

# 250 mm (10")

## RD5100 Series



- ✓ High Speed Scanning at 36 Points/Sec and High-Speed Recording
- ✓ High Accuracy of 0.05%
- ✓ Various Industrial Values Can be Measured at the Same Time with Selectable Ranges
- ✓ Superior Ease of Operation
- ✓ Engineering Port is Provided (USB)
- ✓ Anti-Noise Countermeasures
- ✓ Communication Interfaces are Available
- ✓ Recording and Calculation of Data Communication Input

RD5100 series chart recorders are 250 mm (10") hybrid recorders with multi-range input. Innovative design high performance recorder provides high accuracy,  $\pm 0.05\%$ ; high speed scanning, 0.1 second for 36 points and high speed recording, 1 line in 3 seconds. Simple operational keys and PC setting functions drastically improved usability of recording system.

### Specifications

#### Input

**Number of Measuring Points:**

12, 24 and 36 points

**Input Types:** Universal (refer to the table of inputs)

**Range Setting:** Input type and range are set with front keys

**Scale Setting:** The minimum and maximum values and unit are set for each point with front keys

**Setting Range:** -30,000 to 30,000

**Decimal Points:** Optional setting

CH	INPUT	DATA	AC	CHI	N-CHI	DATA	UNIT
001	MV	262.6	*001	007	MV	326.5	100V
002	MV	272.2	*002	008	MV	336.6	*008
003	MV	283.0	*003	009	MV	346.3	*009
004	MV	297.6	+004	010	MV	356.3	*010
005	MV	305.0	+005	011	MV	366.5	*011
006	MV	315.6	+006	012	MV	376.6	*012

**Indication Accuracy:** Refer to the table of inputs on page S-35d

**Temperature Drift:** 0.1% FS/ 10°C

**Measuring Period:** 0.1 sec/channel

**Reference Junction Compensation Accuracy:**

**K, E, J, T, N, Platel II:**  $\pm 0.5^\circ\text{C}$  ( $33^\circ\text{F}$ ) or less [ $0^\circ\text{C}$  ( $32^\circ\text{F}$ ) or more when measuring]

**R, S, WRe5-WRe26, NiMo-Ni, U, L:**  $\pm 1.0^\circ\text{C}$  ( $34^\circ\text{F}$ ) or less [only when the ambient temperature is  $23^\circ\text{C}$  ( $73^\circ\text{F}$ )  $\pm 5^\circ\text{C}$  ( $41^\circ\text{F}$ )]

**Input Resolution:** Approx. 1/40,000 (standard range conversion)

**Burnout:** Select with/without burnout for each input

**Allowable Signal Source Resistance:**

**Thermocouple Inputs, DC Voltage Input (10 mV):** 500 $\Omega$  or less (without burnout)

**DC Voltage Input (Except 10 mV):** 100 $\Omega$  or less

**Resistance Thermometer Inputs:** 10 $\Omega$  or less/ line, three lines are common, Pt100, JPT100

**Input Resistance:**

**Thermocouple Input, DC Voltage Input:** Approx. 1M $\Omega$

**Maximum Input Applied Voltage:**  $\pm 20$  Vdc

**Input Correction:** Zero/span correction and shift correction for each channel

**Maximum Common Mode Voltage:** 30 Vac (support LVD)

**Common Mode Rejection Ratio:** 130dB

RD5110

**Series Mode Rejection Ratio:** 50dB (only when the peak value of noise is below standard range)

**Terminal Board:** Detachable type, removable for wire connection

### Recording Specifications

**Recording System:** Raster scan system, 10-color wire dot printing

**Recording and Recording Color:**

**Analog Recording:** Color can be specified for each channel as required 10 colors (red, purple-red, orange, brown, green, yellow-green, blue-green, purple, purple-blue, black)

**Digital Recording and Logging**

**Recording:** Black

**Message Printing:** Black

**List Printing:** Black

**Chart Paper:** Fan-fold type; overall width 318 mm (12.5"), total length 20 m (65.6'); effective recording width 250 mm (10") (analog recording)

**Chart Speed:** 1 to 1500 mm/H [in 1 mm/H steps]

**Skip Function:** Analog recording, digital recording and digital display can be set independently from recording slip

**Recording Compensation:** Independent setting of zero spans are available

### Display Specifications

**Digital Display:** Color LCD panel RGB (640 x 240 dot)

**Display Size:** 149.8 W x 57.4 mm H (5.8 W x 2.25" H)

**Setting Display:** Common to digital display\*

**Display Contents:** Digital display

**Channel Display:** One-point/multiple points continuous/sequential indication change

**Display Measuring Value of Each Channel:** One-point/multiple points continuous/sequential indication change

**Clock Display:** Hour/Minute/Second/Tag/Unit

**Chart Speed Display**

**Status Display:**

**Record On:** Lights during recording; LED

**Key Lock:** Lights during key lock

**Alarm:** Lights during alarm activated; LED

**Chart End:** Lights just before record ending

**Fail:** Lights during unit abnormal time

\* *Sharing LED and setting display*

## Alarm Specifications

**Alarm Display:** Occurrence CH No, data is displayed in red when alarm occurs

**Alarm Types:** High limit, low limit

**Alarm Setting Method:** Individual setting for each point four levels/channels

**Alarm Output:** See option specification

## Setting and Operational Specifications

**Key Types, Operation:**

**Func1:** Switching each function

**Func2:** Switching each function

**Enter:** Setting a change of parameter for each mode

**Menu:** Specifying each setting function

**Esc:** Used to escape in the middle of setting

**▲:** Used to switch channels when specifying the parameter on cursor

**▼:** Used to switch channels when specifying the parameter on cursor

**▶:** Used to move cursor to the right

**◀:** Used to move cursor to the left

**Rec:** Analog recording, digital recording, printing, switching chart ON/OFF

**DataP:** Digital recording of latest data

**Feed:** Fast-forwarding chart paper

**Shift:** Specifying key

**\_ \_ =:** Setting characters of “\_ \_ =”

**@ + -:** Setting characters of “@ + -”

**0 \*/:** Setting parameter value 0 and character of “\*/”

**1ABC:** Setting parameter value

**2DEF:** Setting parameter value 2 and character of “DEF”

**3GHI:** Setting parameter value 3 and character of “GHI”

**4JKL:** Setting parameter value 4 and character of “JKL”

**5MNO:** Setting parameter value 5 and character of “MNO”

**6PQR:** Setting parameter value 6 and character of “PQR”

**7STU:** Setting parameter value 7 and character of “STU”

**8VWX:** Setting parameter value 8 and character of “VWX”

**9YZ:** Setting parameter value 9 and character of “YZ”

**Recording Operation:**

**Record On/Off:** Recording operation ON/OFF\*

**Data Print:** Printing measuring data\*

**Feed:** Fast-forwarding chart paper

\* *Two actions are taken to operate*

## General Specifications

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

**Maximum Power Consumption:** 100V A

**Reference Operating Condition:**

**Ambient Temperature/Humidity Range:** 21 to 25°C (70 to 77°F), 45 to 65% RH

**Power Voltage:** 90 to 264V

**Power Frequency:** 50/60Hz ±2%

**Attitude:** Forward/Backward/left/right within 3°

**Warm-Up Time:** 1 hour or longer

**Normal Operating Condition:**

**Ambient Temperature/Humidity Range:** 0 to 40°C (32 to 104°F), 20 to 80% RH

**Power Voltage:** 90 to 264V

**Power Frequency:** 50/60Hz ±2%

**Attitude:** Forward/backward/left/right within 3°

**Transportation Condition:** At the packed condition on shipment from our factory

**Ambient Temperature/Humidity**

**Range:** -20 to 60°C (-4 to 140°F), 5 to 90%RH (no dew condensation)

**Vibration:** 10 to 60 Hz, 4.9 m (16'')/S<sub>2</sub> (0.5G or less)

**Impact:** 392 m (1.3'')/S<sub>2</sub> (approx. 40G or less)

**Storage Condition:**

**Ambient Temperature:** -20 to 60°C (-4 to 140°F), 5 to 90% RH (no dew condensation)

**Working Condition:**

**Working Temperature Range:**

0 to 40°C (32 to 104°F)

