

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

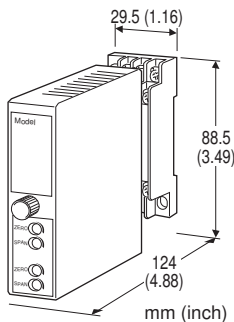
### ABSOLUTE VALUE OUTPUT TRANSMITTER

#### Functions & Features

- Converts polarized DC input into standard process signals proportional to absolute value of input.
- Two independent output ranges
- Fast response type available

#### Typical Applications

- Monitor rotation speed of a machine rotating forward and reverse
- Monitor a deviation between SV and PV



## MODEL: W2VABS-[1][2][3]-[4][5]

### ORDERING INFORMATION

- Code number: W2VABS-[1][2][3]-[4][5]  
Specify a code from below for each of [1] through [5].  
(e.g. W2VABS-2W11-M2/K/N/Q)
- Special input and 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.

### [1] INPUT

#### Current

- DW:** -20 - 0 - +20 mA DC (Input resistance 50 Ω)  
**EW:** -16 - 0 - +16 mA DC (Input resistance 62.5 Ω)  
**FW:** -10 - 0 - +10 mA DC (Input resistance 100 Ω)  
**GW:** -1 - 0 - +1 mA DC (Input resistance 1000 Ω)  
**KW:** -100 - 0 - +100 μA DC (Input resistance 1000 Ω)  
**Z:** Specify current (See INPUT SPECIFICATIONS)

#### Voltage

**15W:** -50 - 0 - +50 mV DC (Input resistance 10 kΩ min.)

- 16W:** -60 - 0 - +60 mV DC (Input resistance 10 kΩ min.)  
**2W:** -100 - 0 - +100 mV DC (Input resistance 100 kΩ min.)  
**3W:** -1 - 0 - +1 V DC (Input resistance 1 MΩ min.)  
**4W:** -10 - 0 - +10 V DC (Input resistance 1 MΩ min.)  
**5W:** -5 - 0 - +5 V DC (Input resistance 1 MΩ min.)  
**0:** Specify voltage (See INPUT SPECIFICATIONS)

### [2] 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.)  
**0:** Specify voltage (See OUTPUT SPECIFICATIONS)

### [3] 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

### [4] 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.)

## [5] OPTIONS (multiple selections)

**Response Time (0 - 90 %)**

**blank:** Standard ( $\leq 0.5$  sec.)

**/K:** Fast Response (Approx. 25 msec.)

**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

## 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)

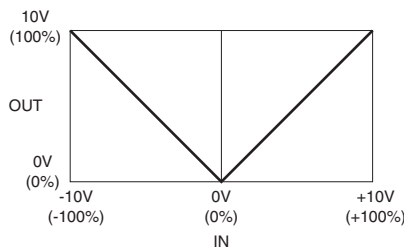
**Isolation:** Input to output 1 to output 2 to power

**Overrange output:** 0 to 120 % (approx.) at 1 - 5 V

**Zero adjustment:** -5 to +5 % (front)

**Span adjustment:** 95 to 105 % (front)

Adjustable individually for each output 1 and output 2.



## INPUT SPECIFICATIONS

■ **DC Current:**

Shunt resistor attached to the input terminals (0.5 W)

Specify input resistance value for code Z.

■ **DC Voltage:** -300 - +300 V DC

**Minimum span:** 50 mV

Input 0 % corresponds 0 mA or 0 V.

Absolute value at  $\pm 100$  % of input corresponds same value.

• **Input resistance**

Span 50 - 100 mV :  $\geq 10$  k $\Omega$

Span 0.1 - 1 V :  $\geq 100$  k $\Omega$

Span  $\geq 1$  V :  $\geq 1$  M $\Omega$

The span is the difference between 100 % and 0 % inputs.

