User's Manual

Notice of Alterations

Models 436101/436102/436103/436104/436106

µR10000 Recorder

Please make the following alterations to the User's Manual IM 04P01B01-01E (see underlined text).

■ Page ii "Software (Sold Separately)"

		Recorder version			
		1.02 or earlier	1.11	1.21	1.31
RXA10 Configuration Software revision	R1.01	Yes	Limited		
	R2.01	Yes	Yes	Yes	Limited
	R3.01	Yes	Yes	Yes	Yes

Yes: Compatible

Limited: The new functions of the recorder cannot be configured from the RXA10.

■ Page iv "Safety Precautions"

Please note the addition of the following.

CAUTION

This instrument is a Class A product. Operation of this instrument in a residential area may cause radio interference, in which case the user is required to take appropriate measures to correct the interference.

■ Page 1-16 "Printout"

Time tick

A time tick is a mark that indicates the position of the date/time on the chart paper.

■ Page 1-18 "Periodic Printout"

- **Printout Contents (for details, see appendix 1)**
  - Date/time, time ticks (a mark that indicates the position of the date/time on the chart paper)

■ Page 1-22, 1-23, 6-19, 6-20, and 12-17

* Computed values can also be included on models with the /M1 option.

■ Page 2-3 "Installation Procedure"

- The proper torque for tightening the mounting screws is 0.7 to 0.9 N•m.

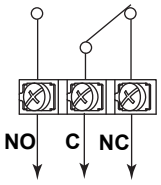
■ Page 2-10 “2.4 Optional Terminal Wiring”

Please note that the terminal wiring diagram and input/output specifications have been changed as follows.

3. Replace the terminal cover and fasten it with screws.

   The proper torque for tightening the screws is 0.6 N•m.

Alarm output/FAIL/chart end output



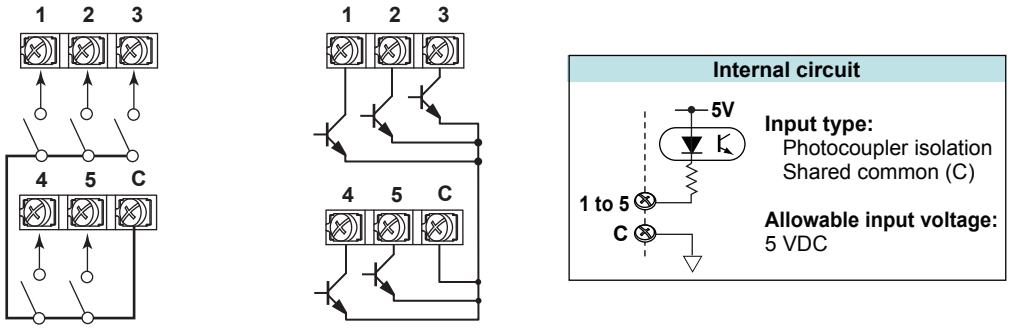
Output type: Relay contact input
Contact rating: 250 VAC (50/60 Hz)/3A, 250 VDC/0.1 A (resistive load)
Dielectric strength: 1500 VAC (50/60Hz) for one minute
(between output terminals and the ground terminal)

NO (Normally Opened), C (Common), NC (Normally Closed)
The alarm output terminals 01–06 correspond to I01–I06 in the alarm output relay settings.

Remote control input

· **Relay contact input**
(Voltage-free contact)
Contact closed at 200 Ω or less
Contact open at 100 kΩ or greater

· **Transistor input**
(Open collector)
ON voltage: 0.5 V or less (30 mADC)
Leakage current when turned OFF: 0.25 mA or less



Dielectric strength: 500 VDC for one minute (between input terminals and the ground terminal)

Please note the addition of the underlined.

- **Relay Contact Output Specifications**

Output type:	**Relay**
Contact rating:	**250 VAC (50/60Hz) /3A, 250 VDC/0.1 A (resistive load)**
Dielectric strength:	**1500 VAC at 50/60 Hz for one minute (between output terminals and the ground terminal)**

Allowable transistor input voltage: 5 VDC

■ Page 3-11 “3.5 Starting/Stopping the Recording”

This section describes the procedures for starting/stopping the chart feed and checking the recorded result.

Procedure

Starting the Recording

Press the RCD key to start the chart feed.
The word “RECORD” on the status display clears.

Stopping the Recording

While recording is in progress, press the RCD key to stop the chart feed.
The word “RECORD” on the status display clears.

Please note the addition of the following.

Note

For models with the FAIL/chart end detection and output function (option code /F1), the chart feed will not start even when pressing the RCD key if the chart paper is empty or almost out. Insert new chart paper before pressing the RCD key.

■ Page 4-3 “Using the ESC Key”

If you press the ESC (MENU) key, the operation is cancelled, and the display returns to a higher level menu. In other words, if you do not show the Setting Complete screen, the changes you made up to that point are discarded.

Press the ESC (MENU) key while holding down the SHIFT (FEED) key to show or hide the comment that is displayed at the bottom half of the screen.

