NEW

Portable Multi-logger

ZR-RX70

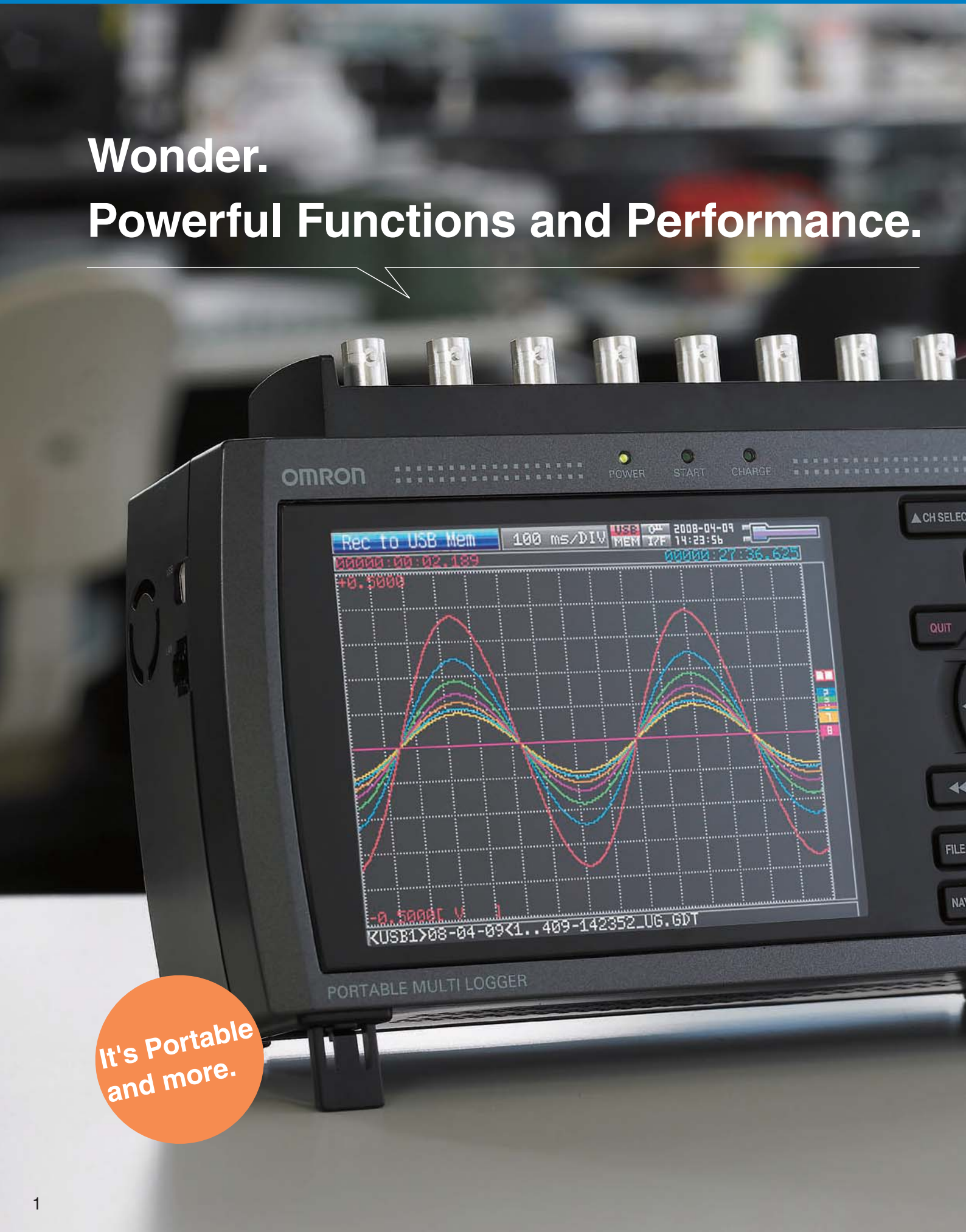
OMRON

The One-stop Data Logger

realizing

The High-Speed Logger. Voltage,

Wonder.
Powerful Functions and Performance.



It's Portable and more.

