

Plug-in Signal Conditioners K-UNIT

RTD TRANSMITTER

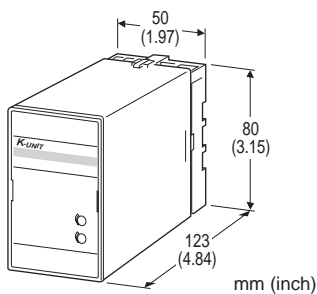
(non-isolated)

Functions & Features

- Accepting direct input from an RTD and providing a standard process signal
- Linearization
- Burnout protection
- "Active bridge" circuit containing two constant current sources allows large leadwire resistances up to 200 Ω
- High density mounting
- CE marking

Typical Applications

- Long distance transmission between the RTD and the transmitter
- Combination with intrinsic safety barriers



MODEL: KR-[1][2]-[3][4]/CE

ORDERING INFORMATION

- Code number: KR-[1][2]-[3][4]/CE
- Specify a code from below for each [1] through [4]. (e.g. KR-4A-H/BL/CE)
- Temperature range (e.g. 0 – 500°C)
- Special output range (For codes Z & 0)

[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

[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 3000 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

- G:** 200 V AC
- H:** 220 V AC
- J:** 240 V AC

DC Power

- S:** 12 V DC
- R:** 24 V DC

[4] OPTIONS

BURNOUT

- blank:** Upscale burnout
- /BL:** Downscale burnout

GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3.5 screw terminals
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input or 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

INPUT SPECIFICATIONS

- INPUT:** 2- or 3-wire RTDs
- Maximum leadwire resistance:** 200 Ω per wire (3-wire)
- Sensing current:** 2 mA (Pt); 1 mA (Ni 508.4 Ω)



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 - +12 V DC
- Minimum span:** 5 mV
- Offset:** Max. 1.5 times span
- Load resistance:** Output drive 1 mA max. at ≥ 3 V

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. 2 W (80 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 lbs)

PERFORMANCE in percentage of span

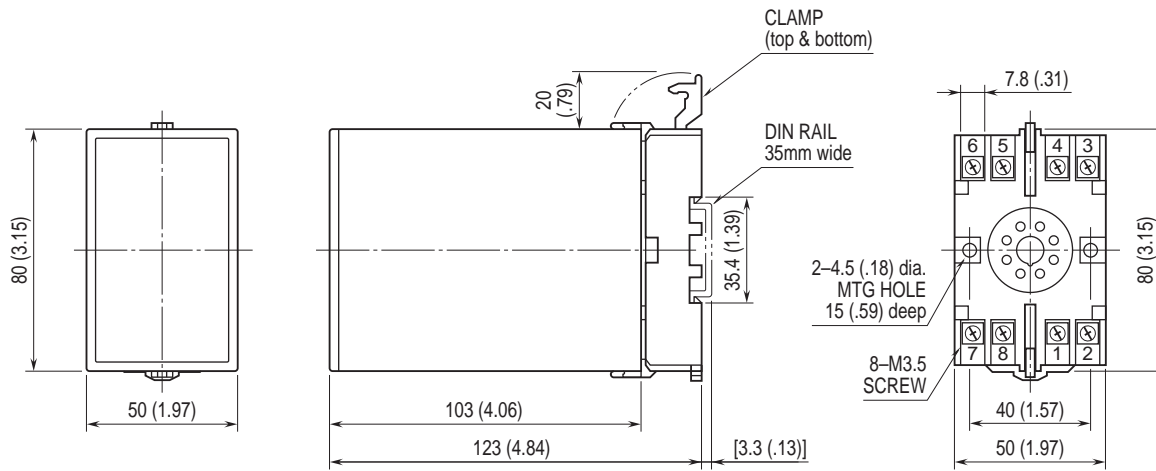
- Accuracy:** ± 0.2 %
- Temp. coefficient:** ± 0.02 %/°C (± 0.01 %/°F)
- Response time:** ≤ 0.5 sec. (0 - 90 %)
- Burnout response:** ≤ 10 sec.
- Line voltage effect:** ± 0.1 % over voltage range
- Insulation resistance:** ≥ 100 M Ω with 500 V DC
- Dielectric strength:** 2300 V AC @1 minute
(input or output to power to ground)

STANDARDS & APPROVALS

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

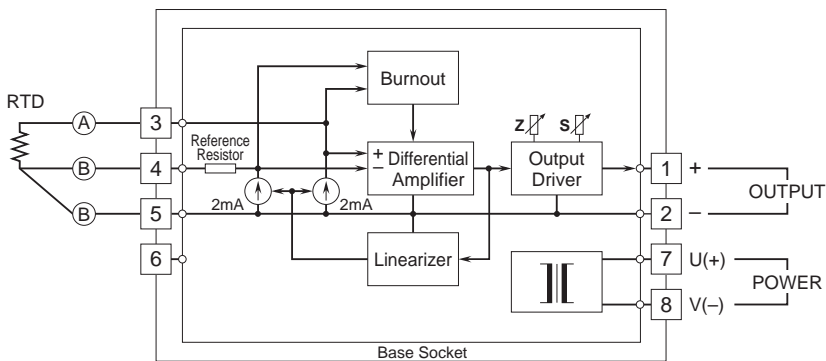


DIMENSIONS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.