M·SYSTEM CO.,LTD.

Paperless Recording System

PAPERLESS RECORDER
(selectable input modules; TFT LCD display)

MODEL 73VR3100

MODEL & SUFFIX CODE SELECTION

73VR3100–☐–☐

MODEL
LANGUAGE
E : English
N : Japanese
POWER INPUT
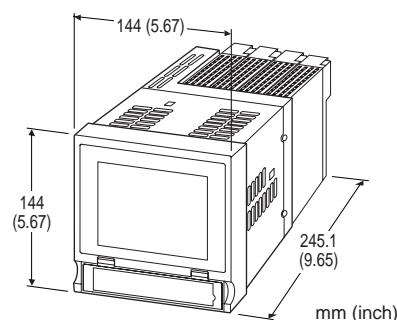**M2**: 100 – 240V AC
R : 24V DC

A CF Card is required to store data in the 73VR3100. M-System will not guarantee the product's described performance if a CF Card other than purchased from M-System, or specified below, is used.

Manufacturer: Hagiwara Sys-Com
Model No.: CFI-xxxxDG
Capacity: 128 MB through 1 GB

144 (5.67)
144 (5.67)
245.1 (9.65)
mm (inch)

Functions & Features

• 20 msec. storing rate with the combination of 8 analog and 8 discrete inputs
• 0.1 sec. storing rate with 16 channels; 0.5 sec. with 64 channels
• Data stored in CF Cards
• CF card slot accessible at the front
• Dedicated application software to view and analyze the data
• IP 65 front panel

ORDERING INFORMATION

Specify code number and variables.
• **Code number** (e.g. 73VR3100-E-M2)
• **I/O and network modules**
  (Use Ordering Sheet No. ESU-7397)

PACKAGE INCLUDES...

• 73VR Application Software CD
  (model: 73VRPAC2)
• Mounting brackets (two)

RELATED PRODUCTS

Please refer to data sheets for the respective models (not available for the CF Card).
• Clamp-on current sensor (model: CLSA, CLSB)
• Special cable for the CLSA-08, -12
  (model: CLSA-08C-30)
• PC configurator cable (model: MCN-CON)
• CF Card (manufactured by Hagiwara Sys-Com)

I/O MODULE

■SELECTABLE I/O MODULES

R3 Series I/O modules as listed below are used for the 73VR3100.

Use Ordering Information Sheet (No. ESU-7397) to specify I/O module types. The total current consumption of I/O modules must be at the maximum of 560mA (continuous). Please refer to the respective data sheet for detailed specifications of I/O modules.

R3–□□

MODEL

SS4 : DC current input, 4 ch.
SS8 : DC current input, 8 ch.
SS8N: DC current input, 8 ch., non-isolated
SS16N: DC current input, 16 ch., non-isolated
SV4 : DC voltage input, 4 ch.
SV4A: DC voltage input, 4 ch., narrow span
SV4B: DC voltage input, 4 ch., wide span
SV8 : DC voltage input, 8 ch.
SV8A: DC voltage input, 8 ch., narrow span
SV8B: DC voltage input, 8 ch., wide span
SV8N: DC voltage input, 8 ch., non-isolated
SV16N: DC voltage input, 16 ch., non-isolated
TS4 : Thermocouple input, 4 ch.
TS8 : Thermocouple input, 8 ch.
RS4 : RTD input, 4 ch.
RS8 : RTD input, 8 ch.
DS4 : 4 – 20mA input with excitation, 4 ch.
DS8N : 4 – 20mA input with excitation, 8 ch., non-isolated
CT4 : CT (AC current) input, 4 ch.
CT4A: AC current input, 4 ch., clamp-on current sensor CLSA use
CT4B: AC current input, 4 ch., clamp-on current sensor CLSB use
CT8A: AC current input, 8 ch., clamp-on current sensor CLSA use
CT8B: AC current input, 8 ch., clamp-on current sensor CLSB use
PT4 : PT (AC voltage) input, 4 ch.
PA2 : Encoder input, 2 ch. (speed and position)
PA4 : High speed pulse input, 4 ch.
PA4A: High speed totalized pulse input, 4 ch.
PA16 : Totalized pulse input, 16 ch.
DA16 : Optical isolation discrete input, 16 ch. (13V DC)
DC16: Relay output, 16 ch. *1
DM : Blank filler module *2

COMMUNICATION MODE

S : Single
W : Dual

*1. Limited to two discrete output modules at the maximum.
*2. Communication mode suffix code is not applicable to the blank filler module.
*3. Select the /W code when a Network Module is used.

■R3-CT4A, R3-CT8A, R3-CT4B, R3-CT8B

In order to use models R3-CT4A, R3-CT8A, R3-CT4B and R3-CT8B, the data range must be set up with the R3 Configurator Software (model: R3CON). This change of setting may lower the resolution of recorded data for certain input ranges.

