

## Super-mini Signal Conditioners Mini-M Series

### SIGNAL TRANSMITTER

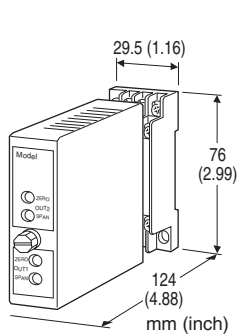
(two isolated outputs)

#### Functions & Features

- Converts DC input from a sensor into a standard process signal
- Fast response type available

#### Typical Applications

- Isolation between control room and field instrumentation



## MODEL: M2WVS-[1][2][3]-[4][5]

### ORDERING INFORMATION

- Code number: M2WVS-[1][2][3]-[4][5]
- Specify a code from below for each of [1] through [5].  
(e.g. M2WVS-6A6-M2/K/CE/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

- A: 4 - 20 mA DC (Input resistance 250  $\Omega$ )
- A1: 4 - 20 mA DC (Input resistance 50  $\Omega$ )
- B: 2 - 10 mA DC (Input resistance 500  $\Omega$ )
- C: 1 - 5 mA DC (Input resistance 1000  $\Omega$ )
- D: 0 - 20 mA DC (Input resistance 50  $\Omega$ )
- E: 0 - 16 mA DC (Input resistance 62.5  $\Omega$ )
- F: 0 - 10 mA DC (Input resistance 100  $\Omega$ )
- G: 0 - 1 mA DC (Input resistance 1000  $\Omega$ )
- H: 10 - 50 mA DC (Input resistance 100  $\Omega$ )
- J: 0 - 10  $\mu$ A DC (Input resistance 1000  $\Omega$ )
- K: 0 - 100  $\mu$ A DC (Input resistance 1000  $\Omega$ )
- GW: -1 - +1 mA DC (Input resistance 1000  $\Omega$ )

FW: -10 - +10 mA DC (Input resistance 100  $\Omega$ )

Z: Specify current (See INPUT SPECIFICATIONS)

#### Voltage

- 1: 0 - 10 mV DC (Input resistance 10 k $\Omega$  min.)  
(Select '/N' for 'Standards & Approvals' code.)
- 15: 0 - 50 mV DC (Input resistance 10 k $\Omega$  min.)
- 16: 0 - 60 mV DC (Input resistance 10 k $\Omega$  min.)
- 2: 0 - 100 mV DC (Input resistance 100 k $\Omega$  min.)
- 3: 0 - 1 V DC (Input resistance 1 M $\Omega$  min.)
- 4: 0 - 10 V DC (Input resistance 1 M $\Omega$  min.)
- 5: 0 - 5 V DC (Input resistance 1 M $\Omega$  min.)
- 6: 1 - 5 V DC (Input resistance 1 M $\Omega$  min.)
- 4W: -10 - +10 V DC (Input resistance 1 M $\Omega$  min.)
- 5W: -5 - +5 V DC (Input resistance 1 M $\Omega$  min.)
- 0: Specify voltage (See INPUT SPECIFICATIONS)

### [2] OUTPUT 1

#### Current

- A: 4 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- B: 2 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- C: 1 - 5 mA DC (Load resistance 3000  $\Omega$  max.)
- D: 0 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- E: 0 - 16 mA DC (Load resistance 900  $\Omega$  max.)
- F: 0 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- G: 0 - 1 mA DC (Load resistance 15 k $\Omega$  max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

#### Voltage

- 1: 0 - 10 mV DC (Load resistance 10 k $\Omega$  min.)
- 2: 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)
- 3: 0 - 1 V DC (Load resistance 1000  $\Omega$  min.)
- 4: 0 - 10 V DC (Load resistance 10 k $\Omega$  min.)
- 5: 0 - 5 V DC (Load resistance 5000  $\Omega$  min.)
- 6: 1 - 5 V DC (Load resistance 5000  $\Omega$  min.)
- 4W: -10 - +10 V DC (Load resistance 10 k $\Omega$  min.)
- 5W: -5 - +5 V DC (Load resistance 5000  $\Omega$  min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

### [3] OUTPUT 2

Y: None

#### Current

- A: 4 - 20 mA DC (Load resistance 350  $\Omega$  max.)
- B: 2 - 10 mA DC (Load resistance 700  $\Omega$  max.)
- C: 1 - 5 mA DC (Load resistance 1400  $\Omega$  max.)
- D: 0 - 20 mA DC (Load resistance 350  $\Omega$  max.)
- E: 0 - 16 mA DC (Load resistance 430  $\Omega$  max.)
- F: 0 - 10 mA DC (Load resistance 700  $\Omega$  max.)
- G: 0 - 1 mA DC (Load resistance 7000  $\Omega$  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  $\pm$ 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.)