First in its class

High-speed, Simultaneous Sampling on All Channels

High-speed, simultaneous sampling without any time lag on all 8 channels and speeds up to 10µs

Super-wide Voltage Input Range

The wide input range from ±20 mV to ±500 V. It enables high-voltage measurement capability meeting versatile needs. Voltage input is selectable from the BNC terminal or the M3 screw terminal.

Secure Isolated Multi-Input

Each channel is equipped with its own isolated circuit. Thus, multifunction input for voltage, temperature, humidity, logic and pulse is secured.

Advanced PC Connectivity

USB port, LAN port and USB flash drive available
The most appropriate connection can be selected depending on the situation.

*Full-scale photo
W232×H150×D80(mm)

Input signal

Voltage | Temperature | Humidity | Logic | Pulse

List of features

Maximum 8 channels simultaneously	All channels isolated	Voltage ±20mV to ±500V	Thermocouples K,J,E,T,R,S,B,N,W
LAN function	USB flash drive	64MB internal memory	5.7inch TFT LCD
Easy-to-navigate menus	2 hour battery	Display switch	16 bit resolution

Portable Multi-logger

ZR-RX70A-E

The ZR-RX70A Portable Multi-Logger. Now running at your Choice.

For Oscillation Tests

For Environmental Tests

Start Powerful Engines.

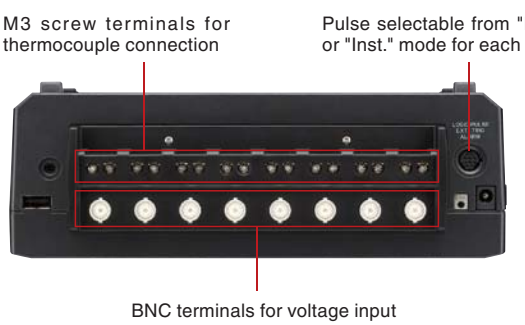
Meeting Versatile Testing Requirements
Multifunction Input

Voltage … ±20mV to ±500V

Temperature … Thermocouples: K, J, E, T, R, S, B, N, W

Humidity … Humidity Sensor (optional ZR-XRH1 required)

Logic **Pulse** (Rpm/Count/Inst.) … 4 channels in addition to the analogue 8 channels



Optimum Setting for Each Intended Use
Appropriate Sampling Speed for Any Application

High-speed sampling at speeds up to 10µs is possible. Thus it is suitable for applications such as drop tests and oscillation tests that require high-speed sampling. Data of lengthy applications, such as endurance tests and environmental tests, can be continuously logged to the flash memory at a sampling interval of 1ms or over.

Applications at High Speeds	Applications at Low Speeds
•Drop tests •Impact tests •Oscillation tests	•Endurance tests •Tensile/ Compression tests •Environmental tests

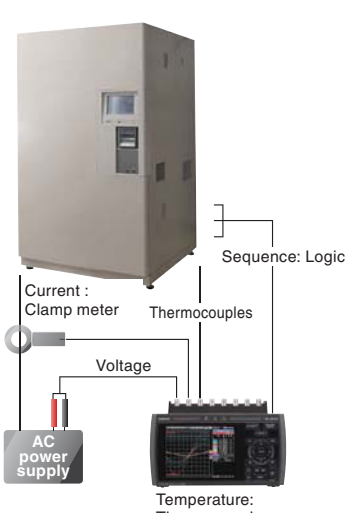
Potential recording time (for 8 analog channels)

Recording medium	10µs	100µs	500µs	1ms	10ms	100ms	1s
Internal RAM	10 sec	Approx 1min 40 sec	Approx 8min 20 sec	Approx 16 min 40 sec	Approx 2 hours 40 sec	Approx 1 day 3 hours	Approx 11 days 13 hours
Internal flash memory	-	-	-	Approx 1 hour	Approx 11 hours	Approx 4 days	Approx 46 days
USB flash drive* (Example: 512MB)	-	-	-	Approx 2 hours	Approx 22 hours	Approx 9 days	Approx 93 days

*Please use a USB flash drive without security function

Meeting Versatile Testing Requirements
Super-wide Voltage Input Range

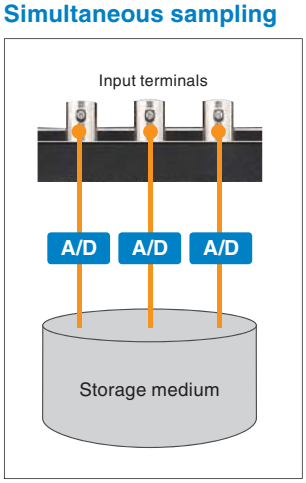
The wide input range from ±20 mV to ±500 V. It allows the measurement of 100 to 240 VAC power supply waveforms. The simultaneous measurement of power supply voltages, currents and sequence controls are possible by use of logic input and a clamp meter.



