Paperless Recorder
with Standard Ethernet and USB Communications Interface

RD9900 Series

2 YEAR WARRANTY

- **Employing Clear 144 mm (5.67") TFT Color LCD**
- **Large Capacity of Data Memory and Various Recording Method**
- **Multi-Points Recording with High-Speed/ Accuracy**
- **Easy Operating and Programming Without Manuals**
- **LAN Network Capability**
- **Safety System and Reliability**
- **Analyzing/Data Acquisition Application Software**

RD9900 Series are network-compatible paperless recorders with high performance and high operating function employed high visibility 5.6" TFT color LCD. High speed of sampling rate 100 ms for 12 points and high accuracy of ±0.1% were realized, and measured data is stored into internal memory and maximum 2 GB compact flash card. As it can be monitored by a web browser display on several computers on intranet or internet, FTP transfer of data file and e-mail notification are also available. The recorder can be used for various applications such as data management, research, development, remote and wide range monitoring by utilizing internet environment.

RD9912 shown smaller than actual size.

Specifications

Input Specifications

Number of Measuring Points:
- **RD9906:** 6 points
- **RD9912:** 12 points

Input Types: Universal (refer to the table of inputs for RD200/2800

Accuracy Rating: Refer to the table of inputs for RD200/RD2800 at **omega.com/rd200_rd2800**

Reference Junction Compensation Accuracy: Type K, E, J, T, N, Platinel II; ±0.5°C or less; R, S, NiMo-Ni, CR-AuFe, WRe5-WRe26, W-Wre, U, L; ±1.0°C or less

Sampling Rate: Approximately 100 ms for all points

Burnout: Disconnection of input signal is detected on thermocouple and resistance thermometer input; UP/DOWN disable is selectable for each input

Scaling: Range/scale is selectable when DC voltage/current is programmed

Digital Filter: Programming FIR filter for each point (common to all points)

Allowable Signal Source Resistance:
- **Thermocouple Input (Burnout Disable)/DC Voltage Input (±2V or less):** 1 kΩ or less
- **DC Voltage Input (±5 to ±50V):** 100 Ω or less
- **Resistance Thermometer:** Per wire 10 Ω or less (same resistance for 3 wires)

Input Resistance: DC voltage, thermocouple input; approximately 1 MΩ

Maximum Input Voltage: DC voltage input (±2V or less)/thermocouple input (burnout disable), ±10 Vdc

DC Voltage Input (±5 to ±50V): ±60 Vdc

Dielectric Strength Between Channels: 1000 Vac or more between each channel (high strength semiconductor relay used)

Display Specifications

Display: 144 mm (5.67") TFT color LCD

Display Types:
- **Measured Data Display:** Trend screen, data screen, bar-graph screen
- **Historical Trend Display:** Simultaneous display with real-time trend is available
- **Information Display:** Alarm display, marker list, file list
- **Setting Screen:** Alarm, computation, memory, system, maintenance, communication, etc.

Trend Screen: 12 colors selectable
- **Display Screen:** 5 screens (5 groups)
- **Display Points:** Maximum 44 points/ screen/
- **Time Axis Direction:** Vertical or horizontal
- **Line Width:** 1/3/5 dot selectable
- **Scale Display:** 4 scales
- **Tag/Data Display** (Show/hide selectable)

Marker Display

Data Screen: Display screen, 5 screens (5 groups)
Display Points: Maximum 44 points/screen
Display Contents: Measured value, channel/tag, unit, alarm status

Bargraph Screen: 12 colors selectable
Display Screen: 5 screens (5 groups)
Display Points: Maximum 44 points/screen
Display Direction: Vertical or horizontal
Scale Display: 1 scale

Information Display:
Alarm Display (Alarm activation/released history display)
Marker List
File List (Group data file list display)

LCD Back Light: Auto/manual OFF function

LCD Brightness: 4 levels adjustment

Recording Specifications

Internal Memory: Flash memory, 4 MB capacity

External Memory: CF card, 32 MB to 2 GB capacity; 128 MB CF card is included as standard

Recording Cycle: 100, 200, 500 ms; 1, 2, 3, 5, 10, 15, 20, 30 s; 1, 2, 3, 5, 10, 15, 20, 30, 60 min

Numbers of Logging Files: 250/numbers of used groups

Logging Data: Measured data; file name (group name), time of day, month and year of recording start, tag, measured data, alarm status/types

Storing Types: Binary/CSV type

Storing Methods:
Manual Start/Stop: Dedicated key operation
Schedule: Designation for time of day and date
Trigger Signal: Alarm event pre-trigger is selectable

