

Super-mini Signal Conditioners Mini-M Series

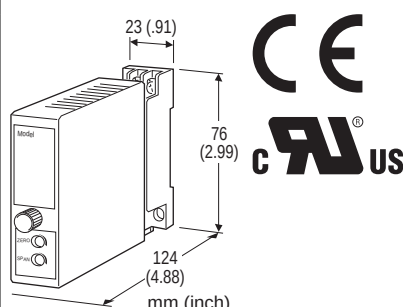
SIGNAL TRANSMITTER

Functions & Features

- Converts DC input from a sensor into a standard process signal
- Fast response type available
- CE marking
- UL approval

Typical Applications

- Isolation between control room and field instrumentation



MODEL: M2VS-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: M2VS-[1][2]-[3][4]
Specify a code from below for each [1] through [4].
(e.g. M2VS-6A-M2/K/CE/Q)
- Special input and output ranges (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/V01)

[1] INPUT

Current

- A: 4 – 20 mA DC (Input resistance 250 Ω)
 A1: 4 – 20 mA DC (Input resistance 50 Ω)
 B: 2 – 10 mA DC (Input resistance 500 Ω)
 C: 1 – 5 mA DC (Input resistance 1000 Ω)
 D: 0 – 20 mA DC (Input resistance 50 Ω)
 E: 0 – 16 mA DC (Input resistance 62.5 Ω)
 F: 0 – 10 mA DC (Input resistance 100 Ω)
 G: 0 – 1 mA DC (Input resistance 1000 Ω)
 H: 10 – 50 mA DC (Input resistance 100 Ω)
 J: 0 – 10 μ A DC (Input resistance 1000 Ω)
 K: 0 – 100 μ A DC (Input resistance 1000 Ω)
 GW: -1 – +1 mA DC (Input resistance 1000 Ω)
 FW: -10 – +10 mA DC (Input resistance 100 Ω)
 Z: Specify current (See INPUT SPECIFICATIONS)

Voltage

- 1: 0 – 10 mV DC (Input resistance 10 k Ω min.)
 15: 0 – 50 mV DC (Input resistance 10 k Ω min.)
 16: 0 – 60 mV DC (Input resistance 10 k Ω min.)
 2: 0 – 100 mV DC (Input resistance 100 k Ω min.)
 3: 0 – 1 V DC (Input resistance 1 M Ω min.)
 4: 0 – 10 V DC (Input resistance 1 M Ω min.)
 5: 0 – 5 V DC (Input resistance 1 M Ω min.)
 6: 1 – 5 V DC (Input resistance 1 M Ω min.)
 4W: -10 – +10 V DC (Input resistance 1 M Ω min.)
 5W: -5 – +5 V DC (Input resistance 1 M Ω min.)
 0: Specify voltage (See INPUT SPECIFICATIONS)

[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 k Ω max.)
 Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 – 10 mV DC (Load resistance 10 k Ω min.)
 2: 0 – 100 mV DC (Load resistance 100 k Ω min.)
 3: 0 – 1 V DC (Load resistance 1000 Ω min.)
 4: 0 – 10 V DC (Load resistance 10 k Ω 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 k Ω min.)
 5W: -5 – +5 V DC (Load resistance 5000 Ω min.)
 0: Specify voltage (See OUTPUT SPECIFICATIONS)

[3] POWER INPUT

AC Power

- M: 85 – 264 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
 (Select 'N' for 'Standards & Approvals' code.)
 M2: 100 – 240 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
 (90 – 264 V for UL)

DC Power

- R: 24 V DC
 (Operational voltage range 24 V $\pm$ 10 %, ripple 10 %p-p max.)
 R2: 11 – 27 V DC
 (Operational voltage range 11 – 27 V, ripple 10 %p-p max.)
 (Select 'N' for 'Standards & Approvals' code.)
 P: 110 V DC
 (Operational voltage range 85 – 150 V, ripple 10 %p-p max.)
 (110 V $\pm$ 10 % for UL)

[4] OPTIONS (multiple selections)**Response Time (0 - 90 %)****blank:** Standard (≤ 0.5 sec.)**/K:** Fast Response (Approx. 25 msec.)**Standards & Approvals (must be specified)****/N:** Without CE or UL**/CE:** CE marking**/UL:** UL approval, CE marking**Other Options****blank:** none**/Q:** Option other than the above (specify the specification)
(UL not available)**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**ADJUSTMENT****/V01:** Multi-turn fine adjustment**TERMINAL SCREW MATERIAL****/S01:** Stainless steel**GENERAL SPECIFICATIONS****Construction:** Plug-in**Connection:** M3 screw terminals (torque 0.8 N·m)**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)**INPUT SPECIFICATIONS****■ DC Current:**

Shunt resistor attached to the input terminals (0.5 W)

Specify input resistance value for code Z.

