

Plug-in Signal Conditioners M-UNIT

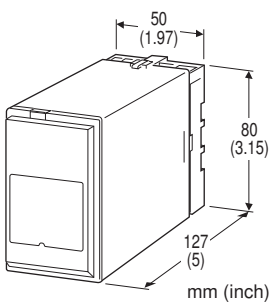
DC/RTD CONVERTER

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
- CE marking

Typical Applications

- Controls an RTD input device with a DC signal



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

ORDERING INFORMATION

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

[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

GENERAL SPECIFICATIONS

Construction: Plug-in

Connection: M3.5 screw terminals

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: ≤0.05 Ω (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	
	°C	°F	°C	°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 ±10 %, 50/60 ±2 Hz, approx. 2 VA

•**DC:** Operational voltage range: Rating ±10 %, ripple 10 %p-p max.; Approx. 1.5 W

Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 300 g (0.66 lbs)

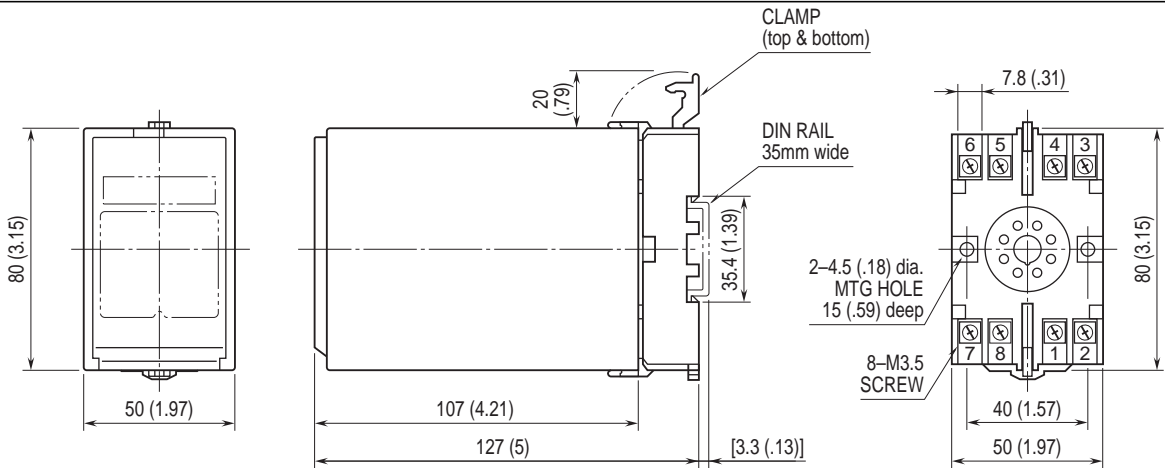
PERFORMANCE in percentage of span

Accuracy: ±0.3 % or ±0.1 Ω, whichever is greater.
Accuracy of the output resistance at power failure: ± 3 %
Temp. coefficient: ± 0.02 %/°C (±0.01 %/°F) or [0.009 Ω + 0.00005 × Output Resistance (Ω)]/°C, whichever is greater.
Response time: ≤ 0.5 sec. (0 - 90 %)
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

STANDARDS & APPROVALS

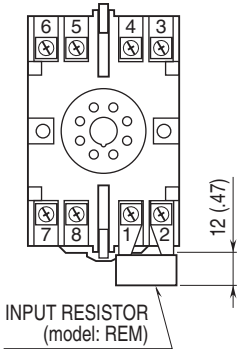
CE conformity:
EMC Directive (2004/108/EC)
EMI EN 61000-6-4: 2007
EMS EN 61000-6-2: 2005
Low Voltage Directive (2006/95/EC)
EN 61010-1: 2001
Installation Category II
Pollution Degree 2
Input or output to power: Reinforced insulation (300 V)
Input to output: Basic insulation (300 V)

DIMENSIONS unit: mm (inch)



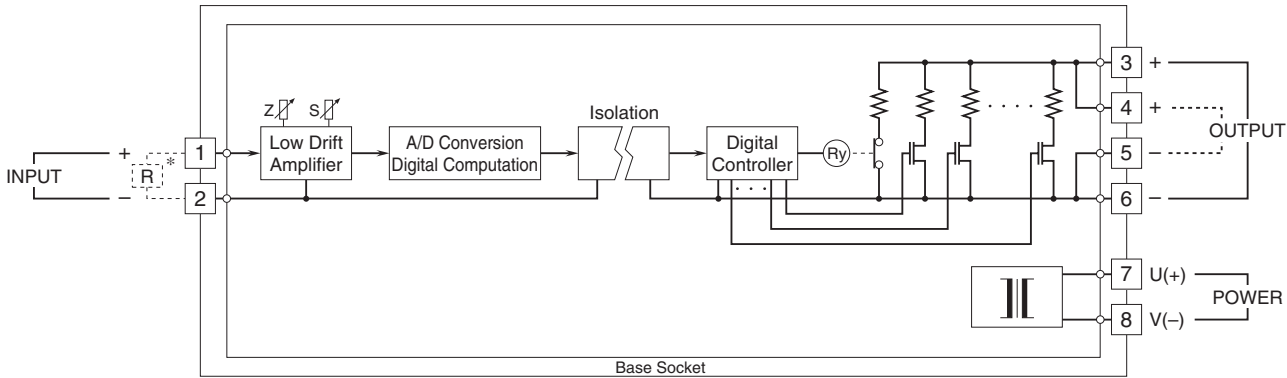
• When mounting, no extra space is needed between units.

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.