Measuring Numbers of Pre-Trigger: Maximum 950 data

Recording Cycle*: Up to 3 groups of 12 points/group can be programmed for 100, 200 and 500 ms recording; 5 groups of 44 points/group for recording with 1s or more (total of 100 points programming possible)

Recording Duration (CF Card): When 6 channels recorded in sampling mode (real data)

Recording Cycle*	128 MB	256 MB	512 MB	1 GB	2 GB
0.1 sec	6.32 days	12.6 days	25.3 days	50.6 days	101 days
1 sec	63.2 days	126 days	253 days	1.4 yrs	2.8 yrs
60 sec	10 yrs	21 yrs	42 yrs	83 yrs	166 yrs

When 12 channels recorded in sampling mode (real data)

Recording Cycle	128 MB	256 MB	512 MB	1 GB	2 GB
0.1 sec	3.16 days	6.32 days	12.6 days	25.3 days	50.6 days
1 sec	31.6 days	63.2 days	126 days	253 yrs	1.4 yrs
60 sec	5.2 yrs	10 yrs	21 yrs	42 yrs	83 yrs

Computation Specifications

Computation Points: Maximum 44 points

Computation Types:
Arithmetic Operations: Addition, subtraction, multiplication, division, remainder, exponential
Comparison Operations: Equality, inequality, great, less, equality/great, equality/less
Logical Operations: AND, OR, XOR, NOT
General Functions: Round-up, round-down, absolute value, square root, exponent of e, natural logarithm, common logarithm
Integration Operations: Analog integration, digital integration
Channel Data Operations: Measured data computation, calculated data computation

Alarm Specifications

Setups: Up to 4 alarms can be programmed per channel

Alarm Types: Upper limit, lower limit, differential higher limit, differential
lower limit (deadband is selectable), abnormal data

Delay Function: Setup range of alarm delay, 1 to 3600 sec

Alarm Settings: AND/OR selectable

Communication Functions Network

FTP Server: Data file can be read from the network computer

Web Server: Conformed to HTTP1.0; displays the alarm, information of maintenance by browser software (Internet Explorer 5.0 or later, Net Scape 6.0 or later, Opera 7 or later)
User's ID and password registration available

E-Mail: E-Mail notification at specified time for alarm activation; report data at specified time is selectable from all registered

USB Communications**

USB: Communication type, USB1.1

Transfer Systems: Bulk transfer, control transfer

Communication Contents: File transfer by virtual drive connection

General Specifications

Rated Power Voltage: 100 to 240 Vac (universal power supply); 50/60 Hz

Maximum Power Consumption: 50 VA (DO: all points ON, 240 Vac)

Reference Operating Condition:
Ambient Temperature/Humidity Range: 21 to 25°C, 45 to 65% RH
Power Voltage: 100 Vac, ±1.0%
Power Frequency: 50/60 Hz ±0.5%
Attitude: Left/right 0°, forward/backward 0°
Warm-Up Time: Longer than 30 minutes

Normal Operating Condition:
Ambient Temperature/Humidity Range: 0 to 50°C, 20 to 80% RH
Power Voltage: 90 to 264 Vac
Power Frequency: 50/60 Hz ±2%
Attitude: Left/right 0°, forward tilting 0°, backward tilting 0° to 20°

Transportation Condition (At the Packed Condition on Shipment from Our Factory):
Ambient Temperature/Humidity Range: -20 to 60°C, 5 to 90% RH (note: no dew condensation)
Vibration: 10 to 60 Hz, 0.5 G (4.9 m/S2) or less
Impact: 40 G (392 m/ S2) or less

Storage Condition: Ambient temperature/humidity range -20 to 60°C, 5 to 90%RH (note: no dew condensation)

Power Failure Protection: Setups and data are backed up by flash memory

Clock: Lithium battery backs up RAM (minimum 5 years)

Insulation Resistance:
Secondary Terminals and Protective Conductor Terminals: 20 MΩ or more at 500 Vdc
Primary Terminals and Protective Conductor Terminals: 20 MΩ or more at 500 Vdc
Primary and Secondary Terminals: 20 MΩ or more at 500 Vdc

Dielectric Strength:
Secondary Terminals and Protective Conductor Terminals: 1 minute at 500 Vac
Primary Terminals and Protective Conductor Terminals: 1 minute at 1500 Vac
Primary and Secondary Terminals: 1 minute at 2300 Vac

