73VR3100 PC CONFIGURATOR
Software model: 73VR31BLD

Users Manual

Contents

1. INTRODUCTION

Thank you for choosing our Paperless Recorder.

The 73VR31BLD 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 73VR31BLD will help you easily and smoothly program parameters for the 73VR3100. It also enables remote setup of the 73VR3100 through Ethernet.

NOTE

This software program is compatible with the 73VR3100 Version 6.01x or higher.
This instruction manual conforms to the 73VR31BLD Version 2.01x or higher.
73VR31BLD Version 2.01 or higher is not compatible with 73VR3100 Version 6.00 or earlier.

1.1 GENERAL DESCRIPTIONS

Configuring the 73VR3100:	Storing setting, Display setting, Input pen setting, function pen setting. Downloading a configuration (setup) file created on the 73VR31BLD to the 73VR3100. Uploading a configuration file stored in the 73VR3100 to the 73VR31BLD. Configuration files can be stored in a storage media such as a hard disk.
Remote operating:	Starting / stopping the 73VR3100 operation remotely.
Creating a data file:	Creating a data file in a CF Card
Exporting configurations to CSV:	Configuration files created on the 73VR31BLD can be converted into CSV format.

1.2 SYSTEM REQUIREMENTS

The PC environment indicated below is recommended for use with the 73VR31BLD.

OS	Windows 10 32-bit, 64-bit or Windows 11 64-bit Note: Proper software functions may not be ensure 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 Install Shield 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 73VR31BLD program installed on your PC, remove entirely before newly installing.

If the Install Shield 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 “73VR31BLD” folder of the CD-ROM
2. After that, follow the step-by-step instructions that will appear on dialog boxes.
3. When the installation is successfully completed, “73VR31BLD” will be added to the menu under Programs.

■ **REMOVE**

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

Select the 73VR31BLD 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 73VR31BLD 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 73VR3100 DATA

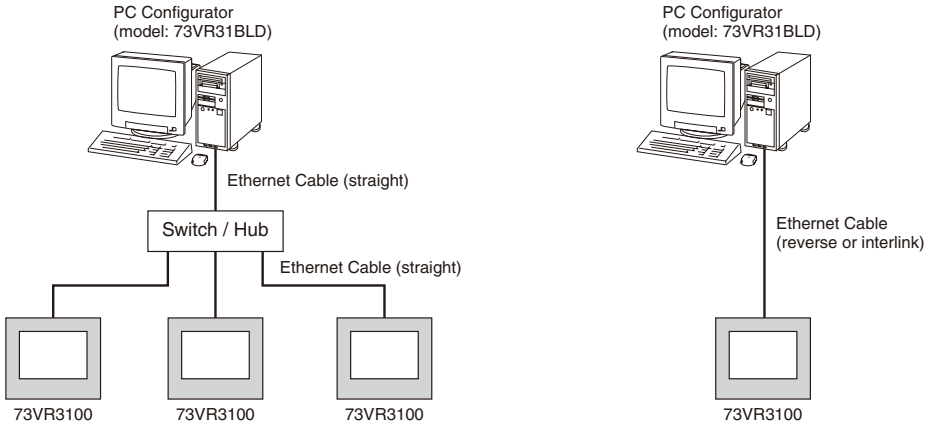
1.4.1 ETHERNET

A PC with the 73VR31BLD installed and the 73VR3100 can communicate through Ethernet. The 73VR3100 must be setup with an IP address in advance. Please refer to the 73VR3100 Users Manual to set the IP address.

■ **ETHERNET CABLE TYPE**

When connecting the PC and the 73VR3100 via a switching hub, use Straight type cables.

When the 73VR3100 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...

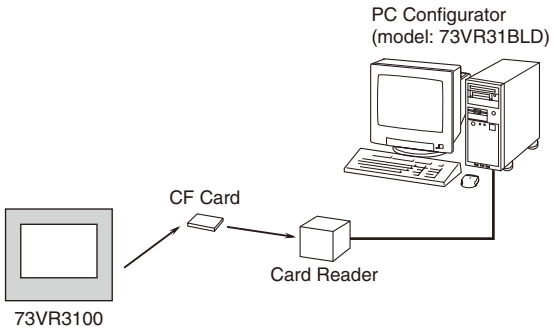
```
C:\WINDOWS > ping ***.***.***.***
```

