

Super-mini Terminal Block Signal Conditioners *M5-UNIT*

SIGNAL TRANSMITTER
(high speed response)

MODEL **M5VF**

MODEL & SUFFIX CODE SELECTION

MODEL _____ M5VF-□□-□□

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
H : 10 – 50mA DC	
Z : Specify current	

OUTPUT _____

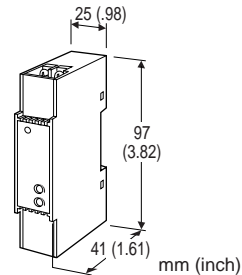
Current	Voltage
A : 4 – 20mA DC	4 : 0 – 10V DC
Z : Specify current *2	5 : 0 – 5V DC
	6 : 1 – 5V DC
	4W : -10 – +10V DC *1
	5W : -5 – +5V DC *1
	0 : Specify voltage *2

*1: For the input suffix codes 4W and 5W only.
*2: Not selectable with the power input code M.
POWER INPUT _____

M : 85 – 264V AC *3
R : 24V DC
*3: CE not available.

ORDERING INFORMATION

- Specify code number and variables.
- **Code number** (e.g. M5VF-4W4W-R)
 - **Special input and output ranges** (For codes Z & 0)



Functions & Features

- Converts a DC input into an isolated DC signal
- Ultra-high speed response 150 microsec.
- High-density mounting
- Power LED
- CE marking for 24V power

GENERAL SPECIFICATIONS

- Construction:** Terminal block
Connection: M3.5 screw terminals
 (nickel-plated steel; torque 0.8 N·m)
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Front adjustments: ±2% for zero and span;
 ±1% with the input suffix codes 4W and 5W selected.
Power LED: Green light turns on when the power is supplied.

INPUT & OUTPUT

■ **INPUT**

- **DC Current:** Input resistor incorporated
- **Input resistance:** For resistance values other than listed below, specify when ordering.

$$R \leq 0.125W \div [F.S. Current]^2$$

Input Span	Input Resistance
4 – 20mA	: 249 (Ω)
2 – 10mA	: 499
1 – 5mA	: 1000
0 – 20mA	: 49.9
0 – 16mA	: 61.9
0 – 10mA	: 100
0 – 1mA	: 1000
10 – 50mA	: 20

- **DC Voltage:** -30 – +30V DC
- Spans:** Min. 1V, max. 30V
- Zero suppression/elevation:** Max. 1.5 times span
- Input resistance:** 1MΩ minimum
 (10kΩ minimum at power loss)

OUTPUT

•DC Current: 0 – 20mA DC

Minimum span: 1mA

Zero suppression/elevation: Max. 1.5 times span

Load resistance: Output drive 11V maximum;
9V maximum for the full-scale output $\leq 3\text{mA}$

Output	Load Resistance
4 – 20mA	: 550 Ω maximum

•DC Voltage: 0 – 10V DC

Minimum span: 1V

Zero suppression/elevation: Max. 1.5 times span

Load resistance: Output drive 10mA maximum; at $\geq 1\text{V}$

Output	Load Resistance
0 – 10V	: 1000 (Ω minimum)
0 – 5V	: 500
1 – 5V	: 500
-10 – +10V	: 8000
-5 – +5V	: 4000

INSTALLATION

Power input

AC: Operational voltage range 85 – 264V;
47 – 66 Hz; approx. 2VA at 100V
approx. 2VA at 200V
approx. 3VA at 264V

DC: Operational voltage range 24V $\pm 10\%$;
ripple 10% p-p max.; approx. 2W

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

Operating humidity: 0 to 90% RH (non-condensing)

Mounting: DIN rail

Dimensions: W25×H97×D41 mm (0.98"×3.82"×1.61")
See General Spec. Sheet Figure C-1.

Weight: 80 g (2.8 oz.)

Terminal assignment: See General Spec. Sheet Figure D-1.

PERFORMANCE in percentage of span

Accuracy: $\pm 0.1\%$

Temp. coefficient: $\pm 0.015\%/^{\circ}\text{C}$ ($\pm 0.008\%/^{\circ}\text{F}$)
 $\pm 0.02\%/^{\circ}\text{C}$ ($\pm 0.01\%/^{\circ}\text{F}$) with AC power

Response time: ≤ 150 microseconds (0 – 90%)

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

Insulation resistance: $\geq 100\text{M}\Omega$ with 500V DC

Dielectric strength

DC powered: 2000V AC @1 minute
(input to output to power to ground)

AC powered: 1500V AC @1 minute
(input to output to power to ground)

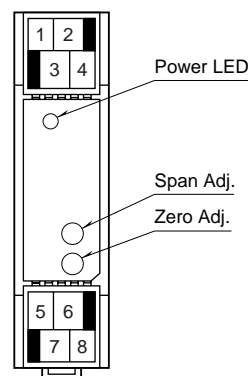
STANDARDS & APPROVALS

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

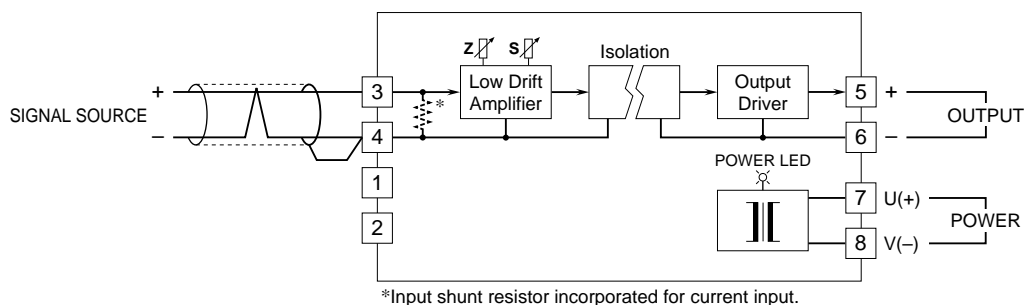
EMI EN61000-6-4

EMS EN61000-6-2

FRONT PANEL CONFIGURATION



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



The M5VF, 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.