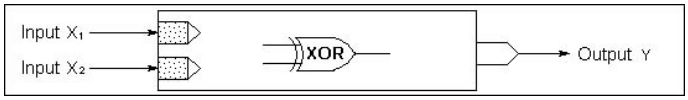

**OR**



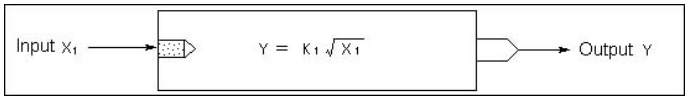

**NOT**



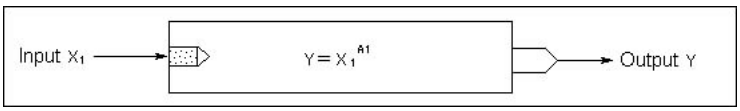

**XOR**



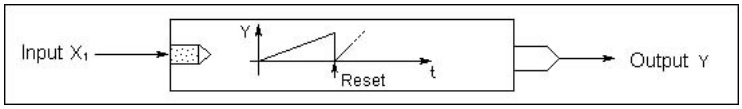

**Square root**



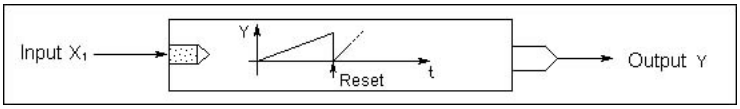
**Power**



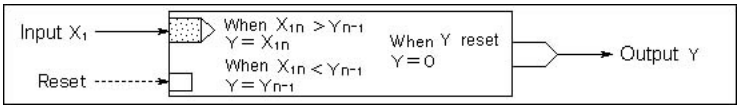

**Analog accumulation**



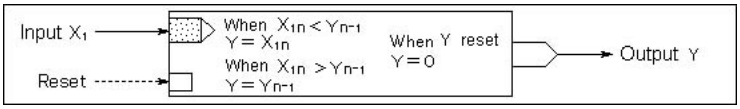

**Pulse accumulation**



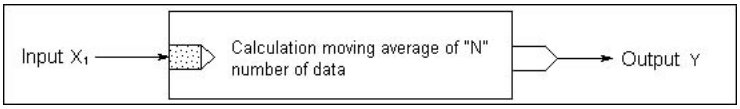

**Peak hold (max)**



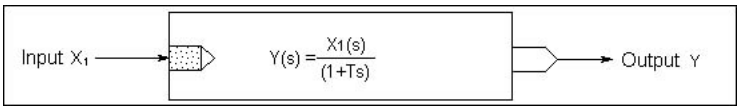

**Peak hold (min)**



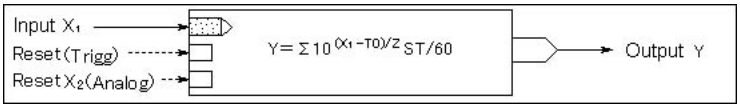

**Moving average**



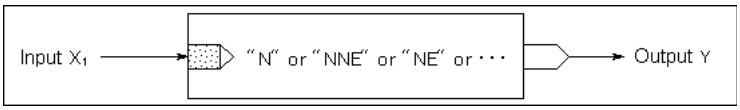

**First order lag**




**F value calculation**




**Anemoscope**




**Input (X1, X2)**

Select input signals used for the operating function. For Square root, Power, Analog accumulation, Peak hold, NOT, First order lag, only X1 is selectable.

To use last sampled or computed data in an equation, choose tags with asterisk (*).

**Caution !**

The tag name list shows only those 'enabled' in the common setting.

**Caution !**

Be careful to choose a pen of Not Itself. For example, you cannot choose Function Pen 1 or the last data of Function Pen 1 to be used as X1 or X2 in an equation for Function Pen 1. When assigning 'last' data sample to X1 or X2, specify also the initial value. Otherwise no data is recorded for the first operating cycle.

**Coefficient (K), Constant (A)**

For AND, OR, NOT, XOR functions, no coefficient or constant is selectable.

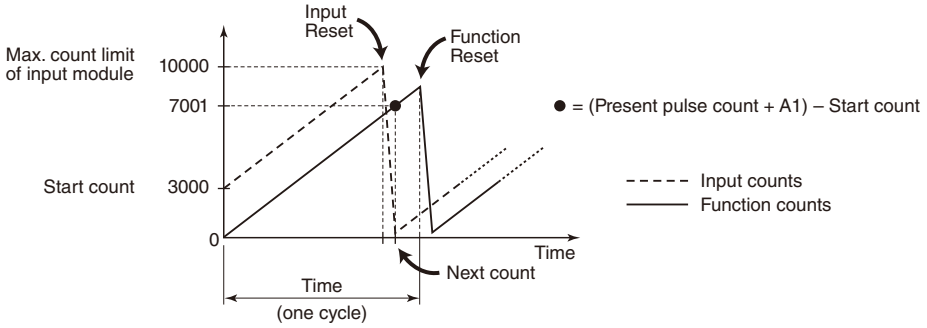
| | |
|---|---|
| Coefficients, Constants | Max. 6 digits including a decimal point and minus sign |

With the totalized pulse input modules (e.g. models R3-PA16, R3-PA4A), the pulse count is automatically reset and starts with '1' again when it reaches the preset maximum limit.

Between the moment when the 73VR starts counting and reset, it is possible that certain counts are reset and ignored if the resetting occurs at the input module, according to the formula:

Pulse count difference = Present pulse count – Start count

In order to add these ignored counts, set the value to A1. When the pulse counts are scaled, set the scaled value.




**Initial value**

Initial value is used in the function operation cycle as default data sample when 'last' data is specified in an equation. If you do not need, leave the field blank.

For Peak hold, First order lag, Moving average and F value calculation, the initial value is not available.

| | |
|---|---|
| Initial value (analog) | Max. 6 digits including a decimal point and minus sign |
| Initial value (discrete) | 1 for ON, 0 for OFF |

**Caution !**

For an analog signal, 'e' can be used to input an exponential value such as '1e9.' Entering 'e' in any other way (e.g. '1ee') will not be recognized as a numeral.

For Logic functions, any setting other than 0 and 1 will be handled as 0 as initial value. For the XOR function, setting other than 0 and 1 to X1 or X2 will result in '0.'

**Moving average sample number**

Specify number of samples used for the moving average operation.

| | |
|---|---|
| Samples | Specify between 2 and 16 |

**First order lag filter time constant**

Specify a time constant used for the filter function.

| | |
|---|---|
| Time constant | Specify between 0.00 and 100.00 seconds. Max. 2 decimal places. |

**Reset conditions (peak hold, analog accumulation and pulse accumulation)**

• Reset by time

Click the left arrow to choose among 30 minutes, 1 hour, 2 hours, 3 hours, 4 hours, 6 hours, 12 hours and 24 hours. To disable the resetting by time setting, specify None.

When '24 hours' is selected, specify also the reset time of the day.

| | |
|---|---|
| Reset | None, 30 minutes, 1 hour, 2 hours, 3 hours, 4 hours, 6 hours, 12 hours, 24 hours |
| Reset time | Specify between 0 and 23 (hours) |

• Reset by trigger input

Click the right arrow to choose among Up, Down, ON and OFF. To disable the resetting by trigger input, specify None.

**Reset conditions (F value calculation)**

• Reset by trigger input

Click the right arrow to choose among Up, Down, ON and OFF. To disable the resetting by trigger input, specify None.

• Reset by analog input

Click the right arrow to choose between Value < Threshold and Value ≤ Threshold. To disable the resetting by analog input, specify None.

With one of the conditions selected, choose also Input 2 tag name and the threshold value. In order to avoid frequent start/reset operations due to instable analog input signal around the threshold value, specify also a deadband.

'e' can be used to input an exponential value such as '1e9.' Entering 'e' in any other way (e.g. '1ee') will not be recognized as a numeral.

| | |
|---|---|
| Threshold, Deadband | Max. 6 digits including a decimal point and minus sign |

**Reference temperature (T0), Z value**

Specify T0 and Z for the F value calculation.