The R3CON Configurator is available for downloading at M-System's web site: http://www.m-system.co.jp. A special cable (model: MCN-CON) is required to connect the R3 modules to a PC.

The CLSA or CLSB Clamp-on Current Sensors, NOT included in the product package of the R3 modules, must be purchased separately. Please refer to data sheet for the respective models (CLSA or CLSB).

The CLSA is used for the R3-CT4A and R3-CT8A.
The CLSB is used for the R3-CT4B and R3-CT8B.

■R3-PA2

The R3-PA2 can handle a data range of -1 000 000 000 to 1 000 000 000 to represent encoder's positions, while the 73VR3100 can handle only from 0 to 1 000 000 000.

Be sure that the input to the R3-PA2 remains within this range.

The R3-PA2's alarm output cannot be triggered from the 73VR3100.

■STORING RATE

Possible storing rates depend upon the I/O module types.

TYPE		STORING RATE		
		20 ms	0.1 s	≥0.5 s
SS4	: DC current input, 4 ch.	Y	Y	Y
SS8	: DC current input, 8 ch.	---	Y	Y
SS8N	: DC current input, 8 ch.	---	Y	Y
SS16N	: DC current input, 16 ch.	---	Y	Y
SV4	: DC voltage input, 4 ch.	Y	Y	Y
SV4A	: DC millivolt input, 4 ch.	Y	Y	Y
SV4B	: DC voltage input, 4 ch.	Y	Y	Y
SV8	: DC voltage input, 8 ch.	---	Y	Y
SV8A	: DC millivolt input, 8 ch.	---	Y	Y
SV8B	: DC voltage input, 8 ch.	---	Y	Y
SV8N	: DC voltage input, 8 ch.	Y	Y	Y
SV16N	: DC voltage input, 16 ch.	---	Y	Y
TS4	: Thermocouple input, 4 ch.	---	---	Y
TS8	: Thermocouple input, 8 ch.	---	---	Y
RS4	: RTD input, 4 ch.	---	---	Y
RS8	: RTD input, 8 ch.	---	---	Y
DS4	: 4 – 20mA input (excitation), 4 ch.	Y	Y	Y
DS8N	: 4 – 20mA input (excitation), 8 ch.	---	Y	Y
CT4	: CT input, 4 ch.	---	---	Y
CT4A	: AC current (CLSA) input, 4 ch.	---	---	Y
CT8A	: AC current (CLSA) input, 8 ch.	---	---	Y
CT4B	: AC current (CLSB) input, 4 ch.	---	---	Y
CT8B	: AC current (CLSB) input, 8 ch.	---	---	Y
PT4	: AC voltage input, 4 ch.	---	---	Y
PA2	: Encoder input, 2 ch.	---	---	Y
PA4	: High speed pulse input, 4 ch.	---	---	Y
PA4A	: High speed totalized pulse input, 4 ch.	---	---	Y
PA16	: Totalized pulse input, 16 ch.	---	---	Y
DA16	: Discrete input, 16 ch.	Y	Y	Y
DC16	: Discrete output, 16 ch.	---	---	Y

[Legend] Y = Selectable, --- = Not selectable

■SELECTABLE NETWORK MODULES

R3 Series network modules as listed to below are usable for the 73VR3100.

Use Ordering Information Sheet (No. ESU-7397) to specify network module types. Please refer to the respective data sheet for detailed specifications of network modules.

R3–☐–N

MODEL

NC1 : CC-Link (Ver. 1; 16-point analog)
NC2 : CC-Link (Ver. 1; 32-point analog)
NC3 : CC-Link (Ver. 2)
ND1 : DeviceNet (16-point analog)
ND2 : DeviceNet (32-point analog)
ND3 : DeviceNet (64-point analog)
NE1 : Ethernet (Modbus/TCP)
NF1 : T-Link (Fuji Electric)
NM1 : Modbus
NP1 : PROFIBUS-DP
NL1 : LONWORKS (16-point analog)

POWER INPUT

N : No power supply

■CAUTIONS OF USING THE R3 SERIES NETWORK MODULE

One R3 Series network module is mountable at the position of I/O Module 4. In the dual communication mode, the 73VR3000 is automatically defined as 'main' bus, while the R3 network is as 'sub.' The R3 network module cannot output through output modules.

GENERAL SPECIFICATIONS

■INTERFACE

Power input: Euro terminal block
Wire diameter 0.14 – 1.5 mm² or AWG 26 – AWG16 for both stranded and single core wires. Use pin terminals with stranded wires.

Ethernet: 10BASE-T / 100BASE-TX automatically switched; Conforms to IEEE 802 (10BASE-T) or IEEE 802.3 (100BASE-TX)

IP address: 192.168.0.1 (factory default setting)

CF Card slot: Type I; for use with the cards' operating voltage 3.3V

USB: Conforms to Version 1.1

■DISPLAY

Display device: 5.5-inch TFT LCD
Display colors: 256
Resolution: 320 × 240 pixels
Pixel pitch: 0.12 × 0.35 mm
Backlight: Cold-cathode tube
Backlight life: approx. 50000 hours (standard) in 25°C (time before the brightness is reduced to 30%). The backlight can be replaced in M-System factory. The LCD must be replaced at the same time.

