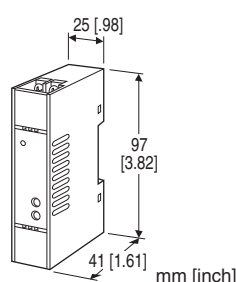


Super-mini Terminal Block Signal Conditioners M5-UNIT

RTD TRANSMITTER

Functions & Features

- Accepts direct input from an RTD and provides a standard process signal
- Linearization and burnout
- High-density mounting
- Power LED



MODEL: M5RS-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: M5RS-[1][2]-[3][4]
Specify a code from below for each of [1] through [4].
(e.g. M5RS-4A-R/K/BL/Q)
- Temperature range (e.g. 0 – 500°C)
- Special output range (For codes Z, 0 & 01)
- Specify the specification for option code /Q
(e.g. /C01/V01/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 +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 us for 2-wire RTD

[2] OUTPUT

Current

A: 4 – 20 mA DC (Load resistance 550 Ω max.)

D: 0 – 20 mA DC (Load resistance 550 Ω max.)

Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

1: 0 – 10 mV DC (Load resistance 100 kΩ min.)
(CE not available)

2: 0 – 100 mV DC (Load resistance 100 kΩ min.)
(CE not available)

3: 0 – 1 V DC (Load resistance 100 Ω min.)

4: 0 – 10 V DC (Load resistance 1000 Ω min.)

5: 0 – 5 V DC (Load resistance 500 Ω min.)

6: 1 – 5 V DC (Load resistance 500 Ω min.)

1W: -10 – +10 mV DC (Load resistance 100 kΩ min.)
(CE not available)

2W: -100 – +100 mV DC (Load resistance 100 kΩ min.)
(CE not available)

3W: -1 – +1 V DC (Load resistance 800 Ω min.)

4W: -10 – +10 V DC (Load resistance 8000 Ω min.)

5W: -5 – +5 V DC (Load resistance 4000 Ω min.)

0: Specify voltage (See OUTPUT SPECIFICATIONS)

01: Specify voltage (See OUTPUT SPECIFICATIONS)
(CE not available)

[3] POWER INPUT

AC Power

M: 85 – 264 V AC (Operational voltage range 85 – 264 V,
47 – 66 Hz)

(CE not available)

DC Power

R: 24 V DC

(Operational voltage range 24 V ±10 %, 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 (multiple selections)

COATING (For the detail, refer to our web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

ADJUSTMENT

/V01: Multi-turn fine adjustment

/VN: Sealed adjustment holes

TERMINAL SCREW MATERIAL

/S01: Stainless steel

GENERAL SPECIFICATIONS

Construction: Terminal block
Connection: M3.5 screw terminals (torque 0.8 N·m)
Screw terminal: Nickel-plated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Overrange output: Approx. -10 to +110 % at 1 - 5 V
Zero adjustment: -2 to +2 % (front)
Span adjustment: 98 to 102 % (front)
At burnout: Downscale $\leq$ -10 %, Upscale $\geq$ 110 %,
 For output code 4W, Downscale $\leq$ -3%, Upscale $\geq$ 103%
Linearization: Standard
Power indicator LED: Green LED turns on when the power is supplied.

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 11 V max.
 ■ **DC Voltage**
 • **Output code 0 (CE)**
Voltage range: -10 - +10 V DC
Minimum span: 1 V
Offset: Max. 1.5 times span
Load resistance: Output drive 10 mA max.; at $\geq$ 1 V
 Max. 1.25 mA output drive for negative voltage
 • **Output code 01 (Not CE)**
Voltage range: -1 - +1 V DC
Minimum span: 10 mV
Offset: Max. 1.5 times span
Load resistance: Min. 100 k Ω
 Min. 1 M Ω for negative voltage

INSTALLATION

Power Consumption
 • **AC:**
 Approx. 2 VA at 100 V
 Approx. 3 VA at 200 V
 Approx. 3 VA at 264 V
 • **DC:** Approx. 2 W
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 0 to 90 %RH (non-condensing)
Mounting: DIN rail
Weight: 80 g (2.8 oz)

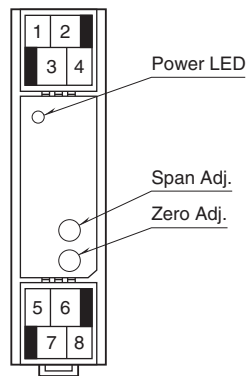
PERFORMANCE in percentage of span

Accuracy: ± 0.2 %
Temp. coefficient:
 ± 0.015 %/°C or ± 0.008 %/°F
 (at 200°C or 360°F or greater spans)
 ± 0.02 %/°C or ± 0.01 %/°F
 (at narrower than 200°C or 360°F spans)
Burnout response: $\leq$ 10 sec.
Line voltage effect: ± 0.1 % over voltage range
Insulation resistance: $\geq$ 100 M Ω with 500 V DC
Dielectric strength (input to output to power to ground)
DC powered: 2000 V AC @1 minute
AC powered: 1500 V AC @1 minute

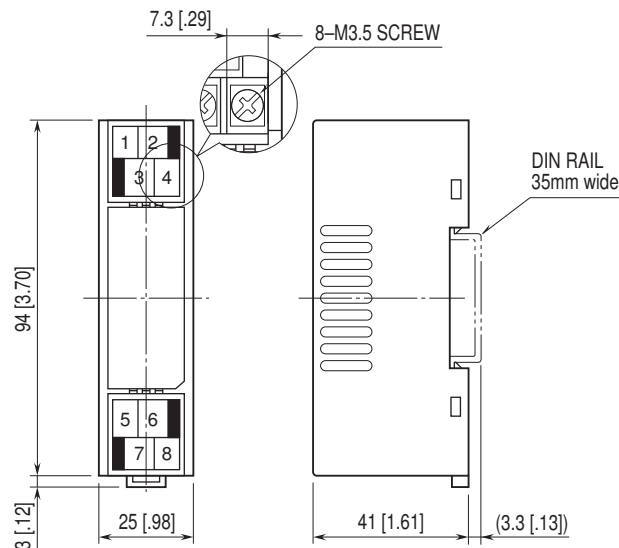
STANDARDS & APPROVALS

EU conformity:
 EMC Directive
 EMI EN 61000-6-4
 EMS EN 61000-6-2
 RoHS Directive

FRONT VIEW

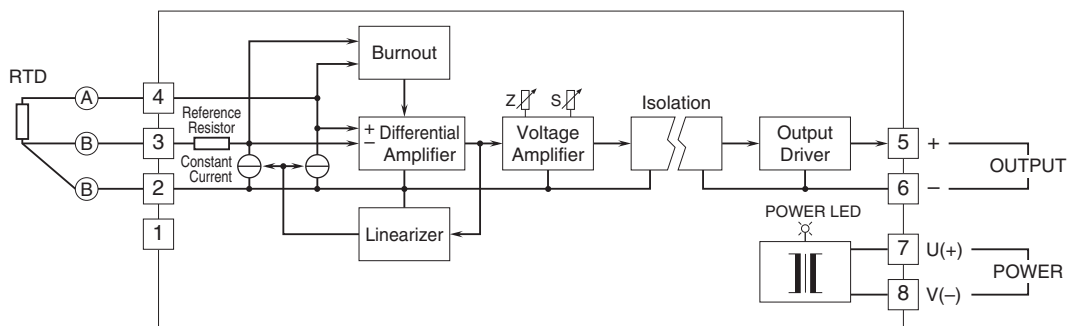


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.