

Super-mini Signal Conditioners Mini-M Series

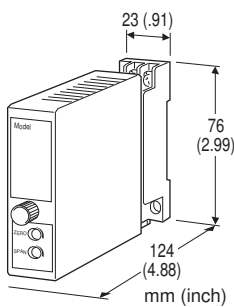
TACHOGENERATOR TRANSMITTER

Functions & Features

- Converts an AC voltage from a tachogenerator (tachometer) into a standard process signal
- Wide input range

Typical Applications

- Measuring rotating or moving speed of multispeed motors, belt conveyers, metering pumps



MODEL: M2TG-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: M2TG-[1][2]-[3][4]
Specify a code from below for each [1] through [4].
(e.g. M2TG-AA-M2/CE/Q)
- Special input and output ranges (For codes U, Z&0)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

Voltage

- 1: 0 – 35 V AC (Input resistance 100 kΩ min.)
- 2: 0 – 50 mV AC (Input resistance 100 kΩ min.)
- 3: 0 – 60 mV AC (Input resistance 100 kΩ min.)
- 4: 0 – 100 mV AC (Input resistance 100 kΩ min.)
- 5: 0 – 1 V AC (Input resistance 100 kΩ min.)
- 6: 0 – 10 V AC (Input resistance 100 kΩ min.)
- 7: 0 – 100 V AC (Input resistance 100 kΩ min.)
- 8: 0 – 110 V AC (Input resistance 100 kΩ min.)
- 9: 0 – 150 V AC (Input resistance 100 kΩ min.)
- A: 0 – 200 V AC (Input resistance 100 kΩ min.)
- B: 0 – 250 V AC (Input resistance 100 kΩ min.)
- U: Specify voltage (See INPUT SPECIFICATIONS)
(0 % input must be 0 V.)

[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.)
- 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

- 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 ±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 ±10 % for UL)

[4] OPTIONS (multiple selections)

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

TERMINAL SCREW MATERIAL

/S01: Stainless steel

GENERAL SPECIFICATIONS**Construction:** Plug-in**Connection:** M3 screw terminals (torque 0.8 N·m)**Screw terminal:** Chromated steel (standard) or stainless steel**Housing material:** Flame-resistant resin (black)**Isolation:** Input to output to power**Overrange output:** 0 to 120 % at 1 – 5 V**Zero adjustment:** -5 to +5 % (front)**Span adjustment:** 95 to 105 % (front)**INPUT SPECIFICATIONS****•AC Voltage:** 0 – 250 V AC**Minimum span:** 50 mV**Frequency:** 15 Hz min., 1 kHz max. with 100 % input**Input resistance:** $\geq 100\text{ k}\Omega$ **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 $\geq 0.5\text{ V}$ **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 lb)**PERFORMANCE in percentage of span****Accuracy:** $\pm 0.4\%$ **Temp. coefficient:** $\pm 0.05\%/^{\circ}\text{C}$ ($\pm 0.03\%/^{\circ}\text{F}$)**Response time:** $\leq 0.7\text{ sec.}$ (0 – 90 %)**Ripple:** 0.5 %p-p max. (100/120 Hz)**Line voltage effect:** $\pm 0.1\%$ over voltage range**Insulation resistance:** $\geq 100\text{ M}\Omega$ 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/A1: 2011

EMS EN 61000-6-2: 2005

Low Voltage Directive (2006/95/EC)

EN 61010-1: 2010

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,

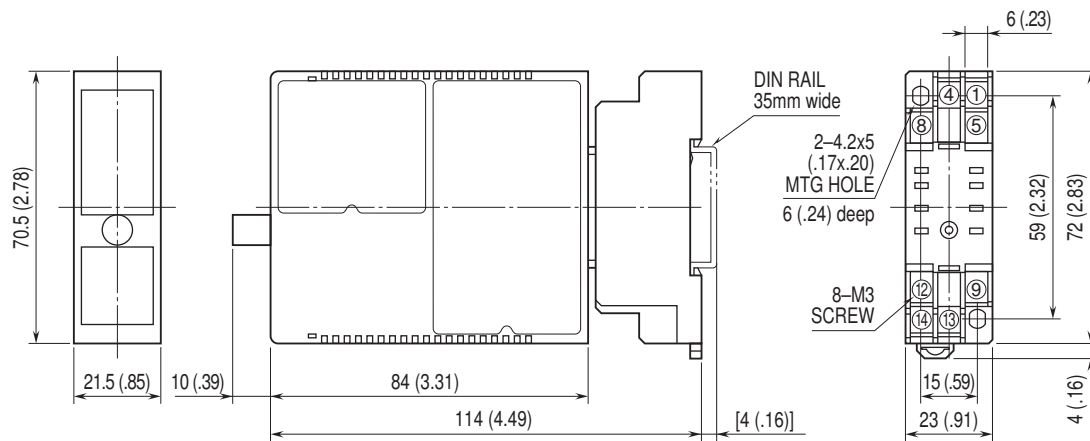
Groups A, B, C, and D

(ANSI/ISA-12.12.01:2011, CAN/CSA-C22.2 No.213:1987)

UL/C-UL general safety requirements

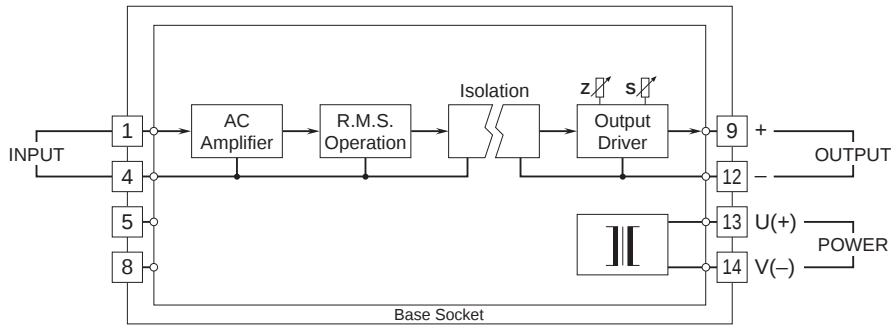
(UL 61010B-1:2003, CAN/CSA-C22.2 No.61010-1:1992)

DIMENSIONS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.