'e' can be used to input an exponential value such as '1e9.' Entering 'e' in any other way (e.g. '1ee') will not be recognized as a numeral.

| | |
|---|---|
| Reference temperature (T0), Z value | Max. 6 digits including a decimal point and minus sign |

**Storing rate**

The storing rate is indicated (but not changed here) for the F value calculation. To change the storing rate, refer to Section 2.3.1.

**Sum scale for analog accumulation**

Choose among None, Second, Minute, Hour and Day.

**Plot position, Scale shift, Normal/Log, Overview color**

Refer to Section 2.6.2.

Log 2 is not selectable for function pens.

## 2.8 ALARM SETTING (INDIVIDUAL)

**Caution !**

Number of alarm event per 1 sampling
- When alarm event occurs per every sampling, be sure to set not more than 8 points for the number of alarm event per 1 sampling.

### 2.8.1 ANALOG ALARM

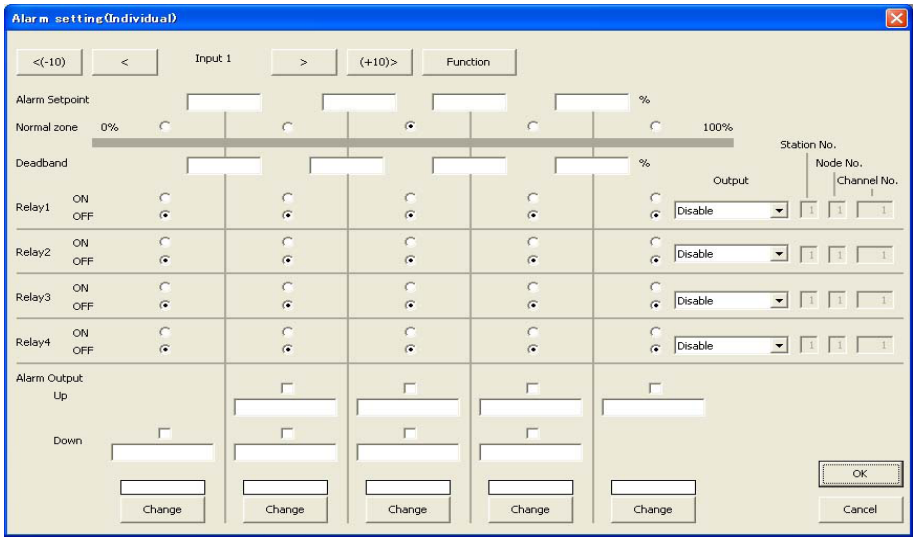



**Figure 2.8.1. Alarm setting for analog signal (Individual).**

#### Alarm Setpoint, Deadband

Specify up to 4 setpoints in engineering unit within the Input Range. Alarms are reset when the signal goes out of the alarm zone by the preset deadband values.

If you do not set all 4 setpoints, the limit setpoints must be next to each other, and 'Normal' zone must be set within or immediately next to the extreme limit.

Deadband is used to avoid the alarm ON and OFF quickly and repeatedly around the setpoint when the input signal changes that way. The alarm, once triggered, does not reset until the signal passes the point by the preset deadband.

'e' can be used to input an exponential value such as '1e9.' Entering 'e' in any other way (e.g. '1ee') will not be recognized as a numeral.

| | |
|---|---|
| Alarm setpoint / Deadband | Max. 6 digits including a decimal point and minus sign |

#### Normal Zone

Specify the zone of normal status. When the input signal is out of this zone, the alarm indicator of the pen flashes. Choose among Zone 0, 1, 2, 3 and 4.

#### Zone Color

You can apply specific colors to represent each zone divided by the limits for use in the Display views. Touch the current selection and use the color palette.

**NOTE**

256 colors are used in the 73VR1100. If you choose a color out of this, it may not be represented accurately on the 73VR1100 screen.

**Output, Station No., Node No., Channel No.**

Set Enable to provide an external contact output, and specify its location (Station No. for Modbus/TCP only, Node No. and Channel No.).

In order to output at the alarm output terminals of the 73VR1100, choose 'Output terminal.' With this setting, location setting fields are greyed out.

In order to output at the alarm output terminals of the R1MS-GH3, R2M-2H3, R2M-2G3 and RZMS-U9, 53U, specify Channel 1.

The R3-DC, R3(S)-DAC and R5(T)-DC Channel number systems are similar to those for the R3-DA and R5(T)-DA. Refer to Appendix-1.

For R7 and IT60RE, ITx0SRE Channel number systems, refer to Appendix-1.

When multiple alarm outputs are set for the same location, the contact turns ON/OFF by OR logic.

**Relay 1...4**

Specify the zone(s) in which you wish the contact to be turned on or off.

The keys are arranged from the left to right in the order of Zone numbers (Zone 0 for the leftmost key, Zone 4 for the rightmost key).

For the 53U, contact logic depends upon the output mode setting at the side of the 53U.

**Alarm Output**

Set Enable to the thresholds where Messages are to be displayed on the Alarm History.

Up messages appear when the signal goes across an alarm setpoint upward. Down messages appear when the signal goes across an alarm setpoint downward. Message contents up to 10 characters respectively for Up and Down.

DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

### 2.8.2 DISCRETE ALARM

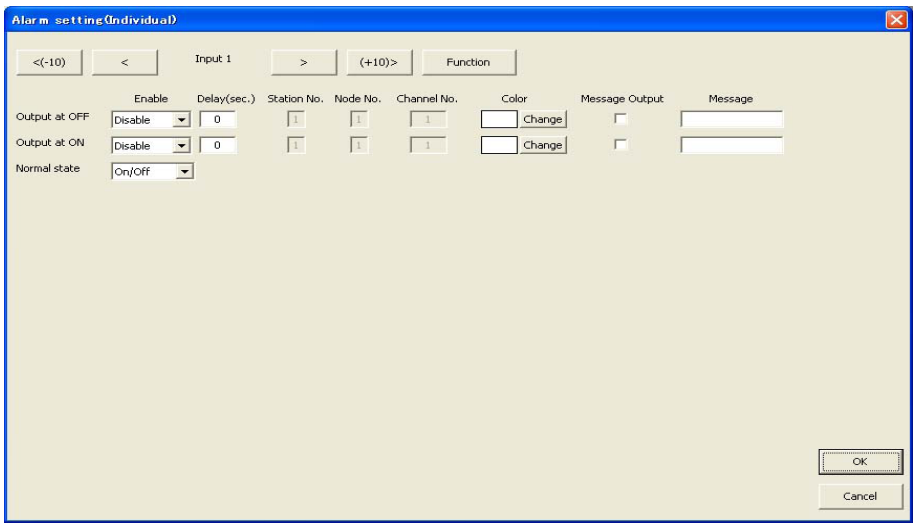



**Figure 2.8.2. Alarm setting for discrete signal (Individual).**

**OFF / ON Output Enable, Delay**

Alarm contact outputs can be provided at the alarm terminal.

Choose Enable to activate an relay output for respective signal status (input ON and OFF).

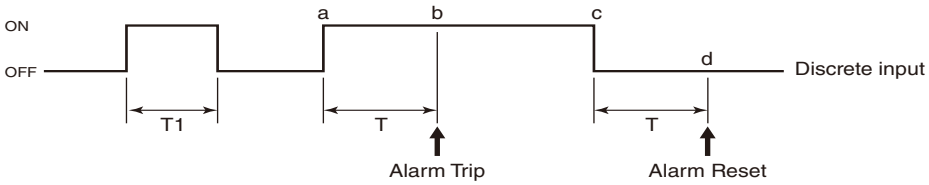
In order to output at the alarm output terminals of the 73VR1100, choose 'Output terminal.' With this setting, location setting fields are greyed out.

In order to eliminate noise interference, you can specify the time (seconds) to wait to apply change in signal status.

| | |
|---|---|
| Delay | Selectable from 1 to 99 seconds |

**Caution !**

Alarm is Not triggered if 'true' contact status lasts shorter than the delay time.




[Example] ON Alarm

- ON status for T1 time duration does not trigger alarm because the duration is shorter than the delay time.
- 'True' contact status starts at (a) point but an alarm is triggered only at (b) point, after the delay time T has been elapsed.
- 'False' contact status starts at (c) point but the alarm is reset only at (c) point, after the delay time T has been elapsed.