****** See next page for additional information.***

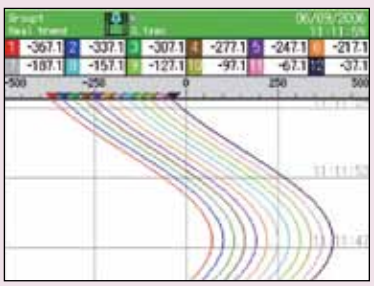
Case Assembly Material:
Door Frame: ABS resin
Case: Steel
Color:
Door Frame: Black (equivalent to Mussel N3.0)
Case: Painting color, gray (equivalent to Mussel N7.0)
Weight: 2.2 kg (4.85 lb)
Mounting: Panel mounting
Terminal Screws:
Power Terminals/Protective Conductor Terminals/ Communications Terminals: M4.0
Measuring Input Terminals/Alarm Output Terminals/Remote Contact Terminals: M3.5

Options Specifications

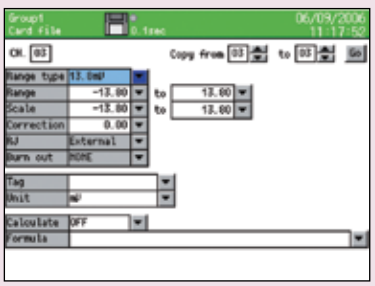
Name	Contents
Alarm Output	Relay contact ouput at alarm activation and abnormal input; output points: 12; contact capacity: mechanical relay, 100 Vac 0.5 A, 240 Vac 0.2 A
Communication Interface	Communication interface for high-order instruments RS232C/RS485 switchable **Ethernet and USB equipped as standard

*** See previous page for additional information.*

RD9900 Series Screens

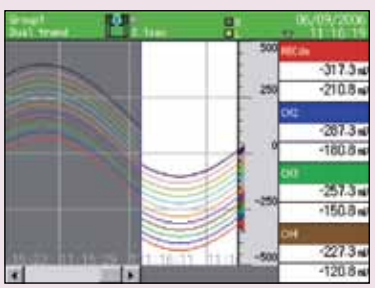


Real Time Trend Screen
Display data (measured and virtual) of selected group. Vertical trend and horizontal trend.



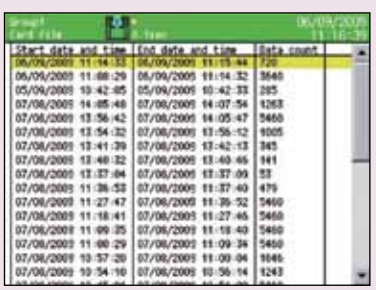
Input/Computation Setting

Bar-Graph Screen
Display data (measured and virtual) of selected group. Combination display with real-time trend is available.

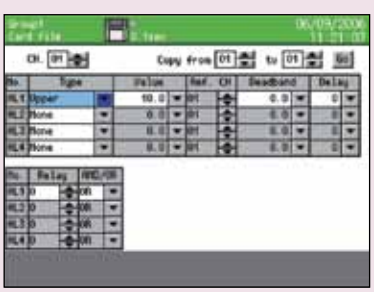


Dual Trend Screen
Two split display for real-time and historical trend. Scroll available for historical trend.

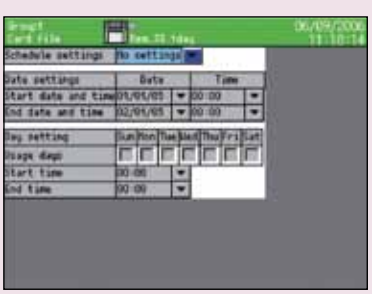
Data Screen
Display data (measured and virtual) of selected group. Simultaneous display of alarm status.



Information Setting Screen



Alarm Settings



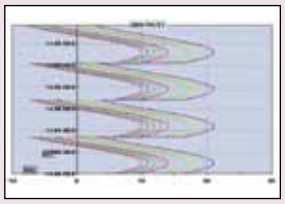
Schedule Setting Screen

OMEGA CARE℠ Extended Warranty Program

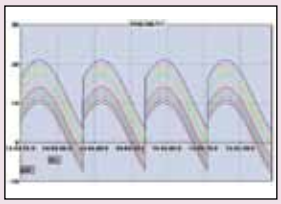
OMEGACARE℠ extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE℠ covers parts, labor and equivalent loaners.