■MATERIAL

Enclosure: Steel
Bezel: Polycarbonate
Front filter: Polyester

INSTALLATION

Power input

AC: Operational voltage range 85 – 264V, 47 – 66 Hz, approx. 27VA at 100V; 46VA at 240V

DC: Operational voltage range 24V ±10%, ripple 10% p-p max., approx. 24W or 1.0A

Operating temperature: 0 to 50°C (32 to 122°F)
Operating humidity: 30 to 85% RH (non-condensing)
Allowable dust particles: 0.1 mg/m² (no conductive particles)
Corrosive gas: Not allowed
Mounting: Panel flush mounting
External dimensions: W144×H144×D245.1 mm* (5.67"×5.67"×9.65") *Includes I/O modules
Panel cutout dimensions: 137×137 mm (5.39"×5.39")
Usable panel thickness: 2 – 26 mm (0.08" – 1.02")
Usable panel material: Steel
Front panel protection: IP 65 (Cover must be closed. Except clustered mounting)
Weight: 2.3 kg (5.1 lbs) except I/O modules

Caution: Use of UPS is recommended to prevent data loss or CF card damage by a loss of power during recording.

PERFORMANCE

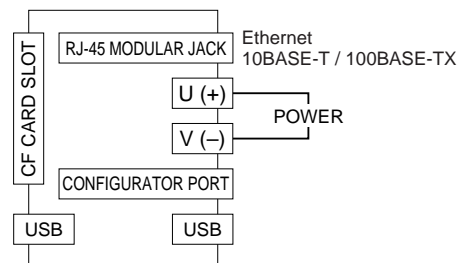**Calendar clock accuracy**: Monthly deviation 3 minutes at 25°C
Insulation resistance: ≥100MΩ with 500V DC (power to FG)
Refer to respective data sheet of R3 Series for I/O insulation.
Dielectric strength
AC power: 2000V AC @1 minute (power to FG)
DC power: 1250V AC @1 minute (power to FG)
Refer to respective data sheet of R3 Series for I/O and I/O-to-FG strength.

CONNECTION DIAGRAM

APPLICATION SOFTWARE CD

■**73VRPAC2** (included in the product package)
•**73VR3100 Builder Software**: Model 73VR31BLD
Used to configure parameters on the PC.
- Parameter configurations can be downloaded to the recorder via Ethernet.
- Present setting on the 73VR3100 can be uploaded and displayed on the PC.
- Configuration files can be converted into CSV.

•**73VR Data Viewer**: Model 73VRWV
Used to show and analyze recorded data on the PC.
- Data stored in the CF Card can be called up on the PC screen via the CF Card Reader.
- Data stored in the CF Card can be sent by FTP and called up on the PC screen.
- Various analyzing functions
- Data and alarm history files can be converted into CSV.

•**PC Recorder Software**: Model MSR128-V5
- The 73VR3100 data can be sampled and stored in real time via Ethernet by the MSR128-V5.
- Data stored in the CF Card can be sent via Ethernet and called up on the PC screen.
- Data stored in the CF Card can be called up on the PC screen via the CF Card Reader.

•**Instruction Manuals**
- 73VR3100 users manual
- 73VR31BLD users manual
- 73VRWV users manual
- MSR128-V5 users manual

■**PC REQUIREMENTS** (provided by the user)
•**73VR3100 Builder Software**: Model 73VR31BLD

OS	Windows 2000 or Windows XP SP2
Screen area	1024 by 768 pixels
Display color	65000 colors (16 bits)
CD-ROM drive	Windows supported CD-ROM 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

•**73VR Data Viewer**: Model 73VRWV

OS	Windows 2000 or Windows XP SP2
Screen area	1024 by 768 pixels or higher
Display color	65000 colors (16 bits)
Main memory (RAM)	512 MB or higher recommended
CD-ROM drive	Windows supported CD-ROM drive is used to install the software programs.
Card reader	Used to read/write the CF Card
Mouse	Windows supported (Certain functions of the 73VR may be compromised if the mouse's software driver is not Windows standard.)
LAN card	LAN card required to connect to Ethernet

