

Plug-in Signal Conditioners M-UNIT

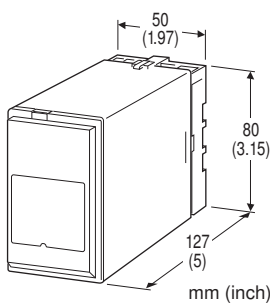
DC/RTD CONVERTER

Functions & Features

- Emulates the RTD resistance proportional to a DC signal
- High accuracy, high resolution
- Response time 0.5 seconds or less
- Output drive circuit with semiconductor switches ensures long life span
- Fixed output at power failure

Typical Applications

- Controls an RTD input device with a DC signal



MODEL: CVRTD-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: CVRTD-[1][2]-[3][4]
- Specify a code from below for each of [1] through [4].
(e.g. CVRTD-64-R/Q)
- Temperature range (e.g. 0 - 100°C)
- Output resistance at power failure (e.g. 400 Ω)
(Set to 'Open' if not otherwise specified.)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

Current

A: 4 - 20 mA DC (Input resistance 250 Ω)

Voltage

6: 1 - 5 V DC (Input resistance 1 MΩ min.)

[2] OUTPUT

1: JPt 100 (JIS '89) equivalent

3: Pt 100 (JIS '89) equivalent

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

[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

blank: none

/Q: With options (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

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

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

Span adjustment: 95 to 105 % (front)

INPUT SPECIFICATIONS

■ DC Current:

Shunt resistor attached to the input terminals (0.5 W)

OUTPUT SPECIFICATIONS

Output: Resistance (unipolar)

Resistance range: Approx. 15 - 400 Ω

(The output may be uncertain immediately after the power is turned on or off.)

Maximum wattage: 0.07 W

Maximum excitation: 15 V DC

Maximum current: 10 mA

Resistance control: Resistance composed by switching resistors connected in parallel

Output devices: MOSFET switch + resistors

Output resolution: $\leq 0.05 \Omega$ (up to 400 Ω)

Output resistance at power failure: 10 - 500 Ω selectable when ordering. Set to 'Open' if not otherwise specified.

Resistance (temperature) range

| RTD | USABLE RANGE | | MIN. SPAN | |
|-----------------------|--------------------|--------------------|--------------------|--------------------|
| | $^{\circ}\text{C}$ | $^{\circ}\text{F}$ | $^{\circ}\text{C}$ | $^{\circ}\text{F}$ |
| JPt 100 (JIS '89) | -200 to +510 | -328 to +950 | 5 | 9 |
| Pt 100 (JIS '89) | -200 to +660 | -328 to +1220 | 5 | 9 |
| Pt 100 (JIS '97, IEC) | -200 to +850 | -328 to +1562 | 5 | 9 |

INSTALLATION

Power input

- **AC:** Operational voltage range: rating $\pm 10 \%$, 50/60 ± 2 Hz, approx. 2 VA
- **DC:** Operational voltage range: Rating $\pm 10 \%$, ripple 10 %p-p max.; Approx. 1.5 W

Operating temperature: -5 to +55 $^{\circ}\text{C}$ (23 to 131 $^{\circ}\text{F}$)

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

Mounting: Surface or DIN rail

Weight: 300 g (0.66 lb)

PERFORMANCE in percentage of span

Accuracy: $\pm 0.3 \%$ or $\pm 0.1 \Omega$, whichever is greater.

Accuracy of the output resistance at power failure: $\pm 3 \%$

Temp. coefficient: $\pm 0.02 \%/^{\circ}\text{C}$ ($\pm 0.01 \%/^{\circ}\text{F}$) or $[0.009 \Omega + 0.00005 \times \text{Output Resistance} (\Omega)]/^{\circ}\text{C}$, whichever is greater.