**Normal State**

You can specify which contact status from the trigger input terminal should be considered 'Normal.' For example, if you set 'OFF' to be normal, ON contact status triggers alarm, and it is indicated on the recorder view.

| | |
|---|---|
| ON/OFF | Both ON and OFF are normal. |
| ON | ON is normal. |
| OFF | OFF is normal. |

**OFF Color, ON Color**

You can apply specific colors to represent each ON and OFF status for use in the Display views. Touch the current selection and use the color palette.

**OFF / ON Station, Node, Channel**

Specify the location (Station No. for Modbus/TCP only, Node No. and Channel No.) of an external contact output for ON and OFF state respectively.

In order to output at the alarm output terminals of the R1MS-GH3, R2M-2H3, R2M-2G3 and RZMS-U9, 53U, specify Channel 1.

The R3-DC, R3(S)-DAC and R5(T)-DC Channel number systems are similar to those for the R3-DA and R5(T)-DA. Refer to Appendix-1.

For R7 and IT60RE, ITx0SRE Channel number systems, refer to Appendix-1

When multiple alarm outputs are set for the same location, the contact turns ON/OFF by OR logic.

**OFF / ON Message Output**

Set Enable to the status for which Messages are to be displayed on the Overview and Alarm History.

**OFF Message, ON Message**

These messages is used for Overview and Alarm History. Message contents up to 10 characters respectively for Up and Down.

DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

## 2.9 INPUT PEN SETTING (BUNDLE)

In order to review and set all pens at once, click Input Pen Setting (Bundle) under Setting.

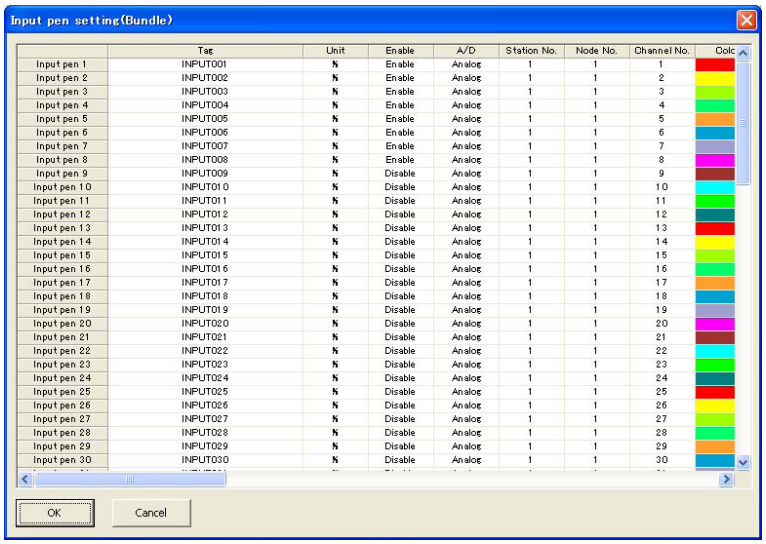



**Figure 2.9. Input pen setting (bundle).**

### HOW TO MODIFY PEN SETTING

1. Click on the cell you want to change.
2. When a pull-down arrow appears to the right, pull down the menu options and select one.
3. Press Enter or move to a next cell.

### HOW TO COPY ONE PEN SETTING TO ANOTHER

1. Click on the leftmost cell you want to copy.
2. Click on the right mouse button. Copy option appears, and click on it.
3. Click on the cell you want to paste the setting on.
4. Click on the right mouse button. Copy and Paste options appear, and choose Paste.

## 2.10 FUNCTION PEN SETTING (BUNDLE)

In order to review and set all function pens at once, click Function Pen Setting (Bundle) under Setting.

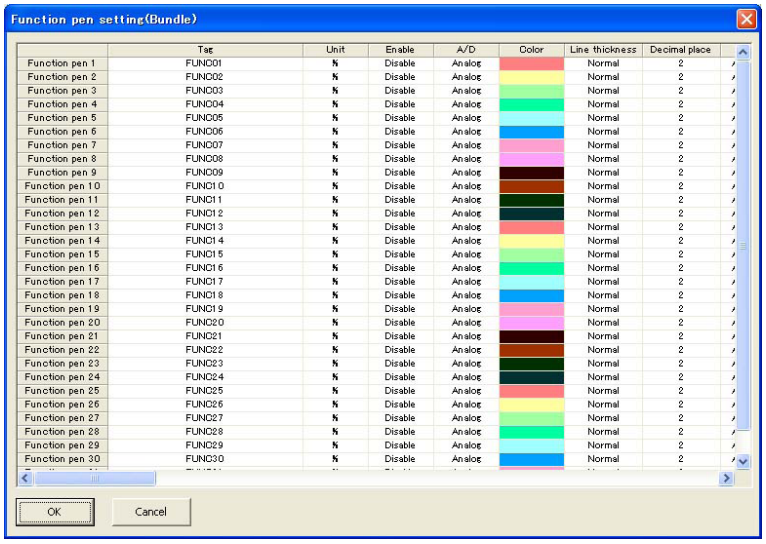



**Figure 2.10. Function pen setting (bundle).**

## 2.11 ALARM SETTING (BUNDLE)

In order to review and set all alarms at once, click Alarm Setting (Bundle) under Setting.

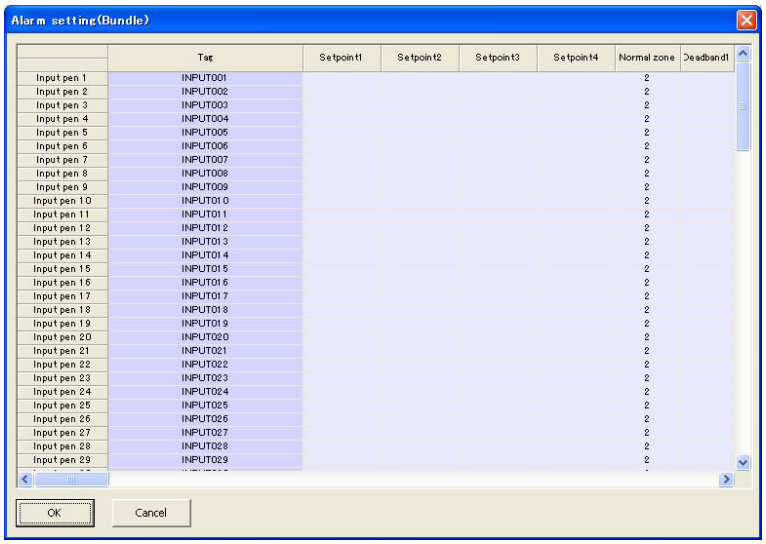



**Figure 2.11. Alarm setting (bundle).**

## 2.12 SELECT DISPLAY PENS

Press Select Display Pens button under Setting in order to specify how you want to arrange pens to appear on the Trend and Bargraph views.

Pull down the arrow to the right of each field and choose among the options in the pulled-down menu.

Number of pens that each group (‘Page’ on the 73VR1100 screen) can show depends upon the ‘Display pen number’ setting.