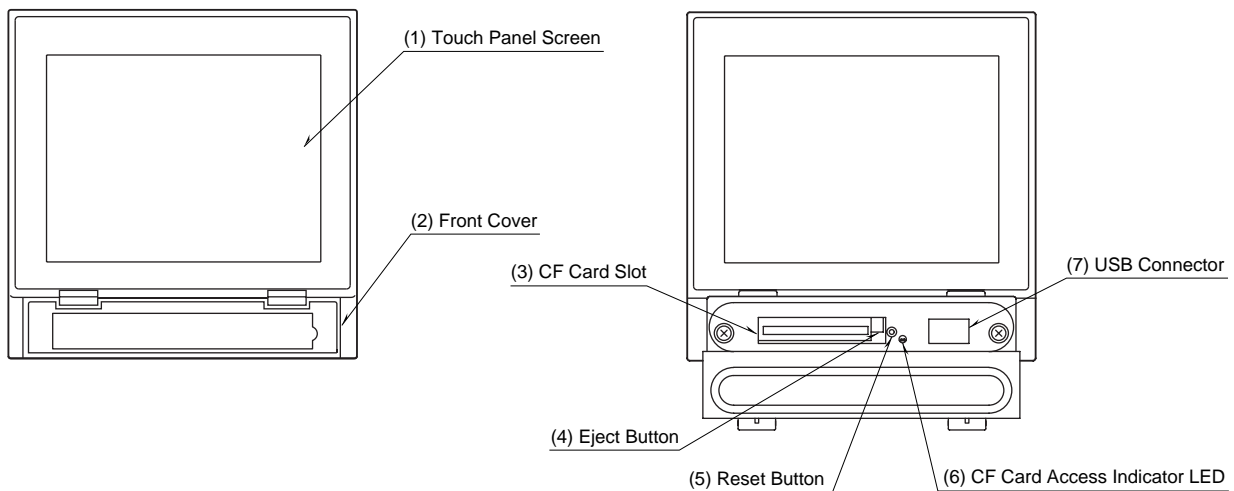■**PC REQUIREMENTS** (provided by the user)
•**PC Recorder Software**: Model MSR128-V5

	NORMAL MODE (storing rates ≥500 ms)	HIGH SPEED MODE (storing rates 100 / 200 ms)
PC	IBM PC/AT or compatible	
Operating system	Microsoft Windows 2000 or Windows XP SP1, SP2	
CPU	Pentium III 800 MHz or higher	Pentium IV 2.0 GHz or higher
Screen area	1024 by 768 pixels or better resolution	
Display color	65000 colors (16 bits)	
Video memory	2 MB minimum; 4 MB recommended	4 MB minimum
Main memory	128 MB minimum; 256 MB recommended for Windows XP	256 MB minimum; 512 MB recommended for Windows XP
Hard disk area	Use an internal hard disk. *1 Max. approx. 100 MB required per day.	Use an internal hard disk. *1
I/O hardware	R1M-GH2, R1MS-GH3, R1M-J3, R1M-D1, R1M-A1, R1M-P4, R2M-2H3, R2M-2G3, 50HR, 73ET, 74ET, 75ET, R5-NM1, R5-NE1, R3-NM1, R3-NE1, RZMS-U9, RZUS-U9, 73VR3100, 73VR3000*2, 73VR210x	R3-NE1, 73VR3100, 73VR3000*2
Printer	Use a printer for Windows. The programs use Standard System Fonts used in Windows. Use a printer driver for Standard System Fonts.	
CD-ROM drive	Used when installing the software program.	
Card reader drive	Used reading data from Compact Flash Card (50HR, 73ET, 74ET, 75ET, 73VR3100, 73VR210x)	
Communication port	RS-232C port (COM1 through COM5) supported by Windows, LAN card	LAN card

*1. External (e.g. SCSI) devices may impair appropriate performance.
*2. Real time data trending via Ethernet is possible but the data stored in a CF Card cannot be read in the MSR128-V5.
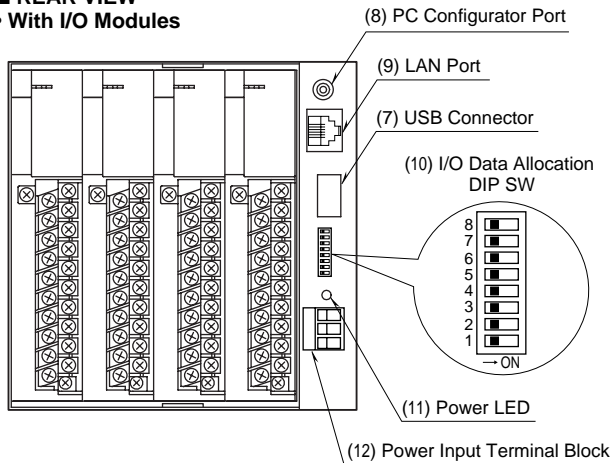
Specifications subject to change without notice.
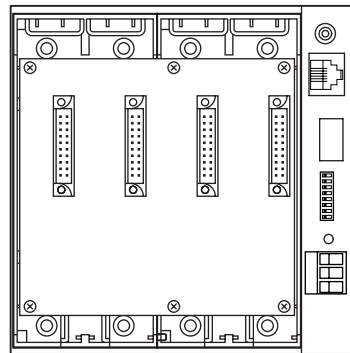
COMPONENT IDENTIFICATIONS