(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 ***.***.***.***
```

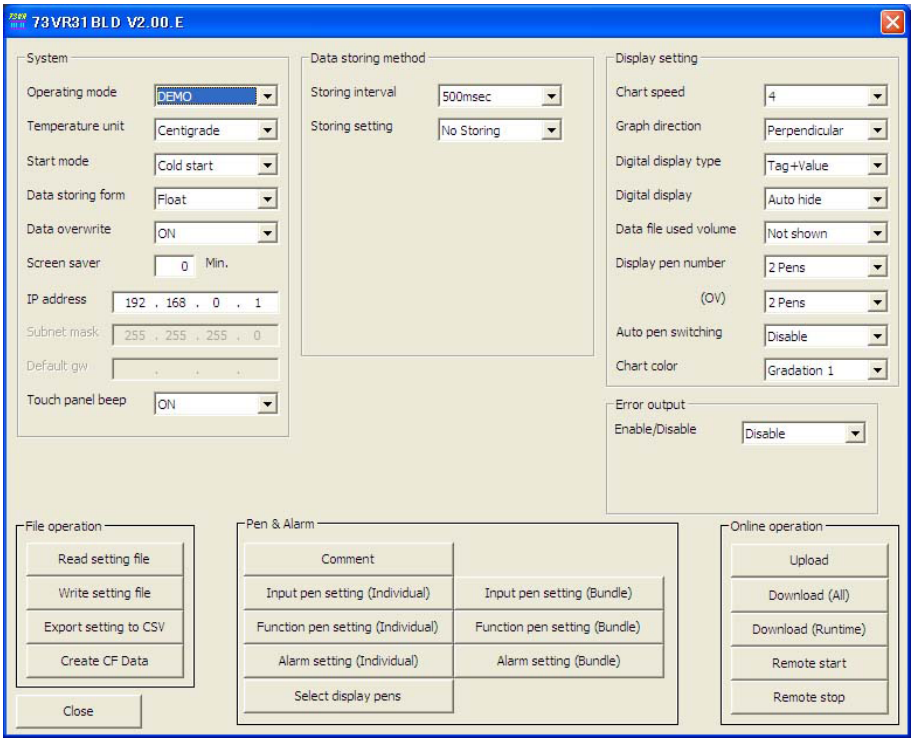
```
Packets:Sent = 4, Received = 4, Lost = 0(0% loss)
```

...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 > 73VR31BLD, and then the 73VR3100 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.

2. SETTING ON THE 73VR31BLD

2.1 SYSTEM SETTING

The System setting menu appears as below.

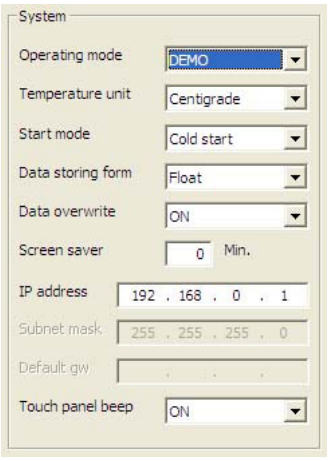


Figure 2.1. System setting.

2.1.1 OPERATING MODE

Choose among the following options.

DEMO	Demonstration mode	You can run the 73VR3100 program without actual signal input for learning, evaluation and demonstration when you choose DEMO.
Normal	Running mode	Choose this option when you connect actual input signals to the 73VR3100.

2.1.2 TEMPERATURE UNIT

Choose among the following options.

Centigrade	Centigrade (Celsius)
Fahrenheit	Fahrenheit

2.1.3 START MODE

Choose among the following options.

Cold Start	At a restart, the 73VR3100 stands by showing the initial view.
Hot Start	At a restart, the 73VR3100 automatically starts recording.

2.1.4 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)

2.1.5 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 73VR3100 stops recording when the file capacity is full.

2.1.6 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) The screensaver function is deactivated with the time set to zero (0).

2.1.7 IP ADDRESS

In order to connect the 73VR3100 to a PC via Ethernet when using the 73VR31BLD (Builder), set an appropriate IP address.

Enter the IP address assigned to the 73VR3100.

IP address	Factory default setting: 192.168.0.1

2.1.8 SUBNET MASK

The subnet mask programmed on the 73VR3100 is indicated, but not modifiable on the 73VR31BLD.

2.1.9 DEFAULT GATEWAY

The default gateway programmed on the 73VR3100 is indicated, but not modifiable on the 73VR31BLD.

2.1.10 TOUCH PANEL BEEP

You can specify if you want a beep sound or not whenever you touch the screen of the 73VR3100.

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

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:

20msec	20 milliseconds
100msec	100 milliseconds
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 73VR3100 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 73VR3100 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 73VR3100 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

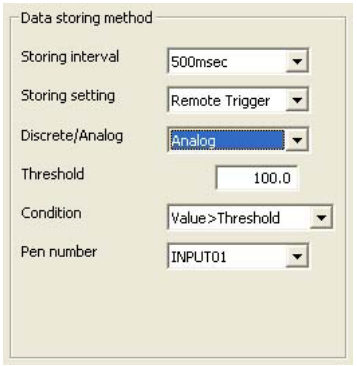


Figure 2.2.2. Remote trigger setting, analog.

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 a pen to be designated as trigger.

EVENT RECORDING

In the event recording mode, the 73VR3100 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 73VR3100 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 73VR3100 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

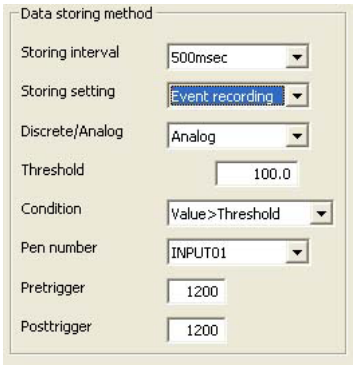


Figure 2.3.2b. Event recording setting, analog.

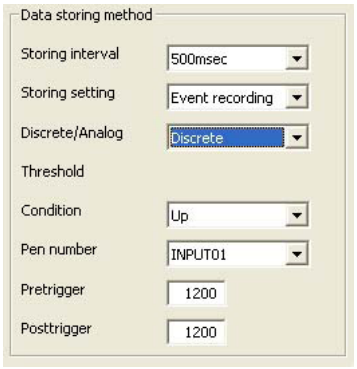


Figure 2.3.2c. Event recording setting, discrete.

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 a 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 73VR3100 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

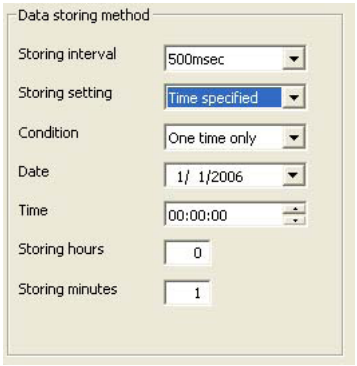


Figure 2.2.2d. Store at a defined time, one day only.

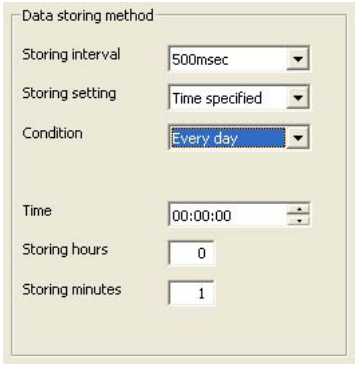


Figure 2.2.2e. Store at a defined time, every day.

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.

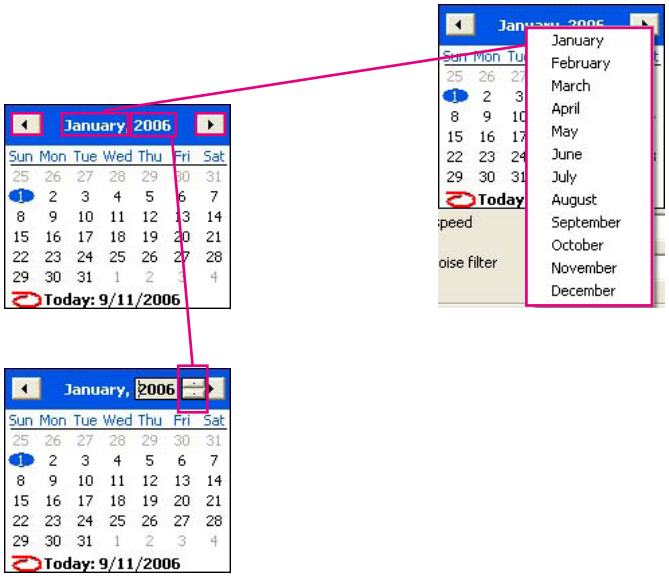


Figure 2.3.2f. Calendar.

2.3 DISPLAY SETTING

The Display setting menu appears as below.

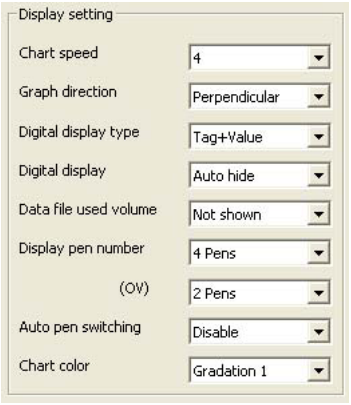


Figure 2.3. Display setting.

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
20 msec.	No	Yes	Yes	Yes	No	No	No
100 msec.	Yes	Yes	Yes	Yes	No	No	No
≥500 msec.	Yes	Yes	Yes	Yes	Yes	Yes	Yes

2.3.2 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

2.3.3 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.

2.3.4 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.