**Working Humidity Range:**

20 to 80% RH

**Power Failure Protection:**

Programmed parameters stored into EEPROM memory clock circuit sustained for 5 years or longer by a lithium battery (at the operation of 8 hours or longer per day)

**Insulation Resistance:**

**Between Primary Terminals and Protective Conductor Terminals:**

20MΩ or more at 500 Vdc

**Between Secondary Terminals and Protective Conductor Terminals:**

20MΩ or more at 500 Vdc

**Between Primary Terminals and Secondary Terminals:** 20MΩ or more at 500 Vdc

**Dielectric Strength:**

**Between Primary Terminals and Protective Conductor Terminals:**

1 minute at 1500 Vac

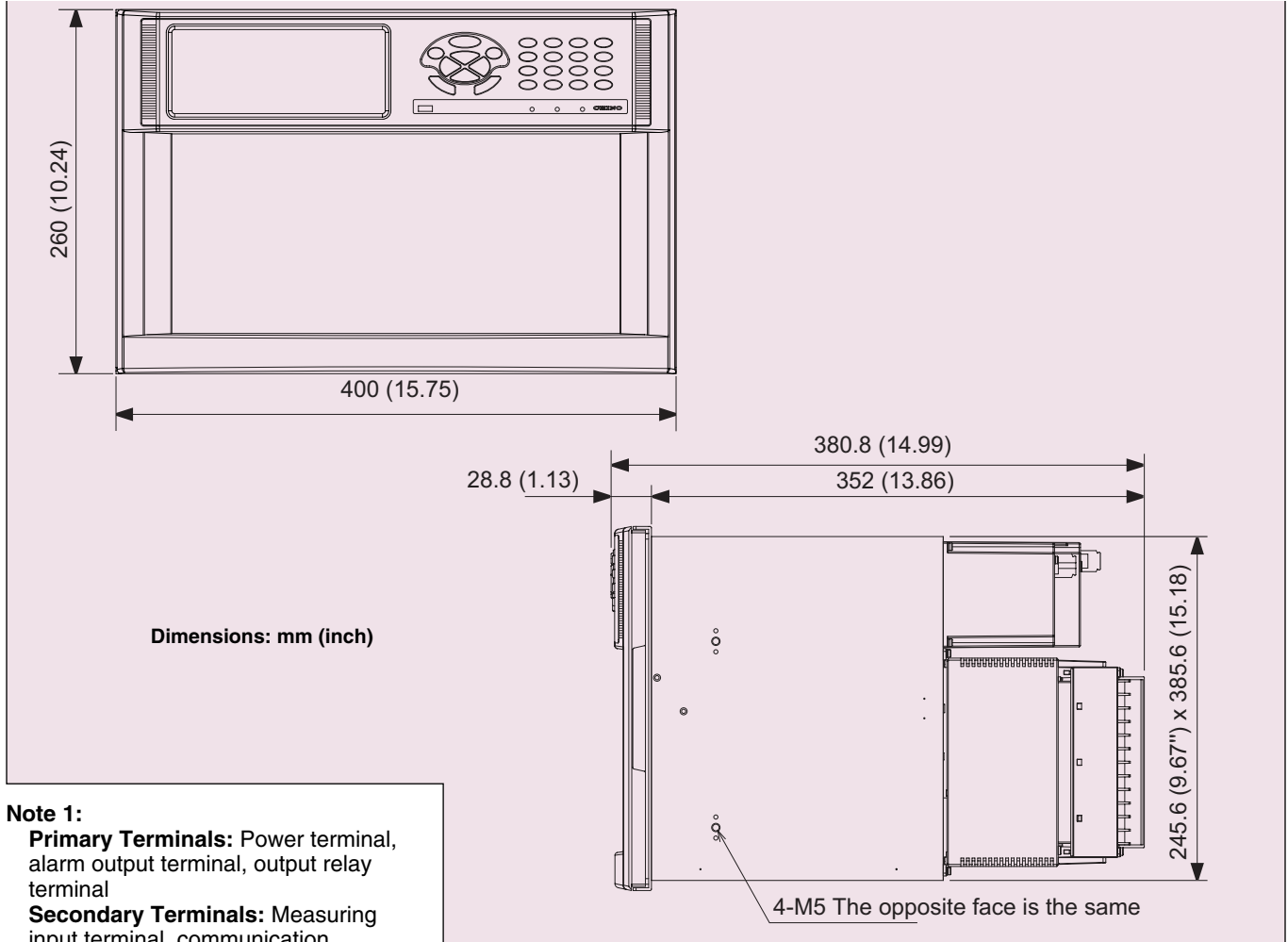
**Between Secondary Terminals and Protective Conductor Terminals:**

1 minute at 500 Vac

**Between Primary Terminals and Secondary Terminals:** 1 minute at 1500 Vac

## Option Specifications

Options	Comments
<b>External Drive</b>	Chart 3-speed, chart stop, data printing, list printing, message printing 5 types, operation recording
<b>Alarm Output</b>	Mechanical relay: 12, 24, 36 points output, max contact capacity of 100 to 240 Vac, 3 A resistance load
<b>External Drive</b>	Chart 3-speed, chart stop, data printing, list printing, message printing 5 types, operation recording
<b>Comm Interface</b>	RS422A or RS485 + Ethernet + 1a contact output (1a contact output is contact output of mecha relay)
<b>Chart End Output</b>	Chart End relay output when chart paper ended (communication interface is required)
<b>Fail Output</b>	Fail relay output when abnormality (communication interface is required)
<b>Receiving Resistance for Current Input</b>	250Ω (for 20 mA) or 100Ω (for 50 mA) are externally mounted to measure current



**Note 1:**

**Primary Terminals:** Power terminal, alarm output terminal, output relay terminal

**Secondary Terminals:** Measuring input terminal, communication terminal, external drive terminal

**Note 2:** When testing insulation resistance and dielectric strength, please short-circuit every terminals of primary and secondary terminals before the test; test without short-circuiting terminals can damage instruments

**Case Assembly Material:**

**Door (Frame):** ABS resin

**Front Panel:** Soda glass

**Back Case:** Normal steel

**Color:**

**Door (Frame):** White (equivalent to DIC546 ½)

**Front Panel:** Transparent

**Back Case:** White (equivalent to DIC546 ½)

**Mounting:** Panel mounting

**Weight:** About 15 kg (33 lb) (full option)

**Dimensions:** 400 W x 260 H x 300 mm D (15.7 W x 10.2 H x 11.8" D)

**Panel Cut Dimensions:** 388 x 248 mm (15.2 x 9.7")

**Terminal Screws:**

**Measuring Input, Alarm**

**Terminals:** M3.5

**Power, Protective Conductor**

**Terminal, External Drive Terminal, Communication Terminal:** M4

**Chart Paper Illumination:** White LED

**Communication Interface Specifications**

		With Communication Interface	Without Communication Interface
Ethernet	Specification	Ethernet10BASE-T/100BASE-T, automated recognition, TCP, IP, HTTP, exclusive protocol	—
	Function	Data display, parameter setting, with browser data display, parameter setting on exclusive application	—
RS422A RS485	Specification	RS422A, RS485, Communication protocol: MODBUS communication specification: 9600 bps to 19200 bps 7E1 to 8N2	—
	Function	Data display and parameter setting using exclusive application	—
USB	Specification	Inside of front door, USB1.1, full speed 12 mbps, bulk transfer, Control transfer	
	Function	Parameter setting for exclusive application	



