

## Model Codes

### μR10000

Model Code	Suffix Code	Option Code	Description
436101			μR10000 1 pen recorder
436102			μR10000 2 pen recorder
436103			μR10000 3 pen recorder
436104			μR10000 4 pen recorder
436106			μR10000 6 dot recorder
Language	-2		English/German <sup>9</sup> /French <sup>9</sup> , degF & DST
Option		/A1	Alarm output relay (2 contacts) <sup>1</sup>
		/A2	Alarm output relay (4 contacts) <sup>1</sup>
		/A3	Alarm output relay (6 contacts) <sup>1,2</sup>
		/BT1	Header printout
		/C3	RS-422A/4B5 communication interface <sup>3</sup>
		/C7	Ethernet communication interface <sup>3</sup>
		/CC1	Calibration Correction
		/F1	FAIL/chart end detection and output <sup>2</sup>
		/H2	Clamped input terminal <sup>4</sup>
		/H3	Non-glare door glass
		/H5[ ] <sup>9</sup>	Portable Type <sup>7</sup>
		/M1	Mathematical function
		/N1	Cu10, Cu25 inputs
		/N2	3 legs Isolated RTD <sup>4,5</sup>
		/N3	Expansion inputs <sup>6</sup>
		/P1	24V DC/AC Power Supply <sup>7</sup>
		/R1	Remote control (5 contacts)

1: Only one of /A1, /A2, /A3 can be selected, 2: /A3 and /F1 can not be specified together, 3: /C3 and /C7 can not be specified together, 4: /H2 and /N2 can not be specified together, 5: /N2 can be specified only for dot model, 6: 14 types inputs: Pt50 RTD, Pt40-20, PLTINEL TC etc., 7: /H5[ ] and /P1 can not be specified together, 8: /A5[1] (D-Powercord UL, CSA std, F-Powercord VDE std, R-Powercord SAA std, J-Powercord BS std, H-Powercord GB std), 9: Available from firmware version R1.21

### μR20000

Model Code	Suffix Code	Option Code	Description
437101			μR20000 1 pen recorder
437102			μR20000 2 pen recorder
437103			μR20000 3 pen recorder
437104			μR20000 4 pen recorder
437106			μR20000 6 dot recorder
437112			μR20000 12 dot recorder
437118			μR20000 18 dot recorder
437124			μR20000 24 dot recorder
Language	-2		English/German <sup>11</sup> /French <sup>11</sup> , degF & DST
Option		/A1	Alarm output relay (2 contacts) <sup>1</sup>
		/A2	Alarm output relay (4 contacts) <sup>1</sup>
		/A3	Alarm output relay (6 contacts) <sup>1</sup>
		/A4	Alarm output relay (12 contacts) <sup>1,2</sup>
		/A5	Alarm output relay (24 contacts) <sup>1,3,4</sup>
		/BT1	Header printout
		/C3	RS-422A/4B5 communication interface <sup>5</sup>
		/C7	Ethernet communication interface <sup>5</sup>
		/CC1	Calibration Correction
		/F1	FAIL / Chart end detection and output <sup>2,3</sup>
		/H2	Clamped input terminal <sup>6</sup>
		/H3	Non-glare door glass
		/H5[ ] <sup>10</sup>	Portable Type <sup>9</sup>
		/M1	Mathematical function
		/N1	Cu10, Cu25 RTD input
		/N2	3 legs isolated RTD input <sup>6,7</sup>
		/N3	Expansion inputs <sup>6</sup>
		/P1	24V DC/AC Power Supply <sup>9</sup>
		/R1	Remote controls (5 contacts)

1: only one of /A1, /A2, /A3, /A4, /A5 can be selected, 2: /A4 and /F1 can not be specified together for pen model, 3: /A5 and /F1 can not be specified together, 4: /A5 can be specified only for dot model, 5: /C3 and /C7 can not be specified together, 6: /H2 and /N2 can not be specified together, 7: /N2 can be specified only for dot model, 8: 14 types inputs: Pt50 RTD, Pt40-20, PLTINEL TC etc., 9: /H5[ ] and /P1 can not be specified together, 10: /H5[ ] (D-Powercord UL, CSA std, F-Powercord VDE std, R-Powercord SAA std, J-Powercord BS std, H-Powercord GB std), 11: Available from firmware version R1.21

Model Code	Description	OS
RXA10-01	RXA10 configuration software*	Windows 2000/XP
RXA10-02	RXA10 configuration software* (With interface unit)	Windows 2000/XP

\* The support of μR20000 is from R2.01 version.