Measurement of High Precision
Simultaneous Sampling on All Channels

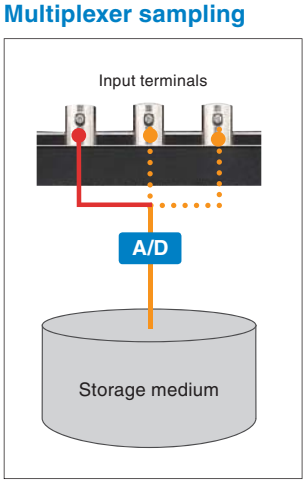
A high-speed AD converter is equipped on each input channel. As the high-performance ICs can simultaneously control all channels, high-speed simultaneous sampling is possible.

Simultaneous sampling



Separate A/D for each channel

Multiplexer sampling

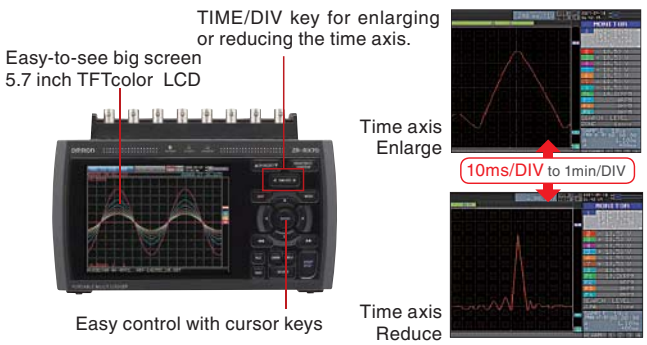


Switching Single A/D for all channels

Everyday Use.

Advanced Usability
Ultimate User-Friendliness

The cell-phone-like advanced usability featuring a set of cursor keys allow users to easily view enlarged and reduced images of high-speed waveforms. A 5.7-inch TFT large-screen color LCD enables easy observation of waveforms and measurements even in a dark place.



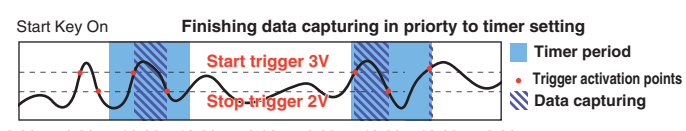
Capturing Necessary Data Only
Useful Trigger and Timer Functions

Different combinations of the trigger and timer functions Offer a wide variety of settings for different situations. They enable users to eliminate superfluous data and capture the data truly necessary for each situation.

Timer Setting	Timer mode	Off, Date/Time, Daily Cycle, Hourly Cycle
Trigger settings	Start source setting	Off, Level Value, External Input
	Stop source setting	Off, Level Value, External Input, Scheduled Time
	Pre-trigger Only when data is stored in internal RAM	0 to 100%
	Repeat capture	On, Off and Repeat Intervals

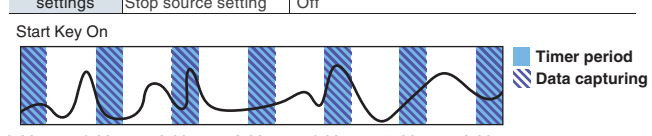
Setting example 1 Measurement of abnormal signals while a certain device is at work

Timer Setting	Timer mode	Daily Cycle Start setting:09 hrs 00 sec Stop setting:18 hrs 00 sec
Trigger settings	Start source setting Stop source setting Repeat capture	Level CH1(3V rising) Level CH1(2V falling) On



Setting example 2 Measurement of certain parameters every 20 minutes

Timer Setting	Timer mode	Hourly cycle Start setting: 00 min 00 sec Stop setting: 20 min 00 sec
Trigger settings	Start source setting Stop source setting	Off Off



No Interruptions During Measurement
Pulling Up Any Stored Data During Data Logging

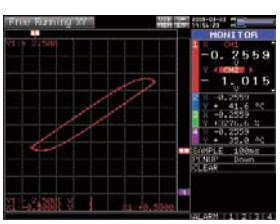
The product is equipped with FTP client function. It allows users to pull out any data stored in the logger whenever necessary during data logging.

