

**Super-mini Signal Conditioners *Mini-M Series***

**SIGNAL TRANSMITTER**  
(high speed response; isolated)

MODEL **M2VF**

**MODEL & SUFFIX CODE SELECTION**

M2VF-□□-□□

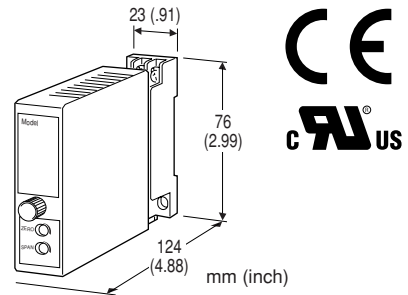
MODEL \_\_\_\_\_  
 INPUT \_\_\_\_\_  
**Current**                      **Voltage**  
**A** : 4 – 20mA DC            **3** : 0 – 1V DC  
**B** : 2 – 10mA DC            **4** : 0 – 10V DC  
**C** : 1 – 5mA DC              **5** : 0 – 5V DC  
**D** : 0 – 20mA DC            **6** : 1 – 5V DC  
**E** : 0 – 16mA DC            **4W** : -10 – +10V DC  
**F** : 0 – 10mA DC            **5W** : -5 – +5V DC  
**G** : 0 – 1mA DC              **0** : Specify voltage \*1  
**H** : 10 – 50mA DC          **01** : Specify voltage \*2  
**GW** : -1 – +1mA DC  
**FW** : -10 – +10mA DC  
**Z** : Specify current  
 \*1 : Select '/N' for 'Standards & Approvals' code.  
 \*2 : Select '/CE' or '/UL' for 'Standards & Approvals' code.

**OUTPUT** \_\_\_\_\_  
**Current**                      **Voltage**  
**A** : 4 – 20mA DC            **1** : 0 – 10mV DC  
**B** : 2 – 10mA DC            **2** : 0 – 100mV DC  
**C** : 1 – 5mA DC              **3** : 0 – 1V DC  
**D** : 0 – 20mA DC            **4** : 0 – 10V DC  
**E** : 0 – 16mA DC            **5** : 0 – 5V DC  
**F** : 0 – 10mA DC            **6** : 1 – 5V DC  
**G** : 0 – 1mA DC              **4W** : -10 – +10V DC  
**GW** : -1 – +1mA DC      **5W** : -5 – +5V DC  
**FW** : -10 – +10mA DC    **0** : Specify voltage  
**Z** : Specify current  
**POWER INPUT** \_\_\_\_\_  
**AC Power**                    **DC Power**  
**M** : 85 – 264V AC \*3      **R** : 24V DC  
**M2** : 100 – 240V AC      **R2** : 11 – 27V DC \*3  
                                  **P** : 110V DC \*3  
 \*3 : Select '/N' for 'Standards & Approvals' code.

**STANDARDS & APPROVALS** \_\_\_\_\_  
 /N : Without CE or UL  
 /CE : CE marking  
 /UL : UL approval (CE marking)

**ORDERING INFORMATION**

Specify code number and variables.  
 • **Code number** (e.g. M2VF-6A-M2/CE)  
 • **Special input and output ranges** (For codes Z & 0)



**Functions & Features**

- Converting a DC input into a standard process signal
- Isolation between input and output
- 180-microsecond response
- Universal power input
- High-density mounting
- CE marking
- UL approval

**Typical Applications**

- Isolation for a vibration analyzing system

**GENERAL SPECIFICATIONS**

**Construction:** plug-in  
**Connection:** M3 screw terminals (torque 0.8 N·m)  
**Housing material:** flame-resistant resin (black)  
**Isolation:** input to output to power  
**Overrange output:** approx. -10 – +120% at 1 – 5V  
**Front adjustments:** zero and span; ±5%

**INPUT & OUTPUT**

**INPUT**

• **DC Current:** shunt resistor attached to input terminals (0.5W)  
**Input resistance:** For resistance values other than listed below, specify when ordering.

Input	Input Resistance
4 – 20mA	: 250 (Ω)
2 – 10mA	: 500
1 – 5mA	: 1000
0 – 20mA	: 50
0 – 16mA	: 62.5
0 – 10mA	: 100
0 – 1mA	: 1000
10 – 50mA	: 100
-1 – +1mA	: 1000
-10 – +10mA	: 100

• **DC Voltage:** -300 – +300V DC\*  
 \*-30 – +30V for code 01. Span 30V max.

