

RTD TRANSMITTER (front configurable)	MODEL	MXR
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BEFORE USE

Thank you for choosing us. Before use, please check contents of the package you received as outlined below. If you have any problems or questions with the product, please contact our sales office or representatives.

■ PACKAGE INCLUDES:

Signal conditioner (body + base socket).....(1)

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

POINTS OF CAUTION

■ CONFORMITY WITH EU DIRECTIVES

- This equipment is suitable for Pollution Degree 2 and Installation Category II (transient voltage 2500V). Reinforced insulation (signal input or output to power input: 300V) and basic insulation (signal input to output: 300V) are maintained. Prior to installation, check that the insulation class of this unit satisfies the system requirements.
- Altitude up to 2000 meters.
- The equipment must be mounted inside a panel.
- Insert a noise filter for the power source connected to the unit. TDK-Lambda Noise Filter Model RSAN-2006 or equivalent is recommended.
- The equipment must be installed such that appropriate clearance and creepage distances are maintained to conform to CE requirements. Failure to observe these requirements may invalidate the CE conformance.
- The actual installation environments such as panel configurations, connected devices, connected wires, may affect the protection level of this unit when it is integrated in a panel system. The user may have to review the CE requirements in regard to the whole system and employ additional protective measures to ensure the CE conformity.
- Install lightning surge protectors for those wires connected to remote locations.

■ POWER INPUT RATING & OPERATIONAL RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:

100 – 240V AC rating: 85 – 264V, 47 – 66 Hz,
 approx. 4VA at 100V
 approx. 5VA at 200V
 approx. 6VA at 264V

24V DC rating: 24V ±10%, approx. 3.5W
 110V DC rating: 85 – 150V, approx. 3.5W

■ GENERAL PRECAUTIONS

- Before you remove the unit from its base socket or mount it, turn off the power supply and input signal for safety.

■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -5 to +55°C (23 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

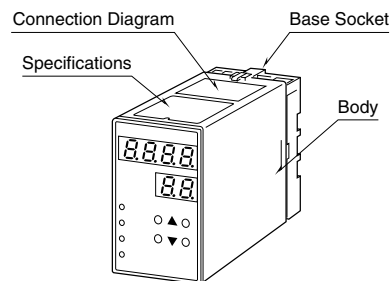
■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND

- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

COMPONENT IDENTIFICATION

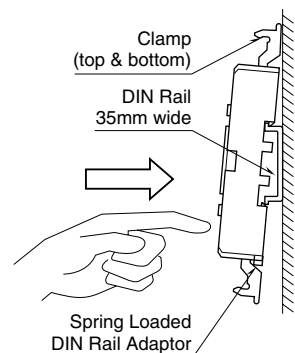


INSTALLATION

Detach the yellow clamps located at the top and bottom of the unit for separate the body from the base socket.

■ DIN RAIL MOUNTING

Set the base socket so that its DIN rail adaptor is at the bottom. Position the upper hook on the DIN rail and push in the lower. When removing the socket, push down the DIN rail adaptor utilizing a minus screwdriver and pull.



■ WALL MOUNTING

Refer to “EXTERNAL DIMENSIONS.”

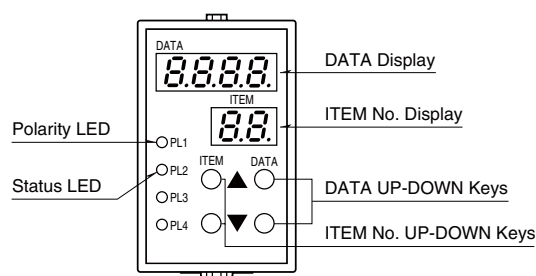
Shape and size of the base socket are slightly different with various socket types.

FRONT VIEW & PROGRAMMING

PROGRAMMING PROCEDURE

- 1) Press ITEM UP or DOWN key until ITEM display indicates "01".
- 2) Press DATA UP or DOWN key and choose "2" on DATA display.
 - 1: Data indication only.
 - 2: All parameters are modifiable.
- 3) Press ITEM UP or DOWN key until ITEM display shows the ITEM No. you need to change.
- 4) Press DATA UP or DOWN key and choose a DATA No. or value you need on DATA display.
- 5) Repeat above 3 and 4. (Entered data is stored 1 sec. after the operation has been complete.)
- 6) Press ITEM UP or DOWN key until ITEM display indicates "01".
- 7) Press DATA UP or DOWN key and choose "1" on the display.
- 8) Press ITEM UP or DOWN key until ITEM display indicates "P".
DATA display shows process input. You can now check data setting by choosing ITEM No.

Note: DO NOT press UP and DOWN keys simultaneously.



