

Data Logger ZR-RX Series

CSM_ZR-RX_DS_E_2_1

Powerful backup capabilities for every conceivable on-site measurement

- Provides peace of mind through support for all channels isolated input and multi-function input.
- Expandable up to 200 channels (ZR-RX45).
- Easy-to-use LAN connection (ZR-RX45 and ZR-RX70).

CE



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.



Be sure to read "Safety Precautions" on page 5.

Ordering Information

Standard set

Item	Applicable Standards	Model
Data Logger	CEE	ZR-RX70A-E
	CCC	ZR-RX70A-CHRO
	PSE	ZR-RX70A
Data Logger	CEE	ZR-RX45A-E
	CCC	ZR-RX45A-CHRO
	PSE	ZR-RX45A
Data Logger	CEE	ZR-RX25A-E
	CCC	ZR-RX25A-CHRO
	PSE	ZR-RX25A

Option

Item	Model
Battery Pack	ZR-XRB1
Humidity Sensor (3 m)	ZR-XRH1
DC Cable (2 m)	ZR-XRD1
Logic Alarm Cable (2 m)	ZR-XRL1
Base Set (For ZR-RX45)	ZR-XRE1
Extension Terminal Set (For ZR-RX45)	ZR-XRT1
BNC-Crocodile Cable (2 m) (For ZR-RX70)	ZR-XRC1
Special PC Software Wave Inspire RX	ZR-SX10

Ratings and Specifications

Main Unit

Item	ZR-RX70A-□		ZR-RX45A-□	ZR-RX25A-□
Input method	All channels isolated input, Simultaneous sampling of all channels		All channels isolated input *1	All channels isolated input
Input terminal shape	BNC terminal: For voltage measurement M3 screw type terminal: For voltage/temperature measurement *2		M3 screw type terminal	
Number of analog input channels	8 ch		Standard: 20 ch Max.: 200 ch (When the terminal unit is connected)	10 ch
Sampling speeds	10 μs to 1 min		10 ms (when 1 ch is used) to 1 h	
A/D resolution	16 bit			
A/D conversion system	Sequential comparison		Delta-sigma	
Measurement ranges	Voltage		20, 50, 100, 200, 500 mV, 1, 2, 5, 10, 20, 50, 100, 200, 500 V, 1-5 V F.S.	
	Temperature	Thermocouple	K, J, E, T, R, S, B, N, W (WRe5-26)	
		Resistance temperature detector	–	Pt100, JPt100, Pt1000 (IEC751)
	Humidity		0% to 100% (Voltage 0 to 1 V scaling conversion) *3	
External input/output sections	Digital input		Logic input (4 ch) or Pulse input (4 ch) *4 *5	
	Alarm output		4 ch (Open collector output)	
Functions	Trigger functions		External trigger input (1 ch), input signal level, time In combination with timer mode, date and time can be set, and a wide variety of trigger settings such as "Every Day Cycle" and "Every Hour Cycle" can be made	External trigger input (1 ch), Input signal level, time, duration, alarm
	Filter functions		Off, Line, 5 Hz, 50 Hz, 500 Hz	Off, 2, 5, 10, 20, 40 (moving average)
	Calculation function		Statistical calculation *6 : Average, peak, maximum, minimum, RMS (maximum of 2 can be set simultaneously)	
PCI/F	Type		LAN (100BASE-TX), USB 2.0 (HIGH SPEED)	
	Function	Ethernet functions	Web server function, FTP server function, NTP client function Realtime data transfer to the PC, Unit control from a PC	Web server function, FTP server function, FTP client function, NTP client function, Realtime data transfer to the PC, Unit control from a PC
		USB	Realtime data transfer to the PC	
Memory devices	Internal		RAM: approx. 64 MB Flash memory: approx. 256 MB	
	External		Flash memory: approx. 4 GB *7 USB memory *7	
Display	5.7-inch color LCD (QVGA: 320 × 240 dots)		5.7-inch color LCD (VGA: 640 × 480 dots)	4.3-inch color LCD (WQVGA: 480 × 272 dots)
Operating environment	0 to 40°C, 5% to 85% (15 to 35°C when operated on batteries)		0 to 45°C, 5% to 85% (0 to 40°C when operated on batteries, 15 to 35°C when charging batteries)	
Vibration resistance	Equivalent to automobile parts Type 1 Category A classification			
Power supply	AC adapter: 100 to 240 VAC/50 to 60 Hz *8, DC drive: 8.5 V to 24 V, Battery: 7.4 VDC (2 packs)			AC adapter: 100 to 240 VAC/50 to 60 Hz *8, DC drive: 8.5 V to 24 V, Battery: 7.4 VDC
Power consumption	42 VA (When the AC adapter is used)		32 VA (When the AC adapter is used)	29 VA (When the AC adapter is used)
Weight	Approx. 1.1 kg (Excluding batteries and AC adapter)		Approx. 900 g (Including one terminal unit, excluding batteries and AC adapter)	Approx. 520 g (Excluding battery and AC adapter)
External dimensions	232 × 150 × 80 mm		232 × 152 × 50 mm	194 × 117 × 42 mm
Accessories	User's Manual, Utility disk (CD-ROM), AC Adapter/AC cable			

*1. Resistance temperature detector is non-isolated.

