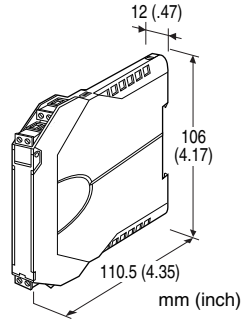
Super-space-saving Signal Conditioners
M3S-UNIT Series

POTENTIOMETER TRANSMITTER

Functions & Features
- Provides a standard DC output proportional to a potentiometer or slidewire position input
- Constant voltage excitation
- Universal AC/DC power input
- Fast response type available
- High-density mounting
- Power indicator LED

Typical Applications
- Tank levels
- Positions



CE

MODEL: M3SMS–[1]–[2][3]

ORDERING INFORMATION

- Code number: M3SMS-[1]-[2][3]

Specify a code from below for each [1] through [3].
(e.g. M3SMS-A-R/K/Q)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q (e.g. /C01)

INPUT

Total resistance 100 Ω – 10 kΩ

[1] 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)

[2] 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.)

[3] OPTIONS (multiple selections)

Response Time (0 – 90 %)

blank: Standard (≤ 0.5 sec.)
/K: Fast Response (Approx. 25 msec.)

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 mm^2, 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: 0 – 30 % of total resistance (front)
Span adjustment: 70 – 100 % of total resistance (front)
Power LED: Green light turns on when the power is supplied.

INPUT SPECIFICATIONS

Minimum span: 70 % of total resistance
Excitation: 0.5 V DC

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)

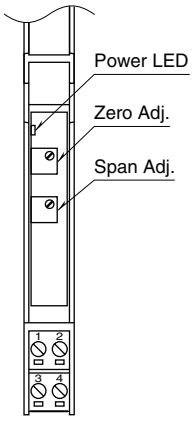
PERFORMANCE in percentage of span

Accuracy: ±0.1 %
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

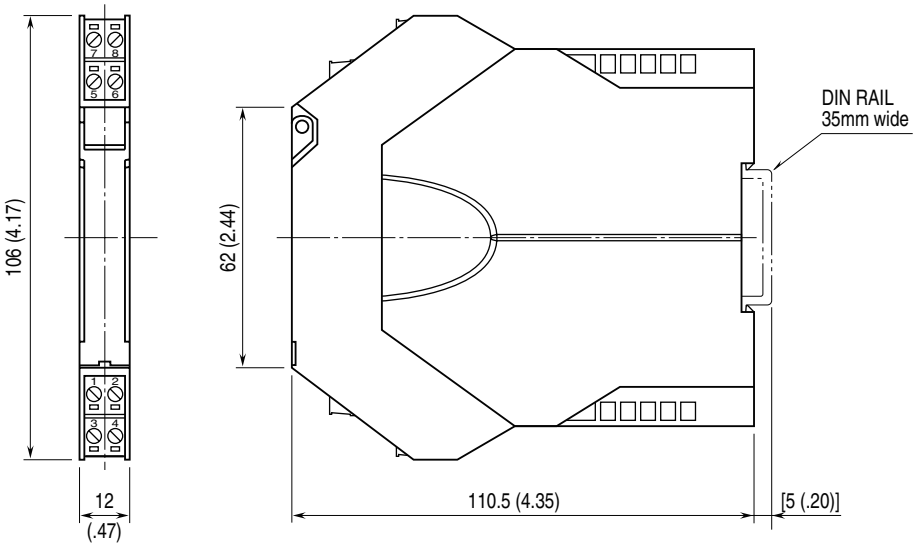
STANDARDS & APPROVALS

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

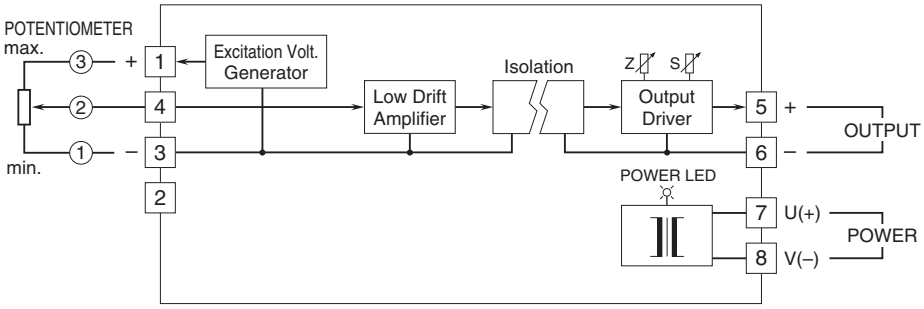


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



⚠ Specifications are subject to change without notice.