2.3.5 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.

2.3.6 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.

2.3.7 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.

2.3.8 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.

2.3.9 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 ERROR OUTPUT

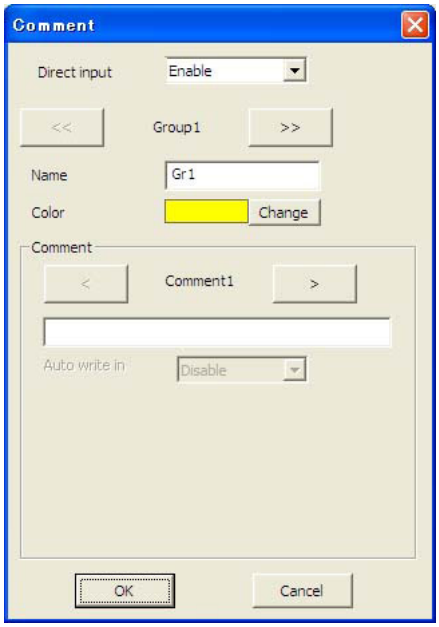
With the error output setting is enabled, the 73VR3100 outputs an alarm contact at a specified channel of the R3-DC16, R3-DC32A and R3-DAC16A modules when an internal bus error continues for 1 minute or longer. Only 1 channel can be specified.

1. Choose Enable or Disable. When Enable is selected, the following selections appears.
2. Output ch.: Specify a channel number where the alarm output is supplied.

Output ch.	Output channel number	Specify within 1 to 256.

3. Contact logic: Specify whether you want to open (OFF) or close (ON) the contact at alarm.

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 DIRECT INPUT

Direct comment entry using a USB keyboard is available, without using preset comments. Comments registered in this way are stored in the 7th group. While this function is enabled, other comments in the groups 1 through 6 are not usable.

2.5.2 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.

Name

Name	Max. 10 characters

Color

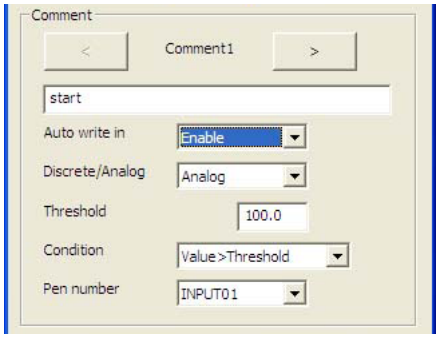
A specific color is applied to each group. Comments are shown in this color in the Trend view and also in the Comment History.

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 pen number for 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.

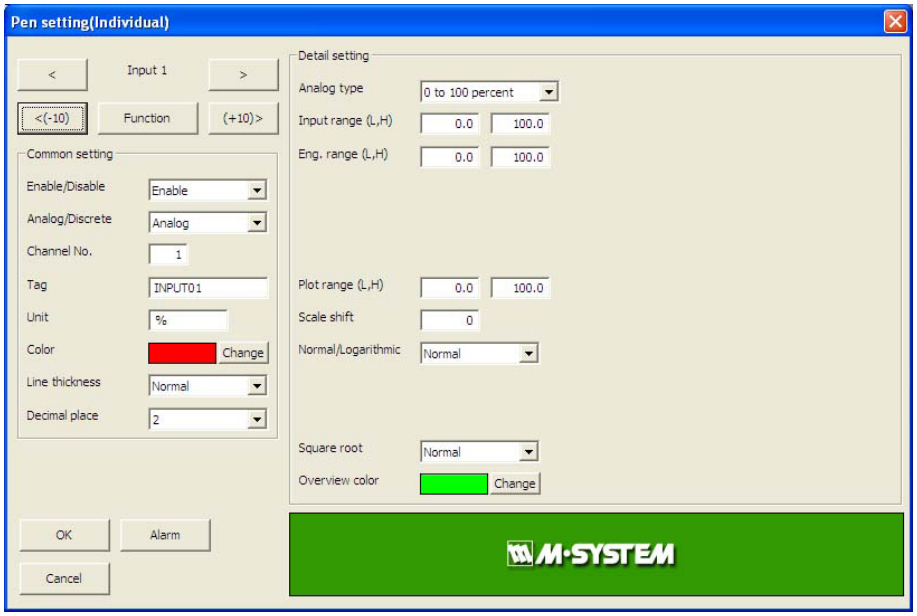


Figure 2.6: Input pen setting (Individual).

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

Analog / Discrete signal. Select pen's signal type. With 20 msec. storing interval, this selection is greyed out as the signal allocation is fixed: Pens 1 through 8 for analog, Pens 9 through 16 for discrete.

Channel No.

Assign the R3 series modules' channel No. to each pen. As the signal allocation is fixed as in the table below for 20 msec. storing interval, there is no need of setting Channel No.

Input Pen	Signal Type	73VR3100 Channel No.
1 through 8	Analog	1 through 8
9 through 16	Discrete	9 through 16

Tag

Enter a desired tag name.

Tag name	Max. 8 characters

Unit

Enter a desired unit name.

Unit	Max. 4 characters

Color

Touching the current selection of the Color opens a color palette. 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.

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.

For horizontal chart, only 1 decimal place is possible.

2.6.2 DETAILED SETTING

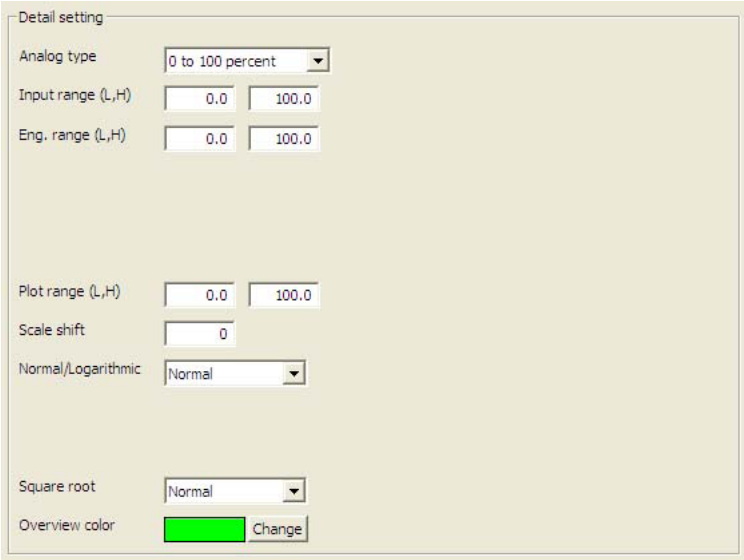


Figure 2.6.2. Detailed setting, analog.

Analog type and Input range

With 200 and 100 msec. storing interval, only DC voltage ranges are selectable.

Selectable signal types and input ranges are as shown in the tables in the previous and this 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.

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

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.

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

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.

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.

Scale shift	Selectable within 0 to 100%

MODEL	I/O TYPE	SELECTIONS	USABLE RANGE	MEASURABLE RANGE
R3-SV4 R3(Y)-SV8 R3(Y)-SV8N R3(Y)-SV16N	DC voltage input	0 to 100 percent	0 – 100%	-10 – 10V
				-5 – 5V
				0 – 10V
				0 – 5V
				1 – 5V
				-1 – 1V*1
R3-SV4A R3-SV8A	DC voltage input	0 to 100 percent	0 – 100%	-100 – 100mV
				-60 – 60mV
				-50 – 50mV
				0 – 100mV
				0 – 60mV
				0 – 50mV
R3-SV4B R3-SV8B	DC voltage input Wide range	0 to 100 percent	0 – 100%	-30 – 30V
				-15 – 15V
				0 – 30V
				0 – 15V
R3-SV4C R3-SV8C	DC voltage input Wide range, ±50V	0 to 100 percent	0 – 100%	-50 – 50V
				-25 – 25V
				0 – 50V
				0 – 25V
R3-SS4 R3(Y)-SS8 R3(Y)-SS8N R3-SS16N	DC current input	0 to 100 percent	0 – 100%	-20 – 20mA*2