*2. BNC terminal and M3 screw type terminal of the same channel cannot be used simultaneously.

*3. A humidity sensor ZR-XRH1 is necessary.

*4. A logic alarm cable ZR-XRL1 is necessary.

*5. Pulse input: Revolutions mode/Counts mode/Inst. mode switch method

*6. Designate real-time or between-cursors mode (during playback)

*7. 1 file max. 2GB (The capacity will vary depending on the external memory used.)

*8. Be sure to use only the AC cable and AC adapter provided as accessories.

Measurement Accuracy

Item		ZR-RX70A-□		ZR-RX45A-□/ZR-RX25A-□	
Voltage		±0.25% of F.S.		±0.1% of F.S.	
Temperature *1	Thermocouple	Measurement temperature range (°C)	Measurement accuracy	Measurement temperature range (°C)	Measurement accuracy
	R/S	0 ≤ TS ≤ 100	±7.0°C	0 ≤ TS ≤ 100	±5.2°C
100 < TS ≤ 300		±5.0°C	100 < TS ≤ 300	±3.0°C	
R : 300 < TS ≤ 1,600		±(0.05% of rdg + 3.0°C)	R : 300 < TS ≤ 1,600	±(0.05% of rdg + 2.0°C)	
S : 300 < TS ≤ 1,760		±(0.05% of rdg + 3.0°C)	S : 300 < TS ≤ 1,760	±(0.05% of rdg + 2.0°C)	
B	400 ≤ TS ≤ 600	±5.5°C	400 ≤ TS ≤ 600	±3.5°C	
	600 < TS ≤ 1,820	±(0.05% of rdg + 3.0°C)	600 < TS ≤ 1,820	±(0.05% of rdg + 2.0°C)	
K	-200 ≤ TS ≤ -100	±(0.05% of rdg + 3.0°C)	-200 ≤ TS ≤ -100	±(0.05% of rdg + 2.0°C)	
	-100 < TS ≤ 1,370	±(0.05% of rdg + 2.0°C)	-100 < TS ≤ 1,370	±(0.05% of rdg + 1.0°C)	
E	-200 ≤ TS ≤ -100	±(0.05% of rdg + 3.0°C)	-200 ≤ TS ≤ -100	±(0.05% of rdg + 2.0°C)	
	-100 < TS ≤ 800	±(0.05% of rdg + 2.0°C)	-100 < TS ≤ 800	±(0.05% of rdg + 1.0°C)	
T	-200 ≤ TS ≤ -100	±(0.1% of rdg + 2.5°C)	-200 ≤ TS ≤ -100	±(0.1% of rdg + 1.5°C)	
	-100 < TS ≤ 400	±(0.1% of rdg + 1.5°C)	-100 < TS ≤ 400	±(0.1% of rdg + 0.5°C)	
J	-200 ≤ TS ≤ -100	±3.7°C	-200 ≤ TS ≤ -100	±2.7°C	
	-100 < TS ≤ 100	±2.7°C	-100 < TS ≤ 100	±1.7°C	
	100 < TS ≤ 1,100	±(0.05% of rdg + 2.0°C)	100 < TS ≤ 1,100	±(0.05% of rdg + 1.0°C)	
N	0 ≤ TS ≤ 1,300	±(0.1% of rdg + 2.0°C)	0 ≤ TS ≤ 1,300	±(0.1% of rdg + 1.0°C)	
W	0 ≤ TS ≤ 2,000	±(0.1% of rdg + 2.5°C)	0 ≤ TS ≤ 2,000	±(0.1% of rdg + 1.5°C)	

*1. • ZR-RX70
 Operating environment 23°C ±5°C
 When 30 minutes or more have elapsed after power was switched on Filter Line/GND connected;
 Thermocouple used is T: 0.32 dia., others: 0.65 dia.

*1. • ZR-RX25/RX45
 Operating environment 23°C ±5°C
 When 30 minutes or more have elapsed after power was switched on Sampling 1 s/Filter ON (10 times)
 GND connected
 Thermocouple used is T: 0.32 dia., others: 0.65 dia.
 Resistance temperature detector is available only for ZR-RX45.

