

## Super-space-saving Signal Conditioners M3S-UNIT Series

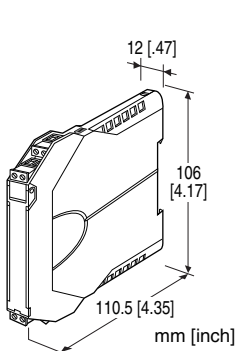
### POTENTIOMETER TRANSMITTER

#### 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



### MODEL: M3SMS-[1]-[2][3]

#### ORDERING INFORMATION

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

Specify a code from below for each of [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<sup>2</sup>, 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 indicator LED:** Green LED 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  $\geq 0.5$  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 (0.22 lb)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.1$  %

**Temp. coefficient:**  $\pm 0.015$  %/°C ( $\pm 0.008$  %/°F)

**Line voltage effect:**  $\pm 0.1$  % over voltage range

**Insulation resistance:**  $\geq 100$  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

Installation Category II

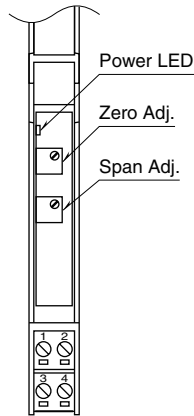
Pollution Degree 2

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

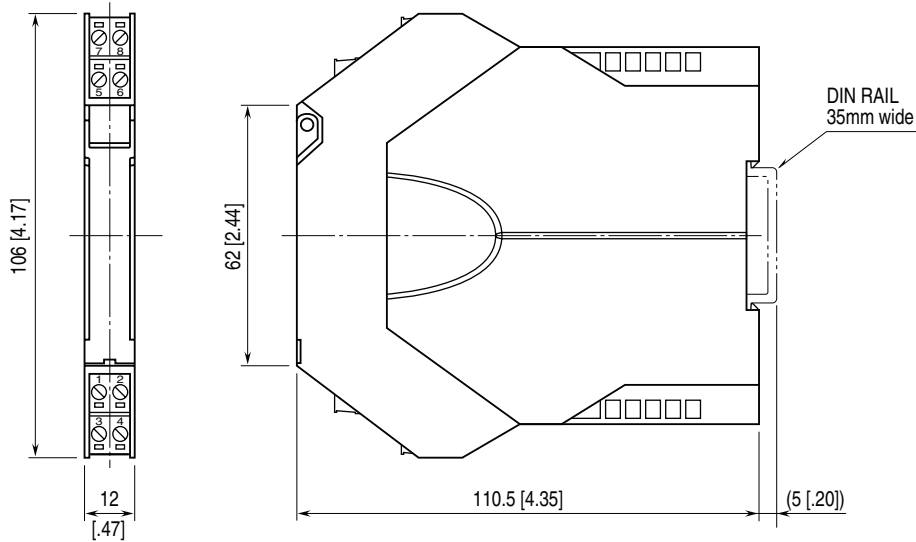
Input to output: Basic insulation (300 V)

RoHS Directive

## EXTERNAL VIEW

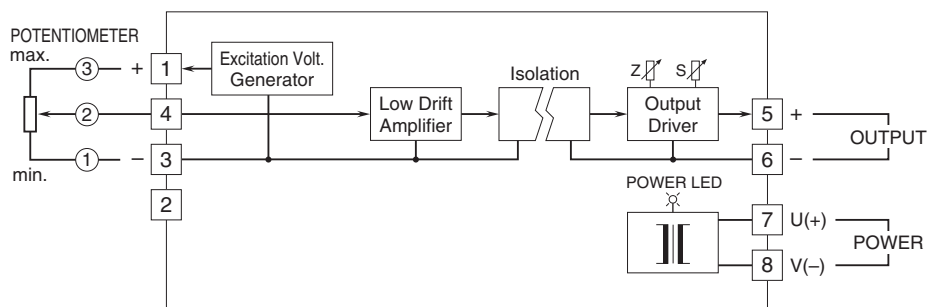


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.