**Communication Interface Specifications**

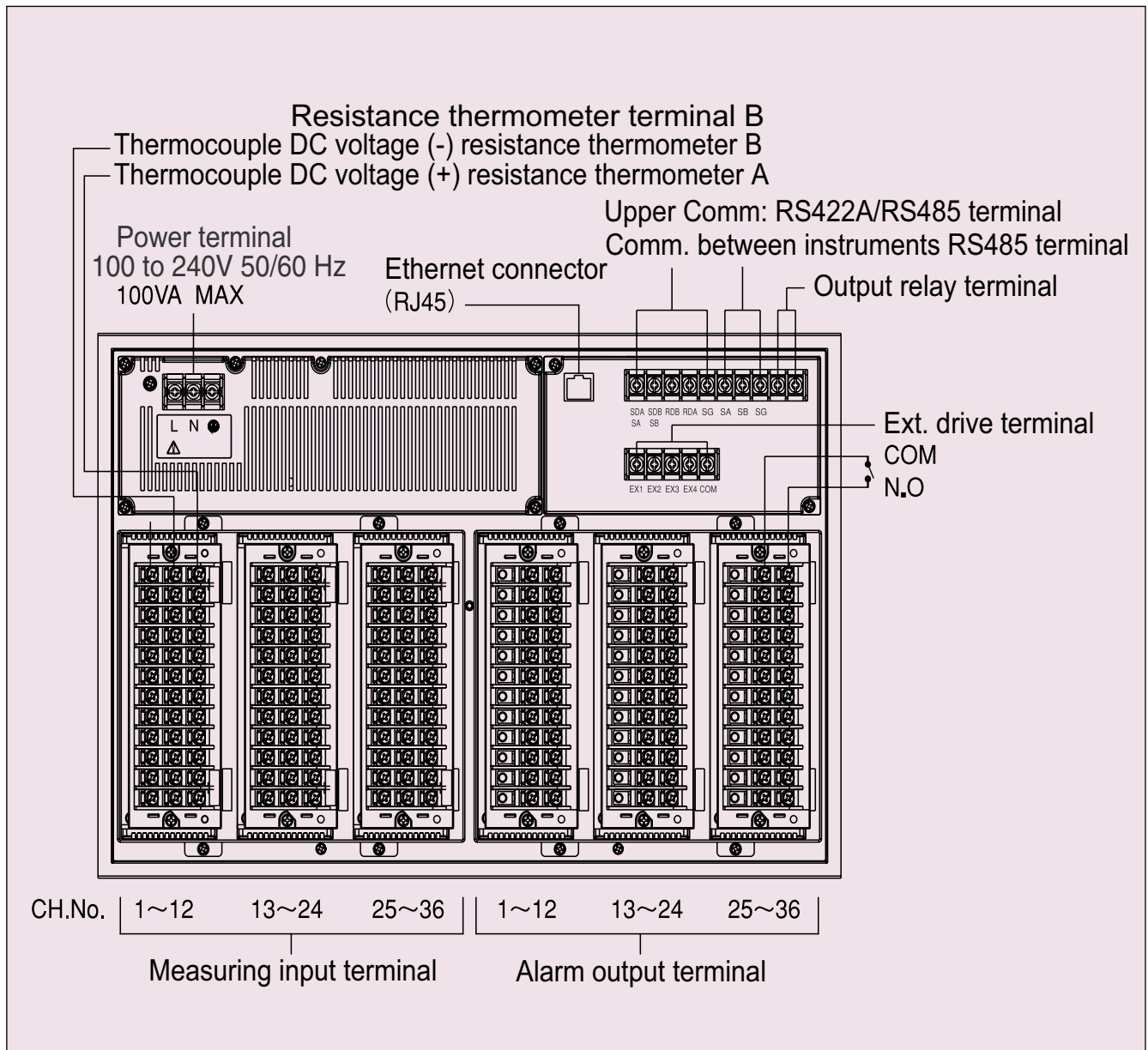
Input Signals		Measuring Ranges	Reference Ranges	Accuracy Ratings	Display Resolutions	
DC Voltage		-10.0 to 10.0 mV	±10 mV	±0.05% ±1 digit	1 μV	
		-20.0 to 20.0 mV	±20 mV		10 μV	
		-40.0 to 40.0 mV	±40 mV		100 μV	
		-80.0 to 80.0 mV	±80 mV		1 mV	
		-1.25 to 1.25V	±1.25V			
		-2.5 to 2.5V	±2.5V			
		-5.0 to 5.0V	±5V			
		-10.0 to 10.0V	±10V			
Thermocouples	K	-200 to 500°C (-328 to 932°F)	±20 mV	±0.05% ±0.5°C (±33°F)	0.1°C (32°F)	
		-200 to 900°C (-328 to 1652°F)	±40 mV			
		-200 to 1370°C (-328 to 2498°F)	±80 mV			
	E	-200 to 250°C (-328 to 482°F)	±20 mV	±0.05% ±0.7°C (±33.2°F)		
		-200 to 500°C (-328 to 932°F)	±40 mV			
		-200 to 900°C (-328 to 1652°F)	±80 mV			
	J	-200 to 350°C (-328 to 662°F)	±20 mV	±0.05% ±0.7°C (±33.2°F)		
		-200 to 700°C (-328 to 1292°F)	±40 mV			
		-200 to 1200°C (-328 to 2192°F)	±80 mV			
	T		-200 to 400°C (-328 to 752°F)	±20 mV		±0.05% ±0.7°C (±33.2°F)
	R		0 to 1760°C (32 to 3200°F)	±20 mV		±0.05% ±1°C (±34°F)
	B		0 to 1300°C (32 to 2372°F)	±20 mV		
	N		0 to 600°C (32 to 1112°F)	±20 mV		±0.1% ±0.1°C (±32°F)
			0 to 1000°C (32 to 1832°F)	±40 mV		
			0 to 1300°C (32 to 2372°F)	±80 mV		
	W-WRe26		0 to 2315°C (32 to 4199°F)	±80 mV		±0.1% ±1°C (±34°F)
	PrRh40-PtRh20		0 to 1888°C (32 to 3430°F)	±20 mV		
NiMo-Ni		-50 to 1310°C (-58 to 2390°F)	±80 mV			
Platinel II		0 to 500°C (32 to 932°F)	±20 mV	±0.1% ±0.1°C (±32°F)		
		0 to 950°C (32 to 1742°F)	±80 mV			
		0 to 1395°C (32 to 2543°F)	±80 mV			
U		-200 to 350°C (-328 to 662°F)	±20 mV	±0.05% ±1°C (±34°F)		
		-200 to 600°C (-328 to 1112°F)	±40 mV			
L		-200 to 350°C (-328 to 662°F)	±20 mV	±0.05% ±1°C (±34°F)		
		-200 to 700°C (-328 to 1292°F)	±40 mV			
		-200 to 900°C (-328 to 1652°F)	±80 mV			
RTDs	Pt100	-50 to 50°C (-58 to 122°F)	50Ω	±0.05% ±0.3°C (±32.5°F)	0.1°C (32°F)	
		-100 to 130°C (-148 to 266°F)	100Ω			
		-200 to 250°C (-328 to 482°F)	200Ω			
		-200 to 550°C (-328 to 1022°F)	300Ω			
	JPt100	-50 to 50°C (-58 to 122°F)	50Ω			
		-100 to 130°C (-148 to 266°F)	100Ω			
		-200 to 250°C (-328 to 482°F)	200Ω			
		-200 to 550°C (-328 to 1022°F)	300Ω			

**Note 1:** Ambient temperature/humidity range: 23°C ±2°C

**Note 2:** For thermocouple input, the accuracy of reference junction compensation is not included with the accuracy ratings.