Meeting Versatile Needs
X-Y Recorder Function

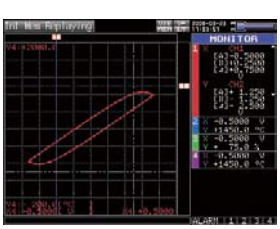
The analog X-Y recorder function of the product enables users to view correlations between different pieces of data. The function enables the reproduction of pen up/down movements of an analog X-Y recorder. The product can also be used as a 4-pen recorder. Digital data captured with this function can be used for reports and other post-measurement works.

Pen up
View the movement of the pen

The point moves as if the pen moves.



Pen down
View the trajectory of the pen and capture data



Confirmation of digital data
Reproduce and confirm digital data. Copiable data on the screen can be used for reports.

Calibration service(charged option)

Calibrations and certification on request

If a calibration certificate is requested when purchasing the Portable Multi-logger, the inspection date on the certificate will be the same as the manufacturing date. If an inspection date that is close to the shipping date is required, an extra fee and additional time will be required. Ask your OMRON representative for details.

PC Connect.

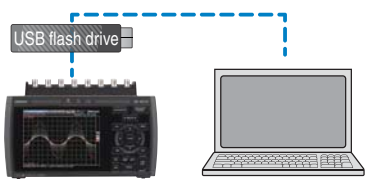
Utilize data in any style you like.

ZR-RX70 offers more than six types of PC connections. You can utilize data in any style you like.

"I want to transfer this data stored in the logger to a PC."

USB flash drive

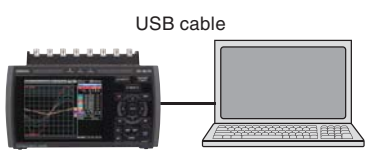
Data transfer using a USB flash drive



Plug a USB flash drive into the logger, copy data on the drive. Then, pull out the drive from the logger and plug it into a PC.

USB

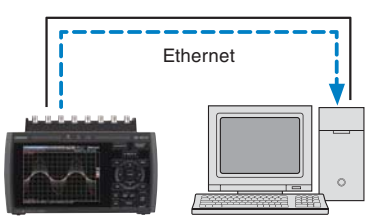
Data transfer using the logger as an external drive



Connect the logger to a PC, have the PC recognize it as an external drive and copy data.

LAN

Data transfer through an Ethernet network using FTP client software



Set an IP address on the logger, connect the logger to a PC through a LAN and have the FTP client software copy the data.

Data can be copied even during logging.

"I want to remote view or remote control the logger."

Web Server Function Pre-installed

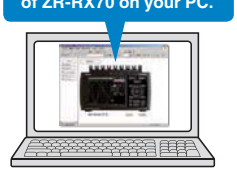
You can remote control the logger from the web browser installed in your PC by connecting the logger with an IP address to the PC through an Ethernet network.

"Remote control across different countries is possible by setting a global IP address on the logger."

"PC software is not required."

"You can remote control (or view) the logger from a PDA with a web browser."

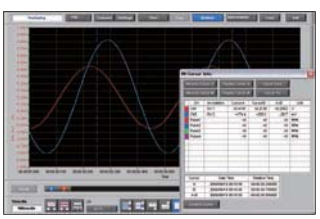
You can view and control the display and cursor keys of ZR-RX70 on your PC.



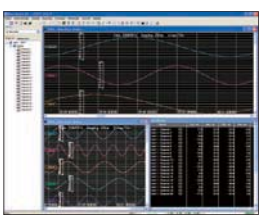
"I want to view logging data on my PC in a simple way."

Logging Data Viewed On a PC

A special PC software program allows you to easily view waveforms and other logging data on your PC.



Standard PC software



Special PC software "Wave Inspire RX"

Start the software and select the file you would like to see. Then, you can view data in multiple windows, and zoom up or down waveforms on your PC.