				0 – 20mA*2
				4 – 20mA
R3-DS4 R3-DS4A R3-DS8N	4 – 20mA input Excitation supply	0 to 100 percent	0 – 100%	4 – 20mA
R3-PT4	AC voltage input	0 to 100 percent	0 – 100%	0 – 250V AC
				0 – 50V AC
R3-CT4	CT input	0 to 100 percent	0 – 100%	0 – 5A AC
				0 – 1A AC
R3-CT4A R3-CT8A	AC current input	0 to 100 percent	0 – 100%	CLSA-50 (0 – 500A AC)*3
				CLSA-30 (0 – 300A AC)*3
				CLSA-12 (0 – 120A AC)*3
				CLSA-08 (0 – 80A AC)
R3-CT4B R3-CT8B	AC current input	0 to 100 percent	0 – 100%	CLSB-60 (0 – 600A AC)*3
				CLSB-40 (0 – 400A AC)*3
				CLSB-20 (0 – 200A AC)*3
				CLSB-10 (0 – 100A AC)
				CLSB-05 (0 – 50A AC)
R3-CT4C R3-CT8C	AC current input	0 to 100 percent	0 – 100%	CLSB-R5 (0 – 5A AC)
R3(Y)-PA16	Totalized pulse input	COUNT16	0 – 10000	0 – 10000*4
R3-PA4	High speed pulse input	COUNT16	0 – 10000	0 – 100 kHz
				0 – 10 kHz
				0 – 1 kHz
				0 – 100 Hz
				0 – 10 Hz
				0 – 1 Hz
				0 – 0.1 Hz
R3-PA4A R3-PA4B R3-PA8	Totalized pulse input	COUNT32	0 – 1e8	0 – 100 000 000*5

MODEL	I/O TYPE	SELECTIONS	USABLE RANGE	MEASURABLE RANGE
R3-PA2	Encoder pulse input	COUNT16	0 – 10000	0 – 100 kHz
				0 – 10 kHz
				0 – 1 kHz
				0 – 100 Hz
				0 – 10 Hz
				0 – 1 Hz
				0 – 0.1 Hz
		COUNT32	0 – 1e8	0 – 100 000 000
R3-WTU	AC current input	0 to 100 percent	0 – 100%	-327.68 – 327.67 *6
		COUNT32	0 – 1e8	0 – 1e8 *5
R3-WT4 R3-WT4A R3-WT4B	AC current input	COUNT16	0 – 10000	0 – 10000
		COUNT32	0 – 1e8	0 – 1e8 *5
R3-MS4 R3(Y)-MS8	Potentiometer input	0 to 100 percent	0 – 100%	0 – 100%
R3-LC2	Strain gauge input	0 to 100 percent	0 – 100%	0 – 100%
R3-CZ4	Zero-phase current input	0 to 100 percent	0 – 100%	0 – 100%
R3-US4	DC Volt/Potentiometer input	0 to 100 percent	0 – 100%	0 – 100%
	T/C RTD input	US4(Temp.)*7	Same as meas. range	Refer to the specifications sheet

*1. Not usable with the R3-SV8N or R3(Y)-SV16N.
*2. Not usable with the R3-SS8N.
*3. Set “0 - 100%” the scaling of input range conversion data with PC Configurator Software (model: R3CON).
*4. Max. count can be modified using the PC Configurator Software (model: R3CON). For the R3(Y)-PA16, do not modify to more than 32767. When the count exceeds 32767, it will be an invalid number. Refer to Users Manual for the R3CON.
*5. Set 32 bit data as 1e8 with R3CON. For other value settings refer to the instruction manual for each I/O module.
*6. It is required to set up 16 bit data with R3CON being sure it does not surpasses the value of “-32768 to +32767.” At active energy count over, it does not return to “0”, for this reason, do not use it for pulse accumulation function.
*7. To measure temperature with R3-US4 (T/C or RTD), select “US4(Temp.)” for Analog type in the Pen setting regardless of sensor type. Measurable range is not displayed when “US4(Temp.)” is selected. For measurable range, refer to the specification sheet of R3-US4.

MODEL	I/O TYPE	SELECTIONS	USABLE AND MEASURABLE RANGE	
			°C	°F
R3-TS4 R3-TS8	T/C 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*	-200 – 850	-328 – 1562
		Ni 508.4 Ω*	-50 – 200	-58 – 392
		Cu 50	-50 – 150	-58 – 302
		Ni 1000*	-56 – 152	-68 – 305

* Not usable with the R3-RS8.

MODEL	SELECTIONS	USABLE RANGE	MEASURABLE RANGE
R3-GC1 R3-GM1 R3-GE1 R3-GD1 R3-GFL1	0 to 100 percent	0 - 100 %	-327.68 - 327.67
	COUNT16	0 - 10000	-32768 - 32767
	COUNT32*	0 – 1e8	-2147483648 -2147483647

* When COUNT32 is used, two set of 16 bits data for 2 channels are required. Send the lower 16 bits data, the higher 16 bits data in turn, to the input channel of the 73VR3100.
Example: R3-GC1 is installed in slot 1.
RWw0: Lower 16 bits data => Input channel 1 of the 73VR3100
RWw1: Higher 16 bits data => Input channel 2 of the 73VR3100
In above case, select "COUNT32" for Analog type in the Pen setting, and then select Channel 1. Do not configure Channel 2.

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.

Square Root

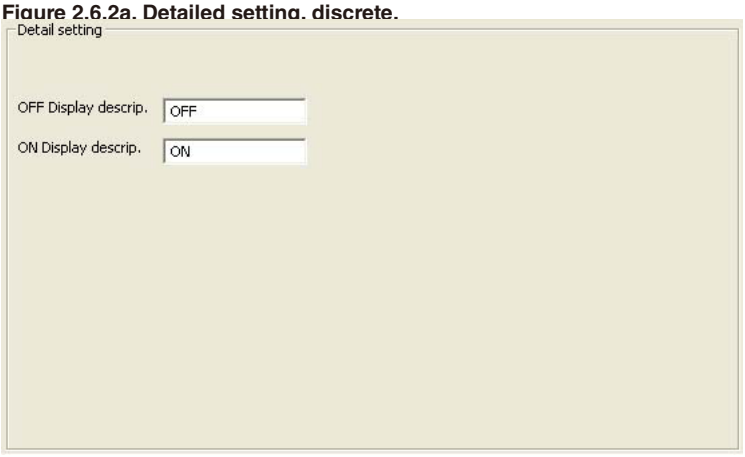
Input data is square-root-extracted when this setting is enabled.

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.

OFF description	Max. 5 characters
