Intelligent Industrial Recorders

The µR10000 is a small compact industrial recorder with a recording width of 100mm.

The model family consists of 1, 2, 3, 4 pen and a 6 dot model.

Model Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Option Code</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>436101</td>
<td>µR10000 1 pen recorder</td>
<td>/A1</td>
<td>436102</td>
<td>µR10000 2 pen recorder</td>
</tr>
<tr>
<td>436103</td>
<td>µR10000 3 pen recorder</td>
<td>/A2</td>
<td>436104</td>
<td>µR10000 4 pen recorder</td>
</tr>
<tr>
<td>436106</td>
<td>µR10000 6 dot recorder</td>
<td>/A3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard Accessories

<table>
<thead>
<tr>
<th>Name</th>
<th>1 pen</th>
<th>2 pen</th>
<th>3 pen</th>
<th>4 pen</th>
<th>6 dot</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-fold chart</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6 color ribbon cassette</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Disposable felt-pen cartridge</td>
<td>Red</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violet</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roller pen</td>
<td>Purple</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mounting brackets</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Instruction Manual/D-ROM</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Operation Manual</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Spares/Optional Accessories

<table>
<thead>
<tr>
<th>Name</th>
<th>Model Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-fold chart</td>
<td>B9565AW</td>
<td>µR10000 1 pen recorder</td>
</tr>
<tr>
<td>6 color ribbon cassette</td>
<td>B9601AX</td>
<td>µR10000 2 pen recorder</td>
</tr>
<tr>
<td>Disposable felt-pen cartridge</td>
<td>B9902AN</td>
<td>µR10000 3 pen recorder</td>
</tr>
<tr>
<td>Blue</td>
<td>B9902AM</td>
<td>µR10000 4 pen recorder</td>
</tr>
<tr>
<td>Violet</td>
<td>B9902AQ</td>
<td>µR10000 6 dot recorder</td>
</tr>
<tr>
<td>Roller pen</td>
<td>B9902AR</td>
<td></td>
</tr>
<tr>
<td>Mounting brackets</td>
<td>B9900BX</td>
<td>(for screw terminal)</td>
</tr>
<tr>
<td>Shunt resistor</td>
<td>415920</td>
<td>(for screw terminal)</td>
</tr>
<tr>
<td>Shunt resistor</td>
<td>415921</td>
<td>(for clamped terminal)</td>
</tr>
<tr>
<td>Shunt resistor</td>
<td>415922</td>
<td></td>
</tr>
<tr>
<td>Disposable felt-pen</td>
<td>438920</td>
<td>6 color ribbon cassette</td>
</tr>
<tr>
<td>6 color ribbon cassette</td>
<td>438921</td>
<td></td>
</tr>
<tr>
<td>6 color ribbon cassette</td>
<td>438922</td>
<td></td>
</tr>
</tbody>
</table>

Specifications

- 10 (sales unit)
- 1 (sales unit)
- 1 (sales unit, 3 piece/unit)
- 1 (sales unit, 3 piece/unit)
- 1 (sales unit, 3 piece/unit)
- 1 (sales unit, 3 piece/unit)
- 2 (sales unit)

Dimensions

- 151.5 (5.96)
- 144 (5.67)
- 27.5 (1.08)
- 220 (8.66)
- 178 (7.01)
- 9.4 (0.37)
- 7.5 (0.30)

Note: The µR10000 should be mounted by only two brackets, either on the top & bottom of the recorder, or on the left & right side of the recorder.
Leading-Edge Technology Offers High Reliability and High Quality

- Fully contact-less technology
- Actuators reduced in size through high precision manufacturing technology
- High degree of integration using custom ICs
- Dust-and splashproof front door (conforms to IP54)

Superior Ease-of-Operation

- Large, VFD 101 x 16 full dot matrix display
- Easily navigable interactive settings
- New Chart Cassette (Enables historical trend review during recording)
- Internal illumination comes standard (high intensity white LED)

Multiple Functions Meet a Variety of Needs

- Broad lineup (1-, 2-, 3-, or 4-pen models, and a 6-dot model)
- Dot model achieves one second measurement intervals
- Universal input
- Supports a wide range of input sensors
  Supports thirty-five types including Pt50, PR40-20, and N191M0 (including options)

- Mathematical functions
  - No. of channels: Pen models (8 ch), dot model (12 ch)
  - Computation types: Offers general, logic, relational, and statistical computations.
  - Analog/digital record computed results to any channel.
- Supports Ethernet or RS-422A/485 interfaces

Get reliable, high quality output with the "power of paper!"