■ Page 4-10 “Header printout (/BT1 option)”

Setup Item	Pen/Dot	Selectable Range or Selections	Default Value
* Batch > Batch No.	-	26 characters or less	Blank
* Batch > Lot No.	-	0000 to 9999 or 000000 to 999999	0000 or 000000

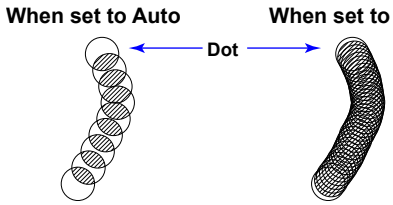
■ Page 5-8 “5.1 Setting the Input range”

- **Low-cut and Low-cut Point**

■ Page 6-1 “6.1 Setting the Trend Recording Interval (Dot Model)”

Please note that the underlined portion has been changed.

Auto: The trend recording interval is set according to the chart speed so that the dots do not overlap many times.



The printing interval differs depending on the chart speed.

■ Page 6-10 “6.10 Setting the Alarm Delay Duration”

3. Press the ▽△ key or **SHIFT** + ▽△ key to select **Alm delay T** and then press the ⏎ key.

■ Page 6-13 “6.13 Performing Calibration Correction (/CC1 Option)”

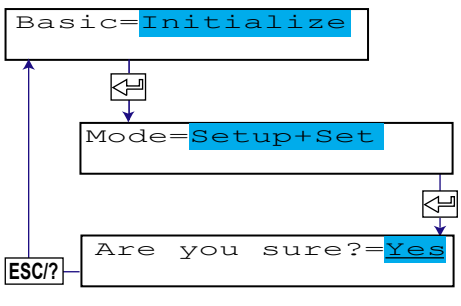
2. Press the ▽△ key or **SHIFT** + ▽△ key to select **Calibration** and then press the ⏎ key.

■ Page 7-1 “7.1 Changing the Auxiliary Alarm Function”

3. Press the ⏎ key with **Alarm** shown on the screen.

■ Page 7-27 “7.17 Initializing the Settings”

Procedure



Select the range to be initialized.

Select Yes and press ⏎ to execute initialization and return to Operation mode.

■ Page 7-38 “7.23 Setting the Calibration Correction Function (/CC1 Option)”

3. Press the ▽△ key or **SHIFT** + ▽△ key to select **Calibration** and then press the ⏎ key.

■ Page 11-8 “11.6 Adjusting the Dot Printing Position (Dot Model)”

6. Press the ▽△ key to select **Hysteresis** (center of the chart paper), **Zero** (left edge of paper chart paper), or **Full** (right edge of the chart paper) and then press the ⏎ key.

   Adjust Hysteresis first followed by Zero and then Full.

Adjusting the Hysteresis

A single line is drawn on the chart paper. If the line appears as shown in Figure a, increase the displayed setting. Then press the ⏎ key.

■ Page 11-10 “11.7 Recommended Replacement Periods for Worn Parts”

Pen Model

Pen servo part number : B8800GG

■ Page 12-2 “Input Computation (Standard Function)”

Please note the addition of the square root measurement range accuracy computation method.

Square root computation

Measurement range accuracy computation

A: Voltage measurement accuracy (digits)

B: Voltage span (digits)

C: Scaling span (digits, upper limit of scaling – lower limit of scaling)

Input Range	Computed Value Accuracy Equation (Digits) Rounded up to the decimal place	Recording Accuracy
0% or more, less than 1.5%*	0.1 × C + 2	Left value + 0.3% of recording span
1.5% or more, less than 6.25%	A / B × C × 5 + 2	Left value + 0.3% of recording span
6.25% or more, less than 25%	A / B × C × 2 + 2	Left value + 0.3% of recording span
25% or more, 100% or less	A / B × C + 2	Left value + 0.3% of recording span

* Also includes case when: (input voltage – lower limit of the specified voltage range) / used range × 20000 < 256. If the specified range is, for example, 1–5 V, the lower limit of the specified voltage range is 1.

■ Page 12-15 “Cu10, Cu25 RTD Input (/N1)”

Input Type		Measurment Range
RTD	Cu10 (GE)	–200.0 to 300.0°C
(Measurement current i: 2 mA)	Cu10 (L&N)	–328.0 to 572.0°F

■ Page 12-20 “Standard Performance”

Measurement and recording accuracy

Input Type	Range Type	Measurement (Digital Display)	
		Measurement Accuracy	Highest Res.
TC **(excludes RJC accuracy)**	E J T	±(0.15% of rdg + 0.5°C) except ±(0.15% of rdg + 0.7°C) for J: –200 to –100°C	0.1°C
	N	±(0.15% of rdg + 0.7°C)	
	W	±(0.15% of rdg + 1°C)	
	L U	±(0.15% of rdg + 0.5°C) except ±(0.15% of rdg + 0.7°C) for L: –200 to –100°C	

■ Page App-1 “Pen Model”

Please note that the underlined portion has been changed.

- **Date/Time**

  The date/time when the periodic printout was printed on the chart paper.

- **Time tick**

  Indicates the pen 1 position at the time the periodic printout was printed on the chart paper.