ON description	Max. 5 characters

2.6.3 CHANNEL SELECTOR BUTTONS

These control buttons are commonly used in many windows.

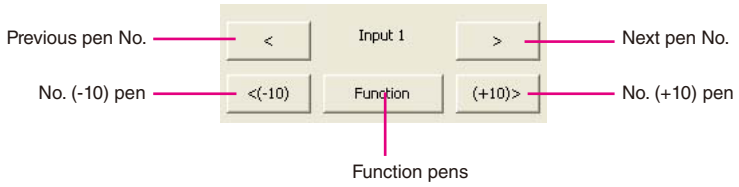


Figure 2.6.3. Channel selector buttons.

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. Choosing Enable under the Common setting will open Detail setting to the right in the same window shown in Figure 2.7.

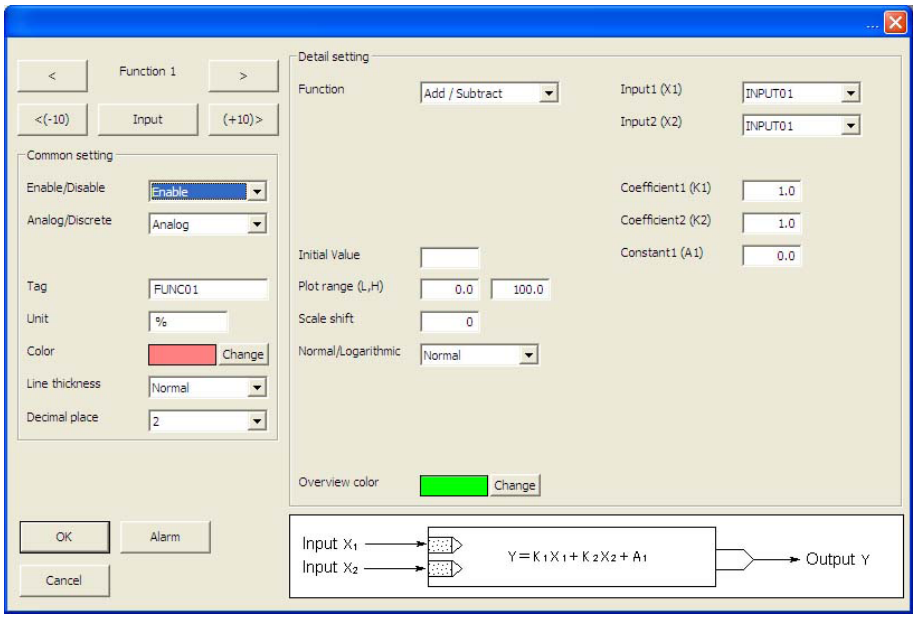


Figure 2.7: Function pen setting (Individual).

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

Analog / Discrete signal. Select the function's signal type. Select Analog for arithmetic functions and filters. Select Discrete for logic functions.

Tag name

Tag name	Max. 8 characters

Unit

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.

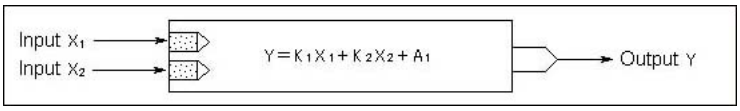
2.7.2 DETAILED SETTING

Selectable operating functions are as shown in the table below.

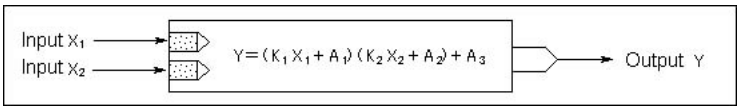
Arithmetic	Addition	K1X1 + K2X2 + A1
	Multiplication	(K1X1+A1) (K2X2+A2) + A3
	Division	(K1X1+A1) / (K2X2+A2) + A3
Logical	AND	X1 ∧ X2
	OR	X1 ∨ X2
	NOT	¬ X1
	XOR	X1 ^ X2
Math	Square root	Square root extraction K1 √ X1
	Power	Power $X1^{A1}$
Accumulation		Analog accumulation, Pulse accumulation
Peak hold	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.

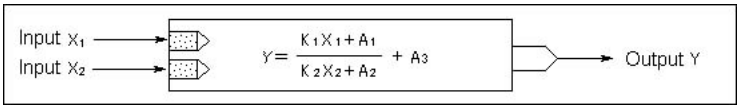
Addition / Subtraction



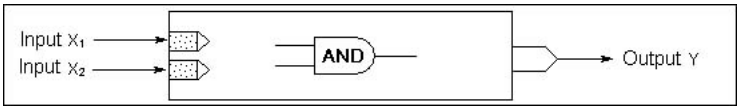
Multiplication



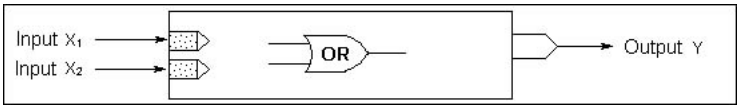
Division



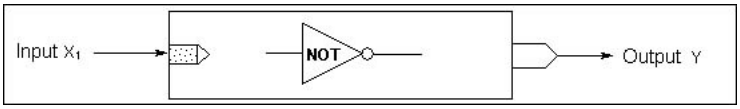
AND



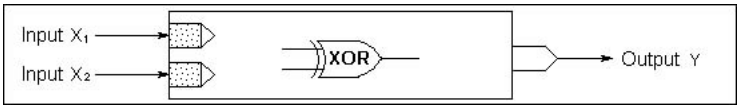
OR



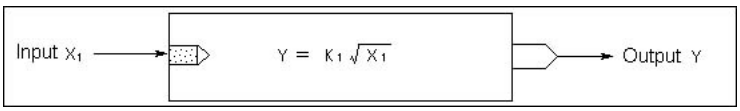
NOT



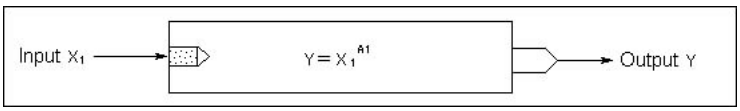
XOR



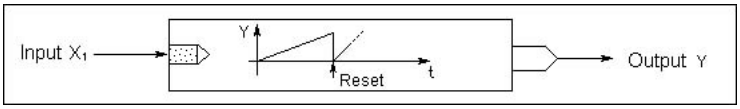
Square root



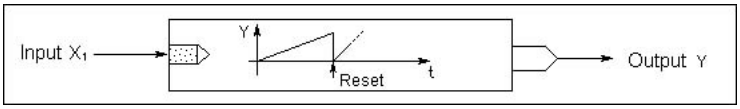
Power



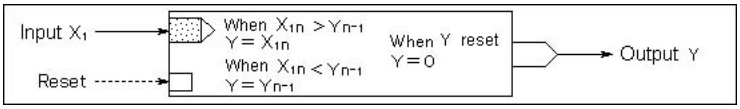
Analog accumulation



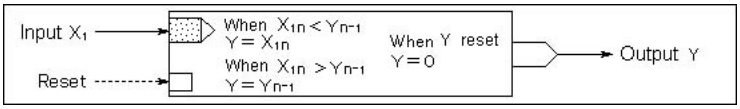
Pulse accumulation



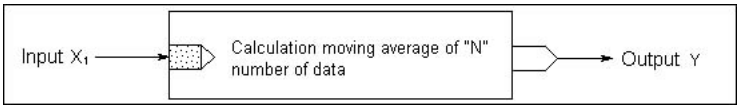
Peak hold (max)



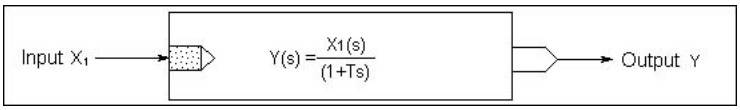
Peak hold (min)



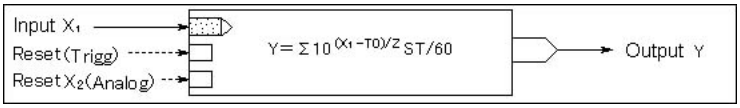
Moving average



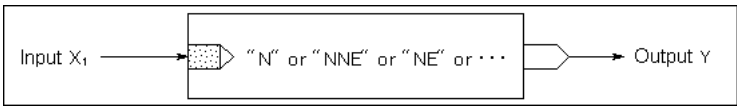
First order lag



F value calculation



Anemoscope



Input (X1, X2, X3)

Select input signals used for the operating function. For Square root, Power, Analog accumulation, Pulse accumulation, Peak hold, NOT, Moving average, 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, X2 or X3 in an equation for Function Pen 1. When assigning 'last' data sample to X1, X2 or X3, 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

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 and analog 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.

Succession is available only for Analog Accumulation. Setting "succession", analog count is performed continuously.

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

• Reset by trigger input

Click the right arrow to choose among Rise, Sink, 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 2.2.1.

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

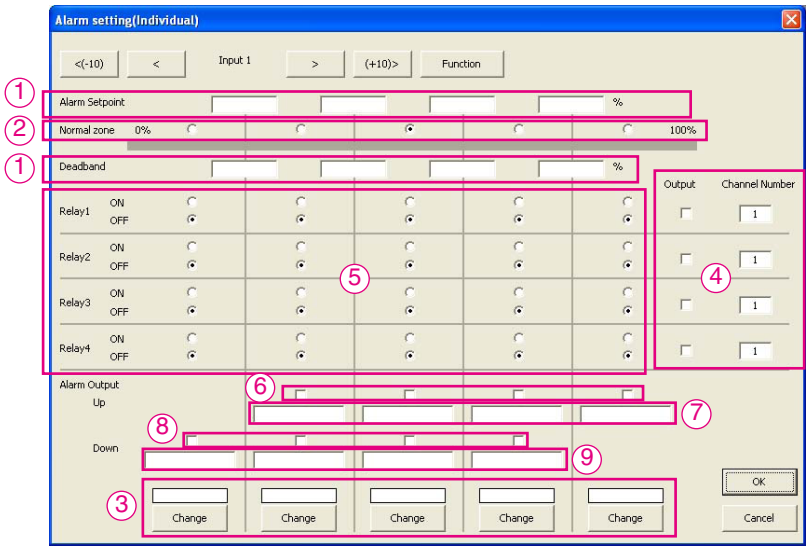


Figure 2.8.1: Alarm setting for analog signal (Individual).

Alarm Setpoint, Deadband (1)

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 set only “High” and “Low” setpoints, they must be set immediately next to the “Normal” zone.

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.

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

Normal Zone (2)

Set a specific range that is judged as a ‘normal state’ so that relevant data is continuously plotted. Consequently, while a pen you have set up is within this range, it means a corresponding input signal is in the normal state.

Zone Color (3)

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

NOTE

256 colors are used in the 73VR3100. If you choose a color out of this, it may not be represented accurately on the 73VR3100 screen.

Output (4)

Alarm contact outputs can be provided to the alarm output terminal

