

Space-saving Plug-in Signal Conditioners H-UNIT

RTD TRANSMITTER

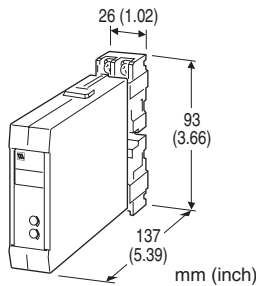
(non-isolated)

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: HR-[1][2]-R[3]

ORDERING INFORMATION

- Code number: HR-[1][2]-R[3]
- Specify a code from below for each [1] through [3]. (e.g. HR-4A-R/BL/Q)
- Temperature range (e.g. 0 - 500°C)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q (e.g. /C01/S01)

[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

Note: Consult M-System for 2-wire RTD

[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)

POWER INPUT

DC Power

R: 24 V DC

(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS (multiple selections)

Burnout

blank: Upscale burnout

/BL: Downscale burnout

Other Options

blank: none

/Q: Option other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to M-System's web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

TERMINAL SCREW MATERIAL

/S01: Stainless steel

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

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

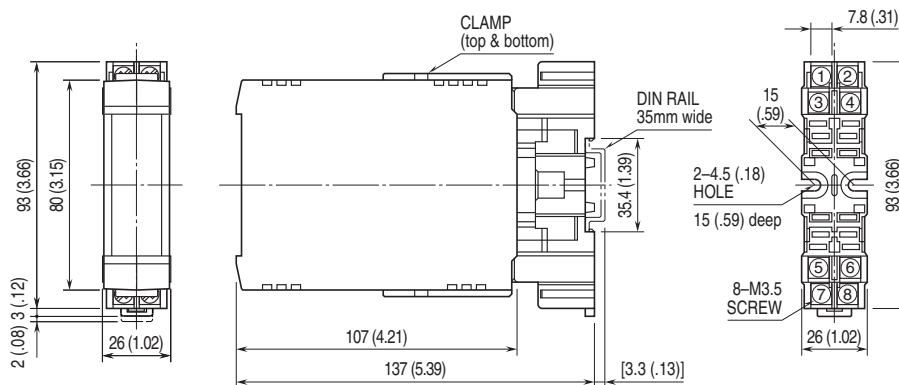
INSTALLATION

Power input: Approx. 75 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: 500 V AC @ 1 minute (input or output to power)
 1500 V AC @ 1 minute (input or output or power to ground)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

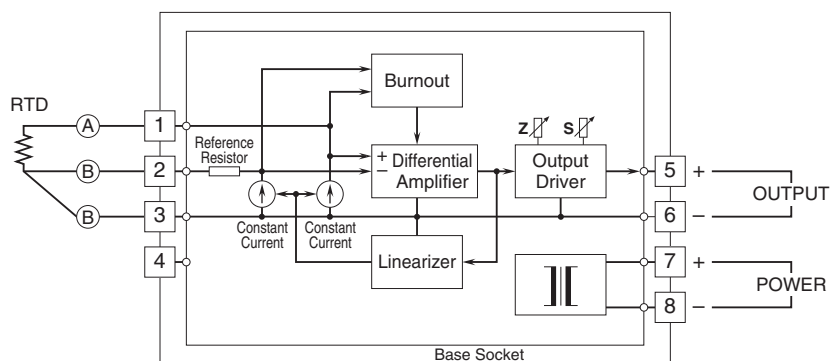


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SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.

