

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

**SIGNAL TRANSMITTER**

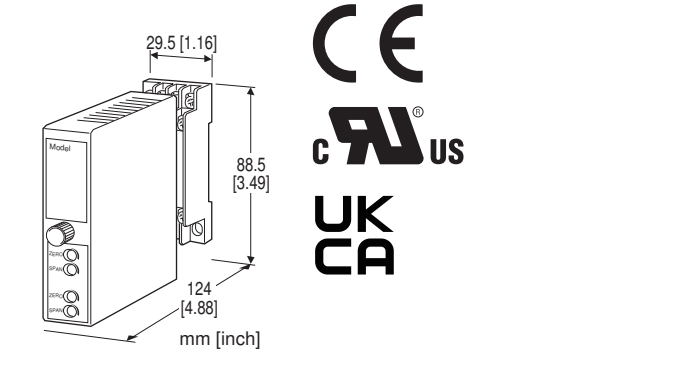
(high speed response)

**Functions & Features**

- Converts DC input from a sensor into two standard process signals
- Isolation between input and output
- Two independent output ranges
- 180-microsecond response

**Typical Applications**

- Isolation for a vibration analyzing system



**MODEL: W2VF-[1][2][3]-[4][5]**

**ORDERING INFORMATION**

- Code number: W2VF-[1][2][3]-[4][5]
- Specify a code from below for each of [1] through [5].  
(e.g. W2VF-6A6-M2/CE/Q)
- Special input and output ranges (For codes Z & 0)
- Specify the specification for option code /Q  
(e.g. /C01/V01)

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 Ω)
- B:** 2 - 10 mA DC (Input resistance 500 Ω)
- C:** 1 - 5 mA DC (Input resistance 1000 Ω)
- D:** 0 - 20 mA DC (Input resistance 50 Ω)
- E:** 0 - 16 mA DC (Input resistance 62.5 Ω)
- F:** 0 - 10 mA DC (Input resistance 100 Ω)
- G:** 0 - 1 mA DC (Input resistance 1000 Ω)
- H:** 10 - 50 mA DC (Input resistance 100 Ω)
- GW:** -1 - +1 mA DC (Input resistance 1000 Ω)

**FW:** -10 - +10 mA DC (Input resistance 100 Ω)

**Z:** Specify current (See INPUT SPECIFICATIONS)

**Voltage**

- 3:** 0 - 1 V DC (Input resistance 1 MΩ min.)
- 4:** 0 - 10 V DC (Input resistance 1 MΩ min.)
- 5:** 0 - 5 V DC (Input resistance 1 MΩ min.)
- 6:** 1 - 5 V DC (Input resistance 1 MΩ min.)
- 4W:** -10 - +10 V DC (Input resistance 1 MΩ min.)
- 5W:** -5 - +5 V DC (Input resistance 1 MΩ min.)
- 0:** Specify voltage (See INPUT SPECIFICATIONS)  
(Select '/N' for 'Standards & Approvals' code.)
- 01:** Specify voltage (See INPUT SPECIFICATIONS)  
(Select '/CE' or '/UL' for 'Standards & Approvals' code.)

**[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.)
- FW:** -10 - +10 mA DC (Load resistance 700 Ω max.)
- GW:** -1 - +1 mA DC (Load resistance 7000 Ω 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)

**[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.)
- FW:** -10 - +10 mA DC (Load resistance 700 Ω max.)
- GW:** -1 - +1 mA DC (Load resistance 7000 Ω max.)
- Z:** Specify current (See OUTPUT SPECIFICATIONS)

**Voltage**

Same range availability as Output 1

Adjustable individually for each output 1 and output 2.

## [4] POWER INPUT

### AC Power

**M:** 85 – 264 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)

(Select '/N' for 'Standards & Approvals' code.)

**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  $\pm$ 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.)

(Select '/N' for 'Standards & Approvals' code.)

## [5] OPTIONS (multiple selections)

### Standards & Approvals (must be specified)

**/N:** Without CE, UKCA or UL

**/CE:** CE marking

**/UK:** CE, UKCA 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 M-System's web site.)

**/C01:** Silicone coating

**/C02:** Polyurethane coating

**/C03:** Rubber coating (UL not available)

#### ADJUSTMENT

**/V01:** Multi-turn fine adjustment (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

**Overrange output:** Approx. -10 to +120 % at 1 – 5 V

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

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

## 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

(-30 – +30 V for the input code 01. Span 30 V max.)