Choose Enable to activate an relay output.

Relay (5)

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

Alarm Message (6)...(9)

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.

2.8.2 DISCRETE ALARM

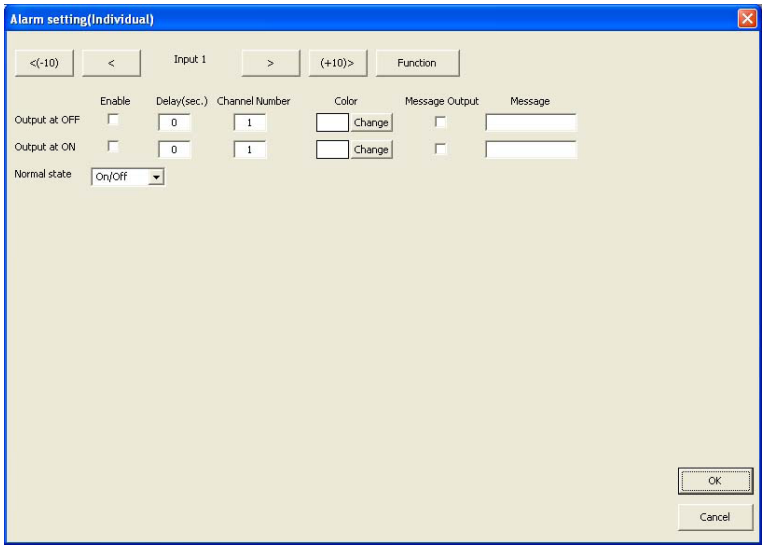


Figure 2.8.2: Alarm setting for discrete signal (Individual).

Output at OFF / ON Enable, Delay

Alarm contact outputs can be provided to the alarm output terminal. Choose Enable to activate an relay output for respective signal status (input ON and OFF).

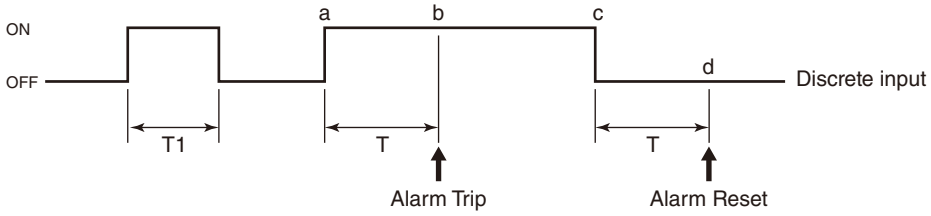
In order to eliminate noise interference, you can specify the time (seconds) to wait to apply change in signal status.

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.

Output Channel Number

Specify the channel No. of the R3-DC16, R3-DC32A and R3-DAC16A.

Channel No.	Selectable from 1 to 256

Color

You can apply specific colors to represent each status for use in the Display views. Use the color palette.

OFF Message, ON Message

These messages are used for Overview and Alarm History. Choose Enable to activate a message output for respective signal status (input ON and OFF). Message contents up to 10 characters respectively for OFF and ON.

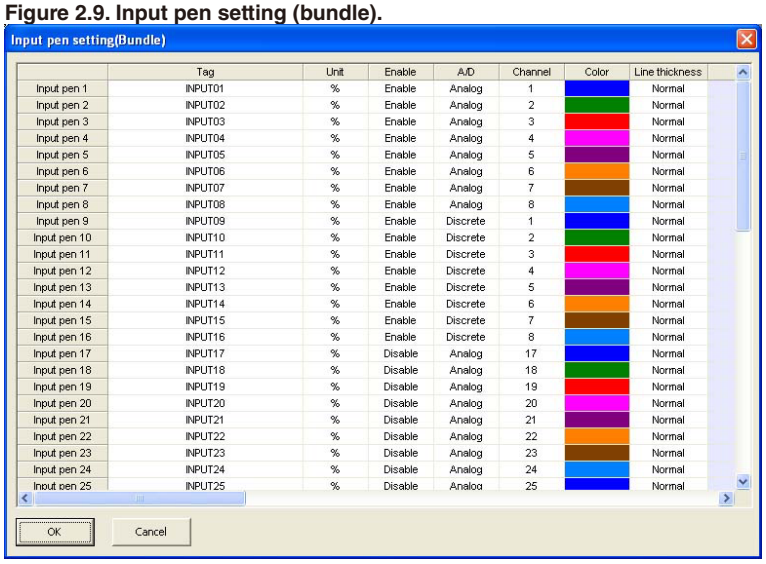
Normal state

Specify which trigger input contact status should be identified as normal.

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).



	Tag	Unit	Enable	A/D	Channel	Color	Line thickness
Input pen 1	INPUT01	%	Enable	Analog	1		Normal
Input pen 2	INPUT02	%	Enable	Analog	2		Normal
Input pen 3	INPUT03	%	Enable	Analog	3		Normal
Input pen 4	INPUT04	%	Enable	Analog	4		Normal
Input pen 5	INPUT05	%	Enable	Analog	5		Normal
Input pen 6	INPUT06	%	Enable	Analog	6		Normal
Input pen 7	INPUT07	%	Enable	Analog	7		Normal
Input pen 8	INPUT08	%	Enable	Analog	8		Normal
Input pen 9	INPUT09	%	Enable	Discrete	1		Normal
Input pen 10	INPUT10	%	Enable	Discrete	2		Normal
Input pen 11	INPUT11	%	Enable	Discrete	3		Normal
Input pen 12	INPUT12	%	Enable	Discrete	4		Normal
Input pen 13	INPUT13	%	Enable	Discrete	5		Normal
Input pen 14	INPUT14	%	Enable	Discrete	6		Normal
Input pen 15	INPUT15	%	Enable	Discrete	7		Normal
Input pen 16	INPUT16	%	Enable	Discrete	8		Normal
Input pen 17	INPUT17	%	Disable	Analog	17		Normal
Input pen 18	INPUT18	%	Disable	Analog	18		Normal
Input pen 19	INPUT19	%	Disable	Analog	19		Normal
Input pen 20	INPUT20	%	Disable	Analog	20		Normal
Input pen 21	INPUT21	%	Disable	Analog	21		Normal
Input pen 22	INPUT22	%	Disable	Analog	22		Normal
Input pen 23	INPUT23	%	Disable	Analog	23		Normal
Input pen 24	INPUT24	%	Disable	Analog	24		Normal
Input pen 25	INPUT25	%	Disable	Analog	25		Normal

HOW TO MODIFY PEN SETTING

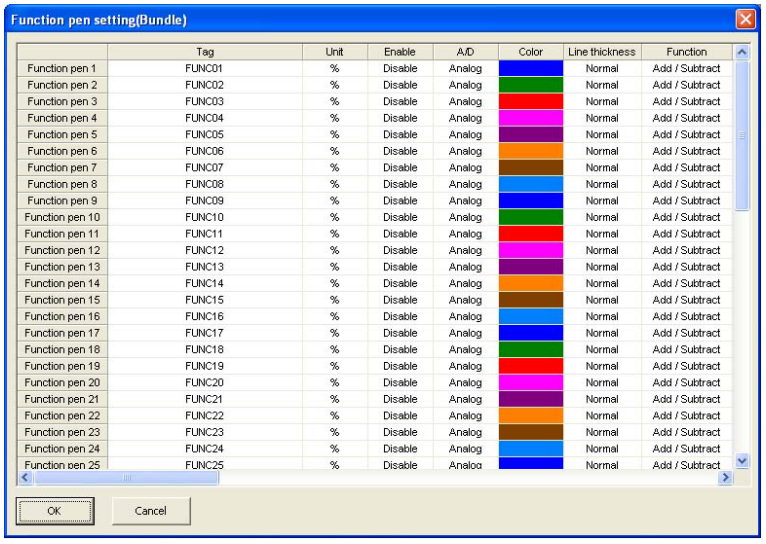
1. Click on the cell you want to change.
2. When a pull-down arrow appears to the right, pull down the menu options and select one.
3. Press Enter or move to a next cell.

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.



	Tag	Unit	Enable	A/D	Color	Line thickness	Function
Function pen 1	FUNC01	%	Disable	Analog		Normal	Add / Subtract
Function pen 2	FUNC02	%	Disable	Analog		Normal	Add / Subtract
Function pen 3	FUNC03	%	Disable	Analog		Normal	Add / Subtract
Function pen 4	FUNC04	%	Disable	Analog		Normal	Add / Subtract
Function pen 5	FUNC05	%	Disable	Analog		Normal	Add / Subtract
Function pen 6	FUNC06	%	Disable	Analog		Normal	Add / Subtract
Function pen 7	FUNC07	%	Disable	Analog		Normal	Add / Subtract
Function pen 8	FUNC08	%	Disable	Analog		Normal	Add / Subtract
Function pen 9	FUNC09	%	Disable	Analog		Normal	Add / Subtract
Function pen 10	FUNC10	%	Disable	Analog		Normal	Add / Subtract
Function pen 11	FUNC11	%	Disable	Analog		Normal	Add / Subtract
Function pen 12	FUNC12	%	Disable	Analog		Normal	Add / Subtract
Function pen 13	FUNC13	%	Disable	Analog		Normal	Add / Subtract
Function pen 14	FUNC14	%	Disable	Analog		Normal	Add / Subtract
Function pen 15	FUNC15	%	Disable	Analog		Normal	Add / Subtract
Function pen 16	FUNC16	%	Disable	Analog		Normal	Add / Subtract