## 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  $\geq 0.5$  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:**  $\pm 0.1$  %

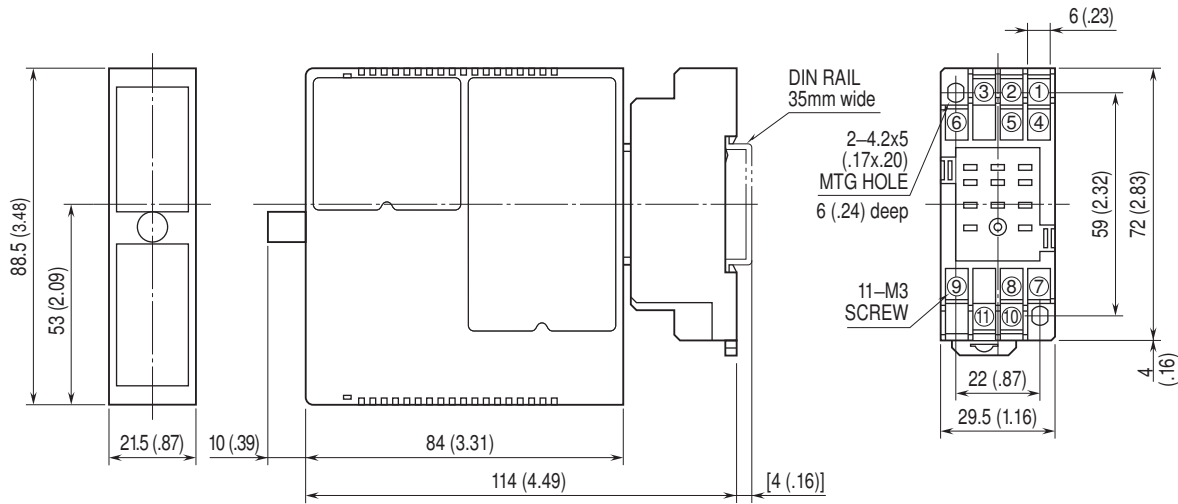
**Temp. coefficient:**  $\pm 0.015$  %/°C ( $\pm 0.008$  %/°F)

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

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC

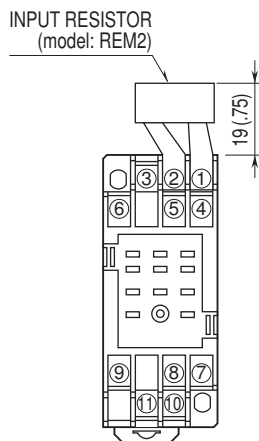
**Dielectric strength:** 2000 V AC @1 minute (input to output 1 to output 2 to power to ground)

## EXTERNAL DIMENSIONS unit: mm (inch)



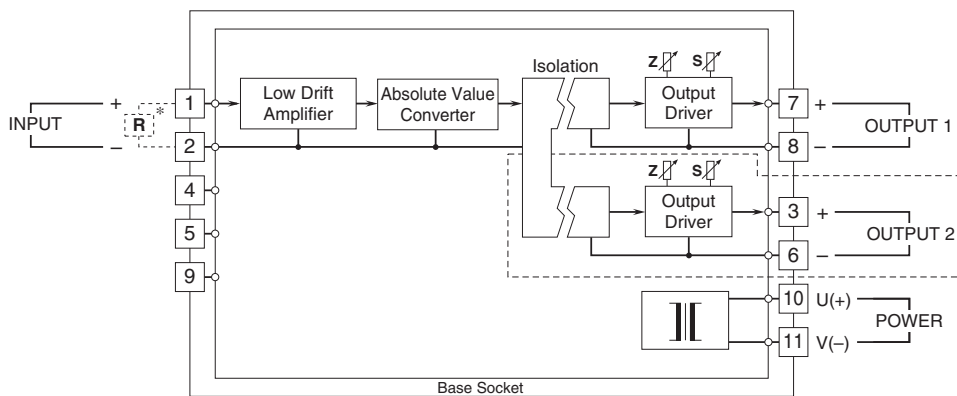
• When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached  
for current input.

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*Input shunt resistor attached for current input.

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



Specifications are subject to change without notice.