**Minimum span:** 1 V

**Offset:** Max. 1.5 times span

**Input resistance:**  $\geq$  1 M $\Omega$

## OUTPUT SPECIFICATIONS

### DC Current: -10 – +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 (7 V for both outputs for bidirectional outputs)

### 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)

**Response time:**  $\leq$  180  $\mu$ sec. (0 – 90 %)

**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 or output1 or output 2 to power to ground)

1000 V AC @1 minute (input to output 1 to output 2)

**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: Functional insulation

RoHS Directive

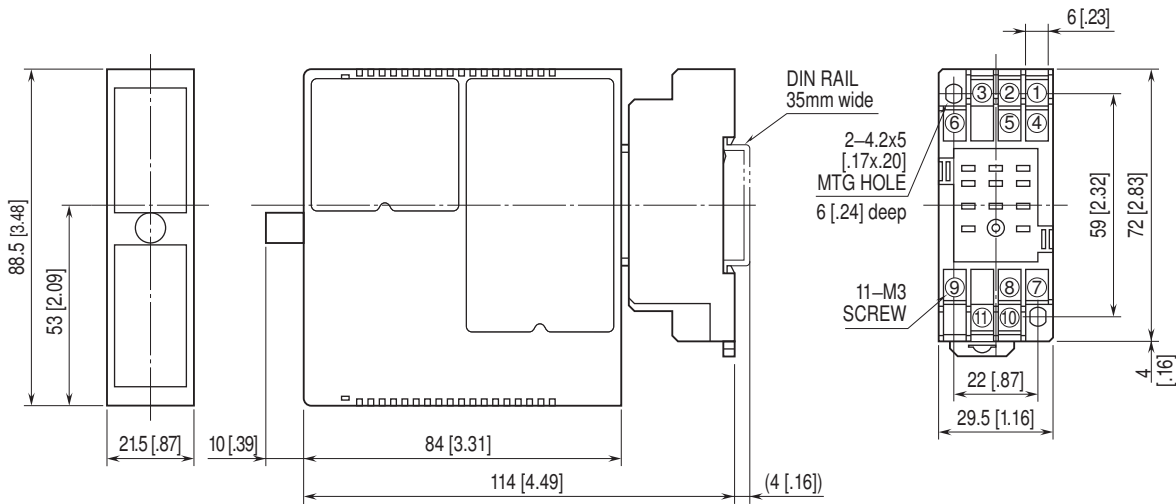
**UK conformity (UKCA):**

The UK legislations and designated standards are equivalent to the applicable EU directives.  
 (Refer to M-System’s website for more information about the legislations and designated standards.)

**Approval:**

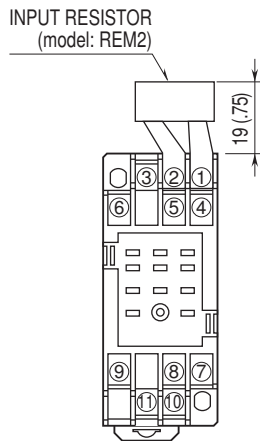
- UL/C-UL nonincendive Class I, Division 2, Groups A, B, C, and D  
 (ANSI/ISA-12.12.01, CAN/CSA-C22.2 No.213)
- UL/C-UL general safety requirements  
 (UL 61010-1, CAN/CSA-C22.2 No.61010-1)

**EXTERNAL DIMENSIONS unit: mm [inch]**



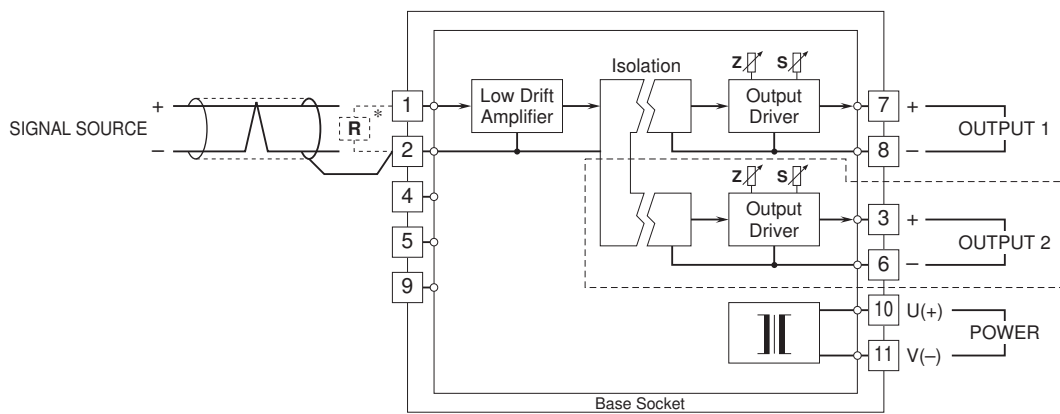
• When mounting, no extra space is needed between units.

**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.

The W2VF, by its fast-response feature, is not designed to eliminate noise present in the input signal. Use a shielded twisted-pair cable for preventing noise entering through the input wiring.



Specifications are subject to change without notice.