**Note 3:** Accuracy rating is the percentage of measuring range K, E, J, T, R, S, B, N: IEC584, JIS C 1602-1995; W-Wre26, Wre5-WRs26, PtRh40-PtRh20, NiMo-Ni, Platinel?: ASTM Vol.14.03; U(Cu-CuNi), L(Fe-CuNi): DIN43710; Pt100: IEC751, JIS C 1604-1997;

## Terminal Board



### Exceptions of Accuracy Ratings

Input Signals	Measuring Ranges	Accuracy Ratings
K, E, J, T, L	-200 to 0°C (-328 to 32°F)	±0.2% ±1 digit
R, S	0 to 400°C (32 to 752°F)	
B	0 to 400°C (32 to 752°F)	None
	400 to 800°C (752 to 1472°F)	±0.15% ±1 digit
U	-200 to 0°C (-328 to 32°F)	±0.3% ±1 digit
W-WRe26	0 to 300°C (32 to 572°F)	
PrRh40-PtRh20	0 to 300°C (32 to 572°F)	±1.5% ±1 digit
	300 to 800°C (572 to 1472°F)	±0.8% ±1 digit
NiMo-Ni	-50 to 100°C (-58 to 212°F)	±0.2% ±1 digit

*Note: Refer to thermocouple input accuracy is calculated based on standard range, see previous page.*



1 channel display



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



12 channels simultaneous display



Engineering and USB port



36 channels simultaneous display



Operation key pad

## To Order

Model No.	Description
RD5110	250 mm (10") 12-points hybrid chart recorder
RD5120	250 mm (10") 24-points hybrid chart recorder
RD5130	250 mm (10") 36-points hybrid chart recorder
RD5111	250 mm (10") 12-points with 12 alarms hybrid chart recorder
RD5112	250 mm (10") 12-points with 24 alarms hybrid chart recorder
RD5121	250 mm (10") 24-points with 12 alarms hybrid chart recorder
RD5122	250 mm (10") 24-points with 24 alarms hybrid chart recorder
RD5131	250 mm (10") 36-points with 12 alarms hybrid chart recorder
RD5132	250 mm (10") 36-points with 24 alarms hybrid chart recorder
RD5133	250 mm (10") 36-points with 36 alarms hybrid chart recorder
RD5110-COMM	250 mm (10") 12-points hybrid chart recorder with communications
RD5120-COMM	250 mm (10") 24-points hybrid chart recorder with communications
RD5130-COMM	250 mm (10") 36-points hybrid chart recorder with communications

Comes complete with operator's manual.

Ordering Example: **RD5110**, 250 mm (10") hybrid chart recorder.

**OCW-3**, OMEGACARE<sup>SM</sup> extends standard 2-year warranty to a total of 5 years.

## Accessories

Model No.	Description
RD5100-RC	10-color ribbon cassette, package of 5
RD5100-CP-0/100	Z-fold chart paper 250 mm x 20 m (9.8" x 65.6'), case of 15
RD9900-ZAILA	ZAILA data analysis software
RD2800-PASS	Parameter programming software
RD2800-KIDS	Data acquisition software

# Programmable Chart Recorders

Rometec srl - [www.rometec.it](http://www.rometec.it) - [info@rometec.it](mailto:info@rometec.it) - Rometec srl - [www.rometec.it](http://www.rometec.it) - [info@rometec.it](mailto:info@rometec.it)

## 100 and 180 mm

### RD101B Series



- ✓ Digital and Bar Graph Display
- ✓ 1, 2, 3, 4 Continuous Pens or 6-Point Dot Printing Models (RD1800B Also Has 12-, 18-, 24-Dot Printing)
- ✓ Universal Inputs: Thermocouple, RTD, Voltage
- ✓ Programmable Input Types, Full Scale Ranges, Alarms, Chart Speed
- ✓ Powerful but Easy to Use
- ✓ Interactive Displays Make Setup Easy
- ✓ Large, Bright Dot-Matrix Display for Data and Units
- ✓ Compact—Only 220 mm (8.6") Deep
- ✓ Splashproof Front Door
- ✓ Fast Dot Printing—6 Channels in as Little as 10 Seconds
- ✓ Removable Terminal Blocks for Easy Wiring
- ✓ Optional Alarms with Remote Control
- ✓ Optional RS422A/RS485 or Ethernet Communications
- ✓ Pen Offset Compensation

The RD100B 100 mm (4") and RD1800B 180 mm (7") Series programmable chart recorders are easy to use. They feature universal thermocouple, RTD, and DC voltage (mV or V) inputs, as well as an analog bar graph and a digital display.



RD106B with KTSS-18G-12 thermocouple, sold separately, shown smaller than actual size. See [omega.com](http://omega.com)

Each recorder can print out—at programmed intervals or on demand—the date and time, channel number, scale marking, tag number, proper engineering units, chart speed, alarm value, and complete program list.

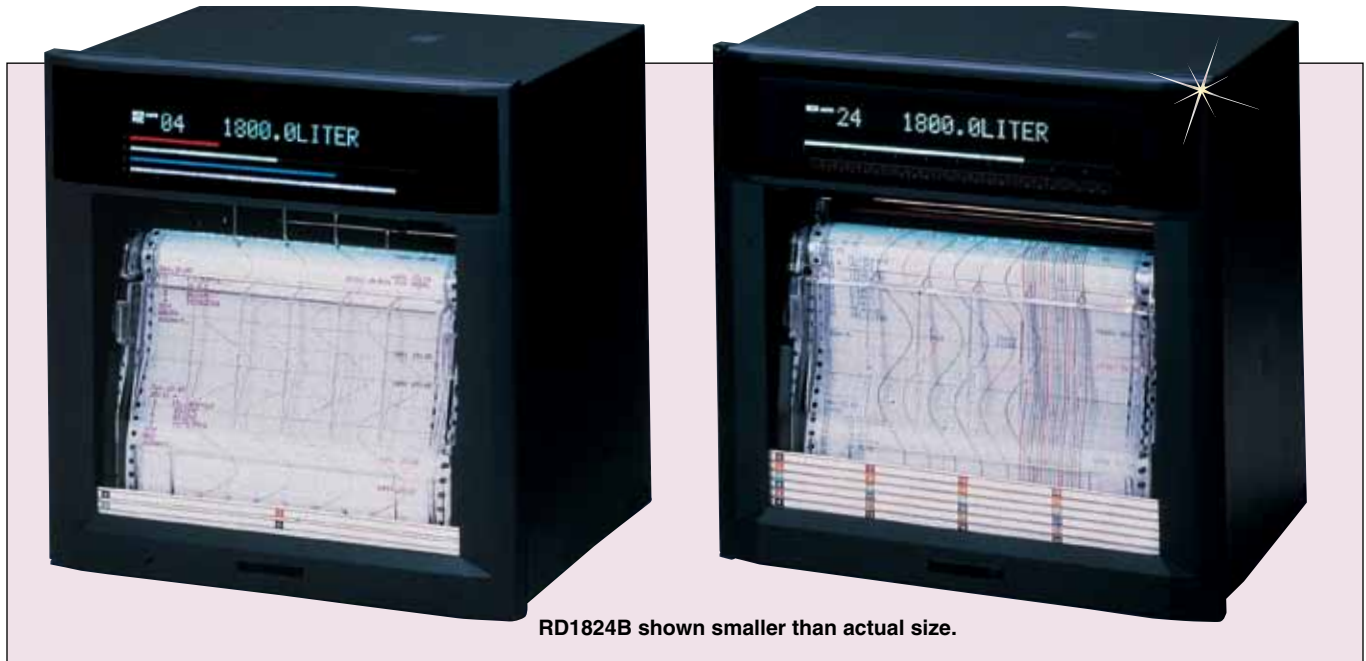
The non-contact, ultrasonic pen-position transducer is more accurate than standard pen mechanisms. The wear-free, brushless DC servo-motor eliminates the need for motor brushes, lead wire, and connectors, and is directly mounted to the printed circuit board. These 2 features contribute to the long, trouble-free life of these recorders.