**Minimum span:** 1V

**Zero suppression/elevation:** max. 1.5 times span

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

#### ■ OUTPUT

• **DC Current:** -10 – +20mA DC

**Minimum span:** 1mA

**Zero suppression/elevation:** max. 1.5 times span

**Load resistance:** output drive 15V maximum; (7V for bidirectional outputs)

Output	Load Resistance
4 – 20mA	: 750 ( $\Omega$ maximum)
2 – 10mA	: 1500
1 – 5mA	: 3000
0 – 20mA	: 750
0 – 16mA	: 900
0 – 10mA	: 1500
0 – 1mA	: 15k
-1 – +1mA	: 7000
-10 – +10mA	: 700

• **DC Voltage:** -10 – +12V DC

**Minimum span:** 5mV

**Zero suppression/elevation:** max. 1.5 times span

**Load resistance:** output drive 1mA maximum at  $\geq 0.5V$

Output	Load Resistance
0 – 10mV	: 10k ( $\Omega$ minimum)
0 – 100mV	: 100k
0 – 1V	: 1000
0 – 10V	: 10k
0 – 5V	: 5000
1 – 5V	: 5000
-10 – +10V	: 10k
-5 – +5V	: 5000

## INSTALLATION

### Power input

**AC:** operational voltage range 85 – 264V  
 (90 – 264V for UL);  
 47 – 66 Hz; approx. 3VA at 100V  
 approx. 4VA at 200V  
 approx. 5VA at 264V

**DC:** operational voltage range for R: 24V  $\pm 10\%$ , R2: 11 – 27V, or P: 85 – 150V  
 ripple 10% p-p max.; approx. 3W

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

**Operating humidity:** 30 to 90% RH (non-condensing)

**Mounting:** surface or DIN rail

**Dimensions:** W23×H76×D124 mm (0.91"×2.99"×4.88")  
 See General Spec. Sheet Figure A-1.

**Weight:** 150 g (0.33 lbs)

**Terminal assignment:** See General Spec. Sheet Figure B-2.

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.1\%$

**Temp. coefficient:**  $\pm 0.015\%/^{\circ}C$  ( $\pm 0.008\%/^{\circ}F$ )

**Response time:** approx. 180 microseconds (0 – 90%)

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

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

**Dielectric strength:** 1000V AC @1 minute

(input to output)

2000V AC @1 minute

(input or output to power to ground)

## STANDARDS & APPROVALS

**CE conformity:** EMC Directive (89/336/EEC)

EMI EN61000-6-4

EMS EN61000-6-2

Low Voltage Directive (73/23/EEC)

EN61010-1

Installation category II

Pollution degree 2

Max. operating voltage 300V

Input or output to power – Reinforced insulation

Input to output – Operational insulation

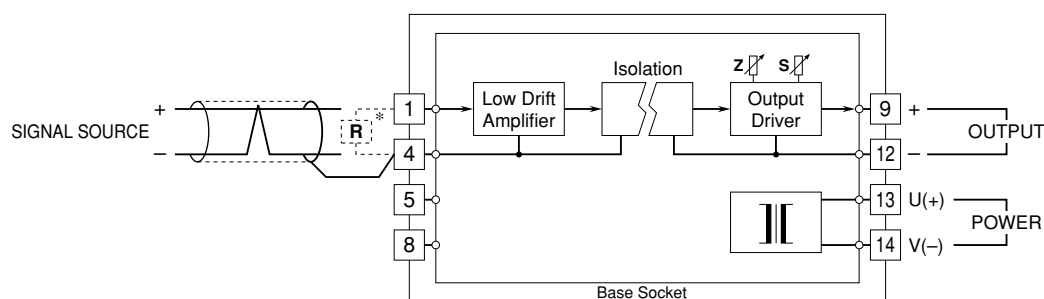
**Approval:** UL/C-UL nonincendive

Class I, Division 2, Groups A, B, C, and D  
 (UL 1604, CAN/CSA-C22.2 No.213)

UL/C-UL general safety requirements

(UL 3111-1, CAN/CSA-C22.2 No.1010-1)

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*Input shunt resistor attached for current input.

Remark: The M2VF, due to its fast-response design, does not eliminate noises included in the input signal. Use shielded twisted-pair cable for preventing them.

Specifications subject to change without notice.