

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

POTENTIOMETER TRANSMITTER

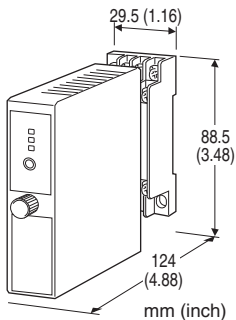
(PC programmable)

Functions & Features

- Provides two DC outputs proportional to a potentiometer or slidewire position input
- Two independent output ranges
- Burnout detection
- PC programmable
- High-density mounting

Typical Applications

- Tank levels
- Positions



MODEL: W2XM-1[1][2]-[3][4]

ORDERING INFORMATION

- Code number: W2XM-1[1][2]-[3][4]
- Specify a code from below for each of [1] through [4].
(e.g. W2XM-1Z1V3-M2/N/Q)
- Total resistance (e.g. 1 kΩ)
 - Input range (e.g. 0 - 100 %)
 - Output 1 range (e.g. 4 - 20 mA DC)
 - Output 2 range (e.g. 1 - 5 V DC)
 - 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

1: Total resistance 75 Ω - 10 kΩ
(Configurator software is used to change the input range.)

[1] OUTPUT 1

Current

Z1: Range 0 - 20 mA DC

Voltage

V2: Range -10 - +10 V DC

V3: Range -5 - +5 V DC

(Configurator software is used to change output over the described range of the selected suffix code.

For changing between suffix codes, set the Output Range Selector on the side of unit before software adjustment.)

[2] OUTPUT 2

Same range availability as Output 1

Y: None

(Configurator software is used to change output over the described range of the selected suffix code.

For changing between suffix codes, set the Output Range Selector on the side of unit before software adjustment.)

[3] POWER INPUT

AC Power

M2: 100 - 240 V AC (Operational voltage range 85 - 264 V, 47 - 66 Hz)

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.)

P: 110 V DC

(Operational voltage range 85 - 150 V, ripple 10 %p-p max.)

[4] OPTIONS (multiple selections)

Standards & Approvals (must be specified)

/N: Without CE

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

TERMINAL SCREW MATERIAL

/S01: Stainless steel

RELATED PRODUCTS

• PC configurator software (model: W2CFG)

Downloadable at M-System's web site.

A dedicated cable is required to connect the module to the

PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

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
Overrange output: -15 to +115 %
 (Negative current output is not available.)
Zero adjustment: -5 to +5 % (PC programming)
Span adjustment: 95 to 105 % (PC programming)
Burnout: Upscale standard; downscale, specific value output or no burnout optional by programming
Status indicator LED: Tri-color (green/amber/red) LED; Blinking patterns indicate operation status of the transmitter.
Programming: Downloaded from PC; input range, output type and range, zero and span, burnout type, user's linearization table, etc.
Configurator connection: 2.5 dia. miniature jack; RS-232-C level

INPUT SPECIFICATIONS

■ **Potentiometer:** Total resistance 75 Ω - 10 kΩ
Sensing current: ≤ 0.2 mA
Minimum span
 (Range) 0 - 75 Ω : 50 Ω
 0 - 150 Ω : 50 Ω
 0 - 300 Ω : 50 Ω
 0 - 600 Ω : 50 Ω
 0 - 1.5 kΩ : 100 Ω
 0 - 3.5 kΩ : 100 Ω
 0 - 10 kΩ : 100 Ω
 If not specified, the input range is 0 - 1.5 kΩ.

OUTPUT SPECIFICATIONS

■ **DC Current**
Maximum range: 0 - 20 mA DC
Conformance range: 0 - 23 mA DC
Minimum span: 1 mA
Offset: Lower range can be any specific value within the output range provided that the minimum span is maintained.
Load resistance: Output drive 12 V max. for Output 1; 7 V max. for Output 2
 (e.g. 4 - 20 mA: 600 Ω [12 V ÷ 20 mA])
 If not specified, the output range is 4 - 20 mA DC.

■ DC Voltage

Code V2 (wide spans)
Output range: -10 - +10 V DC
Conformance range: -11.5 - +11.5 V DC
Minimum span: 1 V
Code V3 (narrow spans)
Output range: -5 - +5 V DC
Conformance range: -6 - +6 V DC
Minimum span: 0.5 V
Offset: Lower range can be any specific value within the output range provided that the minimum span is maintained.
Load resistance: Output drive 1 mA max.
 (e.g. 1 - 5 V: 5000 Ω [5 V ÷ 1 mA])
 If not specified, the output range is shown below.
 V2: 0 - 10 V DC
 V3: 1 - 5 V DC

INSTALLATION

Power Consumption

• **AC:**
 Approx. 5 VA at 100 V
 Approx. 6 VA at 200 V
 Approx. 7 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

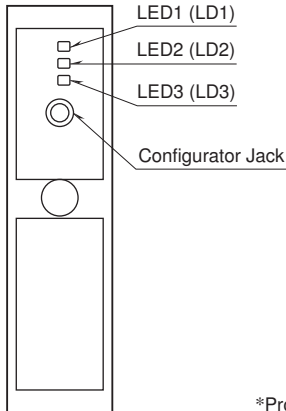
Accuracy: Input accuracy + output accuracy
Input accuracy*: (% of range)
 0 - 75 Ω : ≤ ±0.05 (%)
 0 - 150 Ω : ≤ ±0.05
 0 - 300 Ω : ≤ ±0.03
 0 - 600 Ω : ≤ ±0.03
 0 - 1.5 kΩ : ≤ ±0.01
 0 - 3.5 kΩ : ≤ ±0.01
 0 - 10 kΩ : ≤ ±0.01
Output accuracy*: ≤ ±0.04 % of max. output range
 *Inversely proportional to the span.
 See CALCULATION EXAMPLES OF OVERALL ACCURACY.
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F) of max. span
Response time: ≤ 1 sec. (0 - 90 %)
Burnout response time: ≤ 2 sec.
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)