Measurement Accuracy (ZR-RX45 only)

Resistance temperature detector	Measurement temperature range (°C)	Applied current	Measurement accuracy
Pt100	-200 to 850°C (FS=1,050°C)	1 mA	±1.0°C
JPt100	-200 to 500°C (FS=700°C)	1 mA	±0.8°C
Pt1000	-200 to 500°C (FS=700°C)	0.2 mA	±0.8°C

Humidity Sensor ZR-XRH1 (Option)

Item	Description
Allowable temperature range	-25 to + 80°C
Allowable humidity range	0% to 100%
Relative humidity measurement accuracy	±3% (5% to 98% at 25°C)
Response time	15 sec (90% response when membrane filter installed)
Sensor output	0 to 1 VDC
External dimensions	dia. 14 mm × 80 mm (excluding cable)
Cable length	3 m

PC Software

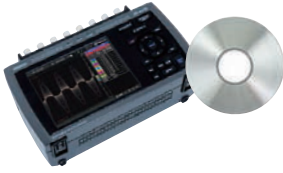
Item	Special PC software ZR-SX10	Standard PC software	
	Wave Inspire RX (Since Ver.2.4) (Option Specifications)	Smart Viewer RXW (Since Ver.2.0) (Standard accessories)	Smart Viewer RX70 (Since Ver.2.0) (Standard accessories)
Compatible logger	ZR-RX25/RX45/RX70/RX20/RX40	ZR-RX25/RX45/RX20/RX40	ZR-RX70
Compatible operating system	Windows XP / Windows Vista / Windows 7		Windows 2000 / Windows XP / Windows Vista
CPU	Intel-compatible, 1 GHz or faster processor recommended, Intel Atom CPU not supported	Pentium 4: 2.0 GHz or faster processor recommended, Intel Atom CPU not supported	
Memory	Windows XP: 512 MB or more Windows Vista / Windows 7: 1GB or more	512 MB or more (recommended: 1 GB or more)	
Display	1024 × 768 or higher, screen resolution, 65,535 color (16-bit color) or higher screen display	1024 × 768 or higher screen resolution	
Compatible interface	USB, LAN		
Standard functions	Review saved data, real-time capture of PC data, main unit setup, CSV file conversion		
Waveform operation	Direct operation of waveform by mouse or icons, Batch processing of selected waveform	Change CH scales individually by icons	
Waveform display	Display graphs in multi-window, X-Y View, FFT View, Handy function of switching waveform, Display function of grouping channel, Scrolling for all directions (up, down, right, left)	Display in single window, X-Y View between Cursors (only during replay), Display function of grouping channel	
Configuration function	Advanced channel grouping function, Advanced Listview setup function, Main unit setup	Channel grouping function, Main unit setup	
External control of sampling	–	Available (can set and display)	
Captured data	Binary file (original format): Captured data and the information of graph window are saved. CSV file: Captured data is saved in comma-separated value format: Binary files can be converted to CSV files all at once		
Others	Cursor function, Comment Input function, Excel transfer function		

- Note:**
1. Even when using a PC with adequate specifications, capture errors occur at times because the PC is in bad condition. (For example, when other applications are open, or recording medium has no free area.) When you capture data using this software, please close all the other applications and save captured data to the hard disk.
 2. Don't start up other applications while this software is operating, and don't perform multiple operations. (For example, screen saver, virus scan program, copying and moving files, searching files, etc.)
 3. Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

System Configuration

Standard set

ZR-RX70A-□



- Main unit
- AC adapter/AC cable
- User's manual
- Utility disk*

* Content of utility disk
 –Standard PC software:
 Smart Viewer RX70
 –Special PC software:
 Wave Inspire RX (Trial version)
 –Manual PDF file

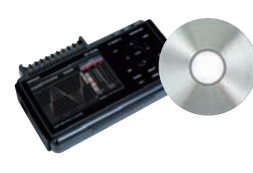
ZR-RX45A-□



- Main unit
- AC adapter/AC cable
- User's manual
- Utility disk*

* Content of utility disk
 –Standard PC software:
 Smart Viewer RXW
 –Special PC software:
 Wave Inspire RX (Trial version)
 –Manual PDF file

ZR-RX25A-□



- Main unit
- AC adapter/AC cable
- User's manual
- Utility disk*

* Content of utility disk
 –Standard PC software:
 Smart Viewer RXW
 –Special PC software:
 Wave Inspire RX (Trial version)
 –Manual PDF file

Option

[ZR-RX common]

