

Space-saving Plug-in Signal Conditioners F-UNIT

RTD TRANSMITTER

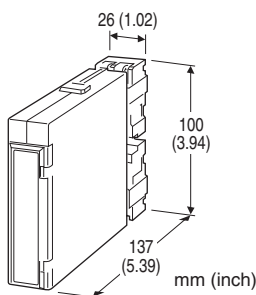
(non-isolated)

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

Typical Applications

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



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

ORDERING INFORMATION

- Code number: FR-[1][2]-[3][4]
- Specify a code from below for each [1] through [4] (e.g. FR-1A-K/BL)
- 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 1000 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

- K:** 85 - 132 V AC
(Operational voltage range 85 - 132 V, 47 - 66 Hz)
- L:** 170 - 264 V AC
(Operational voltage range 170 - 264 V, 47 - 66 Hz)

DC Power

- R:** 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
- P:** 110 V DC
(Operational voltage range 85 - 150 V, ripple 10 %p-p max.)

[4] OPTIONS

Burnout

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

GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3.5 screw terminals (torque 0.8 N·m)
- Screw terminal:** Nickel-plated steel
- 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 ≥ 0.5 V

INSTALLATION

Power input

•AC: Approx. 4.5 VA

•DC: 24 V approx. 70 mA

110 V approx. 20 mA

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

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

Mounting: Surface or DIN rail; Standard Rack Mounting

Frame BX-16H available

Weight: 200 g (0.44 lbs)

PERFORMANCE in percentage of span

Accuracy: ± 0.2 %

Temp. coefficient: ± 0.015 %/°C (± 0.008 %/°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

Power input code R:

2000 V AC @ 1 minute (input or output or power to ground)

500 V AC @ 1 minute (I/O to power)

Power input code K, L, P:

2000 V AC @ 1 minute (input or output or power to ground)

1500 V AC @ 1 minute (I/O to power)



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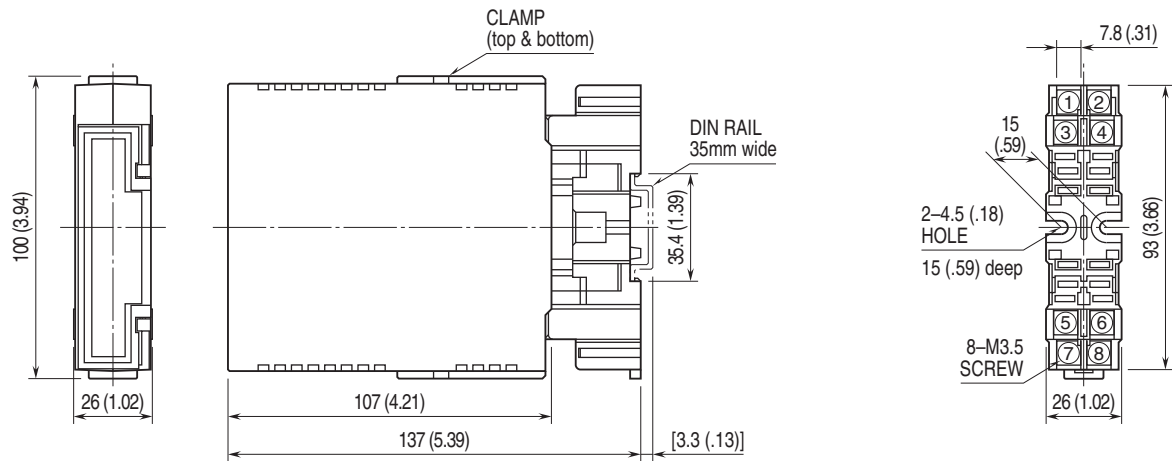
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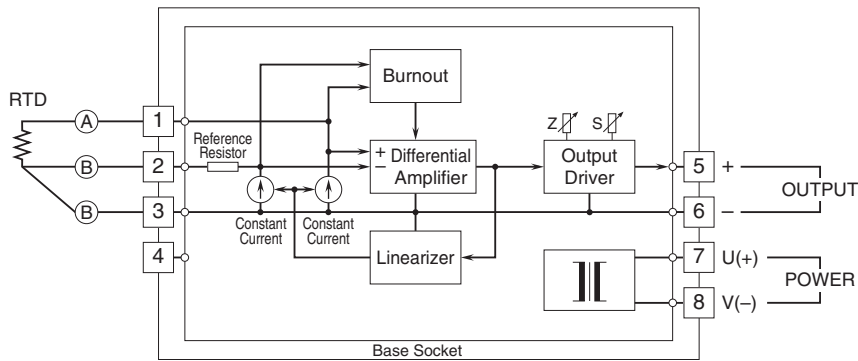
Website : www.xintop.com

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.