■ FRONT VIEW

(1) Touch Panel Screen

(2) Front Cover

(3) CF Card Slot

(7) USB Connector

(4) Eject Button

(5) Reset Button

(6) CF Card Access Indicator LED

■ REAR VIEW
• With I/O Modules

(8) PC Configurator Port

(9) LAN Port

(7) USB Connector

(10) I/O Data Allocation DIP SW

(11) Power LED

(12) Power Input Terminal Block
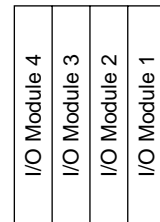
• Without I/O Modules

• I/O Module Assignment

I/O Module 4 | I/O Module 3 | I/O Module 2 | I/O Module 1

(1) Touch Panel Screen
Trend chart and other data views and setup views are displayed.
(2) Front Cover
Access to the CF Card Slot.
(3) CF Card Slot
(4) Eject Button
Used to retrieve the CF Card.
(5) Reset Button
Used to restart the 73VR3100.
(6) CF Card Access Indicator LED
Red light turns on during the CF Card is accessed.
(7) USB Connector
Connect an USB flash-memory.
(8) PC Configurator Port
Used to program with the R3 Configurator Software.
(9) LAN Port
Connects the LAN cable (10BASE-T or 100BASE-TX)
(10) I/O Data Allocation DIP Switch
Assigns the required data area for each I/O module.
Four (4) modes (1, 4, 8 and 16) are selectable depending upon the number of I/Os. See the table to the right.
(11) Power LED
Light turns on while the power is supplied.
(12) Power input terminal block

• I/O Data Allocation

MODULE NUMBER								DATA ALLOC. MODE
1		2		3		4		
SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	1
ON	OFF	ON	OFF	ON	OFF	ON	OFF	4
OFF	ON	OFF	ON	OFF	ON	OFF	ON	8
ON	ON	ON	ON	ON	ON	ON	ON	16

The DIP Switch is set at the factory according to I/O module types specified in Ordering Information Sheet. For example, Module 1 is set to '4' when the R3-SV4 is selected to be installed at this position. Set to '1' with the R3-DA16 and R3-DC16.

SOFTWARE FUNCTIONS

■STORING RATE v.s. NUMBER OF INPUT CHANNELS

20 millisec.: 8 analog inputs and 8 discrete inputs
0.1 seconds: Total of 16 analog and/or discrete inputs
0.5 seconds or longer:
        Total of 64 analog and/or discrete inputs

■INPUT SIGNALS

Analog: DC voltage/current, thermocouple, RTD, AC
        voltage/current or pulse
Discrete: Contact signals

■STORING RATE

20 millisec., 0.1, 0.5, 1, 2, 5, 10 seconds, 1, 10 minutes

■DATA STORING METHOD

Normal: Recording is manually initiated and stopped.
        Data is continuously stored while the record-
        ing is on.
Auto: Recording is automatically initiated and
        stopped at a predefined time.
Event recording: 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.
Remote trigger: Data is automatically recorded while the
        external trigger condition (input) is true.

■DATA STORAGE

Data file: Stores momentary values in the storing rate
        and their calculation result.
Alarm history file: Records time index information when
        alarms are triggered and reset.
Configuration file: Stores the 73VR3100 setting.
File format: Binary
        Oldest measured data and alarm history data
        are overwritten with new data when the card
        memory is full.

■ALARM (Available with 0.5 sec. or longer storing rates)

•Analog Alarm
Alarm setpoints: Max. 4 points per channel
Alarm type: High / Low
Deadband: Set in engineering unit values
Output: At the R3-DC16

•Discrete Alarm
Alarm type: Either ON or OFF status can be set as alarm.
Delay time: Alarm trips after a specified time delay.
Output: At the R3-DC16

•Alarm Data Storage
Stored information: Date/time of alarm events (trip and re-
        set), Pen No., Tag Name and Alarm Message
Number of stored alarm events:
        Depends upon the CF Card capacity.

128 MB	250 events
256 MB	500 events
512 MB or 1 GB	1000 events

■CALCULATION FUNCTIONS

Number of channels
   20 msec. or 0.1 sec. storing rates : 16 channels
   0.5 sec. or longer storing rates : 64 channels
Operations
   Arithmetic: Addition/subtraction, Multiplication, Division
   Logical: AND, OR, NOT, XOR
   Mathematical: Square root extractor, Power
   Accumulation: Analog accumulation, Pulse accumula-
        tion
   Filter: Moving average, First order lag
   Hold: Peak (maximum) hold (tracking increasing
        signal), Peak (minimum) hold (tracking
        decreasing signal)
   Alarm: Alarm trip can be programmed for calculated
        results.

