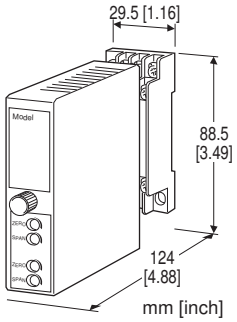
Space-saving Dual Output Signal Conditioners
Mini-MW Series

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 Ω – 10 kΩ without affecting accuracy
• 50 % zero/span adjustments with minimal interaction
• Fast response type available

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 of [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/S01)
Note: When the user requires a current and a voltage output, specify the current to be the Output 1 which allows 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)

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[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)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to our web site.)
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber 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 1 to output 2 to power
Zero adjustment: 0 – 50 % of total resistance (front)
Span adjustment: 50 – 100 % of total resistance (front)
Adjustable individually for each output 1 and output 2.

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:
Approx. 4 VA at 100 V
Approx. 5 VA at 200 V
Approx. 6 VA at 240 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: 200 g (0.44 lb)

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 1 to output 2 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 1 or output 2 to power input:
Reinforced insulation (300 V)
Input to output 1 to output 2: Basic insulation (300 V)
RoHS Directive
Approval:
UL/C-UL nonincendive Class I, Division 2,
Groups A, B, C, and D
(UL 121201, CAN/CSA-C22.2 No.213-17)
UL/C-UL general safety requirements
(UL 61010-1, CAN/CSA-C22.2 No.61010-1-12)

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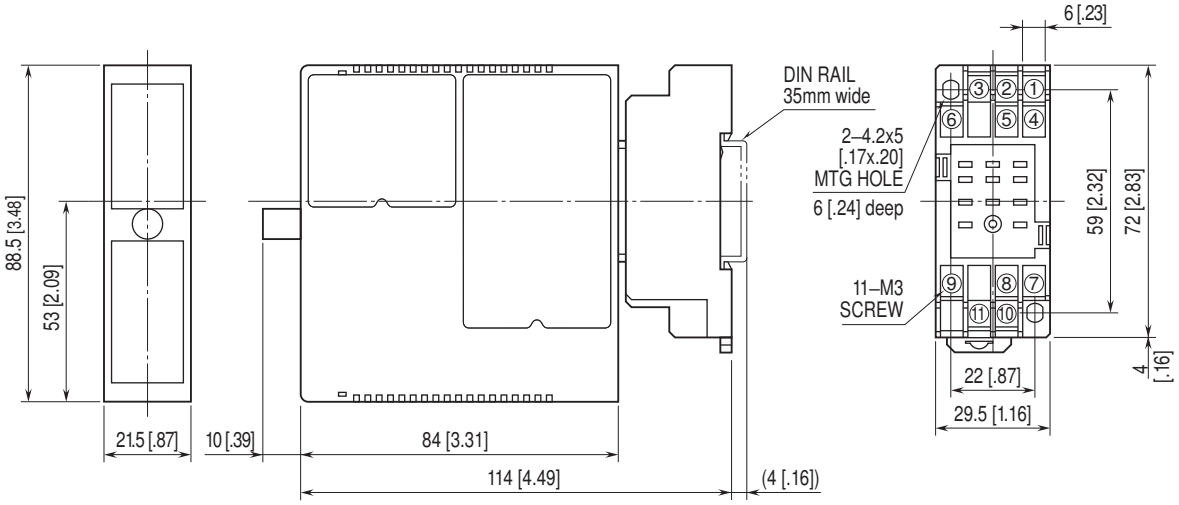
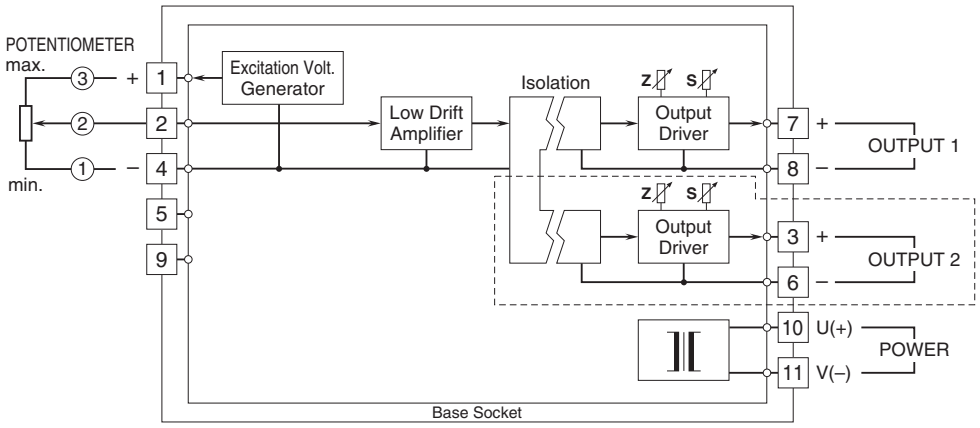
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



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

⚠ Specifications are subject to change without notice.

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