ITEM	MDF. CODE	DATA	CONTENTS	DEFAULT
P	N/A	-9999 – 9999	Input display in engineering unit *1	---
01		1, 2, 3	Modification code 1: Data indication only. 2: All parameters are modifiable. 3: Only ITEM 19 is modifiable.	1
02	N/A	0 – 99	Status indication ("0" is normally indicated.)	---
03	2	0 – 7	RTD type 0: JPt 100 (JIS '89), 1: Pt 100 (JIS '89), 2: Pt 100 (JIS '97, IEC), 3: Pt 50 Ω (JIS '81), 4: Ni 508.4 Ω, 5: Pt 1000, 6: Ni 100, 7: Cu 10 @ 25°C	2: Pt 100 (JIS '97, IEC)
04	N/A	0, 1, 2	Output range code 0: V1 (-1 – +1V) 1: V2 (-10 – +10V) 2: Z1 (0 – 20mA)	V1: 0 V2: 1 Z1: 2
05	N/A	-15.0 – 115.0	Input indicated in % (of the range set in ITEM 13/14)	---
06/L	2	-15.0 – 115.0	Output indicated in % with ITEM 01 DATA 1 (of the range set in ITEM 15/16) Loop test output with ITEM 01 DATA 2 ('L' is indicated as ITEM No.) (Use DATA UP/DOWN key to set the output signal.)	---
07	2	-99.99 – 99.99	Zero adjustment (%) (fine adj. of the value set in ITEM 15)	0.00
08	2	0.000 – 9.999	Gain adjustment (fine adj. of the value set in ITEM 16)	1.000
09	2	0, 1, 2	Temperature unit 0: °C 1: °F 2: K	0
10	2	0, 1, 2, 3, 4	Moving average (sampling cycle: 10 msec.) 0: No 1: 4 samples 2: 8 samples 3: 16 samples 4: 32 samples	0
11	2	0, 1 – 60	Power-saving mode 0: Continuous display 1 – 60: Time before display turned off (minutes)	10
12	2	0, 1	Burnout 0: Downscale 1: Upscale	1
13	2	-230.0 – 900.0	Lower range temperature (ITEM 13 < ITEM 14) *1	0.0
14	2	-230.0 – 900.0	Upper range temperature (ITEM 13 < ITEM 14) *1	100.0
15	2	-1.00 – 1.00	Output code V1 0% output voltage (V) *2	-1.00
16	2	-1.00 – 1.00	100% output voltage (V) *2	1.00
15	2	-10.0 – 10.0	Output code V2 0% output voltage (V) *2	-10.0
16	2	-10.0 – 10.0	100% output voltage (V) *2	10.0
15	2	0.0 – 20.0	Output code Z1 0% output current (mA) *2	4.0
16	2	0.0 – 20.0	100% output current (mA) *2	20.0
17	2	0, 1	Output characteristic 0: Positive 1: Negative (inverted output)	0
18	3	0, 1	Reset all settings *3	0
19	N/A	---	ROM version	---

*1. According to the temperature unit specified in ITEM 09. For under -1000 or over 1000 values, under decimal point position cannot be displayed and setting is unavailable.

*2. ITEM 15 < ITEM 16.

*3. Press DATA UP key and choose DATA 1. Double-click DATA DOWN key. The display shows DATA 0 after the initialization is complete.

Programming can be done in the Program Mode. Return the unit back to Monitor Mode other than for programming. Turning the power supply off in the Program Mode may not save modified settings.

■ SELECTING RTD TYPE

[E.G.] Pt 100 (JIS '89)

1) Program Mode

Set ITEM 01 – DATA 2 to turn the unit into Program Mode.

2) RTD Type

Choose ITEM 03 – DATA 1.

3) Monitor Mode

Set ITEM 01 – DATA 1 to turn the unit into Monitor Mode.

■ SELECTING TEMPERATURE RANGE

[E.G.] -200 to 750°C

1) Turn the unit into Program Mode.

2) 0% Temperature Range

Choose ITEM 13 – DATA -200.0

3) 100% Temperature Range

Choose ITEM 14 – DATA 750.0

4) Turn the unit into Monitor Mode.

Note: Enter the temperature values in the unit specified with ITEM 09.

■ SELECTING OUTPUT RANGE

[E.G.] -10.0 to 0.0V DC

1) Turn the unit into Program Mode.

2) 0% Output Voltage

Choose ITEM 15 – DATA -10.0.

3) 100% Output Voltage

Choose ITEM 16 – DATA 0.0.

4) Turn the unit into Monitor Mode.

5) Set to ITEM P.

■ BURNOUT

[E.G.] Downscale burnout

1) Turn the unit into Program Mode.