Viewing Logging Data in Excel Format

The special software also allows you to save logging data in CSV format.

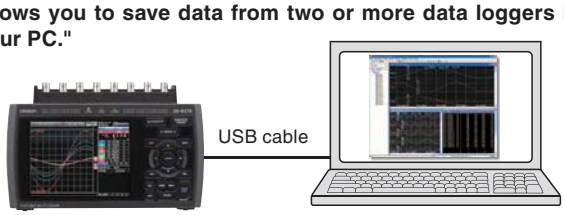
"I want to save logging data in real time in my PC."

USB LAN

The special software enables real-time data saving in a PC.

"The logger can be connected to a PC via USB or LAN connection."

"The use of the special PC software and LAN connection allows you to save data from two or more data loggers into your PC."



The NTP client function of the product also enables an easy synchronization of different devices.

You can also save and convert logging data directly in Excel format.

More Brains.

Special PC software Wave Inspire RX Ver2.0

Accessory

ZR-SX10

Can be used as a USB flash memory (1GB) as well.

Wave Inspire RX, a special PC software program for ZR-RX70, allows you to easily compare data of different measurement tasks and observe the waveform of each input signal. It is very convenient when you have to handle the waveforms of a large quantity of data of multiple measurements, multichannel measurements and other measurement tasks. Featuring a number of functions not available in other logging software programs, it allows you to directly grab and drag waveforms, scales and cursors with a mouse. It far excels other programs in its data processing capability and intuitive operability.

Major functions.

•Quick call up of the cursor •Special search function •Screen save function / CSV save function •Report printing function

High Performance with No Stress

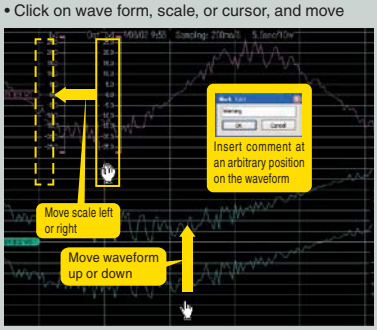
The memory-saving program with low CPU load enables stress-free processing of high-speed data.

Quick Operation!

Intuitive control

Free adjustment function

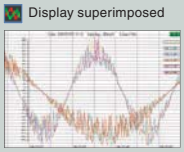
• Click on wave form, scale, or cursor, and move

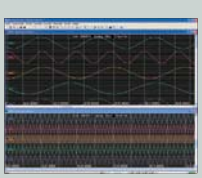


•Change the position of the wave form with a single click of an icon

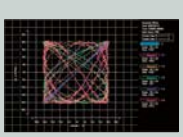
Display side by side

Display superimposed





High-speed display of waveforms

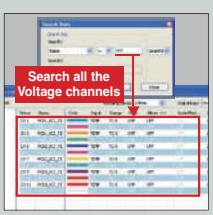


X-Y display

FFT display

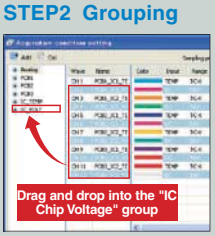
Easy Comparison and Quick Decision

STEP1 Smart search



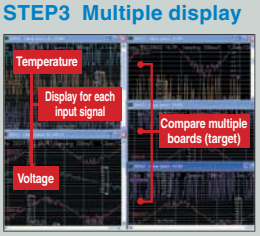
Search selected channels in one operation!
After the search the channels have selected status.

STEP2 Grouping



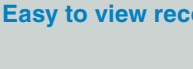
Grouping is simple by drag and drop into the created groups.

STEP3 Multiple display

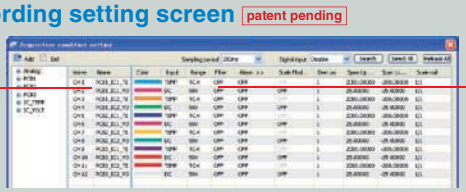


For each group a waveform screen can be displayed, so observation of comparisons between groups is possible.

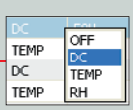
Easy to view recording setting screen patent pending



Direct input



Setting and editing can all be completed from this screen!