**Optional Communication Output**  
The optional RS422A/RS485 or Ethernet interface lets the

user connect up to 32 units on a multidrop line to a single host computer for data logging or input/output of any setup parameter.

#### Versatile Alarm and Remote Control Functions (Optional)

The user can select up to 4 of the following 6 alarm types: high/low limit, deviation high/low limit, rate of change high/low. Optional alarm relay contact outputs are front-panel selectable. Also included is a remote control feature, which lets the user select any 5 of the following functions through the front keypad: recording start/stop; chart speed change; manual printout start; message printout start (up to 5 user-defined messages).



### Specifications

Input	Type*	Measurement Range	Measurement Accuracy	Resolution
T/C	J	-200 to 1100°C (-328 to 2012°F)	±0.15% rdg + 0.5°C (0.9°F); -200 to -100°C (-328 to -148°F): ±0.15% rdg + 0.7°C (1.3°F)	0.1°C
	T	-200 to 400°C (-328 to 752°F)	±0.15% rdg + 0.5°C (0.9°F)	0.1°C
	K	-200 to 1370°C (-328 to 2498°F)	±0.15% rdg + 0.7°C (1.3°F); -200 to -100°C (-328 to -148°F): ±0.15% rdg + 1.0°C (1.8°F)	0.1°C
	E	-200 to 800°C (-328 to 1472°F)	±0.15% rdg + 0.5°C (0.9°F)	0.1°C
	N	0 to 1300°C (32 to 2372°F)	±0.15% rdg + 0.7°C (1.3°F)	0.1°C
	R/S	0 to 1760°C (32 to 3200°F)	±0.15% rdg + 0.1°C (0.2°F); 0 to 100°C (32 to 212°F) ±3.7°C (6.7°F) and 100 to 300°C (212 to 572°F) ±1.5°C (2.7°F)	0.1°C
	B	0 to 1820°C (32 to 3308°F)	±0.15% rdg + 0.1°C above 600°C (0.18°F above 1112°F) 400 to 600°C (752 to 1112°F): ±2.0°C (3.6°F), not specified below 400°C (752°F)	0.1°C
	C(W)	0 to 2315°C (32 to 4199°F)	±0.15% of rdg + 1.0°C (1.8°F)	0.1°C
	J DIN(L)	-200 to 900°C (-328 to 1652°F)	±0.15% rdg + 0.5°C (0.9°F); -200 to -100°C (-328 to -148°F): ±0.15% rdg + 0.7°C (1.3°F)	0.1°C
	T DIN(U)	-200 to 400°C (-328 to 752°F)	±0.15% rdg + 0.5°C (0.9°F)	0.1°C
Vdc	20 mV	-20 to 20 mV	±0.1% rdg + 3-digits	10 µV
	60 mV	-60 to 60 mV	±0.1% rdg + 2-digits	10 µV
	200 mV	-200 to 200 mV	±0.1% rdg + 2-digits	100 µV
	2V	-20 to 20V	±0.1% rdg + 3-digits	1 mV
	6V	-60 to 60V	±0.1% rdg + 3-digits	1 mV
	20V	-20 to 20V	±0.1% rdg + 2-digits	10 mV
	50V	-50 to 50V	±0.1% rdg + 3-digits	10 mV
	1 to 5V	1 to 5V	±0.1% rdg + 2-digits	1 mV
RTD	Pt100	-200 to 600°C (-328 to 1112°F)	±0.15% rdg + 0.3°C (0.5°F)	0.1°C
	JPt100	-200 to 550°C (-328 to 1022°F)	±0.15% rdg + 0.3°C (0.5°F)	0.1°C
<b>Input</b>		<b>Range</b>	<b>Measurement</b>	<b>Limit</b>
Digital input (operation recording)		Input only	Less than 2.4V: off; 2.4 or more: on (TTL)	Contact inputs; contact on/off

\* Note: Thermocouple Type J, K, T, E, R, S, B: ANSI, IEC 584, DIN IEC 584, JIS C 1602-1981; Type N: nicrosil-nisil, IEC 584, DIN IEC 584; Type C W5%-R/W-26%; J DIN, T DIN: DIN 43760.

Pt100: JIS C 1604-1989, JIS C 1606-1989, IEC 751, DIN IEC 751.

JPt100 JIS C 1604-1981, JIS C 1606-1989.



**RD1800B:** 288 W x 288 H x 220 mm D  
(11.4 x 11.4 x 8.66")  
**RD100B:** 144 W x 144 H x 220 mm D  
(5.67 x 5.67 x 8.66")

**Weight:**

**RD1800B:** 6 dot, 8.4 kg (20 lb);  
24 dot, 9.0 kg (20 lb) approx  
**RD100B:** 1 pen, 2.1 kg (4.5 lb);  
2 pen, 3.4 kg (7.5 lb); 3 pen, 3.6 kg  
(7.9 lb); 4 pen, 2.4 kg (6.9 lb);  
6 dot, 2.5 kg (5.5 lb) approx

**Case:** Drawn steel

**Front Door:** Aluminum die casting

**Panel Thickness:**  
2 x 26 mm (0.078 x 1.02")

**Power:** 90 to 132, 180 to 250 Vac,  
50/60 Hz standard

**Maximum Power Consumption:**  
Approximately 40 VA

**Ambient Temperature  
and Humidity:** 0 to 50°C (32 to 122°F),  
20 to 80% RH @ 5 to 40°C (41 to 104°F)

**Memory Backup:** Lithium battery

**Input**

**Reference Junction Accuracy:**  
Type J, K, T, E, N, J DIN, T DIN: ±0.5°C;  
Type R, S, B, C: ±1°C

**Temperature Coefficients:**  
Effect of ambient temperature  
of 10°C (50°F)

**Digital Display:**  
Within ±0.1% rdg + 1 digit

**Recording:** Within digital  
display ±0.2% of recording span  
(excluding reference junction)

**Performance Under Reference**

**Operating Conditions:**

**Temperature:**  
23 ±2°C (73 ±3.6°F)

**Humidity:** 55 ±10%

**Usable Power Voltage:** 90 to 132 or  
180 to 264 Vac, 50/60 Hz

**Warm-Up Time:** 30 minutes

**Measurement Intervals:**

**Pen Models:** 125 ms/channel  
**Dot Models:** RD100B: 1 s/6 channels;  
RD1800B: 2.5 s/6 channels

**Input Resistance:** DC voltage 200 mV  
and lower ranges; T/C ranges: 10 MΩ  
min; DC voltage 2V and higher ranges:  
approx 1 MΩ