Function pen 17	FUNC17	%	Disable	Analog		Normal	Add / Subtract
Function pen 18	FUNC18	%	Disable	Analog		Normal	Add / Subtract
Function pen 19	FUNC19	%	Disable	Analog		Normal	Add / Subtract
Function pen 20	FUNC20	%	Disable	Analog		Normal	Add / Subtract
Function pen 21	FUNC21	%	Disable	Analog		Normal	Add / Subtract
Function pen 22	FUNC22	%	Disable	Analog		Normal	Add / Subtract
Function pen 23	FUNC23	%	Disable	Analog		Normal	Add / Subtract
Function pen 24	FUNC24	%	Disable	Analog		Normal	Add / Subtract
Function pen 25	FUNC25	%	Disable	Analog		Normal	Add / Subtract

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.

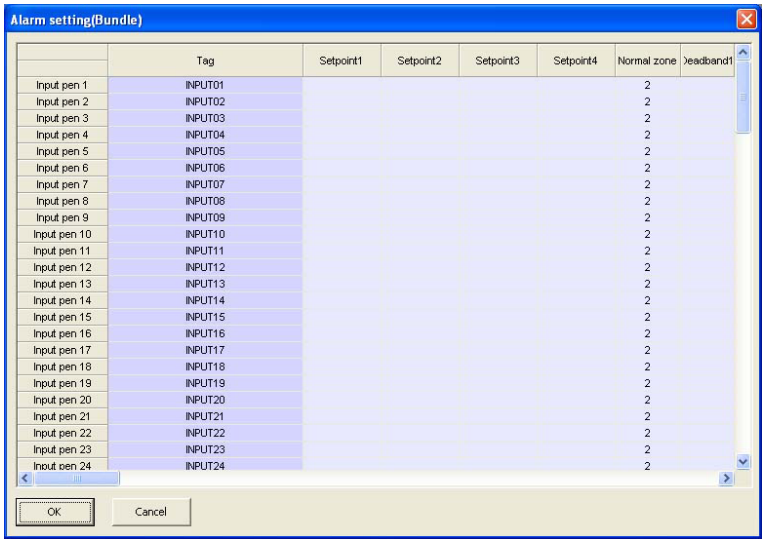


Figure 2.11. Alarm setting (bundle).

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 73VR3100 screen) can show depends upon the 'Display pen number' setting.

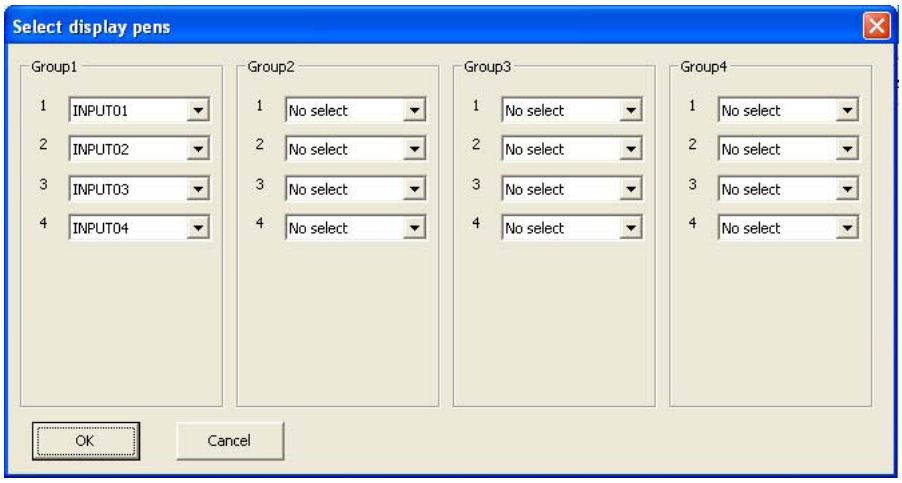
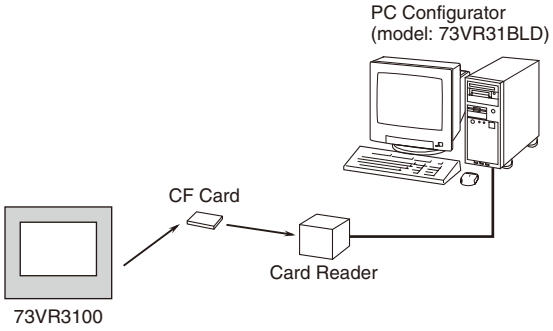


Figure 2.12. Select display pens.

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 73VR3100 to apply the setting.

3.2 WRITE SETTING FILE

Parameters set on the 73VR31BLD can be saved in a file with user-specified file name.

Parameter contents uploaded from the 73VR3100 also can be saved in the same manner.

When you use a file created on the 73VR31BLD for the 73VR3100, the file name must be 73VR.VRP31.

3.3 EXPORT SETTING TO CSV

Parameters set on the 73VR31BLD can be saved in the CSV format.

Parameter contents uploaded from the 73VR3100 also can be saved in the same manner.

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

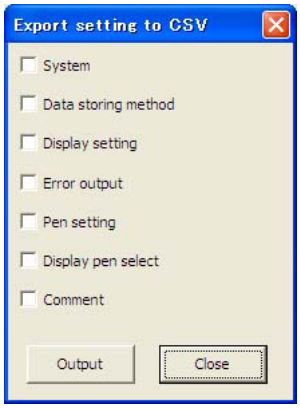


Figure 3.3. Export setting to CSV.

System	Operating mode, Temperature unit, Start mode, Data storing form, Data overwrite, Screen saver, IP address, Touch panel beep
Data storing method	Storing interval, Storing setting
Display setting	Chart speed, Graph direction, Digital display type, Digital display, Data file used volume, Display pen number, Display pen number (OV), Auto pen switching, Chart color
Error output	Enable/Disable, Output channel, Contact logic
Pen setting	Input pen setting, Function pen setting, Alarm setting
Display pen select	Select display pens
Comment	Direct input, 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 73VR3100 automatically creates a data area dedicated to store data files when it starts up. It can also be created on the PC using the 73VR31BLD. Be sure to create a data file in a CF Card before trying to replace CF Cards while the 73VR3100 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.

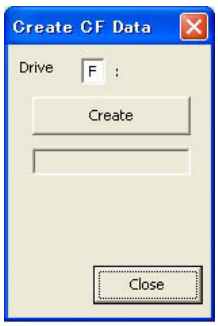


Figure 3.4. Create CF Data.

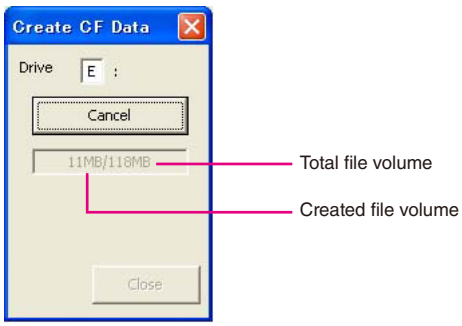
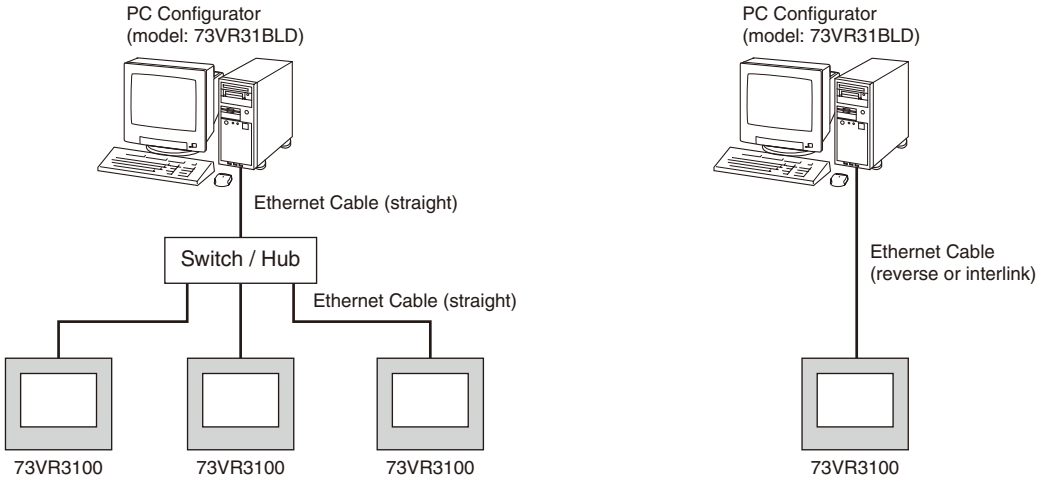


Figure 3.4a. Create CF Data in file creating process.

4. ONLINE OPERATION

File operation functions are usable between the PC and the 73VR3100.

Online Operation are accessible only when the 73VR3100 is connected to a PC installed with the 73VR31BLD via Ethernet. Before using these functions, confirm that an appropriate IP address is set to the 73VR3100.



4.1 UPLOAD

The 73VR31BLD can read the current settings on the 73VR3100. Enter IP address of the 73VR3100 in IP address setting under System setting, and press Upload button.

If you have set up a password to allow access the 73VR3100, 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 73VR31BLD to the 73VR3100.

If you have set up a password to allow access the 73VR3100, 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.

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

If you have set up a password to allow access the 73VR3100, 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 73VR3100 with these control buttons. When you need to change and download settings, the 73VR3100 can be stopped at any time.

If you have set up a password to allow access the 73VR3100, the Enter Password dialog box will appear. Enter password and click OK.

APPENDIX-A SETTING FILE FORMAT IN CSV

Row A : System, item names
Row B : System, parameters