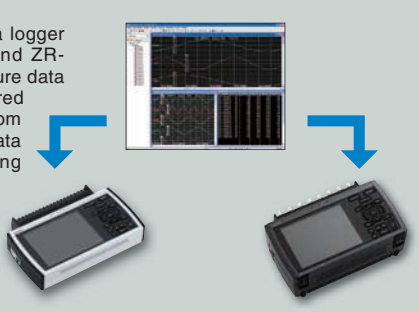


Pull-down selection

Viewing Data from Two Data Loggers Simultaneously

Wave Inspire RX can be used with OMRON data logger ZR-RX40 as well. If you connect ZR-RX70 and ZR-RX40 via LAN connection, you can view temperature data measured by ZR-RX40 and voltage data measured by ZR-RX70 simultaneously, and save the data from the different loggers as one file. You can handle data from the two loggers without any data combining processes.

* When sampling speed is 1ms or faster.



It Will Save You Money.
Value Pack Available

A special value pack (comprising of a standard set of ZR-RX70, the special PC software ZR-SX10 and a buttery pack) is available. It sure will save you movey. For further detail, please see Page 9 and Page 10 hereof.

System Configuration

Standard set

ZR-RX70A-E

- AC adaptor/AC cable(CEE)
- User's Manual
- Utility disk*

*Content of utility disk
–Standard PC software
–manual PDF file

Accessories

Accessories

Special PC software
ZR-SX10

*Can be used as a USB flash memory (1GB) as well.

Battery Pack
ZR-XRB1

Humidity Sensor(3m)
ZR-XRH1

DC Cable(2m)
ZR-XRD1

Logic Alarm Cable(2m)
ZR-XRL1

BNC Cable(2m)
ZR-XRC1

Specifications

Main unit

Item		ZR-RX70A-E
Input method		All channels isolated input, Imbalanced input, Simultaneous sampling of all channels
Input terminal shape		BNC terminal: For voltage measurement. M3 screw type terminal: For voltage / temperature (thermocouples) measurement. *1
Number of input channels		8 CH
Sampling interval		10µs to 1 min
A/D resolution		16 bit
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 (Thermocouples)	K, J, E, T, R, S, B, N, W (WRe5-26)
	Humidity	0 to 100% (Voltage 0 to 1 V scaling conversion) ZR-XRH1(Refer to the option.)
External input/output sections		Switch between logic4CH and pulse4CH *2
Maximum input voltage	between +/– input terminals	20 mV to 1 V: ±30 VDC 2 V to 500 V: ±500 VDC
	between input terminals	60 Vp-p
	between input terminal/GND	60 Vp-p
Withstand voltage	between input terminals	1000 Vp-p (1 minute)
	between input terminal/GND	1000 Vp-p (1 minute)
Input impedance		1 MΩ ± 5%
Allowable signal source resistance		1 kΩ or less
Reference contact compensation accuracy *3		±1.0°C
Pulse input *2 *5	Revolutions mode	5 to 20M RPM/F.S.(1,2,5 step)
	Counts mode	5 to 20M C/F.S.(1,2,5 step)
	Inst.mode	5 to 20M C/F.S.(1,2,5 step)
Trigger Functions	Trigger types	Start: Data capture starts when a trigger is generated. Stop: Data capture stops when a trigger is generated.
	Trigger settings	Start: Off, Level(Analog/Logic/Pulse), External *2 Stop: Off, Level(Analog/Logic/Pulse), External *2・Time
	Channel combinations	Level OR, Level AND, Edge OR, Edge AND
	Mode	↑H, ↓L, Window IN *4, Window Out *4
Timer mode		Date and Time, Every Day Cycle, Every Hour Cycle
Alarm output *2		4CH,Open collector output (5 V, 10 kΩ pull-up resistance)
Output conditions		↑H, ↓L, Window IN *4, Window Out *4
Input filter		OFF, Line, 5 Hz, 50 Hz, 500 Hz
Statistical calculation functions		Types of statistical calculation *6: Average, Max, Min, Peak, RMS (Maximum of 2 can be set simultaneously.)
PC Interface types		Ethernet (10BASE-T/100BASE-TX), USB (USB 2.0 HIGH-SPEED)
PC Interface functions	Ethernet	Web server function, FTP server function, NTP client function
	USB	USB drive mode
Memory device	Internal	RAM:1,000,000points, Internal flash memory: Approx. 256 MB
	External	USB Memory slot(HIGH-SPEED) *7
Display		5.7-inch TFT color LCD
Display settings		Waveform screen + Digital screen, Waveform screen, Digital screen + Calculation Display, screenX-Y display
TIME/DIV		10ms/DIV to 24hour/DIV
Operating environment		0 to 40°C, 5 to 85 %R.H. (15 to 35°C when the battery is used)
Power supply		AC adapter: AC100 to 240 V/50 to 60 Hz DC input: DC8.5 V to 24 V Battery pack *8
Power consumption		28VA (When the AC adapter is used)
Weight		Approx 1.1kg (Excluding AC adapter and batteries)
Vibration resistance		Equivalent to automobile part Type 1 Category A classification
External dimensions		232 × 150 × 80 mm
Accessories		User's Manual, Utility Disk (CD-R), AC adapter/AC cable (CEE), User registration Postcard