Recorders with the Reliability of YOKOGAWA

The Information You Need: Easier to Acquire, Easier to Read
Delivers Confidence

The critical factor in continuous recording using industrial recorders is reliability. Leveraging the latest technology, YOKOGAWA brings you that reliability in a compact, lightweight unit that embodies all the breakthroughs and know-how that Yokogawa has cultivated over the years.

Easier Settings
Uses a large, easy-to-view VFD 101 x 16 full dot matrix display. All settings are interactive, and supported by the navigational display, offering superior ease of operation.

Servo Unit
The pen servo takes advantage of an ultra-small, rack-and-pinion stepping motor. By eliminating the drive belt, transfer-related loss load is reduced, allowing a smaller servo. The motor is controlled digitally, resulting in a smoother, more precise operation. Also, the position of the pen is detected by an optical encoder.

Splash-proof Front Door
(conforms to DIN 40050-IP54)
The front door meets DIN 40050-IP54 standards in panel-mount installations.

Safety/EMC Standards
Yokogawa’s highly reliable industrial recorders support safety and EMC (electromagnetic compatibility) standards. And of course, the µR conforms to the European CE marking standard.

Navigational display Makes Setup a Snap
The instrument features a simple configuration, with Operation mode for normal use, and setting mode for use during setup. In Operation mode, measured values, time, and alarms are updated, and lists are printed. In Setting mode, you can enter measuring ranges, alarm values, and other parameters. Also, Setting mode offers a navigational display that eases entry of settings.

Internal Illumination
By using a high-intensity white LED and light-diffusing rod for the internal illumination, the visibility of the chart section has been greatly increased.

Chart Cassette
The chart cassette is equipped with a chart-ejection function. You can write memos on the chart and check the historical trend during recording.

Increased On-Site Productivity

Use of ASICs
High integration is achieved with none other than Yokogawa ASICs (application specific integrated circuits or custom ICs). For example, the instrument features a signal conditioner chip (mixed analog and digital IC) that combines signal input circuits, a programmable gain amp, an A/D converter, digital filters, and a controller all in a single chip. This and other ASICs increase integration while reducing power consumption, suppressing heat emissions, and increasing the lifespan of components.

Lightweight
The latest molding techniques have been employed to decrease the number of parts by approximately 30% (compared to our previous 4-pen) or 20% (compared to our dot model). Also, through the use of ASICs and the micro servo unit, we have achieved a weight reduction of approximately 2.5 kg (6-dot model), and approximately 2.4 kg (4-pen model).

Key Panel: Upper; Used in Setting mode, the Basic setting mode. Lower; Used in Operation mode

Range Settings
1. Hold down the MENU key for three seconds or more to change from Operation mode to Setting mode. In Set mode, the upper level shows the setting parameter, and the lower level shows the Suffix (suffix for 18 characters or more).
2. Select a parameter using the / key, and press the OK key to advance to the next setting.
3. Press on-screen prompts using the / and OK keys to enter settings.
4. When finished entering settings, hold down the MENU for three seconds to return to Operation mode.

Navigational display to support the settings
(Example: Range Setting)
Below actions can be assigned to up to 5 points
Remote control (/R1)

\[ \text{Cu}_{100} \]
Au_{7}Fe_{RTD}: Pt_{25}, Pt_{50}, Ni_{100} (SAMA), Ni_{100} (DIN), Ni_{120}, J_{263}*B, Cu_{53}, Cu_{100} \]

RS422A/485

Entry and management of settings for measurement and computation channels is easier than ever. Also, settings can be entered via communication interface.

The unit includes an RS422A/485 serial communications interface, and up to thirty-two units can be multidrop-connected to a single host computer. Ethernet is also included for support of high speed communications and LAN environments.