2) Burnout Protection

Choose ITEM 12 – DATA 0.

3) Turn the unit into Monitor Mode.

■ RESET ALL SETTINGS

Returning the unit into the default settings.

1) Turn the unit into Reset Mode.

Set ITEM 01 – DATA 3 to turn the unit into Reset Mode.

2) Call up the Reset menu.

Choose ITEM 18 – DATA 1. (Press DATA UP key.)

3) Resetting Enable

Double-click DATA DOWN key. DATA 0 is displayed after the initialization is complete.

4) Turn the unit into Monitor Mode.

If necessary, go to Moving Average and other adjustments. Set the unit to Monitor Mode other than for programming.

■ STATUS LED, PL2

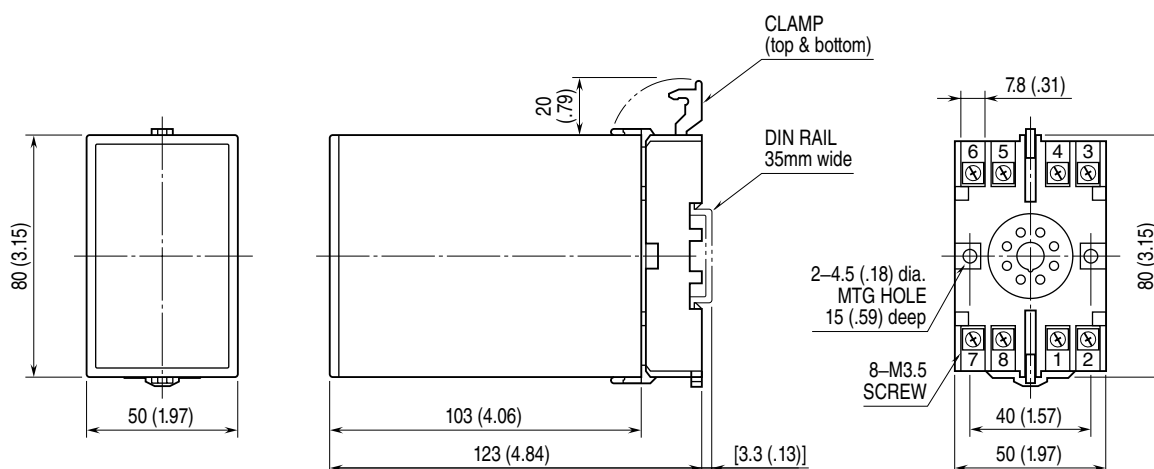
When the PL2 is turned on, identify the device status with ITEM 02.

REF.	STATUS
12	Burnout: Wire breakdown or invalid overrange input. Check RTD wires, RTD type and temperature range.
13	Input range setting: 0% Setting > 100% Setting See ITEM 13 / 14.
15	Output range setting: 0% Setting > 100% Setting See ITEM 15 / 16.
99	Memory error: Initialize all the settings of the unit by operating ITEM 18 and program the unit again.

TERMINAL CONNECTIONS

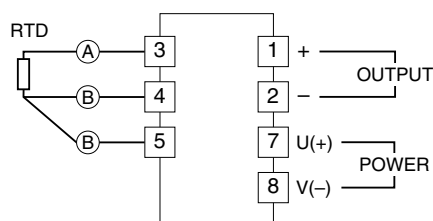
Connect the unit as in the diagram below or refer to the connection diagram on the top of the unit.

EXTERNAL DIMENSIONS unit: mm (inch)



• When mounting, no extra space is needed between units.

CONNECTION DIAGRAM



CHECKING

- 1) Terminal wiring: Check that all cables are correctly connected according to the connection diagram.
- 2) Power input voltage: Check voltage across the terminal 7 – 8 with a multimeter.
- 3) Input: Check voltage across the terminal 3 – 4 with a sensitive voltmeter. (With 20°C or 68°F, approx. 55 mV with Pt 100, approx. 27 mV with Pt 50 Ω.)
If RTD wires are broken, the output goes over 100% (below 0% with downscale) due to the burnout function. Check leadwires in such a case.
- 4) Output: Check that the load resistance meets the described specifications.

MAINTENANCE

Regular calibration procedure is explained below:

CALIBRATION

Warm up the unit for at least 10 minutes. Apply 0%, 25%, 50%, 75% and 100% input signal. Check that the output signal for the respective input signal remains within accuracy described in the data sheet. When the output is out of tolerance, recalibrate the unit as explained earlier (ITEM 07 and 08).

LIGHTNING SURGE PROTECTION

We offer a series of lightning surge protector for protection against induced lightning surges. Please contact us to choose appropriate models.