## Standard Accessories

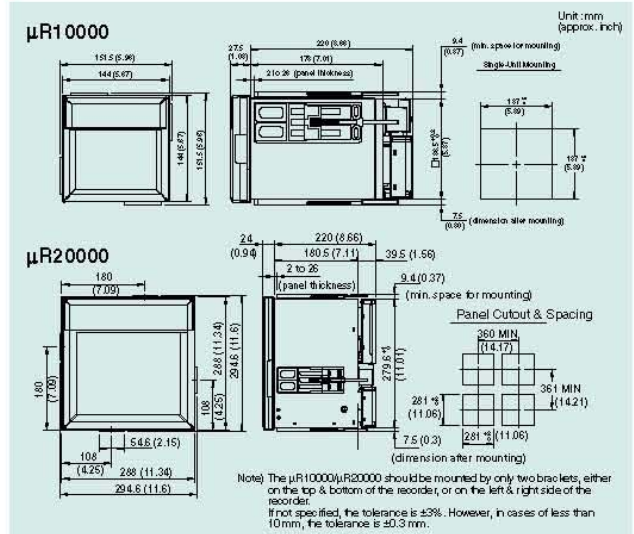
Name	1 pen	2 pen	3 pen	4 pen	dot
Z-fold chart	1	1	1	1	1
6 color ribbon cassette	—	—	—	—	1
Disposable felt-pen cartridge	Red	1	1	1	—
	Green	—	1	1	—
	Blue	—	—	1	1
	Violet	—	—	—	1
Plotter pen	1	1	1	1	—
Mounting brackets	2	2	2	2	2
Instruction manual (CD-ROM)	1	1	1	1	1
Operation manual	1	1	1	1	1

## Spares/Optional Accessories

Name	Model Code (Parts No.)	Specification
Z-fold chart	for μR10000 B9565AW for μR20000 B9573AN	10 (sales unit)
6 color ribbon cassette	for μR10000 B9901AX for μR20000 B9906JA	1 (sales unit)
Disposable felt-pen cartridge	Red	B9902AM 1 (sales unit, 3 piece/unit)
	Green	B9902AN 1 (sales unit, 3 piece/unit)
	Blue	B9902AP 1 (sales unit, 3 piece/unit)
	Violet	B9902AQ 1 (sales unit, 3 piece/unit)
Plotter pen	Purple	B9902AR 1 (sales unit, 3 piece/unit)
Mounting brackets	B9900BX	2 (sales unit)
Shunt resistor (for screw input terminal)	415920	250 Ω ± 0.1%
	415921	100 Ω ± 0.1%
	415922	10 Ω ± 0.1%
Shunt resistor (for clamped input terminal)	438920	250 Ω ± 0.1%
	438921	100 Ω ± 0.1%
	438922	10 Ω ± 0.1%



## Dimensions



### NOTICE

- Before operating the product, read the instruction manual thoroughly for proper and safe operation.
- If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

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### YOKOGAWA ELECTRIC CORPORATION

Network Solutions Business Div./Phone: (81)-422-52-7179, Fax: (81)-422-52-6619  
E-mail: ns@cs.jp.yokogawa.com

YOKOGAWA CORPORATION OF AMERICA

YOKOGAWA EUROPE B.V.

YOKOGAWA ENGINEERING ASIA PTE. LTD.

Phone: 800-888-6400, Fax: (1)-770-251-6427

Phone: (31)-33-4641806, Fax: (31)-33-4641807

Phone: (65)-62419939, Fax: (65)-62412606

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Fig-RS-1E

Printed in Japan, 605(KP) [Ed.: 04/b]

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# Specifications

See the general specification (GS04P01B01-01E, GS04P02B01-01E) for the detailed specifications.

