

## Dual Output Plug-in Signal Conditioners W-UNIT

### RTD TRANSMITTER

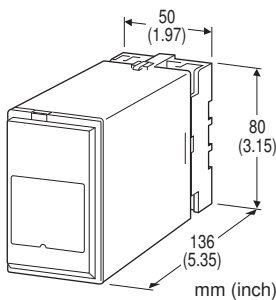
(field-programmable)

#### 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: WJR-[1][2][3]-[4][5]

### ORDERING INFORMATION

- Code number: WJR-[1][2][3]-[4][5]

Specify a code from below for each [1] through [5].

(e.g. WJR-4AA-B/BL/Q)

- Temperature range (e.g. 0 - 500°C)
- Special output ranges (For codes Z & 0)

Default setting will be used if not otherwise specified.

- Specify the specification for option code /Q

(e.g. /C01/S01)

When the user requires a current and a voltage output, specify the current to be the Output 1 which allows a greater load.

### [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 1

#### Current

A: 4 - 20 mA DC (Load resistance 600 Ω max.)

B: 2 - 10 mA DC (Load resistance 1200 Ω max.)

C: 1 - 5 mA DC (Load resistance 2400 Ω max.)

D: 0 - 20 mA DC (Load resistance 600 Ω max.)

E: 0 - 16 mA DC (Load resistance 750 Ω max.)

F: 0 - 10 mA DC (Load resistance 1200 Ω max.)

G: 0 - 1 mA DC (Load resistance 12 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] OUTPUT 2

#### Current

A: 4 - 20 mA DC (Load resistance 350 Ω max.)

B: 2 - 10 mA DC (Load resistance 700 Ω max.)

C: 1 - 5 mA DC (Load resistance 1400 Ω max.)

D: 0 - 20 mA DC (Load resistance 350 Ω max.)

E: 0 - 16 mA DC (Load resistance 430 Ω max.)

F: 0 - 10 mA DC (Load resistance 700 Ω max.)

G: 0 - 1 mA DC (Load resistance 7000 Ω max.)

Z: Specify current (See OUTPUT SPECIFICATIONS)

#### Voltage

Same range availability as Output 1

### [4] 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

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

## [5] OPTIONS (multiple selections)

### Burnout

blank: Upscale burnout  
/BL: Downscale 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

**Isolation:** Input to output 1 to output 2 to power

**Housing material:** Flame-resistant resin (black)

**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

## OUTPUT SPECIFICATIONS

■ **DC Current:** 0 - 20 mA DC

**Minimum span:** 1 mA

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 12 V max. for Output 1;  
7 V max. for Output 2

■ **DC Voltage:** -10 - +10 V DC

**Minimum span:** 5 mV

**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. 3.5 VA

• **DC:** Operational voltage range: rating  $\pm 10$  %  
ripple 10 %p-p max., approx. 2.6 W (110 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:** 400 g (0.88 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 greater

**Temp. 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 range

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC

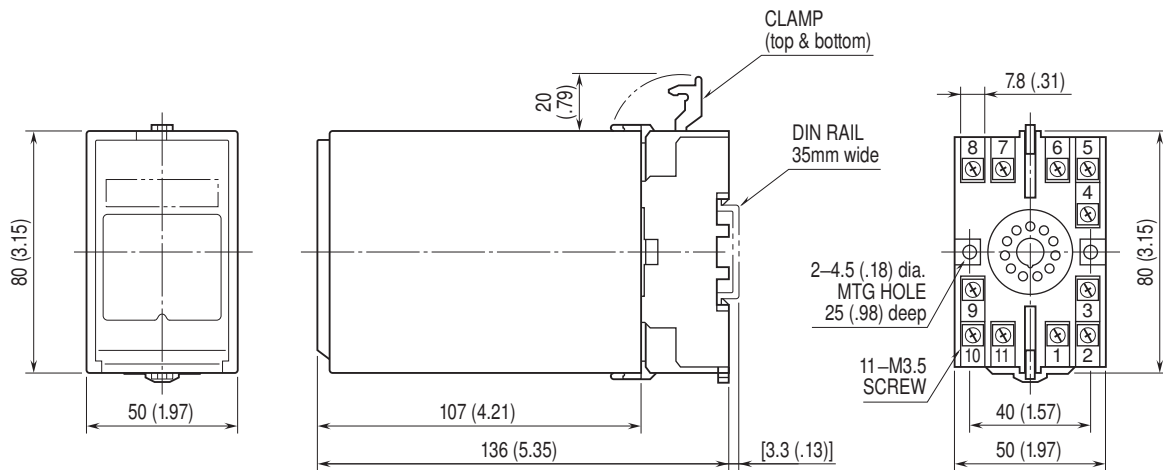
**Dielectric strength:** 2000 V AC @1 minute

(input to output to power to ground)

1000 V AC @ 1 minute (output 1 to output 2)

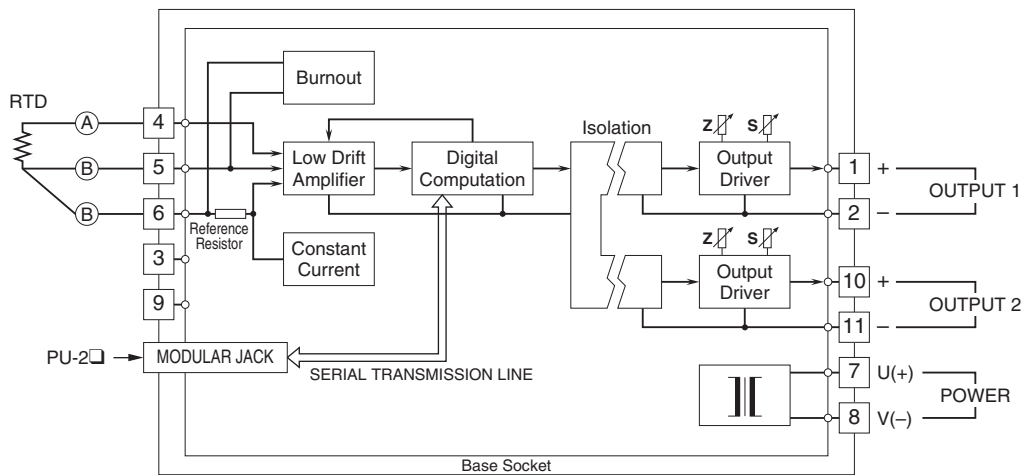


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.