

## Plug-in Signal Conditioners M-UNIT

### RTD TRANSMITTER

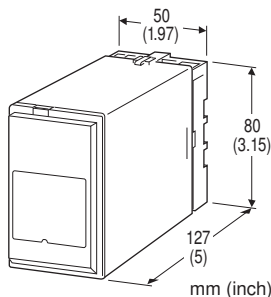
(field-programmable)

#### Functions & Features

- Accepting direct input from an RTD and providing standard process signal
- Micro-processor based
- Field-programmable temperature range
- Linearization
- Burnout protection
- Isolation up to 2000 V AC
- Loop testing via hand-held programmer PU-2x
- High-density mounting

#### Typical Applications

- Ideal for quick spare part
- Power plant (2000 V AC isolation)



## MODEL: JR-[1][2]-[3][4]

### ORDERING INFORMATION

- Code number: JR-[1][2]-[3][4]
- Specify a code from below for each [1] through [4]. (e.g. JR-4A-B/BL/Q)
- Temperature range (e.g. 0 - 500°C)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q (e.g. /C01/S01)

#### [1] INPUT RTD (2- or 3-wire)

**1:** JPt 100 (JIS'89)

(Usable range: -200 to +500°C, -328 to +932°F; min.span: 50°C, 90°F)

**3:** Pt 100 (JIS'89)

(Usable range: -200 to +650°C, -328 to +1202°F; min.span: 50°C, 90°F)

**4:** Pt 100 (JIS'97, IEC)

(Usable range: -200 to +650°C, -328 to +1202°F; min.span: 50°C, 90°F)

**5:** Pt 50 Ω (JIS'81)

(Usable range: -200 to +500°C, -328 to +932°F; min.span: 100°C, 180°F)

**6:** Ni 508.4 Ω

(Usable range: -50 to +200°C, -58 to +392°F; min.span: 30°C, 54°F)

**0:** Specify

Note: Consult M-System for 2-wire RTD

#### [2] OUTPUT

##### Current

**A:** 4 - 20 mA DC (Load resistance 750 Ω max.)

**B:** 2 - 10 mA DC (Load resistance 1500 Ω max.)

**C:** 1 - 5 mA DC (Load resistance 3000 Ω max.)

**D:** 0 - 20 mA DC (Load resistance 750 Ω max.)

**E:** 0 - 16 mA DC (Load resistance 900 Ω max.)

**F:** 0 - 10 mA DC (Load resistance 1500 Ω max.)

**G:** 0 - 1 mA DC (Load resistance 15 kΩ max.)

**Z:** Specify current (See OUTPUT SPECIFICATIONS)

##### Voltage

**1:** 0 - 10 mV DC (Load resistance 10 kΩ min.)

**2:** 0 - 100 mV DC (Load resistance 100 kΩ min.)

**3:** 0 - 1 V DC (Load resistance 1000 Ω min.)

**4:** 0 - 10 V DC (Load resistance 10 kΩ min.)

**5:** 0 - 5 V DC (Load resistance 5000 Ω min.)

**6:** 1 - 5 V DC (Load resistance 5000 Ω min.)

**0:** Specify voltage (See OUTPUT SPECIFICATIONS)

#### [3] POWER INPUT

##### AC Power

**B:** 100 V AC

**C:** 110 V AC

**D:** 115 V AC

**F:** 120 V AC

**G:** 200 V AC

**H:** 220 V AC

**J:** 240 V AC

##### DC Power

**S:** 12 V DC

**R:** 24 V DC

**V:** 48 V DC

#### [4] OPTIONS (multiple selections)

##### Burnout

**blank:** Upscale burnout

**/BL:** Downscale burnout

**/BN:** No burnout

##### Other Options

**blank:** none

**/Q:** Option other than the above (specify the specification)



**SPECIFICATIONS OF OPTION: Q (multiple selections)****COATING (For the detail, refer to M-System's web site.)**

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

**TERMINAL SCREW MATERIAL**

/S01: Stainless steel

**RELATED PRODUCTS**

- JX configurator connection kit (model: JXCON)
- Programming Unit (model: PU-2x)

**GENERAL SPECIFICATIONS**

Construction: Plug-in

Connection: M3.5 screw terminals

Screw terminal: Chromated steel (standard) or stainless steel

Housing material: Flame-resistant resin (black)

Isolation: Input to output to power

Overrange output: Approx. -10 to +120 % at 1 - 5 V

Zero adjustment: -5 to +5 % (front)

Span adjustment: 95 to 105 % (front)

Linearization: Standard

Adjustments: Programming Unit (model: PU-2x);  
(Refer to the users manual of JXCON for the adjustments configurable with JXCON.)

- RTD type (between Pt 100 and JPt 100 only)
- temp. range
- zero and span
- simulating output
- Others

**INPUT SPECIFICATIONS**Maximum leadwire resistance: 20  $\Omega$  per wire (3-wire)

Sensing current: 2 mA (Pt)

If not specified, the input range is shown below.