■DATA DISPLAY FUNCTIONS

•Trend View
Chart direction: Perpendicular or horizontal
Number of pens displayed: 2, 4, 6, 8 per view selectable
Number of display views: 4
Chart speed: 4***, 1, 1/5, 1/32, 1/160****, 1/480**** or 1/
        960**** (pixel(s)/samples**)
Display rate: 1 second
Pen thickness: Normal and wide
Digital indicator: Shows momentary value.
Alarm indicator: Shows alarm status of the channels
        displayed on the screen.
Scale: Linear and square root;
        Switchable to the engineering unit scale.
**Chart speed is described as number of pixels to plot
single data sample.
***Not selectable with the storing rate 20 millisec.
****Not selectable with the storing rates 20 millisec. and 0.1 sec.

•Bargraph View
Bargraph direction: Perpendicular or horizontal
Number of pens displayed: 2, 4, 6, 8 per view selectable
Number of display views: 4
Display rate: 1 second
Digital indicator: Shows momentary value.
Alarm indicator: Shows alarm status of the channels
        displayed on the screen.
Scale: Linear and square root;
        Switchable to the engineering unit scale.

•Overview
Number of pens displayed: 2, 4, 6, 8, 16 per view selectable
Display rate: 1 second
Digital indicator: Shows momentary value.
Alarm indicator: Shows alarm status and date/time of the
        last alarm trip and reset for the channels
        displayed on the screen.

Specifications subject to change without notice.

•**Retrieve View**: Shows data stored in the CF Card.
Number of pens displayed: 2, 4, 6, 8 per view selectable
Number of display views: 4
Data search: Scrolling the chart, specifying a specific time index, or searching by maximum/minimum values.
Data readout: Reading data pointed by the cursor on the screen and showing the readout value.

•**Alarm History View**: Shows data stored in the alarm history file.
Number of displayed alarm events: 16
Number of display views: 1
Display items: Date/time of alarm events (trip and reset), Pen No., Tag Name and Alarm Message
Display update: Automatically updated by a new event
Data search: Scrolling the chart or specifying a specific time index.

■**COMMUNICATIONS**: Monitoring data and setup of the 73VR3100 is possible on the PC connected via Ethernet.
Real time communication: Transmits specific data to a host PC installed with the PC Recorder Software (model: MSR128-V5).
FTP communication: Transmits data stored in the CF Card using the FTP protocol to a host PC by the 73VR Data Viewer (model: 73VRWV) installed in it. Data can be transmitted even during recording.
Download, Upload: A software configuration created on the 73VR3100 Configuration Builder (model: 73VR31BLD) can be downloaded to the 73VR3100. The configuration set up on the 73VR3100 can be uploaded and displayed on the 73VR31BLD.

■**OTHER FUNCTIONS**
•**Operation Lockout**
With a password setting, unauthorized operations on the Trend View, Bargraph View and Overview can be locked out.

•**Data File Used Volume Information**
A bargraph with % indication is provided on the screen to show how much percent of the data file memory has been used up.

  0 – 49% used: Green bargraph
  50 – 79% used: Amber bargraph
  80 – 100% used: Red bargraph