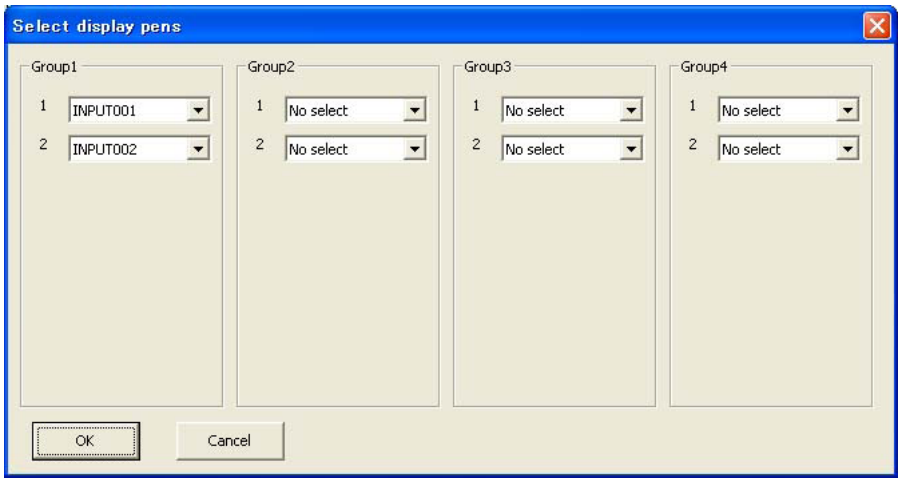
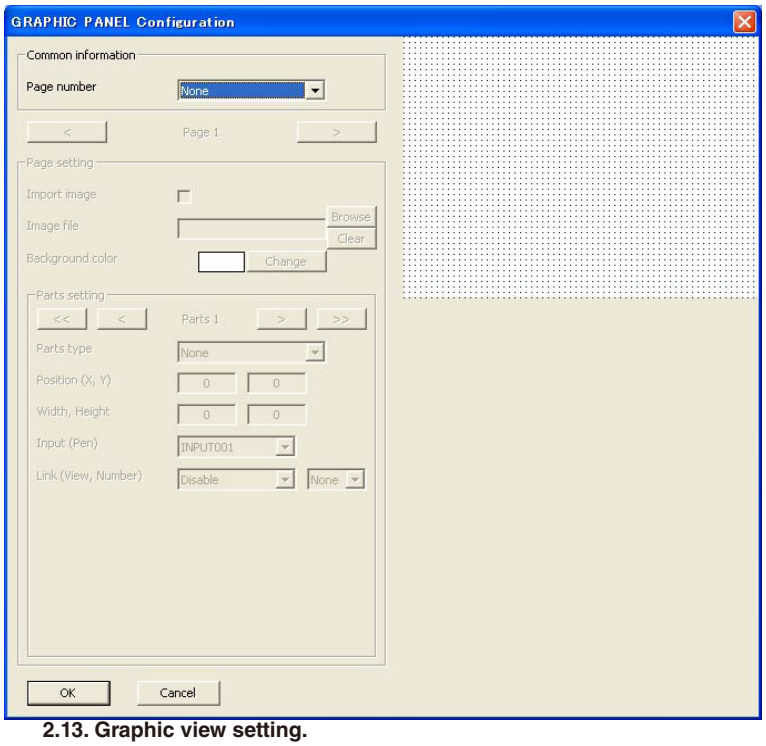



**Figure 2.12. Select display pens.**

## 2.13 GRAPHIC VIEW SETTING




**2.13. Graphic view setting.**

### 2.13.1 COMMON INFORMATION

#### Page number

Specify how many graphic views you want to use. 0 (No graphic view), 1 or 2 views.

### 2.13.2 PAGE SETTING

#### Import image

If you want to use the image file saved in the CF Card, Set Enable. The file named 73VRIMAGE1 is used for Page 1, and 73VRIMAGE2 for Page 2.

Get ready image files of the following specifications in order to use it in Graphic View.

Format: .bmp (.jpg (jpeg) format is automatically converted into .bmp when downloaded or saved. There are minute differences between two formats.

File size: 320 x 240 pixels (Trim and resize to this exact size if necessary.)

Color: 256 colors (The 73VR1100 automatically decreases color variation if higher colors are used.

File name: 73VRIMAGE1, 73VRIMAGE2

Browse the image file and the selected image is displayed on the right corner of the window.

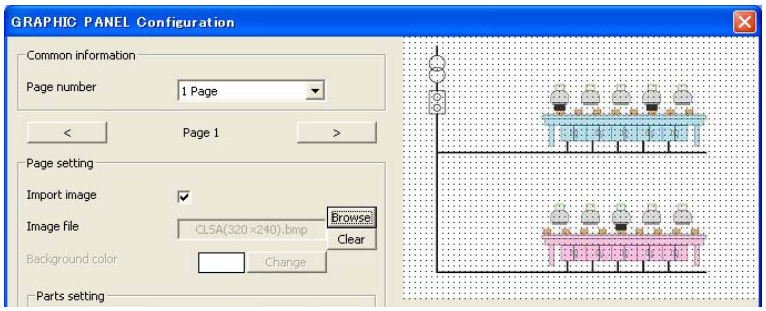



**Figure 2.13.2. Background image imported.**

#### Background color

If you do not use a background image file, you can specify a plain color for the background. Clicking Change button opens a color palette.

### 2.13.3 PARTS SETTING

Max. 64 component parts per page such as Title, LED, Digital indicator and Bargraph, can be placed.

**Position Coordinates and Size Unit**

Parts position is specified by relative distance in pixels from the reference point, top-left corner of the screen.

X = Horizontal axis, 0 to 319 pixels

Y = Vertical axis, 0 to 239 pixels

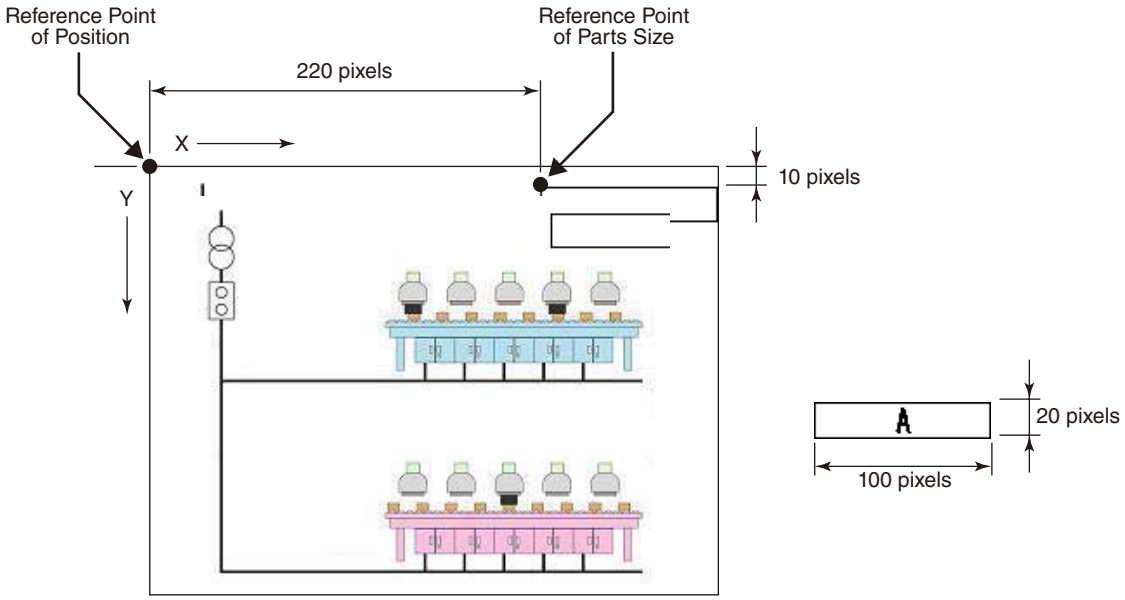
Specify the coordinates of the top-left corner of the parts.

Parts size is specified by width and height in pixels.

Width = 1 to 319 pixels

Height = 1 to 239 pixels

Refer to the example below.




**Example: X = 220, Y = 10, Width = 100, Height = 20**

You can also move and resize components placed on the graphic view.

Click and hold an object with the left mouse button and drag to move.

Click an object and pull one of the 8 anchor points around it to resize.

CAUTION

Be sure that no one component is on another. Linked view may not be switched if multiple components are placed on the same spot.

**Link view, Link number**

You can choose a specific view to switch from the graphic when you touch a specific component parts on the screen.

Selectable views are: Trend, Overview, Bargraph and Graphic. If you do not want any switching views, specify 'Disable.'

Specify also the view number (Link number).

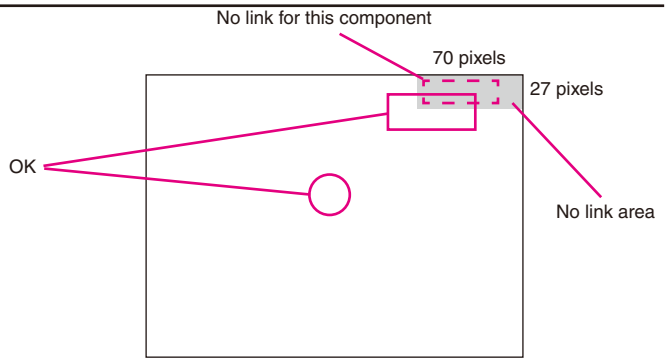
If a Trend or Bargraph view without any pens is specified to be linked, the 73VR1100 automatically switches to the one of next number with pens. Choose a view with pens.