**Input Bias Current:** 10 nA max  
(approximately 100 nA on a  
thermocouple input if burnout detection  
selected)

**Thermocouple Burnout Detection:**  
On/off programmable for each channel or  
more detected as open circuit

**1 to 5 V Burnout:** Less than 0.2V

**Maximum Input Voltage:** 200 mV or  
lower and TC, RTS, DI ranges: ±10 Vdc  
continuous; 2 Vdc or greater:  
±6 Vdc continuous

**Recording System**

**Recording Span:**  
**RD100B:** 100 mm  
**RD1800B:** 180 mm

**Pen-Writing:** Disposable felt pens  
(analog recording), plotter pens  
(digital recording)

**Dot Printing:**

**Recording Paper:**  
**RD1800:** 20 m Z-fold chart  
**RD100B:** 16 m Z-fold chart

**Step Response Time:**

**RD1800:** 1.5 s  
**RD100B:** 1 s max

**Deadband:** Pen models  
0.2% of recording span max

**Maximum Recording  
Resolution:** Dot-printing models 0.1 mm

**Recording Format:**  
Normal, zone and partial recording

**Chart Speed:**  
**Pen Models:** 5 to 12,000 mm/h  
(82 increments)  
**Dot-Printing Models:** 1 to 1500 mm/h  
(1 mm steps)

**Analog Recording Cycles:**  
**Pen Models:** Continuous  
**Dot Printing Models:** 6 dots/10 s;  
12 dots/15 s; 18 dots/20 s,  
24 dots/30 s max

**Print Cycle Time—Dot Printing  
Models:** Auto mode chart speed  
determines analog recording cycle rate;  
fix mode recording is done at fastest  
analog recording interval

**Chart Speed Accuracy:** Less than  
±0.1% (chart running more than  
1000 mm continuously and related  
to grid of the paper)

**Message Printout:**  
5 messages, date/time and message  
up to 16 characters

**Periodic Printout:** Engineering units  
(up to 6 alphanumeric), tag marker  
(up to 7 alphanumeric), scale marker  
(0/100%), the measured data print

**List Printout:**  
Prints listing of range settings, alarm  
settings and other parameters

**Manual Printout:** Provides a digital  
printout of measured results

**Display System**

**Display:**  
**RD100B:** VFD 254 x 406 mm  
(10 x 16") dot matrix  
**RD1800B:** 457 x 406 mm  
(18 x 16") dot matrix

**Display:** Selectable display screen  
**Bar Graph Display:** Measured value is  
1% resolution, left-reference or  
center-zero bar graph display (individually  
programmable for each channel)

**Alarms:**  
**Display:** Alarm setting level indicator;  
channel number (dot-matrix  
models only)

**Levels:** 4 levels/channel  
**Types:** High, low, high rate of  
change, low rate of change, delta  
high, delta low (rate of change  
alarm time interval: measurement  
interval x 1 to 15)

**Indications:** Shared alarm indicator  
flashes; in dot-printing models, alarm  
status of alarm channel is  
also displayed

**Recording:** Prints channel number,  
alarm type and time on or off on right  
side of chart



RD1804B shown smaller  
than actual size.

**Optional Alarm Relay Contact  
Output and Remote Control**

**Alarm Relays:** 2, 4, 6 (all units),  
12 and 24 points (RD1800 only);  
outputs programmable; energize or  
de-energize (all relays); hold or non-hold

**Remote Control:** Enables any mix of  
the following to be assigned to 5 contact  
inputs: output programmable, recording  
start/stop; chart speed change; manual  
printout start; alarm acknowledge,  
time adjust; computation start/stop,  
computation restart; message printout  
start (up to 5)

**Input Signal:** TTL, open collector,  
contact

**Input Signal Width:** 1 second minimum

**Contact Capacity:** 3 A @ 250 Vac;  
0.1 A @ 250 Vdc resistive load

**Optional Communication  
Output**

**RS422A/RS485:** Conforms to EIA  
RS422A; can be used to output  
measured values, input and output setup  
parameters

**Addresses:** 1 to 32

**Asynchronous:**  
Start-stop synchronization

**Communication System:** Half duplex

**Wiring:** 5-wire

**Data Length:** 7 or 8-bit

**Parity:** odd, even or none

**Communication Rate:** 1200, 2400,  
4800, 9600, 19,200, 38,400 baud

**Communication Mode:**  
ASCII or binary (measured data only)

**Communication Distance:** 1.2 km

**Ethernet Interface:** Electrical and  
mechanical conformance to IEEE8023

**Transmission Media:** 10 Base-T

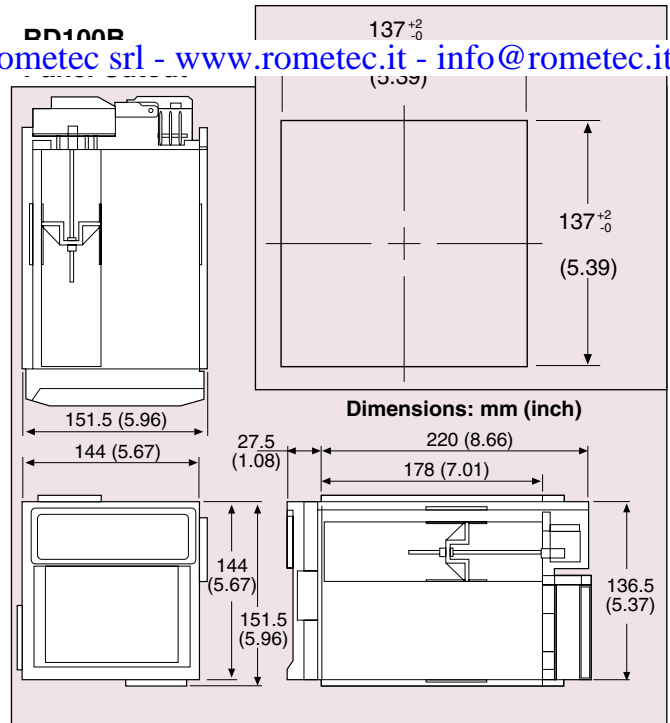
**Protocol:** TCP, IP, UDP, ICMP, ARP

**CE Option:** Meets European  
standards for EMI interference

Model No.	Input Channels	Recording Type
RD101B	1	100 mm (4") continuous
RD102B	2	100 mm (4") continuous
RD103B	3	100 mm (4") continuous
RD104B	4	100 mm (4") continuous
RD106B	6	100 mm (4") dot
RD1801B	1	180 mm (7") continuous
RD1802B	2	180 mm (7") continuous
RD1803B	3	180 mm (7") continuous
RD1804B	4	180 mm (7") continuous
RD1806B	6	180 mm (7") dot
RD1812B	12	180 mm (7") dot
RD1818B	18	180 mm (7") dot
RD1824B	24	180 mm (7") dot

Comes complete with 1 pen per channel, 1 pack of paper, mounting brackets and operator's manual.

