

**Space-saving Dual Output Signal Conditioners
Mini-MW Series**

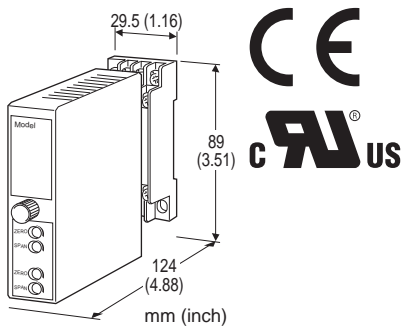
POTENTIOMETER TRANSMITTER

Functions & Features

- Provides a DC output proportional to a potentiometer or slidewire position input
- Constant voltage excitation allows use with pots with total resistances from 100 - 10 kΩ without affecting accuracy
- 50 % zero/span adjustments with minimal interaction
- Fast response type available
- CE marking
- UL approval

Typical Applications

- Tank levels
- Positions



MODEL: W2MS-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: W2MS-[1][2]-[3][4]
- Specify a code from below for each [1] through [4]. (e.g. W2MS-A6-M2/K/CE/Q)
- Special output ranges (For codes Z & 0)
- Specify the specification for option code 'Q.' (e.g. /C01)

Note: If one of the outputs should be a current range, specify it for the Output 1 to allow a greater load.

INPUT

Total resistance 100 Ω - 10 kΩ

[1] OUTPUT 1

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)

[2] OUTPUT 2

Y: None

Current

- A:** 4 - 20 mA DC (Load resistance 350 Ω max.)
- B:** 2 - 10 mA DC (Load resistance 700 Ω max.)
- C:** 1 - 5 mA DC (Load resistance 1400 Ω max.)
- D:** 0 - 20 mA DC (Load resistance 350 Ω max.)
- E:** 0 - 16 mA DC (Load resistance 430 Ω max.)
- F:** 0 - 10 mA DC (Load resistance 700 Ω max.)
- G:** 0 - 1 mA DC (Load resistance 7000 Ω max.)
- Z:** Specify current (See OUTPUT SPECIFICATIONS)

Voltage

Same range availability as Output 1

[3] POWER INPUT

AC Power

- 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)

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

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)

Housing material: Flame-resistant resin (black)

Isolation: Input to output 1 to output 2 to power

Zero adjustment: 0 - 50 % of total resistance (front)

Span adjustment: 50 - 100 % of total resistance (front)

INPUT SPECIFICATIONS

Minimum span: 50 % 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 15 V max. for Output 1;
7 V max. for Output 2

■ **DC Voltage:** -10 - +12 V DC (up to 10 V for Output 2)

Minimum span: 5 mV

Offset: Max. 1.5 times span

Load resistance: Output drive 1 mA max.; at ≥ 0.5 V

INSTALLATION

Power Consumption

•AC Power input:

Approx. 4 VA at 100 V

Approx. 5 VA at 200 V

Approx. 6 VA at 240 V

•DC power input: 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: 200 g (0.44 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 1 to output 2 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 1 or output 2 to power input:

Reinforced insulation (300 V)

Input to output 1 to output 2: Basic insulation (300 V)

Approval:

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

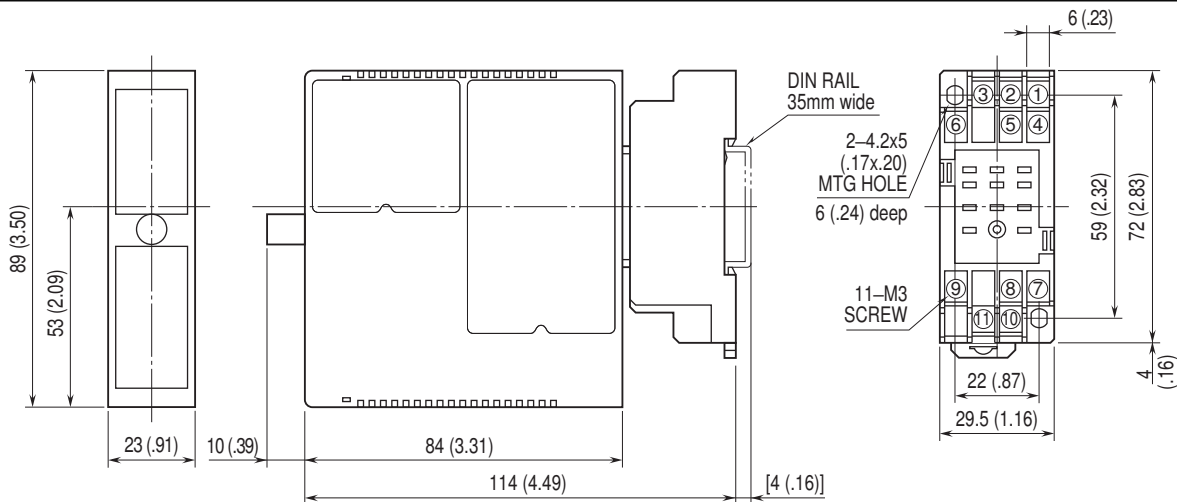
Groups A, B, C, and D hazardous locations

(UL 1604:2004, CAN/CSA-C22.2 No.213:1987)

UL/C-UL general safety requirements

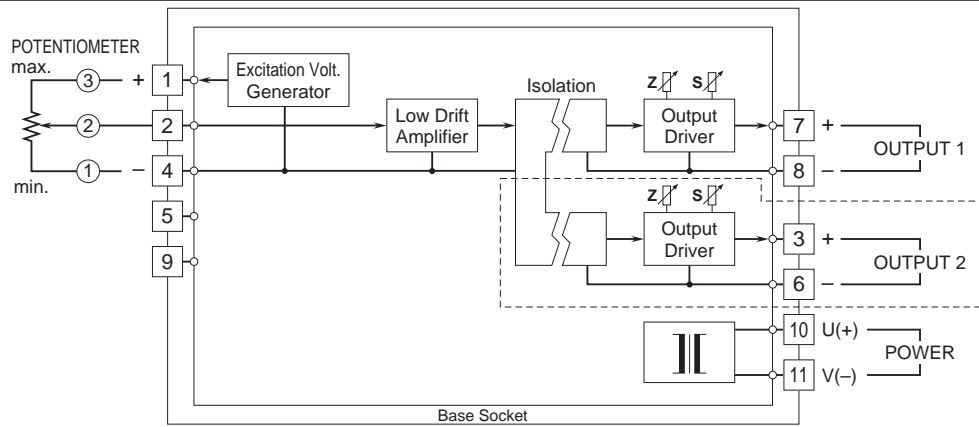
(UL 61010B-1:2003, CAN/CSA-C22.2 No.61010-1:1992)

DIMENSIONS unit: mm (inch)



When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Remark: The section enclosed by broken line is only with 2nd output option.



Specifications are subject to change without notice.