Overview number depends upon how may pens (channels) are assigned per view. You may have to be careful when you change number of channels displayed per view after you have set link options from the graphic view.

CAUTION

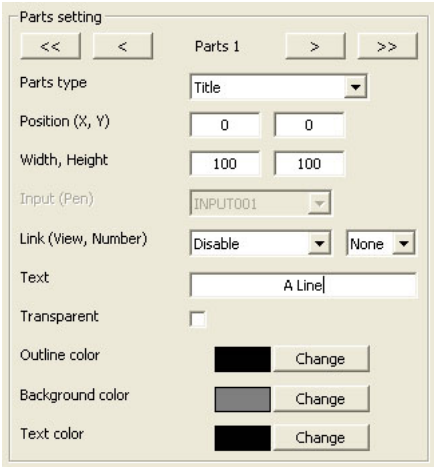
Be sure that no one component is on another. Linked view may not be switched if multiple components are placed on the same spot.

Link setting is invalid at the top-right corner of the screen (see below). If you place a component parts completely inside this area, Link is not valid. IF a part of the component is out of this area, touching the part running off the edges will switch the view.




## ■ PLACING COMPONENT PARTS

**Title**




1. Parts type: Choose Title.
2. Position, Width, Height: Specify the position and the size of the title field.
3. Link view, Link number: Choose a view if any.
4. The field below Link number is for entering texts for the title.

   DO NOT use symbols such as comma, period, space or tab, which can be used to separate data fields in a CSV file.

   Be aware also that data cells including symbols such as plus (+) and minus (–) will be handled as an equation in an Excel file.

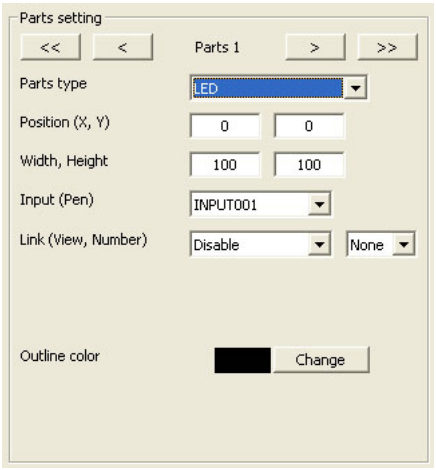
| Title text | 30 characters max. |
|---|---|

5. Transparent, Outline color, Background color: Specify if you want the title text on an opaque background (Normal) or on a transparent background (Transparent).

   For an opaque background, specify the field outline and background colors.
6. Text color: Choose a color for the title text.

### LED

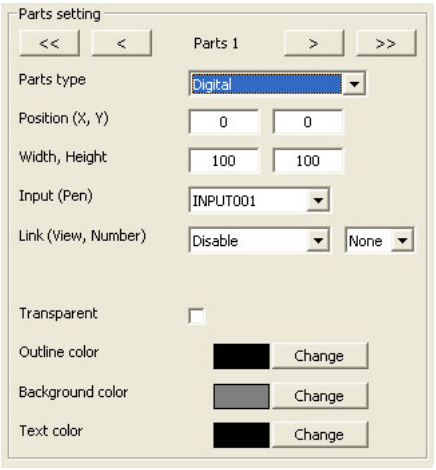
1. Parts type: Choose LED.
2. Position, Width, Height: Specify the position and the size of the LED.
3. Input (Pen): Specify a pen to be assigned to the LED.
4. Link view, Link number: Choose a view if any.
5. Outline color: Specify an outline color for the LED.




### Digital Indicator

1. Parts type: Choose Digital.
2. Position, Width, Height: Specify the position and the size of the indicator.
3. Input (Pen): Specify a pen to be assigned to the indicator.
4. Link view, Link number: Choose a view if any.
5. Transparent, Outline color, Background color: Specify if you want the digital indicator on an opaque background (Normal) or on a transparent background (Transparent).

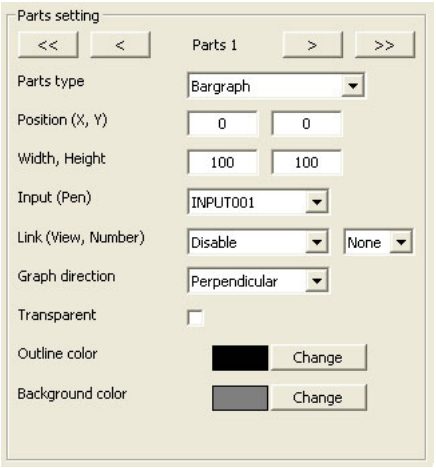
   For an opaque background, specify the field outline and background colors.
6. Text color: Choose a color for the value text.




### Bargraph

1. Parts type: Choose Bargraph.
2. Position, Width, Height: Specify the position and the size of the bargraph.
3. Input (Pen): Specify a pen to be assigned to the bargraph.
4. Link view, Link number: Choose a view if any.
5. Graph direction: Choose Perpendicular or Horizontal bar.
6. Transparent, Outline color, Background color: Specify if you want the bargraph on an opaque background (Normal) or on a transparent background (Transparent).

   For an opaque background, specify the field outline and background colors.

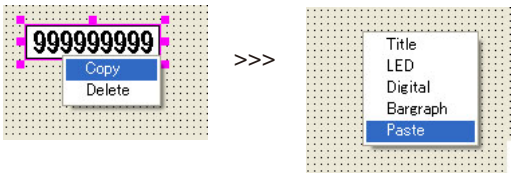



## ■ COPYING, DELETING, CREATING COMPONENT PARTS

When you need a lot of similar components, you can copy an object on the screen and paste it as a new object.

### Copy / Paste

1. Click the object with the right mouse button and choose copy.
2. Click with the right mouse button at the location where you want to have a new object, and choose paste.




### Creating new object

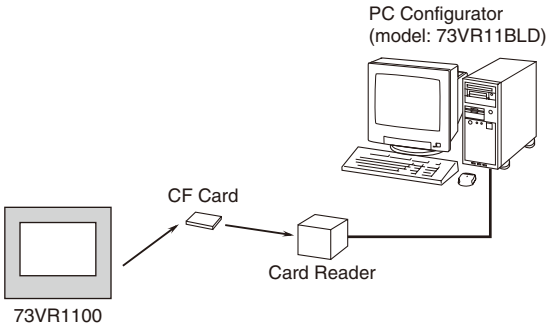
1. Click with the right mouse button at the location where you want to have a new object.
2. Choose one of the component types from the list.

### Deleting an object

1. Click the object with the right mouse button.
2. Choose Delete.

# 3 FILE OPERATION

File operation functions are applicable to data stored in a CF Card or in the PC's hard disk. A Card Reader device is required to interface between the PC and a CF Card.




## 3.1 READ SETTING FILE

When you need a specific set of parameter settings, press Read Setting File and choose one of the parameter files saved as in 3.2. The file displayed on the screen can be exported to CSV, or downloaded to the 73VR1100 to apply the setting.

## 3.2 WRITE SETTING FILE

Parameters set on the 73VR11BLD can be saved in a file with user-specified file name.

Parameter contents uploaded from the 73VR1100 also can be saved in the same manner.

**File names**

When you use a file created on the 73VR11BLD for the 73VR1100, the file name must be 73VR.VRP11.

When you have imported an image file for the Graphic view, it is saved in the folder named 'File name.VRP11.IMAGE.' In order to show it on the 73VR1100 screen, move this file to the same directory level as the file 73VR.VRP11 in the CF Card. DO NOT change the file name. If changed, the 73VR1100 is unable to read the file.

## 3.3 EXPORT SETTING TO CSV

Parameters set on the 73VR11BLD can be saved in the CSV format. Parameter contents uploaded from the 73VR1100 also can be saved in the same manner.

Pressing Export Setting to CSV opens up the dialog box shown below on the screen.