*1 BNC terminal and M3 screw type terminal of the same channel cannot be used simultaneously.
*2 A logic alarm cable ZR-XRL1 (optional) is necessary.
*3 23°C ± 5°C
At least 30 minutes after the power supply is turned on
Filter Line GND connection
*4 The logic input cannot be set.
*5 Maximum input frequency: 50 kHz, Maximum number of counts: 15 MC (24-bit counter)
*6 Real time and data between cursors specified (during data replay)
*7 Max. 2 GB (Depends on the type of USB memory in use)
*8 2 battery packs should be mounted when using battery pack.

Temperature, Humidity, and more.

Analog Input Measurement Accuracy

Voltage	±0.25% of F.S.

Item	Description		
Temperature*1	Thermocouple	Measurement Temperature Range (°C)	Measurement accuracy
	R/S	0 ≤ TS ≤ 100	± 7.0°C
		100 < TS ≤ 300	± 5.0°C
		R: 300 < TS ≤ 1600	± (0.05% of rdg + 3.0°C)
		S: 300 < TS ≤ 1760	± (0.05% of rdg + 3.0°C)
	B	400 ≤ TS ≤ 600	± 5.5°C
		600 < TS ≤ 1820	± (0.05% of rdg + 3.0°C)
	K	–200 ≤ TS ≤ –100	± (0.05% of rdg + 3.0°C)
		–100 < TS ≤ 1370	± (0.05% of rdg + 2.0°C)
	E	–200 ≤ TS ≤ –100	± (0.05% of rdg + 3.0°C)
		–100 < TS ≤ 800	± (0.05% of rdg + 2.0°C)
	T	–200 ≤ TS ≤ –100	± (0.1% of rdg + 2.5°C)
		–100 < TS ≤ 400	± (0.1% of rdg + 1.5°C)
	J	–200 ≤ TS ≤ –100	± 3.7°C
		–100 < TS ≤ 100	± 2.7°C
		100 < TS ≤ 1100	± (0.05% of rdg + 2.0°C)
	N	0 ≤ TS ≤ 1300	± (0.1% of rdg + 2.0°C)
	W	0 ≤ TS ≤ 2315	± (0.1% of rdg + 2.5°C)

*1:Operating environment 23°C ± 5°C
Left for at least 30 minutes after the power supply is turned on
Filter Line
GND connection
Thermocouple used is T:0.32 ø, other:0.65ø

Humidity Sensor ZR-XRH1 (Accessory)

Item	Description
Allowable temperature range	–25 to +80°C
Allowable humidity range	0 to 100% RH
Relative humidity measurement accuracy	± 3% RH (5 to 98% RH at 25°C)
Response time	15 sec (90% response when membrane filter is installed)
Sensor output	0 to 1V
External dimensions	ø14 mm × 80 mm (excluding cable)
Cable length	3 m