CALCULATION EXAMPLES OF OVERALL ACCURACY

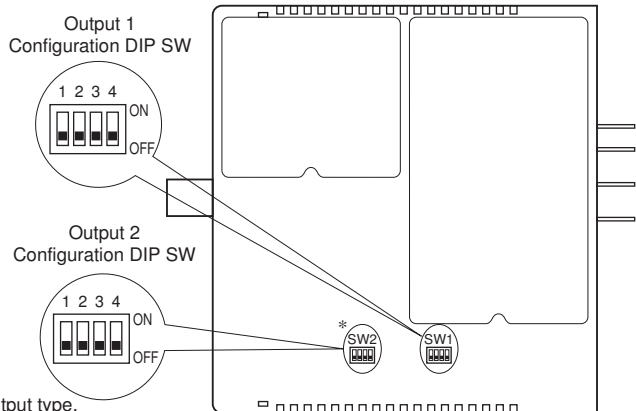
[Example] Total Resistance 0 - 1.5 kΩ, Input Range 250 - 750 Ω, Output Type -5 - +5 V, Output Range 1 - 5V
 Max. Input Range (1500 Ω) ÷ Span (500Ω) × 0.01 % + Max.
 Output Range (10 V) ÷ Span (4V) × 0.04 % = 0.13 %

EXTERNAL VIEW

FRONT VIEW



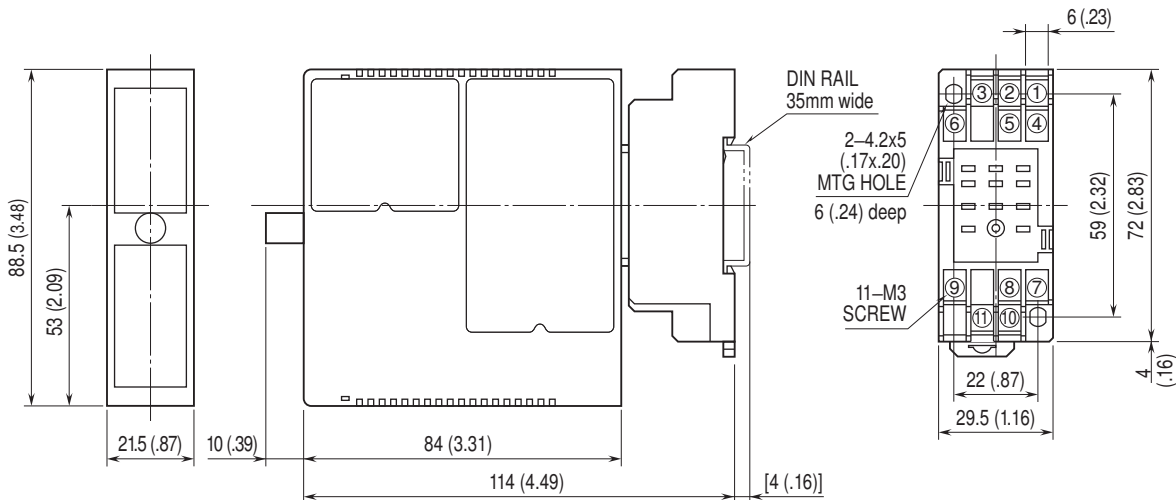
SIDE VIEW



*Provided only for two-output type.

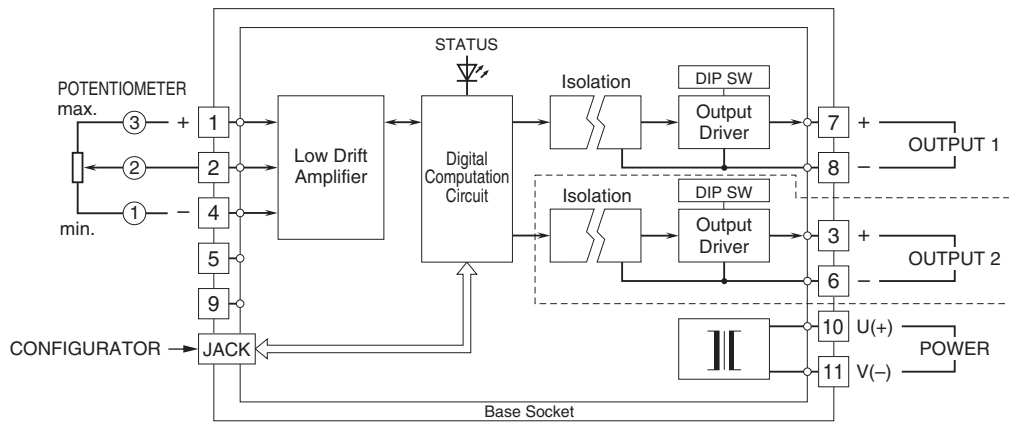
Refer to the instruction manual for detailed procedures.

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.