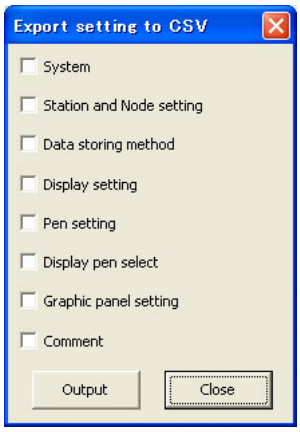



**Figure 3.3. Export setting to CSV.**

| | |
|---|---|
| System | Operating mode, Temperature unit, Stroging mode, Type download, Alarm output cycle, Start mode, Data storing form, Data overwrite, Screen saver, IP address, Touch panel beep, Function channel |
| Station and Node setting | Enable/Disable station, IP address, Node 1 thr. F |
| Data storing method | Storing interval, Storing setting |
| Display setting | Chart speed, Display rate, Graph direction, Digital display type, Digital display, Data file used volume, Display pen number, Display pen number (OV), Auto pen switching, Chart color |
| Pen setting | Input pen setting, Function pen setting, Alarm setting |
| Display pen select | Select display pens |
| Graphic panel setting | Background color, Background image, Parts setting |
| Comment | Group name, Group color, Comment, Auto write in |

Choose one or more options and click Output. Specify a file name and save.

## 3.4 CREATE CF DATA

The 73VR1100 automatically creates files when it starts up: Data file (73VR.VRD11), Alarm history (73VR.VRA11), Comment history (73VR.VRM11) and Control file (73VR.VRC11). It can also be created on the PC using the 73VR-11BLD. Be sure to create data files in a CF Card before trying to replace CF Cards while the 73VR1100 is running.

Press Create CF Data and the window shown in Figure 3.4 appears on the screen.

Enter the drive ID where you have a CF Card and press Create. Then the window is replaced with the one shown in Figure 3.4a.

Pressing Cancel stops creating the file.

The field below the Cancel button shows two figures: file size to be created on the right, file size being created on the left.

When the operation is complete, 'Congratulations!' appears on the screen.

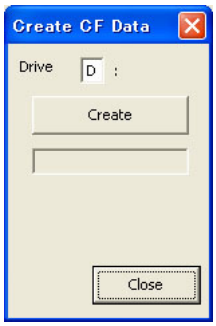



**Figure 3.4. Create CF Data.**

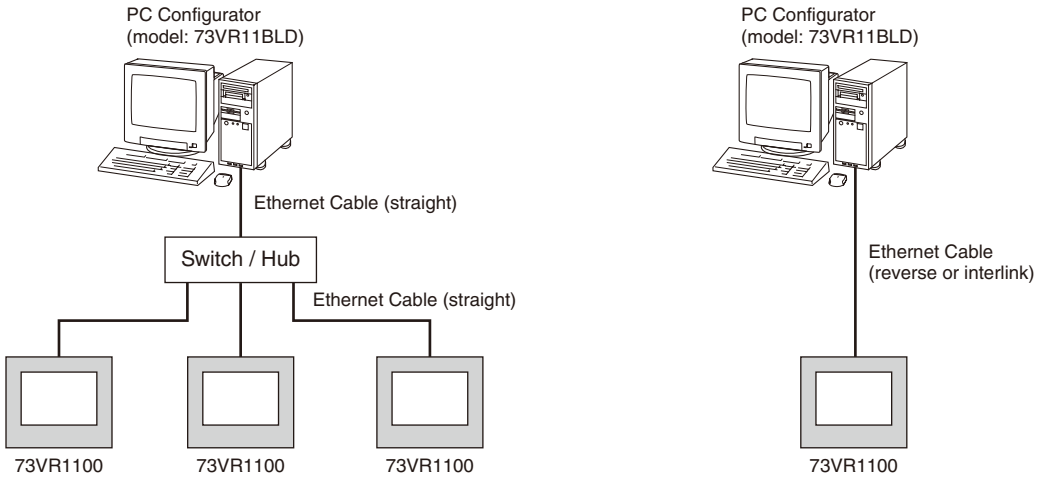
**Caution !**

In order to use the data area created by Create CF Data, insert the CF Card while the power to the 73VR1100 is not supplied.

# 4. ONLINE OPERATION

File operation functions are usable between the PC and the 73VR1100.

Online Operation are accessible only when the 73VR1100 is connected to a PC installed with the 73VR11BLD via Ethernet. Before using these functions, confirm that an appropriate IP address is set to the 73VR1100.




## 4.1 UPLOAD

The 73VR11BLD can read the current settings on the 73VR1100. Enter IP address of the 73VR1100 in IP address setting under System setting, and press Upload button.

If you have set up a password to allow access the 73VR1100, the Enter Password dialog box will appear. Enter password and click OK.

When the upload is successfully complete, 'Congratulations!' appears on the screen.

## 4.2 DOWNLOAD (All)

Pressing Download button downloads the current settings configured on the 73VR11BLD to the 73VR1100.

If you have set up a password to allow access the 73VR1100, the Enter Password dialog box will appear. Enter password and click OK.

When the download is successfully complete, 'Congratulations!' appears on the screen. Downloading can be executed only while recording is stopped.

If there were changes for the following parameters in the new configuration, the data file, the alarm history and the comment history files are all reset: Storing interval, Data format, Number of enabled pens.

## 4.3 DOWNLOAD (Runtime)

The following parameters, runtime programmable items, can be downloaded even while recording.

| | |
|---|---|
| System | Screen saver, Touch panel beep |
| Display setting | Graph direction, Digital display type, Digital display, Data file used volume, Display pen number, Display pen number (OV), Auto pen switching, Chart color |
| Input pen setting | Color, Line thickness, Decimal place, Plot range, Scale shift, Exponential scale, Overview color |
| Function pen setting | Line thickness, Decimal place, Plot range, Exponential scale, Overview color |
| Alarm setting | All parameters |
| Select display pens | Select display pens |
| Comment | All parameters |

If you have set up a password to allow access the 73VR1100, the Enter Password dialog box will appear. Enter password and click OK.

When the download is successfully complete, 'Congratulations!' appears on the screen.

## 4.4 REMOTE START / STOP

You can remotely start / stop the 73VR1100 with these control buttons. When you need to change and download settings, the 73VR1100 can be stopped at any time.

If you have set up a password to allow access the 73VR1100, the Enter Password dialog box will appear. Enter password and click OK.

# APPENDIX – 1. CHANNEL NO. SYSTEMS FOR R1M-P4, R3/R5/R7 SERIES, 53U & IT60RE, ITx0SRE

## ■ R1M-P4

For the R1M-P4 channel numbers correspond to the 73VR1100 channels as in the table to the right.

| 73VR1100 | R1M-P4 |
|---|---|
| 1 through 8 | 1 through 8 |
| 9 | A |
| 10 | B |
| 11 | C |
| 12 | D |

## ■ R3 SERIES

The R3 series modules' channel numbers depend upon the module types and their data allocation.

For analog modules, the data allocation mode assigned to each module, is then assigned to consecutive channel No. from Slot 1. For example, when 4 data areas (allocated units) are assigned to Slot No. 1 through 3, 1 data area is assigned to Slot No. 4, the module No. 1 takes Channels from 1 to 4, No. 2 from 5 to 8, No. 3 from 9 to 12, and No. 4 takes 13.

| Slot No. | Data Allocation Mode | Channel No. |
|---|---|---|
| 1 | 4 | 1 through 4 |
| 2 | 4 | 5 through 8 |
| 3 | 4 | 9 through 12 |
| 4 | 1 | 13 |

### CAUTION FOR ASSIGNING CHANNEL NUMBERS FOR THE R3-PA4A R3-PA4B, R3(S)-PA8 & R3-PA2

The R3-PA4A and R3-PA4B take 8 data areas for 4 input points. Set 'Previous Channel + 2' for the second and the following points.

The R3(S)-PA8 takes 16 data areas for 8 input points. Set 'Previous Channel + 2' for the second and the following points.

For example, if the R3-PA4A is located at Slot 1 position, set Channel 1 to the first point, Channel 2 for the second.

The R3-PA2 takes 8 data areas for 2 input points. Each point contains 2 sets of data, the speed and position conversion data, on which channel numbers assignment depends.

Refer to the figure to the right.