Personal computer

RS422A/485 converter

RS-422A/485 communication interface (/C3)

FAIL/chart end detection and output (/F1)

Partial expanded recording Zone recording

Alarm

Power supply

Rated power voltage

90-125VAC, 180-240VAC

Rated power frequency

50/60Hz (automatically selectable)

Power consumption

12VA/17VA/24VA/40VA

General Specification

Ambient temperature and humidity

0°C - 50°C (at 5 to 40°C)

Memory backup

In case of an alarm

Settings protection function

Password method

Internal light

White LED

Operation position

Front: Within 30° from horizontal

Optional Specification

Alarm output relay (A1, A2, A3)

Number of output: 6

RS-422A/485 communication interface (C3)

Maximum number of channels per relay

Conforms to EXA-422A (RS-422A) and EXA-485 (RS-485) standard

Ethernet (IEP)

Measurement value output and setting parameter input/output

Transmission media: 10 Base T

FAIL short-circuit detector and output (P1)

In CPU error occurrence or the chart end, output relay is activated.

Relay contact rating: 250VAC, 2A (AC3, 100V, 2A (60Hz))

Clamped input (H2)

Clamped input (H2)

Non-garage door glass (RD)

Front door

Number of input channels

8 channels (pen model), 12 channels (dot model)

Arithmetic operation (+, -, ×, ÷)

Square, Absolute, Common logarithm (\(y^{x}\)), Exponential (e^x), Power (x^n), Reciprocal operator (1/x, x^-1, 1÷x), Log (LOG, LN, OR, NOT, XOR).

Statistical computation: Statistical type: MAX, MIN, AVE, SUM, MAX-MIN, Deviation, Standard deviation

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

Pen Offset Compensation:

125ms/channel Dot model: 1s/6dot or 2.5s/6dot

Chart Speed Change

1, 2, 3, 4, 5 points

Parameter Setting Software is available (sold separately).

Entry and management of settings for measurement and computation channels is easier than ever. Also, settings can be entered via communication interface.
Intelligent Industrial Recorders

**µR1000 is a small compact industrial recorder with a recording width of 100mm.**

The model family consists of 1, 2, 3, 4 pen and a 6 dot model.

### Standard Accessories

<table>
<thead>
<tr>
<th>Name</th>
<th>1 pen</th>
<th>2 pen</th>
<th>3 pen</th>
<th>4 pen</th>
<th>6 dot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fold chart</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6 color ribbon cassette</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Disposable felt-pen cartridge</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Plotter pen</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mounting brackets</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Instruction Manual(D-ROM)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Operation Manual</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Spares/Optional Accessories

<table>
<thead>
<tr>
<th>Name</th>
<th>Model Code</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fold chart</td>
<td>B9658M</td>
<td>10 (sales unit)</td>
</tr>
<tr>
<td>6 color ribbon cassette</td>
<td>B9691AX</td>
<td>1 (sales unit)</td>
</tr>
<tr>
<td>Disposable felt-pen cartridge</td>
<td>B9902AN</td>
<td>1 (sales unit, 3 piece/unit)</td>
</tr>
<tr>
<td>Purple</td>
<td>B9902AQ</td>
<td>1 (sales unit, 3 piece/unit)</td>
</tr>
<tr>
<td>Plotter pen</td>
<td>B9902AQ</td>
<td>1 (sales unit, 3 piece/unit)</td>
</tr>
<tr>
<td>Mounting brackets</td>
<td>B9900BX</td>
<td>2 (sales unit)</td>
</tr>
<tr>
<td>Shunt resistor (for screw input terminal)</td>
<td>415900</td>
<td>250Ω ± 0.1%</td>
</tr>
<tr>
<td>Shunt resistor (for clamped input terminal)</td>
<td>415902</td>
<td>100Ω ± 0.1%</td>
</tr>
<tr>
<td>Shunt resistor</td>
<td>438921</td>
<td>100Ω ± 0.1%</td>
</tr>
<tr>
<td>Shunt resistor</td>
<td>438922</td>
<td>100Ω ± 0.1%</td>
</tr>
</tbody>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Description</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RXA10-01</td>
<td>µR10000 Configuration software</td>
<td>Windows 98/Me/NT4.0/2000/XP</td>
</tr>
<tr>
<td>RXA10-02</td>
<td>µR10000 Configuration software (With interface unit)</td>
<td>Windows 98/Me/NT4.0/2000/XP</td>
</tr>
</tbody>
</table>

**Subject to change without notice.**

*©2004 YOKOGAWA ELECTRIC CORPORATION*

Printed in Japan, 2004

---

**µR10000**

Intelligent Industrial Recorders

The µR10000 is a small compact industrial recorder with a recording width of 100mm.

The model family consists of 1, 2, 3, 4 pen and a 6 dot model.