1: JPt 100 (JIS '89) 0 - 100°C

3: Pt 100 (JIS '89) 0 - 100°C

4: Pt 100 (JIS '97, IEC) 0 - 100°C

5: Pt 50  $\Omega$  (JIS '81) 0 - 200°C6: Ni 508.4  $\Omega$  0 - 100°C**OUTPUT SPECIFICATIONS**

■ DC Current: 0 - 20 mA DC

Minimum span: 1 mA

Offset: Max. 1.5 times span

Load resistance: Output drive 15 V max.

■ DC Voltage: -10 - +20 V DC

Span: Min. 5 mV, max. 20 V

Offset: Max. 1.5 times span

Load resistance: Output drive 1 mA max.; at  $\geq 0.5$  V**INSTALLATION****Power input**•AC: Operational voltage range: rating  $\pm 10$  %, 50/60  $\pm 2$  Hz, approx. 3 VA•DC: Operational voltage range: rating  $\pm 10$  %, ripple 10 %p-p max., approx. 2 W (90 mA at 24 V)

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: Surface or DIN rail

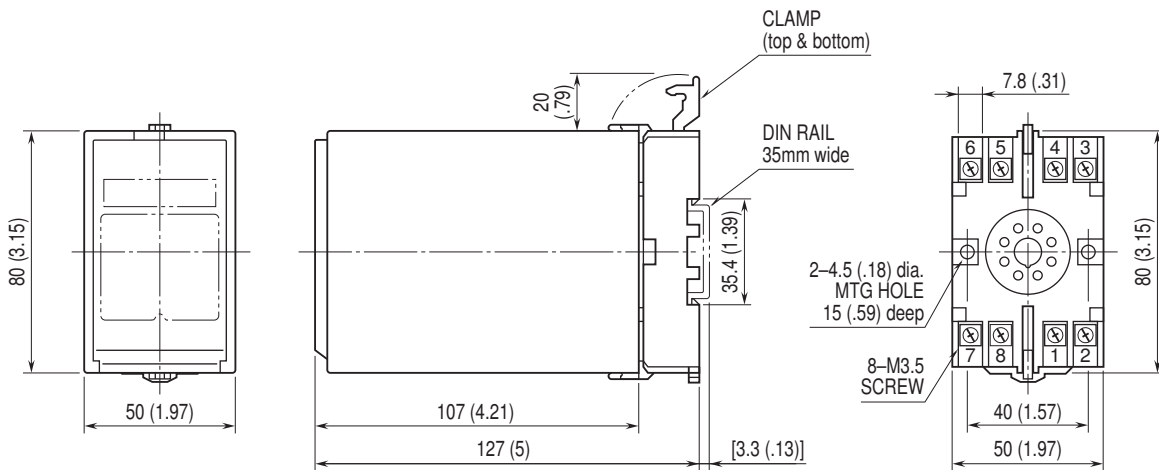
Weight: 350 g (0.77 lb)

**PERFORMANCE in percentage of span**Accuracy:  $\pm 0.1$  % or  $\pm 0.1^\circ\text{C}$  ( $\pm 0.18^\circ\text{F}$ ), whichever is greaterTemp. coefficient:  $\pm 0.015$  %/ $^\circ\text{C}$  ( $\pm 0.008$  %/ $^\circ\text{F}$ )Response time:  $\leq 0.5$  sec. (0 - 90 %)Burnout response:  $\leq 10$  sec.Line voltage effect:  $\pm 0.1$  % over voltage rangeInsulation resistance:  $\geq 100$  M $\Omega$  with 500 V DC

Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

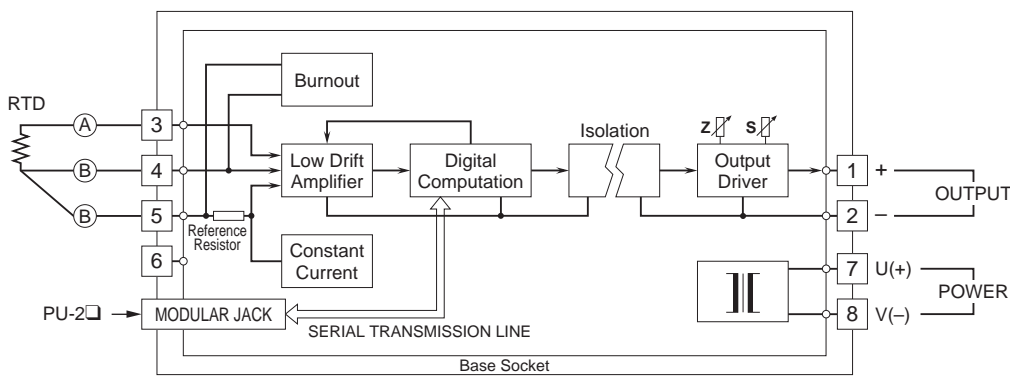


## DIMENSIONS unit: mm (inch)



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

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.