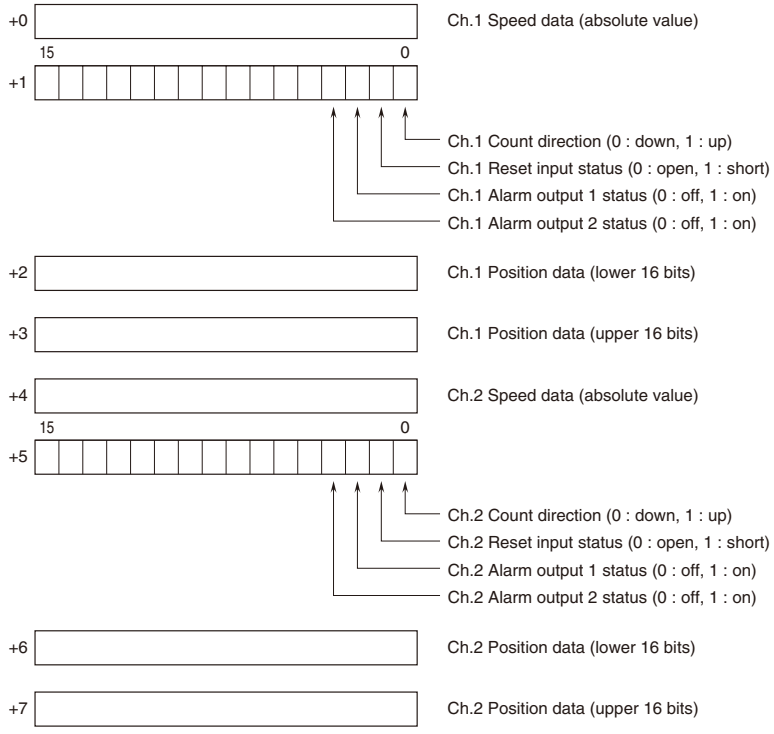



**Figure: R3-PA2 data description.**

For example, if the R3-PA2 is located at Slot 1 position, channel assignment on the 73VR1100 is as shown below:

| R3-PA2 Ch. | Data Type | 73VR1100 Channel No. |
|---|---|---|
| 1 | Speed | 1 |
| | Position | 3 |
| 2 | Speed | 5 |
| | Position | 7 |

For discrete modules, the data allocation mode 1 takes 16 channels (1 x 16), and the mode 4 takes 64 (4 x 16), and the mode 8 and 16 takes automatically 64 data areas. For example, when 4 data areas are assigned to Slot No. 1, and 1 data area to Slot No. 2 through 4, the module No. 1 takes Channels from 1 through 64, No. 2 from 65 to 80, No. 3 from 81 to 96, and No. 4 from 97 to 112.

| Slot No. | Data Allocation Mode | Channel No. |
|---|---|---|
| 1 | 4 | 1 through 64 |
| 2 | 1 | 65 through 80 |
| 3 | 1 | 81 through 96 |
| 4 | 1 | 97 through 112 |

**CAUTION FOR ASSIGNING CHANNEL NUMBERS FOR THE R3-WTU**

R3-WTU takes 16 data areas (with option code "/D", virtual module's data area is also 16.)

Measurands and assigned word numbers are specified using the R3CON PC Configurator.

Data length (1 or 2-word) can be set up for every channel with the Configurator software R3CON.

The analog type of the channel set as 2-word length is set as "COUNT32."

Set 'Previous Channel + 2' for the second and the following points.

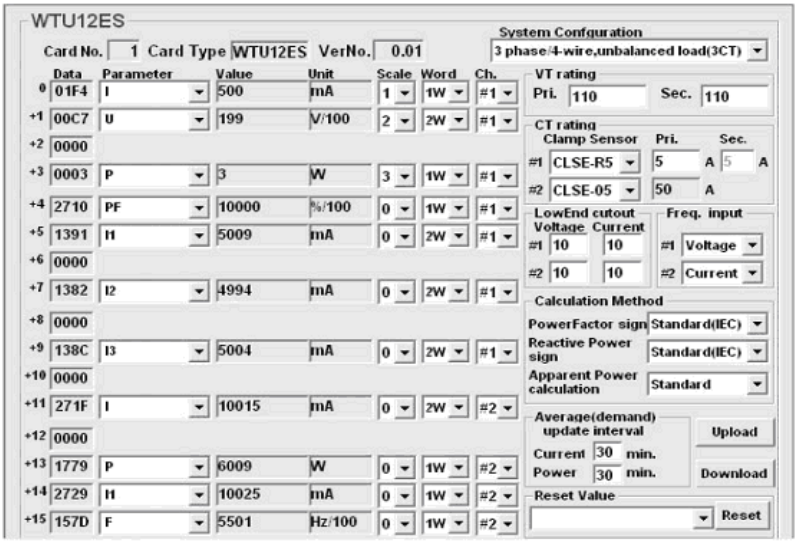



**Figure: R3CON setting with R3-WTU (without option code) mounted on the module slot.**

The channels indicated with the numbers +1, +5, +7, +9, and +11 on the left of the figure are set with 2-word length.

| I.D. | Parameter | Data length | Channel No. set on the 73VR1100 |
|---|---|---|---|
| 0 | I | 1 | 1 |
| +1 | U | 2 | 2 |
| +3 | P | 1 | 4 |
| +4 | PF | 1 | 5 |
| +5 | I1 | 2 | 6 |
| +7 | I2 | 2 | 8 |
| +9 | I3 | 2 | 10 |
| +11 | I | 2 | 12 |
| +13 | P | 1 | 14 |
| +14 | M | 1 | 15 |
| +15 | F | 1 | 16 |

**CAUTION FOR ASSIGNING CHANNEL NUMBERS FOR THE R3-WT4, R3-WT4A & R3-WT4B**

R3-WT4x data length can be set with the DIP switch.

1-word and 2-word length data mixed setting is also available. (Refer to each specifications and instruction manual for details)

Set 'Previous Channel + 2' for the second and the following points.

## ■ R5 SERIES

Since the R5 I/O modules can mix input types and numbers, Channel Number does not mean the module's physical position (slot number) on the base. Refer to the table below.

| | R5 SLOT NUMBER | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Analog Module, Data Allocation Mode 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Analog Signal, Data Allocation Mode 2 | 1-2 | 3-4 | 5-6 | 7-8 | 9-10 | 11-12 | 13-14 | 15-16 | 17-18 | 19-20 | 21-22 | 23-24 | 25-26 | 27-28 | 29-30 | 31-32 |
| Discrete Signal | 1 -16 | 17 -32 | 33 -48 | 49 -64 | 65 -80 | 81 -96 | 97 -112 | 113 -128 | 129 -144 | 145 -160 | 161 -176 | 177 -192 | 193 -208 | 209 -224 | 225 -240 | 241 -256 |
| | 73VR1100 CHANNEL NO. | | | | | | | | | | | | | | | |

## ■ R7 SERIES

In the case of analog input and discrete-input/output units, the input 0 of R7 is corresponding to the channel 1 of the 73VR1100, and the input "n" of R7 is corresponding to the setting channel "n+1" of the 73VR1100.

The channel for digital I/O of extension unit is set on channel 17 of the 73VR1100.

## ■ 53U

Channel number for analog signal means the parameter's Modbus address. Please refer to the operating manual of the 53U (EM-6485-B), under 'MEASURED VARIABLES.' For example, to assign the momentary active power (P), specify the channel number to '5.'

For discrete signal, specify channel '1.'

## ■ IT60RE, ITx0SRE

There is no need of pen settings for the IT60RE, ITx0SRE since it is contact output for alarm output.