Special PC Software
 ZR-SX10



DC Cable (2 m)
 ZR-XRD1



Battery Pack
 ZR-XRB1



Humidity Sensor (3 m)
 ZR-XRH1



Logic Alarm Cable (2 m)
 ZR-XRL1



[ZR-RX45 common]

Base Set
 ZR-XRE1



Extension Terminal Set
 ZR-XRT1



Cable (Accessory, 0.5 m)



[For ZR-RX70]

BNC-Crocodile Cable (2 m)
 ZR-XRC1



ZR-RX45 Necessary option when channel is enhanced

Item	20 CH	40 CH	100 CH	200 CH
ZR-RX45 Main unit	1	1	1	1
Base Set (ZR-XRE1)	0	1	1	1
Extension Terminal Set (ZR-XRT1)	0	1	4	9

Safety Precautions

WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



Precaution for Correct Use

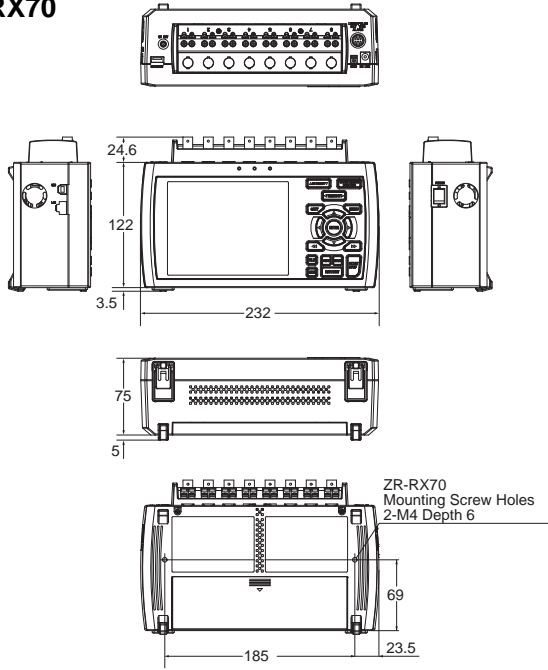
Do not use the product in ambient atmospheres or environments that exceed the ratings.

For technical information and product FAQs, refer to the "Technical Guide" on your OMRON website.

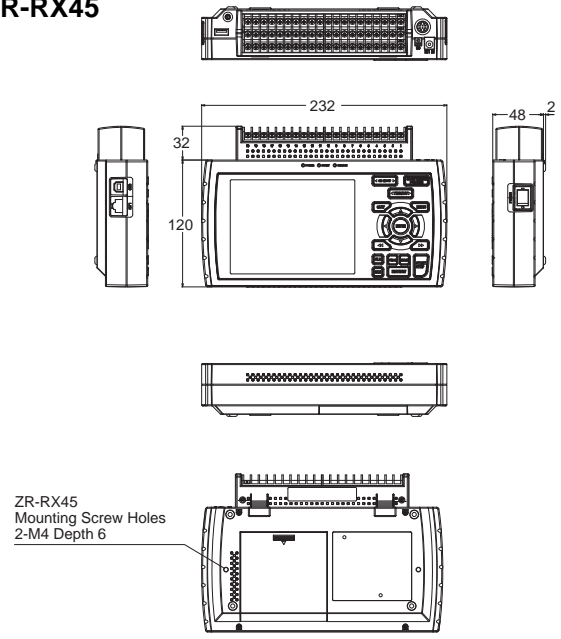
Dimensions

Tolerance class IT16 applies to dimensions in this data sheet unless otherwise specified.

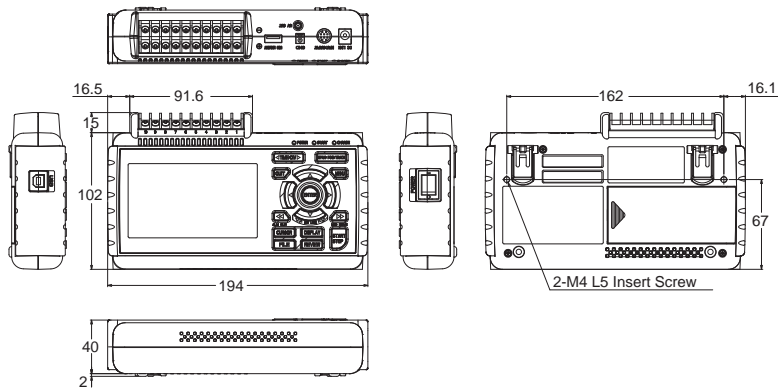
ZR-RX70



ZR-RX45



ZR-RX25



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2013.7

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