**[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

**/CE:** 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 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:** Approx. -10 to +120 % at 1 – 5 V

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

(No output less than 0 mA for codes D, E, F)

**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:** 3 mV

**Offset:** Max. 1.5 times span

**Input resistance**

Span 3 – 10 mV :  $\geq$  10 k $\Omega$

Span 10 – 100 mV :  $\geq$  10 k $\Omega$

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

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

**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.;  $\geq$  0.5 V

**INSTALLATION****Power consumption****•AC:**

$\leq$  3 VA at 100 V

$\leq$  4 VA at 200 V

$\leq$  5 VA at 264 V

**•DC:**  $\leq$  3 W

**Operating temperature:** -5 to +55°C (23 to 131°F)

**Operating humidity:** 10 to 85 %RH (non-condensing)

**Mounting:** Surface or DIN rail

**Weight:** 150 g (0.33 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)

**STANDARDS & APPROVALS****EU conformity:**

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

EN 61010-1

Measurement Category II (input)

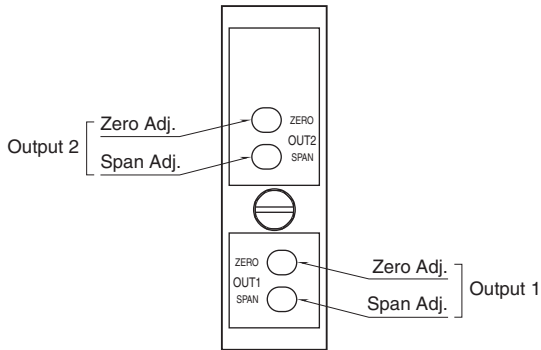
Installation Category II (power)

Pollution Degree 2

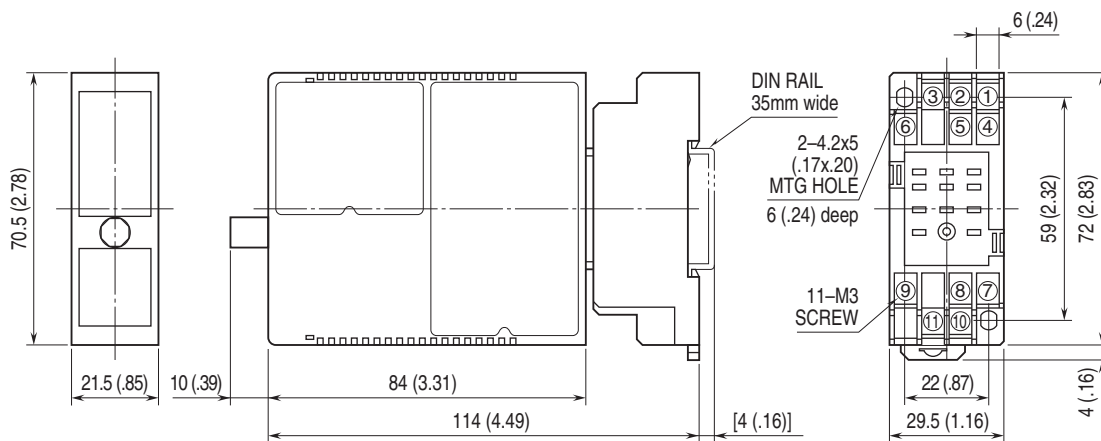
Input to power input: Reinforced insulation (300 V)

Output 1 or output 2 to power input: Basic insulation (300 V)  
 Input to output 1 to output 2: Basic insulation (300 V)  
 RoHS Directive  
 EN 50581

## EXTERNAL VIEW

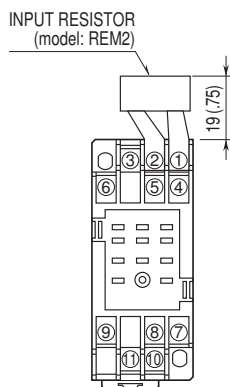


## EXTERNAL DIMENSIONS unit: mm (inch)



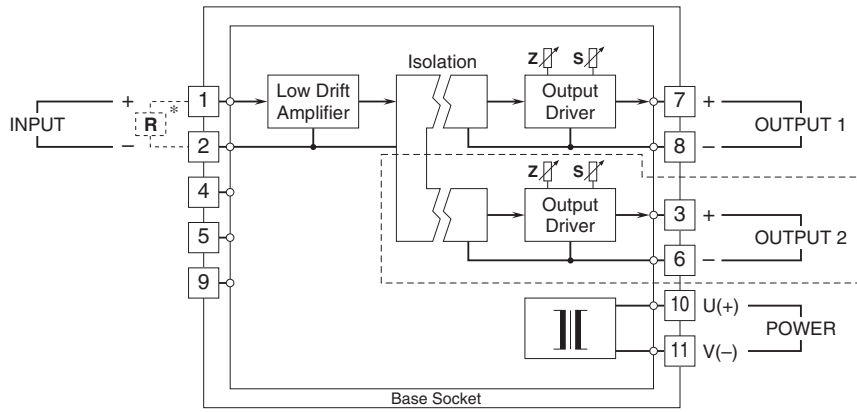
• When mounting, no extra space is needed between units.

## 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.