

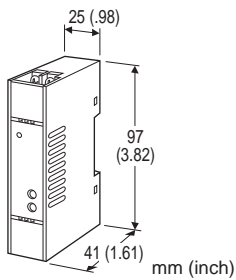
## Super-mini Terminal Block Signal Conditioners M5-UNIT

### SIGNAL TRANSMITTER

(high speed response)

#### Functions & Features

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



### MODEL: M5VF-[1][2]-[3][4]

#### ORDERING INFORMATION

Specify a code from below for each [1] through [4].

- Code number: M5VF-[1][2]-[3][4]  
(e.g. M5VF-4W4W-R/Q)

Specify variables.

- Special input and output ranges (For codes Z & O)
- Specify the specification for option code /Q  
(e.g. /C01)

#### [1] INPUT

##### Current

- A:** 4 - 20 mA DC (Input resistance 249  $\Omega$ )
- B:** 2 - 10 mA DC (Input resistance 499  $\Omega$ )
- C:** 1 - 5 mA DC (Input resistance 1000  $\Omega$ )
- D:** 0 - 20 mA DC (Input resistance 49.9  $\Omega$ )
- E:** 0 - 16 mA DC (Input resistance 61.9  $\Omega$ )
- 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 20  $\Omega$ )
- Z:** Specify current (See INPUT SPECIFICATIONS)

##### Voltage

- 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

##### Current

- A:** 4 - 20 mA DC (Load resistance 550  $\Omega$  max.)
- Z:** Specify current (See OUTPUT SPECIFICATIONS)  
(Not selectable with the power input code M)

##### Voltage

- 4:** 0 - 10 V DC (Load resistance 1000  $\Omega$  min.)
- 5:** 0 - 5 V DC (Load resistance 500  $\Omega$  min.)
- 6:** 1 - 5 V DC (Load resistance 500  $\Omega$  min.)
- 4W:** -10 - +10 V DC (Load resistance 8000  $\Omega$  min.)  
(For the input suffix codes 4W and 5W only)
- 5W:** -5 - +5 V DC (Load resistance 4000  $\Omega$  min.)  
(For the input suffix codes 4W and 5W only)
- 0:** Specify voltage (See OUTPUT SPECIFICATIONS)  
(Not selectable with the power input code M)

#### [3] POWER INPUT

##### AC Power

- M:** 85 - 264 V AC (Operational voltage range 85 - 264 V,  
47 - 66 Hz)  
(CE not available)

##### DC Power

- R:** 24 V DC  
(Operational voltage range 24 V  $\pm$ 10 %, ripple 10 %p-p max.)

#### [4] OPTIONS

- blank:** none
- /Q:** With options (specify the specification)

#### SPECIFICATIONS OF OPTION: Q

##### COATING (For the detail, refer to M-System's web site.)

- /C01:** Silicone coating
- /C02:** Polyurethane coating
- /C03:** Rubber coating

#### GENERAL SPECIFICATIONS

- Construction:** Terminal block
- Connection:** M3.5 screw terminals (torque 0.8 N·m)
- Screw terminal:** Nickel-plated steel
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input to output to power
- Zero adjustment:** -2 to +2 % (front)  
( $\pm$ 1 % with the input suffix codes 4W and 5W selected)
- Span adjustment:** 98 to 102 % (front)  
(99 to 101 % with the input suffix codes 4W and 5W selected.)
- Power LED:** Green light turns on when the power is supplied.

**INPUT SPECIFICATIONS**

■ **DC Current:** Input resistor incorporated

Specify input resistance value for code Z.

( $R \leq 0.125 \text{ W} \div [\text{F.S. Current}]^2$ )

■ **DC Voltage:** -30 - +30 V DC

**Minimum span:** 1 V

**Offset:** Max. 1.5 times span

**Input resistance:** 1 M $\Omega$  min.

(10 k $\Omega$  min. at power loss)

**OUTPUT SPECIFICATIONS**

■ **DC Current:** 0 - 20 mA DC

**Minimum span:** 1 mA

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 11 V max.; 9 V max. for the full-scale output < 3 mA

■ **DC Voltage:** 0 - 10 V DC

**Minimum span:** 1 V

**Offset:** Max. 1.5 times span

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

**INSTALLATION****Power Consumption****•AC:**

Approx. 2 VA at 100 V

Approx. 2 VA at 200 V

Approx. 3 VA at 264 V

**•DC:** Approx. 2 W

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

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

**Mounting:** DIN rail

**Weight:** 80 g (2.8 oz)

**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:**  $\leq 150 \mu\text{sec.}$  (0 - 90 %)

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

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

**Dielectric strength** (input to output to power to ground)

**DC powered:** 2000 V AC @1 minute

**AC powered:** 1500 V AC @1 minute

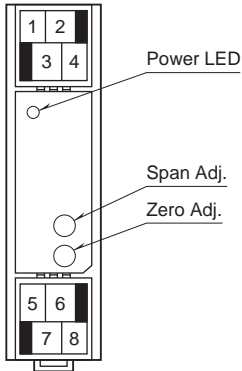
**STANDARDS & APPROVALS****CE conformity:**

EMC Directive (2004/108/EC)

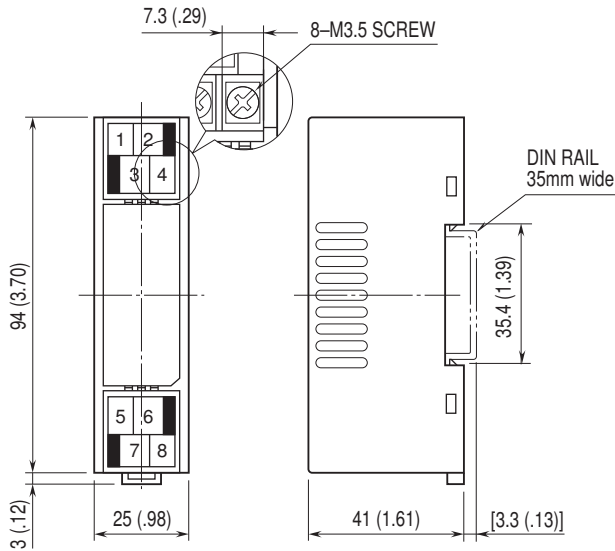
EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

**FRONT VIEW**

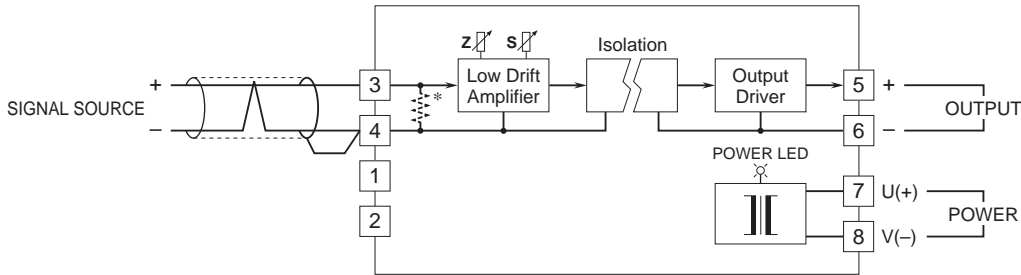


**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**



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

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\*Input shunt resistor incorporated for current input.

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.



Specifications are subject to change without notice.