Application Software ZAILA (Sold Separately)

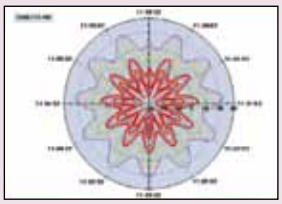
The software is applied for replay display/ wave editing operation of recorded data in RD9900 series. It has replay display of vertical/ horizontal trend and circular trend function, and also analyzing function such as magnify/reduce/ partially magnify of graphs and message insert.



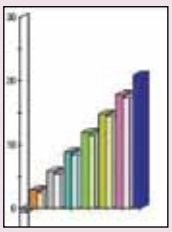
Trend Screen (Verical Flow)



Trend Screen (Horizontal Flow)



Circular Chart



Bar Graph

- **Trend display: Selectable from Trend Display Window (Vertical Flow, Horizontal Flow) and Circular Trend Display Window**
- **Continuous Replay Display Window: Trend is Scrolled Continuously (Automatically); Scroll Changes by Speed and Renewal Data Number**
- **Data List Display Window: Displays Registered Data as List Display**
- **Bar-Graph: Displays by bar; Message Can be Inserted Into Bar-Graph**
- **Data Between Markers: Displays Date/ Time, Time Difference Between 2 Data, Data Difference, Maximum, Minimum, Average, Standard Deviation and Median Among all Data**
- **Alarm Display: Points for Alarm Activation at Each Level are Displayed on a Trend Graph**
- **Settings: Cursor, Trend Line, Scale Axis, Time Axis, Title Input on the Graph, Graph Assistant and Magnify/Reduce/Rotation of Graphs**

Environment

CPU: 1GHz or more

OS: Windows 98/Me/2000/XP Home/XP Pro

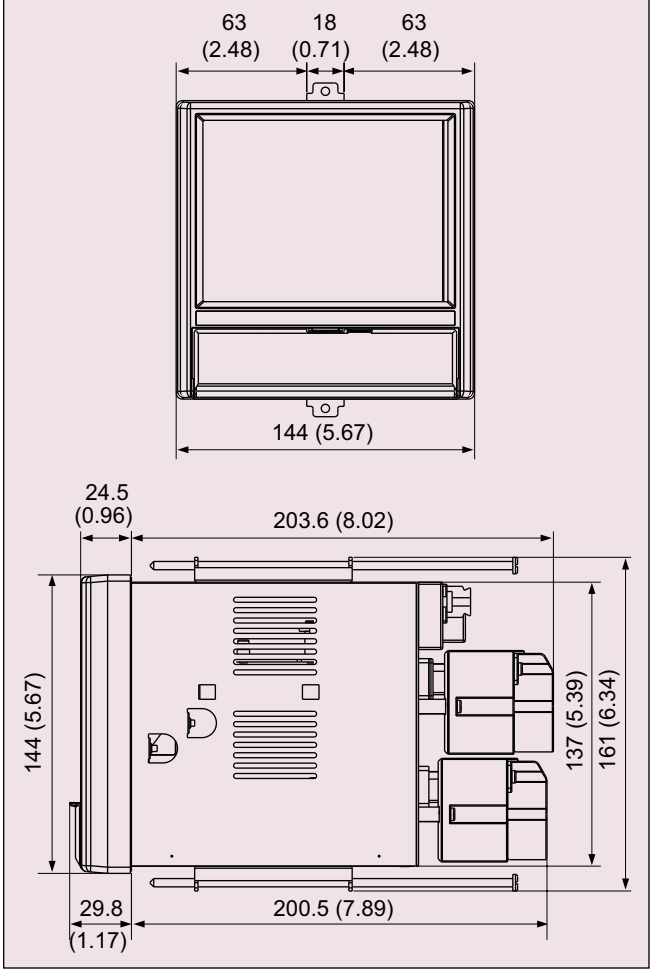
Memory: 256 MB or more (512 MB or more recommended)

Disk Drive: CD-ROM drive

Hard Disk: Disk space 100MB or more

Language: English, Japanese, Chinese (simplified and traditional characters)

Dimensions: mm (inch)



To Order

Model No.	Description
RD9906	6 points paperless recorder
RD9912	12 points paperless recorder
POWERCORD-SE	Power cord

Option Boards

Model No.	Description
RD9900-C24	RS232C/RS485 communication interface
RD9900-AL12	12 point mechanical relay

Option Software

Model No.	Description
RD9900-ZAILA	ZAILA data analysis software

Comes complete with operator's manual and 128 MB compact flash card.

***Ordering Examples: RD9912,** 12 points paperless recorder.*
***RD9906,** 6 points paperless recorder and **OCW-3,** OMEGACARE℠ extends standard 2-year warranty to a total of 5-years.*

S