

Super-space-saving Signal Conditioners M3S-UNIT Series

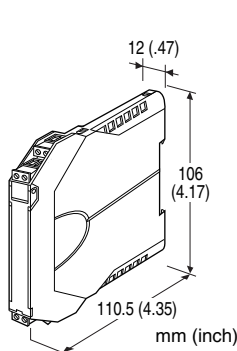
RTD TRANSMITTER

Functions & Features

- Accepts direct input from an RTD and provides a standard process signal
- Linearization
- Burnout protection
- Universal AC/DC power input
- Fast response type available
- High-density mounting
- Power indicator LED

Typical Applications

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



MODEL: M3SRS-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: M3SRS-[1][2]-[3][4]
Specify a code from below for each [1] through [4].
(e.g. M3SRS-4A-R/K/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)

[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 +850°C, -328 to +1562°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 550 Ω max.)
B: 2 - 10 mA DC (Load resistance 1100 Ω max.)
C: 1 - 5 mA DC (Load resistance 2200 Ω max.)
D: 0 - 20 mA DC (Load resistance 550 Ω max.)
E: 0 - 16 mA DC (Load resistance 680 Ω max.)
F: 0 - 10 mA DC (Load resistance 1100 Ω max.)
G: 0 - 1 mA DC (Load resistance 11 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.)
4W: -10 - +10 V DC (Load resistance 10 kΩ min.)
5W: -5 - +5 V DC (Load resistance 5000 Ω min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)

[3] POWER INPUT

AC Power

M2: 100 - 240 V AC (Operational voltage range 90 - 264 V, 47 - 66 Hz)

DC Power

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

Universal

AD: 100 - 240 V AC / 24 - 240 V DC (universal)
(Operational voltage range 90 - 264 V AC, 47 - 66 Hz / 21.6 - 264 V DC, ripple 10 %p-p max.)

[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

Other Options

blank: none

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

SPECIFICATIONS OF OPTION: Q

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

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

GENERAL SPECIFICATIONS

Construction: Small-sized front terminal structure

Connection: Euro type connector terminal

Applicable wire size: 0.2 to 2.5 mm², stripped length 8 mm

Housing material: Flame-resistant resin (gray)

Isolation: Input to output to power

Overrange output: Approx. -10 to +120 % at 1 - 5 V

Zero adjustment: -2 to +2 % (front)

Span adjustment: 98 to 102 % (front)

Burnout: Upscale standard;downscale optional

Linearization: Standard

Power LED: Green light turns on when the power is supplied.

INPUT SPECIFICATIONS

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

Sensing current: 1.3 mA (Pt); 0.7 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 11 V max.

■ **DC Voltage:** -10 - +11 V DC

Minimum span: 5 mV

Offset: Max. 1.5 times span

Load resistance: Output drive 1 mA maximum; at ≥ 0.5 V

INSTALLATION

Power consumption

•AC:

Approx. 2 VA at 100 V

Approx. 3 VA at 200 V

Approx. 4 VA at 264 V

•DC: Approx. 1 W

Operating temperature: -10 to +55°C (14 to 131°F)

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

Mounting: DIN rail

Weight: 100 g (3.53 oz)

PERFORMANCE in percentage of span

Accuracy: ± 0.2 %

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

Burnout response: ≤ 10 sec.

Line voltage effect: ± 0.1 % over voltage range

Insulation resistance: ≥ 100 M Ω with 500 V DC

Dielectric strength: 2000 V AC @1 minute (input to 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

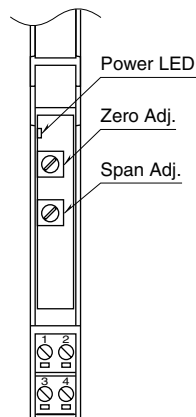
Input or output to power: Reinforced insulation (300 V)

Input to output: Basic insulation (300 V)

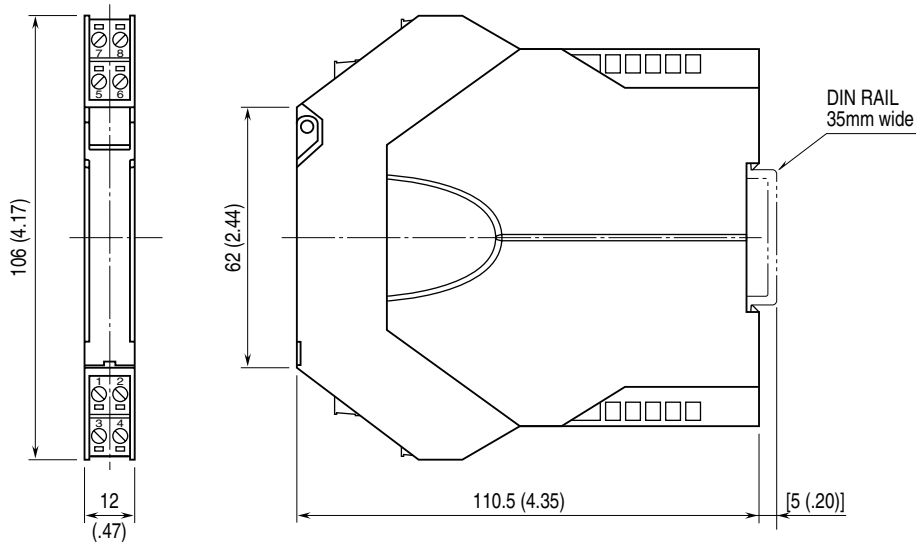
RoHS Directive

EN 50581

EXTERNAL VIEW

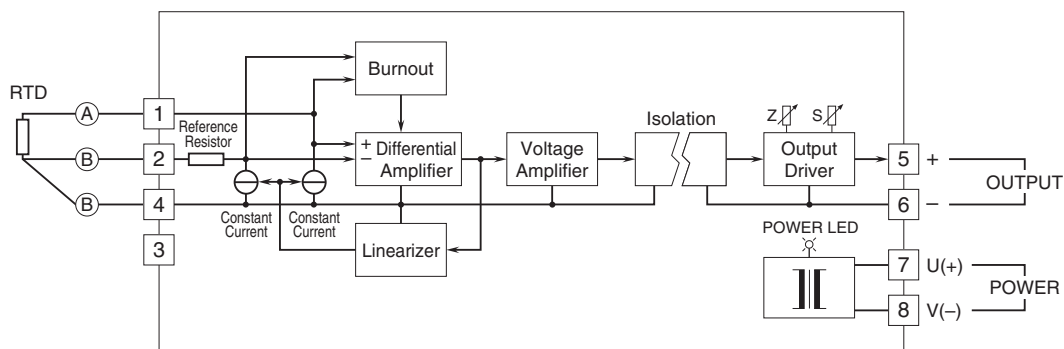


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.