**Ordering Examples:** RD104B, 4-pen recorder with 4-alarm relays.  
 OCV-3, OMEGACARE<sup>SM</sup> extends standard 2-year warranty to a total of 5 years.



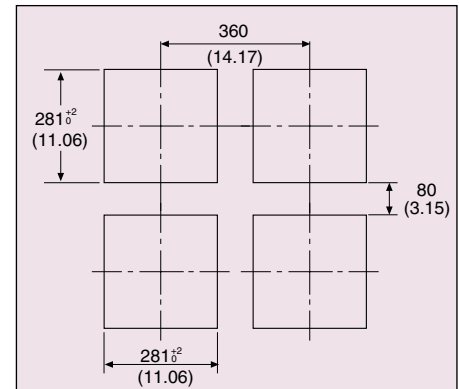
**Options (Not Field Installable)**

Suffix No.	Description
/A1/R1	2-alarm outputs, remote control
/A2/R1	4-alarm outputs, remote control (RD100A Series only)
/A3/R1	6-alarm outputs, remote control (RD106A and RD1800 Series)
/A4/R1	12-alarm outputs, remote control (RD1806, RD1812, RD1818, RD1824 only)
/A5/R1	24-alarm outputs, remote control (RD1824 only)
/C3	RS422A communications
24V	24 Vdc power (not available on portable unit)
/C7	Ethernet interface, 10 Base-T



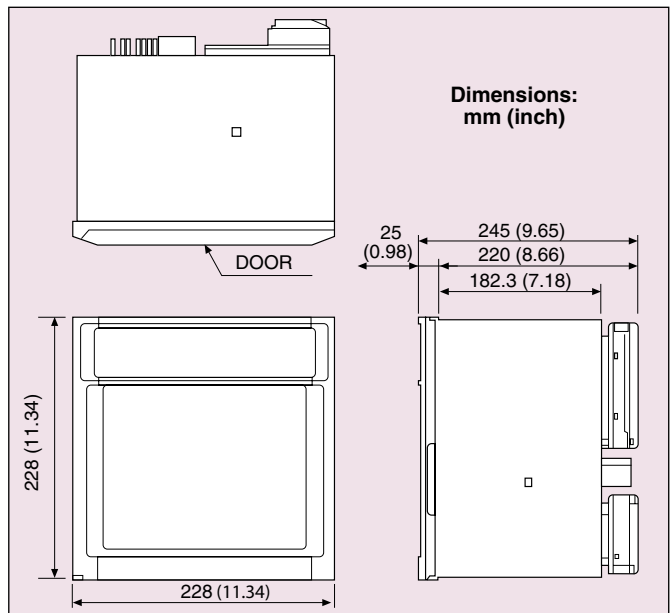
OMEGACARE<sup>SM</sup> extended warranty program is available for models shown on this page.  
 OMEGACARE<sup>SM</sup> covers parts, labor and equivalent loaners. Ask your sales representative for full details when placing an order.

**RD1800B Panel Cutout**



**Accessories**

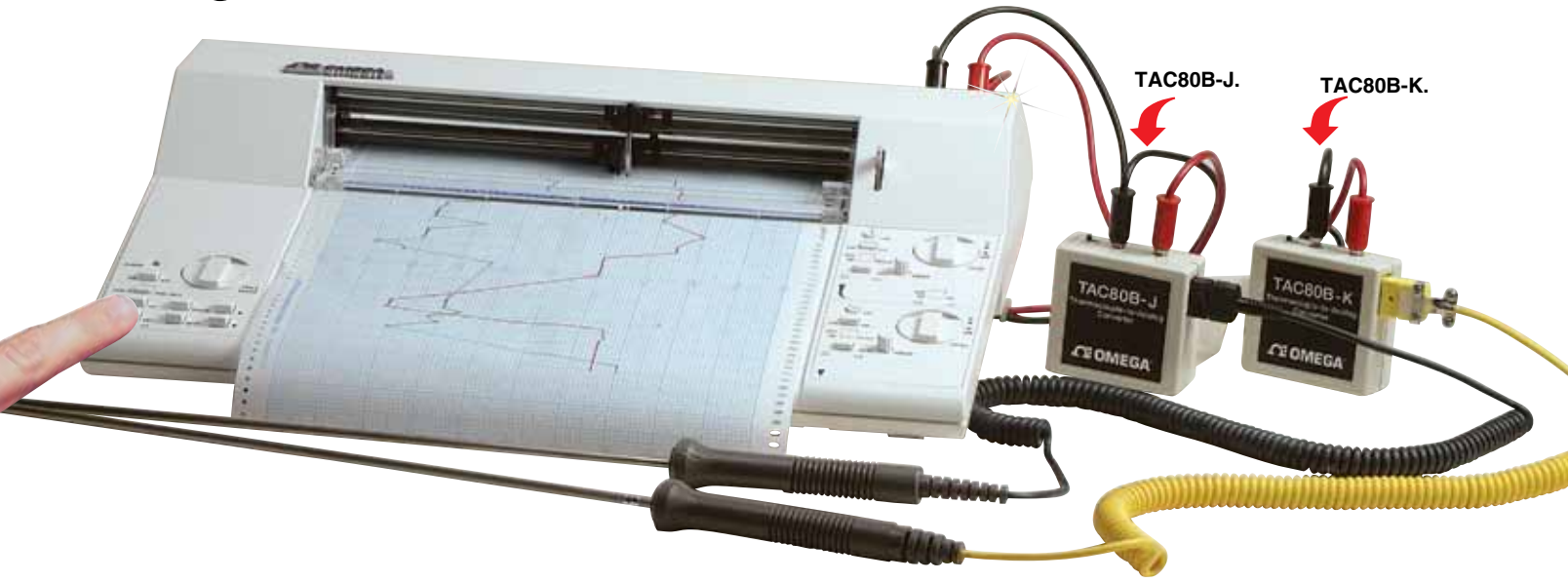
Model No.	Description
RD100A-01	Disposable red felt pen channel-1
RD100A-02	Disposable green felt pen channel-2
RD100A-03	Disposable blue felt pen channel-3
RD100A-04	Disposable violet felt pen channel-4
RD100A-11	Plotter pen
RD100B-SW1	Configuration software for models with communication interface
RD100B-SW2	Configuration software for models without communication interface
RD100-RC	6-color print ribbon purple, red, green, blue, brown, black (RD106 only)
RD110-RC	6-color print ribbon for RD1806, RD1812, RD1818 and RD1824
RD100-ZFP-1	Z-fold chart paper (pkg of 1) 100 mm x 16 m (4" x 52') RD100A Series
RD110-ZFP	Z-fold chart paper (pkg of 1) 180 mm x 20 m (7" x 65') RD1800 Series



# 200 mm (8") Flatbed Recorder

Rometec srl - [www.rometec.it](http://www.rometec.it) - [info@rometec.it](mailto:info@rometec.it) - Rometec srl - [www.rometec.it](http://www.rometec.it) - [info@rometec.it](mailto:info@rometec.it)

## Single and Dual Channel



RD45A-EPL with optional TAC-80B thermocouple-to-analog converters, and JHIN-18G-RSC-12 and KHIN-18G-RSC-12 thermocouple probes. Shown smaller than actual size.