## Input

- Measurement Inputs**
  - $\mu R10000$ : 1, 2, 3, 4 (pen) and 6 (dot) points
  - $\mu R20000$ : 1, 2, 3, 4 (pen) and 6, 12, 18, 24 (dot) points
- Inputs**
  - Universal input
  - DCV: 20, 60, 200 mV, 2, 6, 20, 50 V, 1-5 V
  - TC: R, S, B, K, E, J, T, N, W, L, U, WRe
  - RTD: Pt100, JPt100
  - DI: Digital Input (contact or DC Voltage, TTL level).
  - DCA: Direct Current Input (using external shunt resistor (10  $\Omega$ , 100  $\Omega$ , 250  $\Omega$ ))
- Measurement Interval**
  - Pen model: 125 ms/channel
  - Dot model:  $\mu R10000$ : 1 s/6 dot or 2.5 s/6 dot
  - $\mu R20000$ : 1 s/6 dot, 2.5 s/12 to 24 dot or 2.5 s/6 dot, 5 s/12 dot, 10 s/18 to 24 dot
- Burnout**
  - Available on TC and 1-5 VDC range, ON/OFF selectable (per channel)
  - 1-5V Burnout: less than 0.2V
- Filter**
  - Pen model: Signal damping
  - ON/OFF selectable (per channel), Time constant (2, 5, 10sec)
  - Dot model: Moving average
  - ON/OFF selectable (per channel), Moving average cycle (2 to 16)
- Standard Computation**
  - Differential computation, Linear scaling, Square root, Bias addition

## Recording and Printing

- Recording Method**
  - Pen model: Disposable felt pens, Plotter pen, Dot model: 6 color wire dot
- Pen Offset Compensation**: ON / OFF selectable (Pen model only)
- Effective Recording Width**
  - $\mu R10000$ : 100 mm,  $\mu R20000$ : 180 mm
- Chart**
  - $\mu R10000$ : Plain-paper Z-fold chart (16 m)
  - $\mu R20000$ : Plain-paper Z-fold chart (20 m)
- Recording Period**
  - Pen model: Continuous for each channel
  - Dot model:  $\mu R10000$ : Max. 6 ch/10sec
  - $\mu R20000$ : Max. 6 ch/10 s, 7 to 12 ch/15 s, 13 to 18 ch/20 s, 19 to 24/30 s
- Chart Speed**
  - Pen model: 5 to 12000 mm/h (82 increments)
  - Dot model: 1 to 1500 mm/h (1 mm step)
- Chart Speed Change**
  - speed 1, speed 2 change by remote control signals (option).
- Recording Colors**
  - Pen model: pen1=red, pen2=green, pen3=blue, pen4=violet, plotter pen=purple
  - Dot model:  $\mu R10000$ 
    - ch1=purple, ch2=red, ch3=green, ch4=blue, ch5=brown, ch6=black (color can be assigned to any channel)
  - $\mu R20000$ 
    - ch1, 7, 13, 19=purple ch2, 8, 14, 20=red ch3, 9, 15, 21=green ch4, 10, 16, 22=blue ch5, 11, 17, 23=brown ch6, 12, 18, 24=black (color can be assigned to any channel)
- Recording Format**
  - Analog recording: Zone recording, Partial expanded recording
  - Digital printout: Channel number or TAG (Dot model only), Alarm, Periodic printout or Report printout, Message printout, Record start time, Chart speed printout, List printout, Manual printout, SET UP List printout

## Display

- Display Method**
  - $\mu R10000$ : VFD (101 $\times$ 16 dot matrix),  $\mu R20000$ : VFD (181 $\times$ 16 dot matrix)
- Display Types**
  - Multiple displays
  - Digital, bar, flag, DI/DO display etc. can be displayed.
  - 15 display types can be selected from approx. 80 display types.
- Status Display**
  - Recording in progress (RECORD), Shared alarm (ALARM), Channel No. display of occurring alarm (pen model: 1 2 3 4 or Dot model:  $\mu R10000$ : 1 to 6,  $\mu R20000$ : 1 to 24), Chart end display (CHART END) For the model with option (FAIL/chart end detection and output), Math (MATH), Key lock display (KEY LOCK)
- Setting**
  - Settings display by interactive mode. In setting, navigator method is used.
  - Display updated interval can be selected from AUTO/MAN.
- Bar Graph Display**
  - Measurement value: left/right (%) reference or center zero reference display (each channel selectable).
  - Alarm: Alarm setting level display and flashing display of occurring alarm.
- Display Brightness Setting** Display brightness level: 1 to 8

## Alarm

- Number of Levels**: Up to 4 level for each channel.
- Alarm Type**
  - High and low limits, differential high and low limits, high and low rate-of-change limits and delay high and low Interval time of rate-of-change alarms.
  - The measurement interval times 1 to 15

## Display

- Set value is indicated as a point on the bar graph (only for bar graph display)
- In case of an alarm:
  - For digital display: Alarm type indicator
  - Shared alarm display
  - Alarm occurring channel No. is displayed
  - For bar graph display: Flashing point indicator

## Power supply

- Rated Power Voltage**: 100-240 VAC (automatically selected)
- Power Voltage Range**: 90-132 VAC, 180-264 VAC
- Rated Power Frequency**: 50 Hz/60 Hz (automatically selected)
- Power Consumption** (Approx.)