PC Software

Item	Special PC software ZR-SX10 Wave Inspire RX (Ver 2.0) (Accessory)	Standard PC software Smart Viewer RX70 (Standard Accessory)
Standard functions	Review saved data, real-time capture of PC data, main unit setup, CSV file conversion	
Waveform operation	Drag & Move waveform directly Batch change of CH scale Intuitive operation by mouse wheel	Change CH scales individually by icons
Waveform display	Displays multi-windows Displays all the CH multi-scales simultaneously Scrolling for all directions (up, down, right, left) X-T display , X-Y display , FFT display	Split display in the single window X-T display , X-Y display , FFT display Meter display selection
Configuration function	Smart List view setup function Smart Grouping function	Setup in the tab format
Captured data	Binary format: Sampling interval 10 µs to 60 s CSV format: Sampling interval 10 ms to 60 s CSV conversion method: between cursors, All data, File bulk conversion	
Others	Cursor function, Comment input function, Acquisition setup , Smart search function , Excel data transfer function , Alarm mail function	Cursor function, Comment input function, Excel data transfer function , Alarm mail function
Compatible interface	USB, LAN	
Compatible operating system	Windows Vista/XP/2000	

■ Ordering Information

Standard set

Item	Model
Portable Multi Logger	ZR-RX70A-E

Models compliant with the Chinese RoHS Directive are also available.
Please contact your OMRON representative for further information.

Accessories (Order separately)

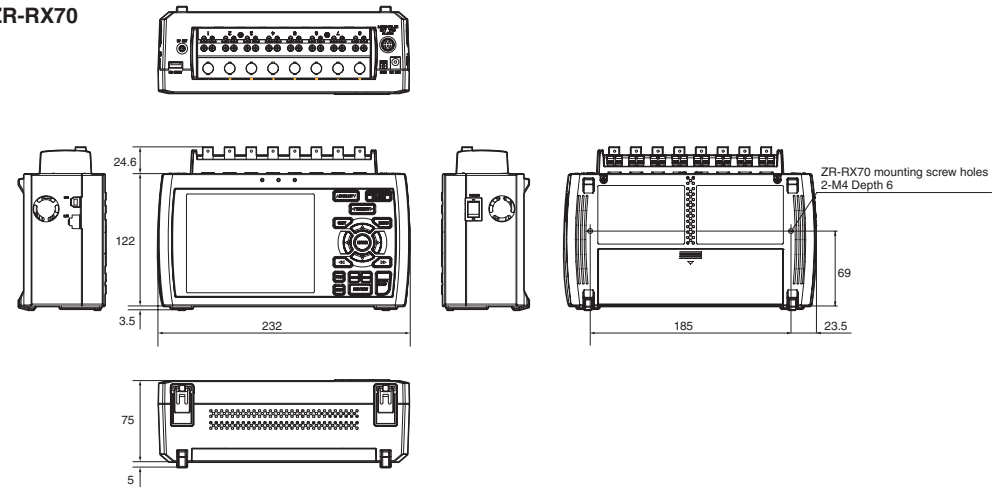
Item	Model
Battery Pack	ZR-XRB1
Humidity Sensor(3m)	ZR-XRH1
DC Cable(2m)	ZR-XRD1
Logic Alarm Cable(2m)	ZR-XRL1
BNC Cable(2m)	ZR-XRC1
Special PC Software Wave Inspire RX	ZR-SX10

The temperature detector also abundantly does the lineup.

■ External Dimensions

(Unit:mm)

ZR-RX70



Related Products

Max. 200-channel Temperature Measurement

Portable Multi-logger

ZR-RX40A-E

- Up to 200 isolated channels
- Multifunction input (thermocouples, resistance thermometer, voltage etc.)
- LAN connection
- Compatible with USB flash drive
- Internal 12MB flash-memory
- 5.7 inch TFT color LCD
- Easy-to-navigate menus
- 9 hour battery (Accessory)
- M3 screw terminal blocks
- Standard PC software

Palm-top Mobile Model

Portable Multi-logger

ZR-RX20A-E

- 10 isolated channels
- Multi-channel input (thermal resistance, voltage etc.)
- Compatible with USB flash drive
- Internal 3.5MB flash memory
- 3.5 inch TFT color LCD
- Easy-to-navigate menus
- 6 hour battery (Accessory)
- M3 screw terminal blocks
- Standard PC software

This document provides information mainly for selecting suitable models. Please read the document User's Manual (Z283) carefully for information that the user must understand and accept before purchase, including information on warranty, limitations of liability, and precautions.

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