### RD45A-EPL



- ✓ 14 Input Ranges from 1 mV to 20 Vdc
- ✓ Selectable Left or Right Side Zero Position
- ✓ Differential Inputs
- ✓ Electric Pen Lift and Remote Control Options
- ✓ Pen Offset Compensation Optional

The RD45A single-channel and RD46A dual-channel flatbed recorders are ideal instruments for use in research, development and production, as well as in service and education applications. Designed for ease of use, these recorders have an ergonomic shape which allows the user to easily write comments on the chart, even next to the pen.

The wide, 200 mm (8") chart is capable of recording measurements from 1 mV full scale to 20 V. Chart speeds from 0.1 mm/min to 20 mm/

sec (1 mm = 0.03937") are available. As an option, pen offset compensation is available. This eliminates the recording offset caused by the distance between the 2 pens.

#### Specifications

**Input Ranges:** 1, 2, 5, 10, 20, 50, 100, 200, 500 mV; 1, 2, 5, 10, 20 Vdc

**Variable Range:**

From 40 to 100% FS

**Span Accuracy:** 0.3% FS

**Non-Linearity:** 0.3% FS

**Deadband:** 0.2% FS

**Response Time:**

0.2 sec for 5 to 95% FS

**Input Impedance:** 1 MΩ dc; 10 kΩ in series with 1.5 μF for ac

**Input:** Floating, non-symmetric

**Input Terminals:** 2 safety terminals

**Max Input Voltage:** 42 Vdc/30 Vac max at input terminals; (personal safety limits)

**CMRR:** 130 dB

**Zero Adjustment:** -50 to 150% FS

**Zero Position:** User-selectable, left or right side

**Remember to Order Extra Pens and Paper!**

**Zero Drift:** 1 μV/°C max

**Chart Speeds:** 0.1, 0.2, 0.5, 1, 2, 5, 10, 20 mm/min or mm/sec (1 mm = 0.03937")

**Chart Paper:** 200 mm W x 25 m L (7.87" x 82")

**Chart Step Size:** 0.05 mm (0.002")

**Chart Timebase Accuracy:** ±50 ppm

**Pen Lift Option:** Electronic; automatic pen lift after 30 sec if chart is not advanced

**Operating Ambient Range:**

-10 to 40°C (14 to 104°F);

35 to 85% RH, non-condensing

**Storage Temperature Range:** -40 to 75°C (-40 to 167°F)

**Power:** 110/220 Vac, switchable;

-15/+20%; 50/60 Hz

**Power Consumption:**

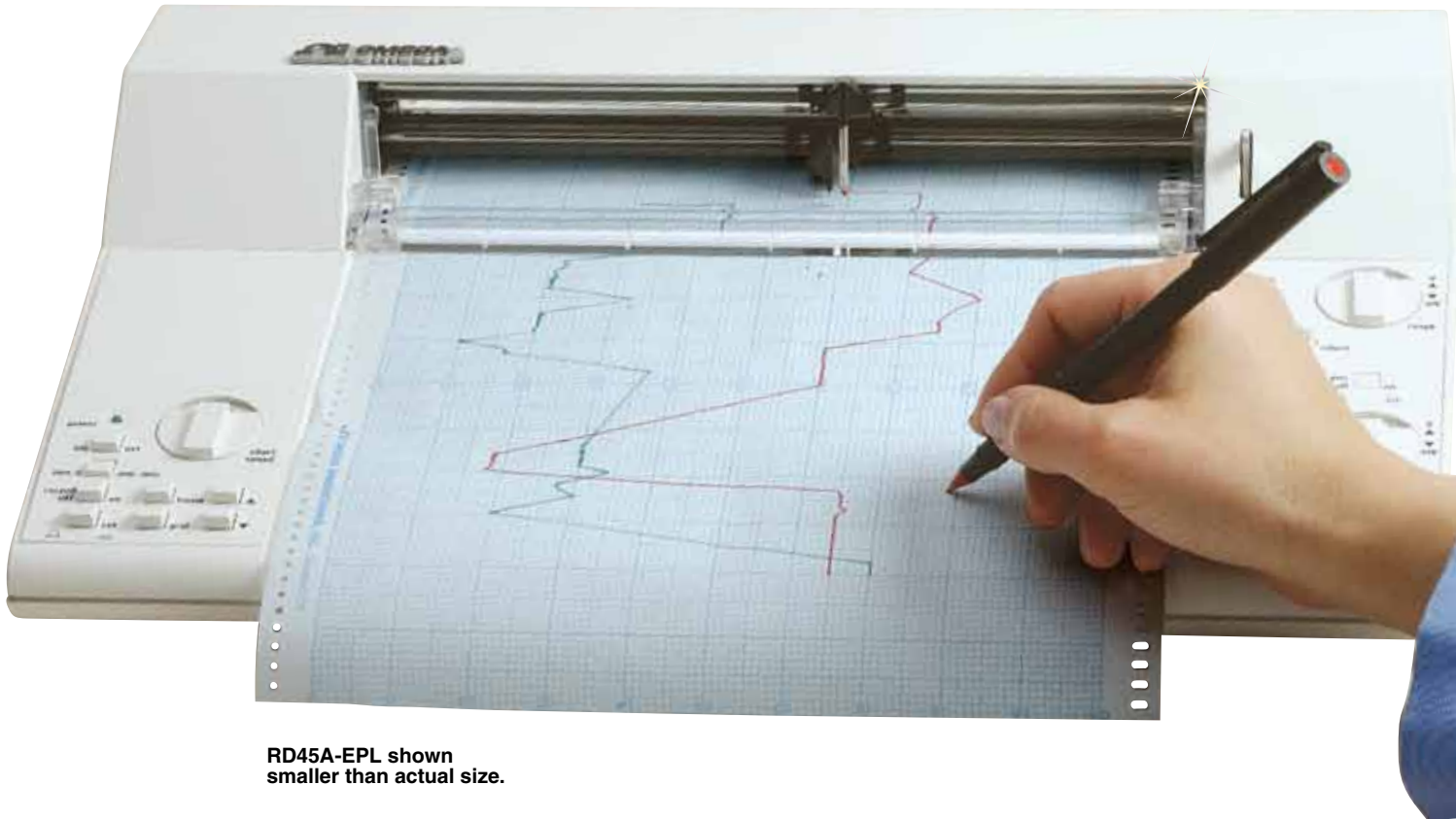
30 VA single-channel; 40 VA dual-channel

**Dimensions:**

90 H x 380 W x 290 mm D

(3.6 x 15 x 11.5")

**Weight:** 3.5 kg (7.7 lb)



RD45A-EPL shown smaller than actual size.

## To Order

Model No.	Description
RD45A-EPL	Single-channel recorder with pen lift and remote control, 200 mm (8")
RD46A-EPL	Dual-channel recorder with pen lift and remote control, 200 mm (8")

Each recorder comes with 1 pen for each channel, one 25 m (82') roll of paper, power cord, fuse, input adaptor connectors and complete operator's manual.

Ordering Example: RD46A-EPL, dual-channel recorder, RDX40-RP, extra chart paper [ten 25 m (82') rolls].

OCW-3, OMEGACARE<sup>SM</sup> extends standard 1-year warranty to a total of 4 years.

**Ergonomic Shape Lets User Write Comments Right on the Chart, Even Next to the Pen!**



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

## Accessories and Options

Model No.	Description
RDX40-RP	10 rolls of chart paper, 25 m (82') each
RDX40-RD1	6 red pens, channel-1; also event marker
RDX40-BL	6 blue pens, channel-1
RDX40-GR	6 green pens, channel-1
RDX40-BK	6 black pens, channel-1
RDX40-RD2	6 red pens, channel-2
RDX40-BK2	6 black pens, channel-2