$\mu R10000$	100 VAC power source	240 VAC power source	Maximum
1 to 4 pen model	12 VA*	17 VA*	40 VA
6 dot model	13 VA*	18 VA*	40 VA

\* In balance

$\mu R20000$	100 VAC power source	240 VAC power source	Maximum
1 to 4 pen model	17 VA*	25 VA*	55 VA
6 to 24 dot model	17 VA*	23 VA*	55 VA

\* In balance

## General Specification

- Ambient Temperature and Humidity**
  - 0 to 50°C, 20 -80%RH (at 5 to 40°C)
- Memory Backup**
  - Lithium battery to save settings parameters
  - Approx. 10 years (at room temperature, for standard model)
- Settings Protection Function**
  - Password method
- Internal Light**
  - White LED
- Operation Position**
  - 0° Frontwards: Within 30° from horizontal

## Optional Specification

- Alarm output relay (/A1, /A2, /A3, /A4\*, /A5\*)**
  - Number of output: 2, 4, 6, 12\*, 14\*
  - Relay contact rating: 250 VDC/0.1 A (resistance load), 250 VAC (50/60 Hz) /3 A \*only for  $\mu R20000$
- RS-422A/485 communication interface (/C3)**
  - Measurement value output and setting parameter input/output
  - Conforms to EIA-422A (RS-422A) and EIA-485 (RS-485) standard
- Ethernet communication interface (/C7)**
  - Measurement value output and setting parameter input/output
  - Transmission media: 10 Base-T
  - Protocol: TCP, IP, UDP, ICMP, ARP
- FAIL/chart end detection and output (/F1)**
  - In CPU error occurrence or the chart end, output relay is activated.
  - Relay contact rating: 250 VDC/0.1 A (resistance load), 250 VAC (50/60 Hz) /3 A
- Clamped input terminal (/H2)**: Clamped input
- Non-glare door glass (/H3)**
  - Non-glare door glass for front door
- Portable Type (/H5[ J])**
  - Provides carrying handle and power code
- Mathematical function (/M1)**
  - Number of computation channel: 8 channels (pen model), 12 channels ( $\mu R10000$  dot model), 24 channels ( $\mu R20000$  dot model)
  - Arithmetic operation (+, -,  $\times$ ,  $\div$ ), Square, Absolute, Common logarithm ( $y=\log 10x$ ), Exponential ( $e^x$ ), Power ( $X^n$ ), Relational operator (<,  $\leq$ ,  $\geq$ , =,  $\neq$ ), Logic (AND, OR, NOT, XOR)
  - Statistical computation: Statistical type: MAX, MIN, AVE, SUM, MAX-MIN
  - Computation channel can be recorded
- Cu10, Cu25 RTD input (/N1)**
  - Cu10, Cu25 RTD input
  - Pt100 and JPt100 inputs can be used together.
- 3 legs isolated RTD input (/N2)**: A, B, b legs of RTD are isolated for dot model
- Expansion inputs (/N3)**
  - Following input types can be supported besides standard inputs.
  - TC: PR40-20, PLATINEL, NINIMO, W/WRe26, Type N (AWG14), Kp vs Au7Fe
  - RTD: Pt25, Pt50, Ni100 (SAMA), Ni100 (DIN), Ni120, J263\*B, Cu53, Cu100
  - \*Cu100 :  $\alpha=0.00425$  at 0°C
- 24V DC/AC Power Supply (/P1)**
  - Rated power supply: 24 V DC/AC
  - Allowable power supply voltage range: 21.6 to 26.4 V DC/AC
  - Rated power supply frequency: 50/60 Hz
- Remote control (/R1)**
  - Below actions can be assigned to up to 5 points
  - Recording start/stop, Chart speed change, Message printout start, Manual printout start, Alarm ACK, Time set, Math start/stop, Math reset etc.
- Calibration Correction (/CC1)**
  - Corrects the measurement value of each channel using segment linearizer approximation.
  - Number of segment points: 2 to 16
- Header printout (/BT1)**
  - Batch name, comment, time, chart speed are printed in record Start/Stop.
  - /R1 option allows you to execute functions of /BT1 easily by a contact input.