

Plug-in Signal Conditioners K-UNIT

Note: Consult M-System for 2-wire RTD

RTD TRANSMITTER

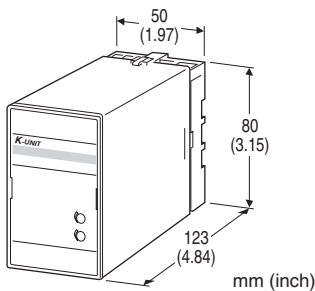
(CE, isolated)

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
- Fast response type available
- High-density mounting

Typical Applications

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



[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

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

ORDERING INFORMATION

- Code number: KRS-[1][2]-[3][4]/CE
- Specify a code from below for each of [1] through [4].
(e.g. KRS-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

[4] OPTIONS (multiple selections)

Response Time (0 - 90 %)

- blank: Standard (≤ 0.5 sec.)
- /K: Fast Response (Approx. 25 msec.)

Burnout

- blank: Upscale burnout
- /BL: Downscale burnout

Standards & Approvals (must be specified)

- /CE: CE marking

GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3.5 screw terminals
- Screw terminal:** Chromated steel
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input to 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)
- At burnout:** Downscale ≤ -10 %, Upscale ≥ 110 %

Linearization: Standard

INPUT SPECIFICATIONS

Maximum leadwire resistance: 200 Ω per wire (3-wire)

Sensing current: 2 mA

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 lb)

PERFORMANCE in percentage of span

Accuracy: ± 0.2 %

Temp. coefficient: ± 0.02 %/°C (± 0.01 %/°F)

Burnout response: ≤ 10 sec.

Line voltage effect: ± 0.1 % over voltage range

Insulation resistance: ≥ 100 M Ω with 500 V DC

Dielectric strength:

1350 V AC @1 minute (input to output)

2300 V AC @1 minute (input or 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

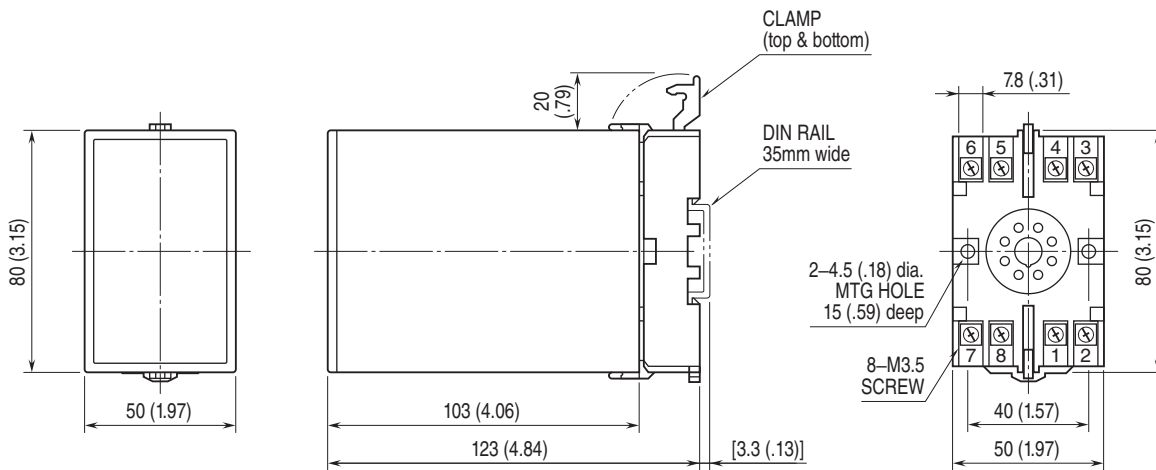
Pollution Degree 2

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

Input to output: Basic insulation (300 V)

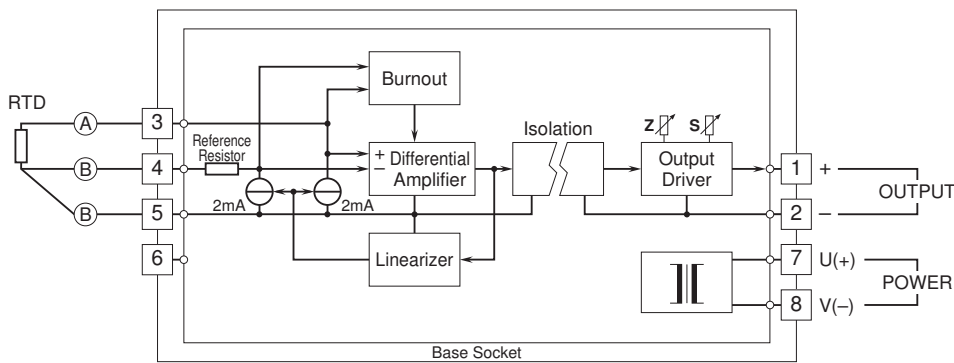
RoHS Directive

EXTERNAL DIMENSIONS & 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.