1	Setting File Version 1	
2	# System information #	
3	Communication setting	DEMO
4	Temperayure unit	Centigrade
5	Start mode	Cold start
6	Data storing form	Float
7	Data overwrite	ON
8	Screen saver	0Min.
9	IP address	192.168.0.1
10	Touch panel beep	ON

Row A : Data storing method, item names
Row B : Data storing method, parameters

11	# Data storing method information #	
12	Sampling rate	500msec
13	Storing mode	No Storing

Row A : Display setting, item names
Row B : Display setting, parameters

14	# Display setting information #	
15	Chart speed	[4]
16	Graph	Perpendicular
17	Digital display pen No.	Tag+Value
18	Digital display	Auto hide
19	Use rate of DataFile	Not shown
20	Display pen number	2 Pens
21	Display pen number (OV)	2 Pens
22	Auto pen switching	Disable
23	Chart color	Gradation 1

Row A : Error output, item names
Row B : Error output, parameters

24	# Error output information #	
25	Enable/Disable	Enable
26	Output channel	1
27	Contact logic	OFF

Row A : Pen setting, item names
Row B : Pen setting, parameters
Lower range values
Row C : Upper range values

28	# Pen setting information #			
29	*Input 1*			
30	Analog/Discrete	Analog		
31	Channel No.		1	
32	Tag	INPUT01		
33	Unit	%		
34	Color	RGB(255.0.0)		
35	Thick line	Normal		
36	Decimal place		2	
37	Analog type	0 to 100 percent		
38	Input range		0	100
39	Eng. range		0	100
40	Plot range		0	100
41	Scale shift		0	
42	Normal/Logarithmic	Normal		
43	Square root	Normal		
44	Overview color	RGB(0.255.0)		
45	Alarm Setpoint			
46	Normal Zone		2	
47	Deadband			
48	Relay1 disable			
49	Relay2 disable			
50	Relay3 disable			
51	Relay4 disable			
52	UP1->2 message	Disable		
53	UP2->3 message	Disable		
54	UP3->4 message	Disable		
55	UP4->5 message	Disable		
56	DOWN1<-2 message	Disable		
57	DOWN2<-3 message	Disable		
58	DOWN3<-4 message	Disable		
59	DOWN4<-5 message	Disable		
60	Zone color1	RGB(255.255.255)		
61	Zone color2	RGB(255.255.255)		
62	Zone color3	RGB(255.255.255)		
63	Zone color4	RGB(255.255.255)		
64	Zone color5	RGB(255.255.255)		

Row A : Display pen select, item names
Row B : Display pen select, parameters

437	# Display pen select information #	
438	Group 1	
439	01:[001]INPUT01	
440	02:[002]INPUT02	
441	03:[003]INPUT03	
442	04:[004]INPUT04	
443	05:[005]INPUT05	
444	06:[006]INPUT06	
445	07:[007]INPUT07	
446	08:[008]INPUT08	
447	Group 2	
448	01:No select	
449	02:No select	

Row A : Comment, item names
Row B : Comment, parameters

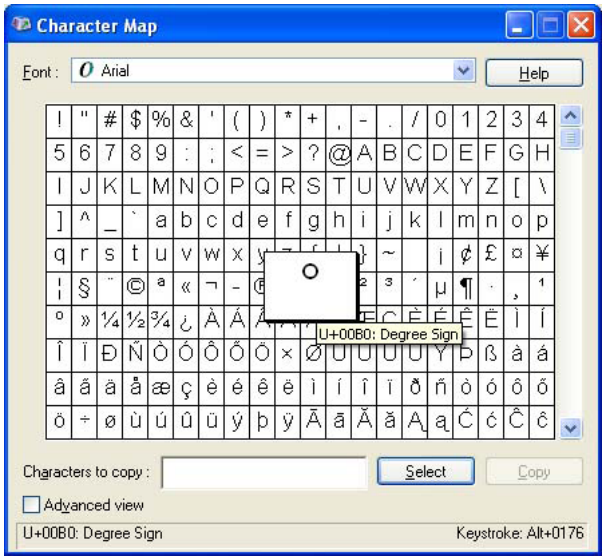
Setting File Version 1		
# Comment information #		
Direct input	Enable	
Group 1		
Name	Gr1	
Color	RGB(255.255.0)	
Comment 1	START	
Auto write in	Enable	
Discrete/Analog	Analog	
Threshold	100	
Condition	Value>Threshold	
Pen number	INPUT01	
Comment 2		
Auto write in	Disable	
Comment 3		
Auto write in	Disable	
Comment 4		
Auto write in	Disable	
Comment 5		
Auto write in	Disable	
Comment 6		
Auto write in	Disable	
Comment 7		
Auto write in	Disable	

APPENDIX-B HOW TO SHOW TEMPERATURE UNIT

In order to enter '°C' or '°F' on the 73VR3100, please use the following procedure:

(1) Choose on the task bar Start > Programs > Accessories > System Tools > Character Map.

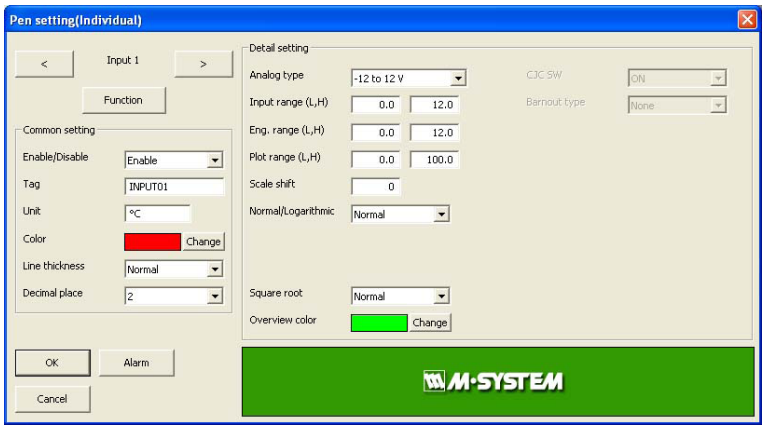
(2) Click on [°] (U+00B0: Degree Sign) and click Select button.



(3) Click on [C] (U+0043: Latin Capital Letter C) or [F] (U+0046: Latin Capital Letter F) and click Select. [C] and [F] can be entered directly on the keyboard after the Character Map is closed.

(4) Click Copy button to copy [°C] or [°F].

(5) Open Pen setting (individual) window and paste the copied characters.



NOTE

Max. 4 characters can be used for an engineering unit. '°C' or '°F' takes two characters.

Characters may be garbled if an OS other than English is used.

APPENDIX-C UPDATE HISTORY

Ver.2.01.xx ... R3-US4 and anemoscope meter function available.

Ver.2.02.xx ... SD card available.

Ver.2.03.xx ... Add “succession” to reset condition (Reset by time) of analog accumulation.

Ver.2.04.xx ... Supports Windows 10. “Analog accumulation” setting added.