■ DC Voltage: -300 - +300 V DC**Minimum span:** 3 mV**Offset:** Max. 1.5 times span**Input resistance**Span 3 - 10 mV : ≥ 10 k Ω Span 10 - 100 mV : ≥ 10 k Ω Span 0.1 - 1 V : ≥ 100 k Ω Span ≥ 1 V : ≥ 1 M 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 - +15 V DC**Minimum span:** 5 mV**Maximum span:** 22 V**Offset:** Max. 1.5 times span**Load resistance:** Output drive 1 mA max.; at ≥ 0.5 V**INSTALLATION****Power Consumption****•AC:**

Approx. 3 VA at 100 V

Approx. 4 VA at 200 V

Approx. 5 VA at 264 V

•DC: Approx. 3 W**Operating temperature:** -5 to +55°C (23 to 131°F)**Operating humidity:** 30 to 90 %RH (non-condensing)**Mounting:** Surface or DIN rail**Weight:** 150 g (0.33 lbs)**PERFORMANCE in percentage of span****Accuracy:** ± 0.1 %**Temp. coefficient:** ± 0.015 %/°C (± 0.008 %/°F)**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****CE conformity:**

EMC Directive (2004/108/EC)

EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

Low Voltage Directive (2006/95/EC)

EN 61010-1: 2001

Installation Category II

Pollution Degree 2

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

Input to output: Basic insulation (300 V)

Approval:

UL/C-UL nonincendive Class I, Division 2,

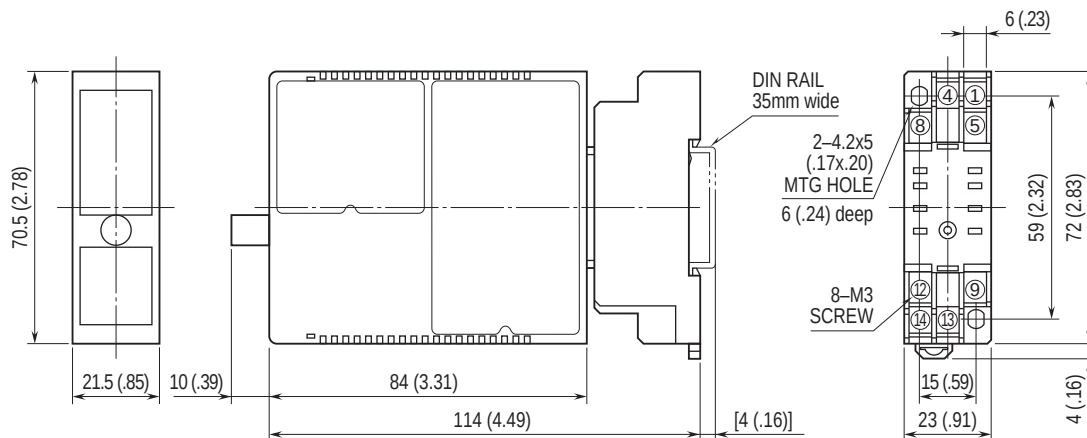
Groups A, B, C, and D hazardous locations

(ANSI/ISA-12.12.01:2007, CAN/CSA-C22.2 No.213:1987)

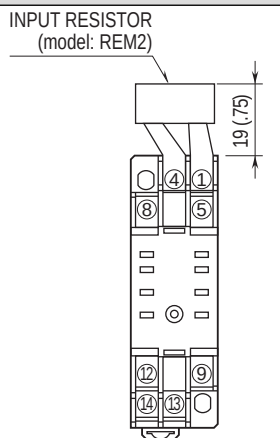
UL/C-UL general safety requirements

(UL 61010-1:2004, CAN/CSA-C22.2 No.61010-1:2004)

DIMENSIONS unit: mm (inch)

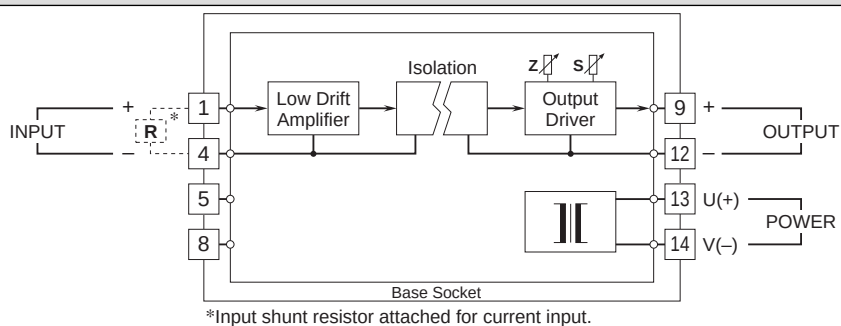


- When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm (inch)

Input shunt resistor attached for current input.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.