It is configurable with submenu of Relay 1 to 4 of Pen setting (alarm) menu. For analog alarm it is configurable with (3/11) - (6/11) of pen setting (alarm) screen and for digital alarm is configurable with (3/5) through (4/5).
Refer to the table below for the relation between channel setting number and the output number of IT60RE, ITx-0SRE.

| Ch. No. | IT60RE, ITx0SRE Output | | Ch. No. | IT60RE, ITx0SRE Output | |
|---|---|---|---|---|---|
| 1 | Output 0 | Indicator 1 ON | 9 | Output 8 | Indicator 1 Blinking |
| 2 | Output 1 | Indicator 2 ON | 10 | Output 9 | Indicator 2 Blinking |
| 3 | Output 2 | Indicator 3 ON | 11 | Output 10 | Indicator 3 Blinking |
| 4 | Output 3 | Indicator 4 ON | 12 | Output 11 | Indicator 4 Blinking |
| 5 | Output 4 | Indicator 5 ON | 13 | Output 12 | Indicator 5 Blinking |
| 6 | Output 5 | Buzzer (continuance) | 14 | Output 13 | Buzzer (continuance) |
| 7 | Output 6 | --- | 15 | Output 14 | --- |
| 8 | Output 7 | --- | 16 | Output 15 | --- |

# APPENDIX – 2. SETTING FILE FORMAT IN CSV

Row A : System, item names

Row B : System, parameters

| | | |
|---|---|---|
| 2 | # System information # | |
| 3 | Communication setting | DEMO |
| 4 | Temperayure unit | Centigrade |
| 5 | Storing mode | Normal |
| 6 | Type downloads | Disable |
| 7 | Alarm output cycle | Priority on alarm |
| 8 | Start mode | Cold start |
| 9 | Data storing form | Float |
| 10 | Data overwrite | ON |
| 11 | Screen saver | 0Min. |
| 12 | IP address | 192.168.0.1 |
| 13 | Subnet mask | 255.255.255.0 |
| 14 | Default gw | |
| 15 | Touch panel beep | ON |
| 16 | Function channel | Disable |

Row A : Data storing method, item names

Row B : Data storing method, parameters

| | | |
|---|---|---|
| 17 | # Data storing method information # | |
| 18 | Sampling rate | 500msec. |
| 19 | Storing mode | No Storing |

Row A : Display setting, item names

Row B : Display setting, parameters

| | | |
|---|---|---|
| 38 | # Display setting information # | |
| 39 | Chart speed | [4] |
| 40 | Display rate | 1sec. |
| 41 | Graph | Perpendicular |
| 42 | Digital display pen No. | Tag+Value |
| 43 | Digital display | Auto hide |
| 44 | Use rate of DataFile | Not shown |
| 45 | Display pen number | 2 Pens |
| 46 | Display pen number (OV) | 2 Pens |
| 47 | Auto pen switching | Disable |
| 48 | Chart color | Gradation 1 |

Row A : Station & Node, item names

Row B : Station & Node, parameters

Row C : IP address

| | | | |
|---|---|---|---|
| 21 | Station1 | Enable | 192.168.0.2 |
| 22 | Node1 | R3-NM(E)1 | |
| 23 | Node2 | Disable | |
| 24 | Node3 | Disable | |
| 25 | Node4 | Disable | |
| 26 | Node5 | Disable | |
| 27 | Node6 | Disable | |
| 28 | Node7 | Disable | |
| 29 | Node8 | Disable | |
| 30 | Node9 | Disable | |
| 31 | NodeA | Disable | |
| 32 | NodeB | Disable | |
| 33 | NodeC | Disable | |
| 34 | NodeD | Disable | |
| 35 | NodeE | Disable | |
| 36 | NodeF | Disable | |

Row A : Pen setting, item names

Row B : Pen setting, parameters

Lower range values

Row C : Upper range values

| | | | |
|---|---|---|---|
| 49 | # Pen setting information # | | |
| 50 | *Input 1* | | |
| 51 | Analog/Discrete | Analog | |
| 52 | Tag | INPUT001 | |
| 53 | Unit | % | |
| 54 | Station No. | 1 | |
| 55 | Node No. | 1 | |
| 56 | Channel No. | 1 | |
| 57 | Color | RGB(255.0.0) | |
| 58 | Line thickness | Normal | |
| 59 | Decimal place | 2 | |
| 60 | Analog type | 0 to 100 percent | |
| 61 | Input range | 0 | 100 |
| 62 | Eng. range | 0 | 100 |
| 63 | Plot range | 0 | 100 |
| 64 | Scale shift | 0 | |
| 65 | Normal/Logarithmic | Normal | |
| 66 | Square root | Normal | |
| 67 | Overview color | RGB(255.255.255) | |
| 68 | Alarm Setpoint | | |
| 69 | Normal Zone | 2 | |
| 70 | Deadband | | |
| 71 | Relay1 disable | | |
| 72 | Relay2 disable | | |
| 73 | Relay3 disable | | |
| 74 | Relay4 disable | | |
| 75 | UP1->2 message | Disable | |
| 76 | UP2->3 message | Disable | |
| 77 | UP3->4 message | Disable | |
| 78 | UP4->5 message | Disable | |
| 79 | DOWN1<-2 message | Disable | |
| 80 | DOWN2<-3 message | Disable | |
| 81 | DOWN3<-4 message | Disable | |
| 82 | DOWN4<-5 message | Disable | |
| 83 | Zone color1 | RGB(255.255.255) | |
| 84 | Zone color2 | RGB(255.255.255) | |
| 85 | Zone color3 | RGB(255.255.255) | |
| 86 | Zone color4 | RGB(255.255.255) | |
| 87 | Zone color5 | RGB(255.255.255) | |

Row A : Display pen select, parameters

| | |
|---|---|
| 474 | # Display pen select information # |
| 475 | Group 1 |
| 476 | 01:[001]INPUT001 |
| 477 | 02:[002]INPUT002 |
| 478 | 03:[003]INPUT003 |
| 479 | 04:[004]INPUT004 |
| 480 | 05:[005]INPUT005 |
| 481 | 06:[006]INPUT006 |
| 482 | 07:[007]INPUT007 |
| 483 | 08:[008]INPUT008 |
| 484 | Group 2 |
| 485 | 01:No select |
| 486 | 02:No select |
| 487 | 03:No select |
| 488 | 04:No select |
| 489 | 05:No select |
| 490 | 06:No select |
| 491 | 07:No select |
| 492 | 08:No select |
| 493 | Group 3 |
| 494 | 01:No select |
| 495 | 02:No select |
| 496 | 03:No select |
| 497 | 04:No select |
| 498 | 05:No select |
| 499 | 06:No select |
| 500 | 07:No select |
| 501 | 08:No select |
| 502 | Group 4 |
| 503 | 01:No select |
| 504 | 02:No select |
| 505 | 03:No select |
| 506 | 04:No select |
| 507 | 05:No select |
| 508 | 06:No select |
| 509 | 07:No select |
| 510 | 08:No select |

Row A : Comment, item names

Row B : Comment, parameters

| | | |
|---|---|---|
| 512 | # Comment information # | |
| 513 | Group 1 | |
| 514 | Name | Gr1 |
| 515 | Color | RGB(255.255.0) |
| 516 | Comment 1 | |
| 517 | Auto write in | Disable |
| 518 | Comment 2 | |
| 519 | Auto write in | Disable |
| 520 | Comment 3 | |
| 521 | Auto write in | Disable |
| 522 | Comment 4 | |
| 523 | Auto write in | Disable |
| 524 | Comment 5 | |
| 525 | Auto write in | Disable |
| 526 | Comment 6 | |
| 527 | Auto write in | Disable |
| 528 | Comment 7 | |
| 529 | Auto write in | Disable |
| 530 | Comment 8 | |
| 531 | Auto write in | Disable |
| 532 | Group 2 | |
| 533 | Name | Gr2 |
| 534 | Color | RGB(255.255.0) |
| 535 | Comment 1 | |

Row A : Graphic panel setting, item names

Row B : Graphic panel setting, parameters

Row C: Graphic panel setting, parameters

| | | | |
|---|---|---|---|
| 2 | # Graphic panel setting information # | | |
| 3 | *Page1* | | |
| 4 | Image file | Enable | |
| 5 | *Parts1* | | |
| 6 | Parts type | Title | |
| 7 | Position (X & Y) | 0 | 0 |
| 8 | Width & Height | 100 | 35 |
| 9 | Link (View & Number) | Disable | Disable |
| 10 | Text | A Line | |
| 11 | Transparent | Normal | |
| 12 | Outline color | RGB(1.1.1) | |
| 13 | Background color | RGB(127.127.127) | |
| 14 | Text color | RGB(1.1.1) | |

# APPENDIX – 3 SOFTWARE UPDATE HISTORY

Ver. 1.00G Function added that shows a dialog box to confirm whether to clear the data stored in the CF card after the 73VR11BLD changes the setting of the 73VR1100.

Ver. 1.01.xx Anemoscope function added.

Corresponds to R7M-CT4E, R7M-MS4, R7E series, IT60RE and I/O module models of R3 series.

Ver. 1.02.xx SD card available.

Ver. 1.03.xx “Analog accumulation” setting added.

Ver. 2.00.xx Supports Windows 10.

Corresponds to IT40SRE, IT50SRE and IT60SRE.