•**Hot Swapping of the CF Card**
The CF Card is hot swappable: removable during data recording. However, there may be a slight disturbance in storing rate when the card is inserted.
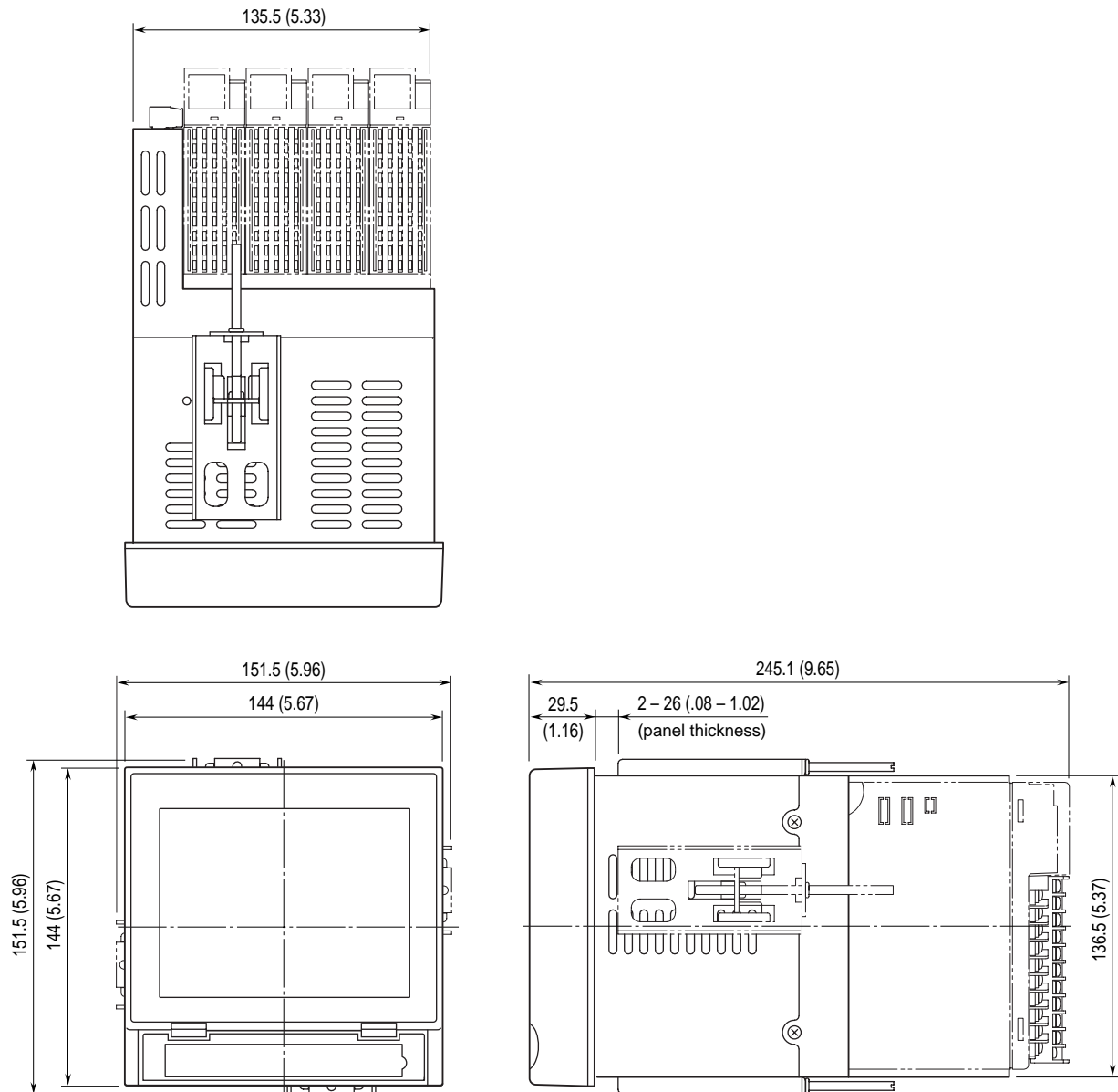
•**Screen Saver**
The backlight is automatically turned off if the screen is untouched for a certain time period.

•**Bus Error Alert**
An alarm contact is output at a specified channel of the R3-DC16 in case of internal bus error. (Only 1 channel can be specified.)

•**Writing/Reading Setting**
The 73VR3100's present setting can be stored in a USB flash-memory. Setting stored in the memory can be read in to the 73VR3100.

■**STORABLE TIME DURATION IN 128MB CF CARD**

STORING RATE	APPROXIMATE TIME DURATION				
	4 ch input	8 ch input	16 ch input	32 ch input	64 ch input
20 millisec.	27 hours	16 hours	9 hours	---	---
0.1 seconds	5 days, 18 hours	3 days, 11 hours	1 day, 22 hours	---	---
0.5 seconds	28 days, 22 hours	17 days, 8 hours	9 days, 15 hours	5 days	2 days, 14 hours
1 second	57 days, 20 hours	34 days, 17 hours	19 days, 6 hours	10 days, 5 hours	5 days, 6 hours
10 seconds	1 year, 211 days	347 days, 5 hours	192 days, 21 hours	102 days	52 days, 14 hours
1 minute	9 years, 186 days	5 years, 255 days	3 years, 62 days	1 year, 244 days	315 days, 15 hours

--- : Not Applicable
Note 1) Data are calculated ones, and thus not guaranteed.
Note 2) Assuming 4 bytes per data per channel.
Note 3) A year is calculated as 365 days.

EXTERNAL DIMENSIONS mm (inch)

135.5 (5.33)

151.5 (5.96)
144 (5.67)

151.5 (5.96)
144 (5.67)

245.1 (9.65)

29.5 (1.16)

2 – 26 (.08 – 1.02) (panel thickness)

136.5 (5.37)

Attach the mounting bracket either on the top/bottom or on the sides.

Specifications subject to change without notice.

PANEL CUTOUT unit: mm

■ SINGLE MOUNTING

$137 \, ^{+2}_{0}$

$137 \, ^{+2}_{0}$
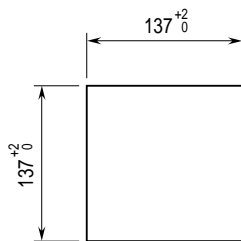
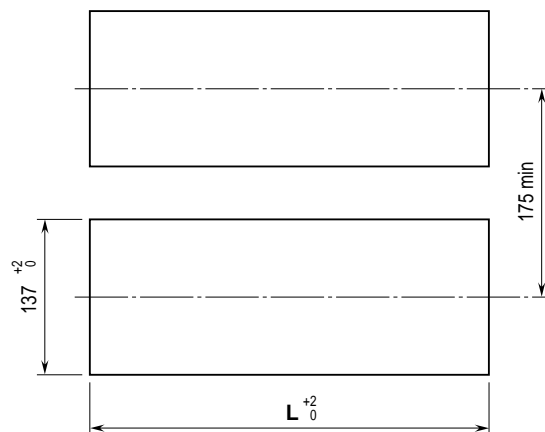| Number	$\mathbf{L} \, ^{+2}_{0}$ (mm)
2	282
3	426
4	570
5	714
6	858
7	1002
8	1146
9	1290
10	1434
n	$(114 \times n) - 6$

