

Super-mini Signal Conditioners Mini-M Series

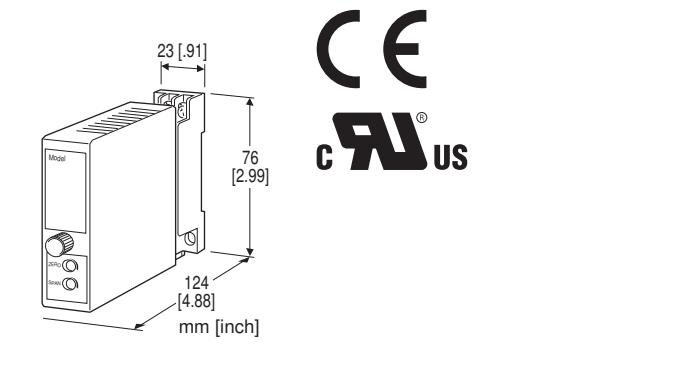
TACHOGENERATOR TRANSMITTER

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 of [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)

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 (UL not available)
- /C04: Polyolefin coating (UL not available)

TERMINAL SCREW MATERIAL

- /S01: Stainless steel (UL not available)

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)

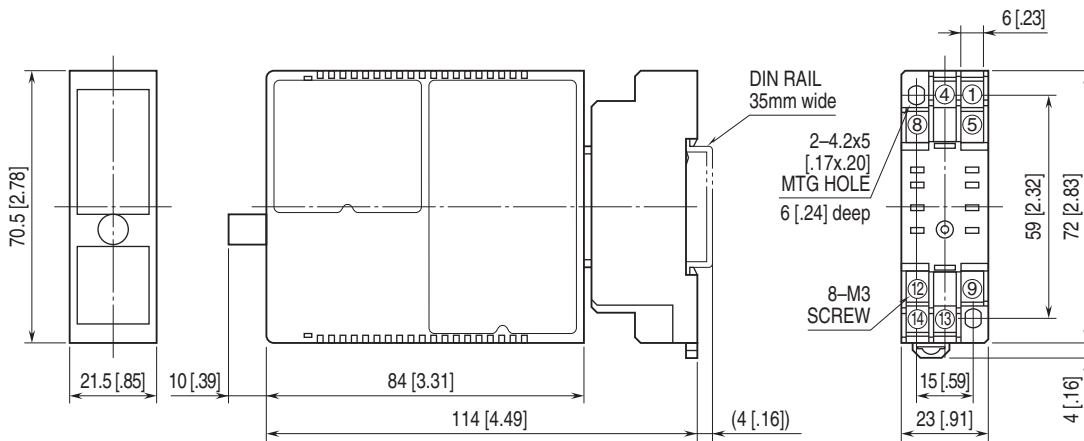
PERFORMANCE in percentage of span

- 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

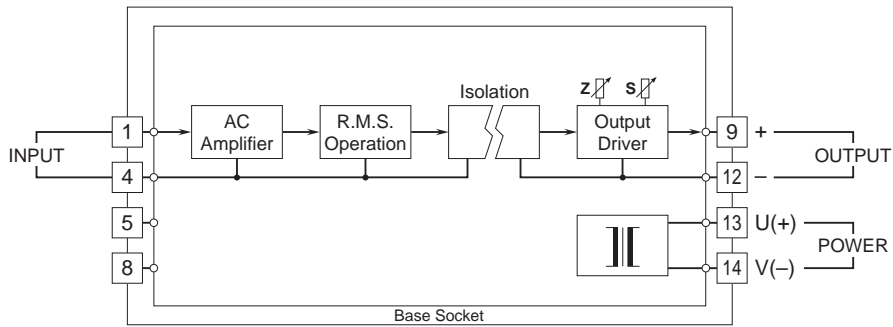
- EU conformity:
 - EMC Directive
 - EMI EN 61000-6-4
 - EMS EN 61000-6-2
 - Low Voltage Directive
 - EN 61010-1
 - Measurement Category II (input)
 - Installation Category II (power)
 - Pollution Degree 2
 - Input or output to power: Reinforced insulation (300 V)
 - Input to output: Basic insulation (300 V)
- RoHS Directive
- Approval:
 - UL/C-UL nonincendive Class I, Division 2, Groups A, B, C, and D (ANSI/ISA-12.12.01, CAN/CSA-C22.2 No.213)
 - UL/C-UL general safety requirements (UL 61010-1, CAN/CSA-C22.2 No.61010-1)

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.