

Plug-in Signal Conditioners M-UNIT

DC/RTD CONVERTER

MODEL **CVRTD**

MODEL & SUFFIX CODE SELECTION

MODEL _____ CVRTD-□□□

INPUT _____

Current _____ Voltage _____

A : 4 – 20mA DC 6 : 1 – 5V DC

OUTPUT RESISTANCE _____

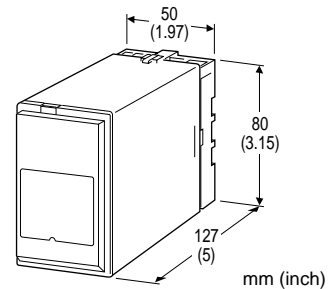
1 : JPt 100 (JIS '89) equivalent

3 : Pt 100 (JIS '89) equivalent

4 : Pt 100 (JIS '97, DIN, IEC751) equivalent

POWER INPUT _____

AC Power		DC Power
B : 100V AC	G : 200V AC	S : 12V DC
C : 110V AC	H : 220V AC	R : 24V DC
D : 115V AC	J : 240V AC	V : 48V DC
F : 120V AC		



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

ORDERING INFORMATION

Specify code number and variables.

- **Code number** (e.g. CVRTD-64-R)
- **Temperature range** (e.g. 0 – 100°C)
- **Output resistance at power failure** (e.g. 400Ω)
(Set to 'Open' if not otherwise specified.)

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Front adjustments: Zero and span; ±5%

INPUT & OUTPUT

■ **INPUT**

• **DC Current:** 4 – 20mA DC; shunt resistor attached to input terminals (0.5W)

Input resistance: 250Ω

• **DC Voltage:** 1 – 5V DC

Input resistance: 1MΩ minimum

■ **OUTPUT:** Resistance (unipolar)

Resistance range: Approx. 15 – 400Ω

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

Maximum wattage: 0.07W

Maximum excitation: 15V DC

Maximum current: 10mA

Resistance control: Resistance composed by switching resistors connected in parallel

Output devices: MOSFET switch + resistors

Output resolution: ≤0.05Ω (up to 400Ω)

Output resistance at power failure: 10 – 500Ω

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/DIN/IEC)	-200 to +850	-328 to +1562	5	9

INSTALLATION

Power input

AC: Operational range: Rating $\pm 10\%$,
50/60 ± 2 Hz, approx. 2VA

DC: Operational range: Rating $\pm 10\%$
approx. 1.5W (ripple 10% p-p max.)

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

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

Mounting: Surface or DIN rail

Dimensions: W50×H80×D127 mm (1.97"×3.15"×5")

See General Spec. Sheet Figure A-1.

Weight: 300 g (0.66 lbs)

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 Ω + 0.00005 × Output Resistance (Ω)]/ $^{\circ}\text{C}$,
whichever is greater.

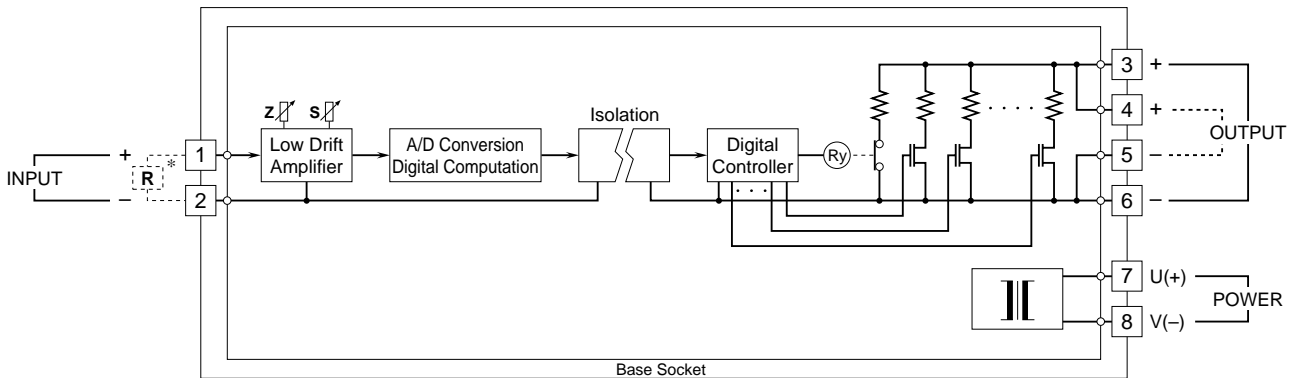
Response time: ≤ 0.5 seconds (0 – 90%)

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

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

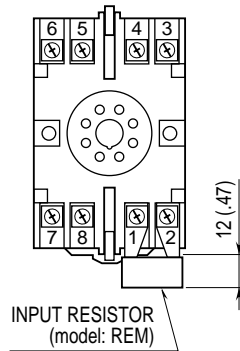
Dielectric strength: 2000V AC @1 minute
(input to output to power to ground)

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Input shunt resistor attached for current input.

TERMINAL ASSIGNMENT mm (inch)



Input shunt resistor attached for current input.