Response time: ≤ 0.5 sec. (0 - 90 %)

Line voltage effect: $\pm 0.1 \%$ over voltage range

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

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

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

EN 61010-1

Installation Category II

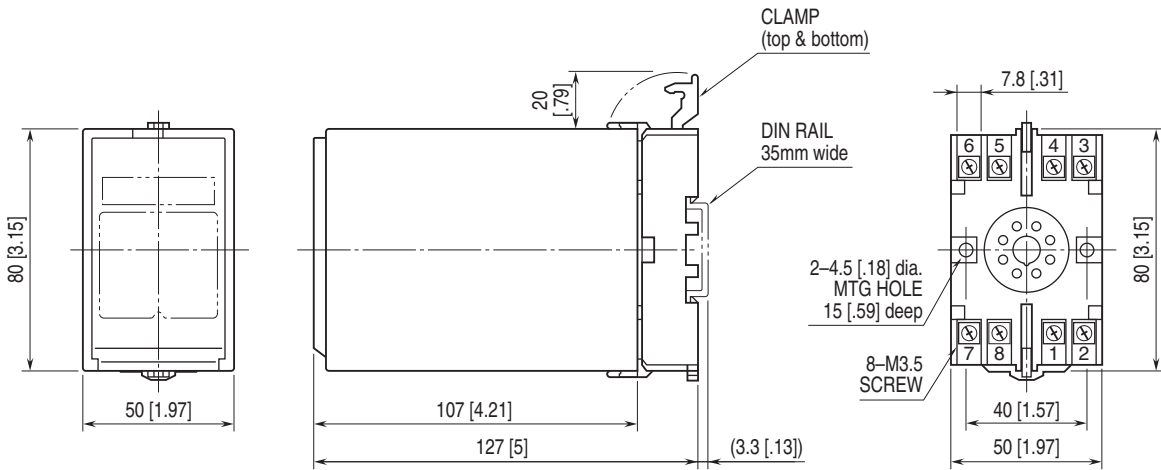
Pollution Degree 2

Input or output to power: Reinforced insulation (300 V)

Input to output: Basic insulation (300 V)

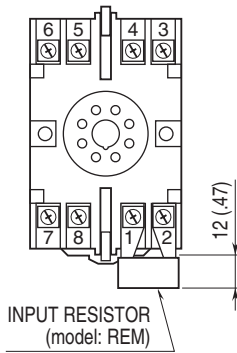
RoHS Directive

EXTERNAL DIMENSIONS unit: mm [inch]



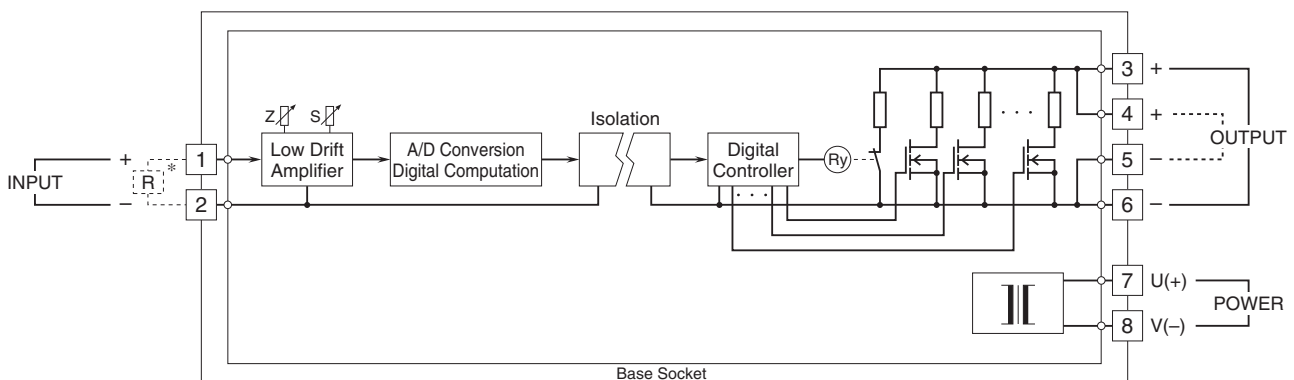
• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm [inch]



Input shunt resistor attached for current input.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Input shunt resistor attached for current input.



Specifications are subject to change without notice.