Notes
1. The R3 I/O modules mounted on the second and the third 73VR3100 from the top cannot be removed in the vertical clustered mounting.
2. Dimensional tolerance ±3% unless otherwise specified.
   (±0.3 mm for <10 mm)
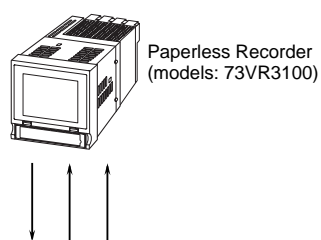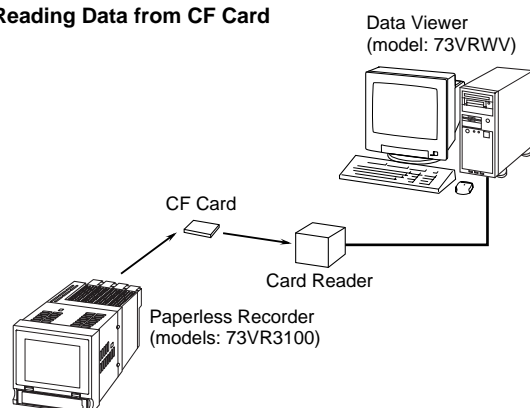
■ VERTICAL CLUSTERED MOUNTING (max. 3 units)

$137 \, ^{+2}_{0}$

$\mathbf{L} \, ^{+2}_{0}$

175 min
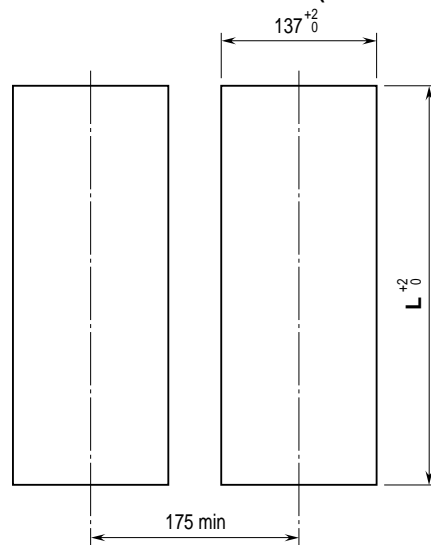
■ HORIZONTAL CLUSTERED MOUNTING

175 min

$137 \, ^{+2}_{0}$

$\mathbf{L} \, ^{+2}_{0}$

SYSTEM CONFIGURATION EXAMPLES

■INDEPENDENTLY USED

Paperless Recorder
(models: 73VR3100)

■INTERFACING WITH A PC
• **Reading Data from CF Card**

Data Viewer
(model: 73VRWV)

CF Card

Card Reader

Paperless Recorder
(models: 73VR3100)

• **Ethernet Connection**

PC Recorder Software
(model: MSR128)

Ethernet

Switch / Hub

Ethernet

Paperless Recorder
(models: 73VR3100)
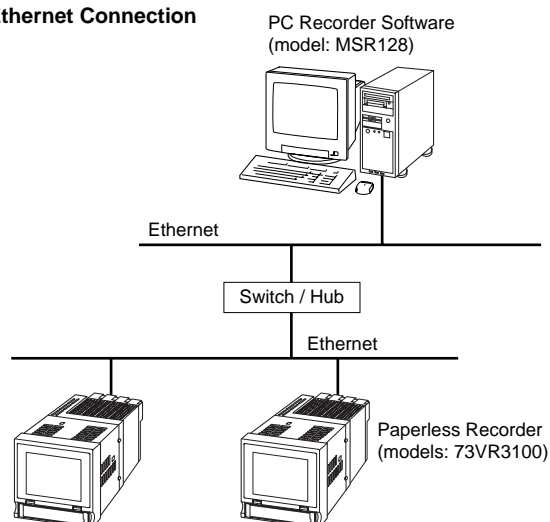
Note: It is recommended to connect the 73VR3100 to the PC using straight cables via a switch/hub on the Ethernet.

■INTERFACING WITH A PLC/DCS USING A NETWORK MODULE

PC

PLC, DCS

PC Recorder Software
(model: MSR128)

Ethernet

Open Field Network

Switch / Hub

Ethernet

Paperless Recorder
(models: 73VR3100)

Specifications subject to change without notice.