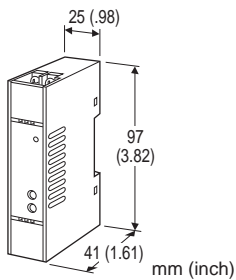


Super-mini Terminal Block Signal Conditioners M5-UNIT

SIGNAL TRANSMITTER

Functions & Features

- Converts a DC input into an isolated DC signal
- High-density mounting
- Power LED
- CE marking for 24 V power



MODEL: M5VS-[1][2]-[3][4]

ORDERING INFORMATION

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

- Code number: M5VS-[1][2]-[3][4]
(e.g. M5VS-4W4W-R/K/Q)

Specify variables.

- Special input and output ranges (For codes Z & O)
- Specify the specification for option code /Q
(e.g. /C01 /V01)

[1] INPUT

Current

- A:** 4 - 20 mA DC (Input resistance 249 Ω)
- A1:** 4 - 20 mA DC (Input resistance 49.9 Ω)
- B:** 2 - 10 mA DC (Input resistance 499 Ω)
- C:** 1 - 5 mA DC (Input resistance 1000 Ω)
- D:** 0 - 20 mA DC (Input resistance 49.9 Ω)
- E:** 0 - 16 mA DC (Input resistance 61.9 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 20 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)
(CE not available)

01: Specify voltage (See INPUT SPECIFICATIONS)
(Choose 01 for CE. Power suffix code R only.)

02: Specify voltage (See INPUT SPECIFICATIONS)
(CE not available)

[2] OUTPUT

Current

- A:** 4 - 20 mA DC (Load resistance 550 Ω max.)
- D:** 0 - 20 mA DC (Load resistance 550 Ω max.)
- Z:** Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1:** 0 - 10 mV DC (Load resistance 100 kΩ min.)
(CE not available)
- 2:** 0 - 100 mV DC (Load resistance 100 kΩ min.)
(CE not available)
- 3:** 0 - 1 V DC (Load resistance 100 Ω min.)
- 4:** 0 - 10 V DC (Load resistance 1000 Ω min.)
- 5:** 0 - 5 V DC (Load resistance 500 Ω min.)
- 6:** 1 - 5 V DC (Load resistance 500 Ω min.)
- 1W:** -10 - +10 mV DC (Load resistance 100 kΩ min.)
(CE not available)
- 2W:** -100 - +100 mV DC (Load resistance 100 kΩ min.)
(CE not available)
- 3W:** -1 - +1 V DC (Load resistance 800 Ω min.)
- 4W:** -10 - +10 V DC (Load resistance 8000 Ω min.)
- 5W:** -5 - +5 V DC (Load resistance 4000 Ω min.)
- 0:** Specify voltage (See OUTPUT SPECIFICATIONS)
- 01:** Specify voltage (See OUTPUT SPECIFICATIONS)
(CE not available)

[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 ±10 %, ripple 10 %p-p max.)

[4] OPTIONS (multiple selections)

Response Time (0 - 90 %)

- blank:** Standard (≤ 0.5 sec.)
- /K:** Fast Response (Approx. 25 msec.)
- /F:** Fast Response (≤ 1 msec.)

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

ADJUSTMENT

/V01: Multi-turn fine adjustment

/VN: Sealed adjustment holes

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)

(±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**

Input resistance: 1 MΩ min. (10 kΩ min. at power loss)

Input code 0 (Not CE)

Voltage range: -300 - +300 V DC

Minimum span: 100 mV

Offset: Max. 1.5 times span

Input code 01 (CE)

Voltage range: -70 - +70 V DC

Minimum span: 100 mV

Offset: Max. 1.5 times span

Input code 02 (Not CE)

Voltage range: 0 - 500 V DC

Minimum span: 200 V

Offset: Max. 1.5 times span

Input at 100%: min. 300 V

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.

■ **DC Voltage**

Output code 0 (CE)

Voltage range: -10 - +10 V DC

Minimum span: 1 V

Offset: Max. 1.5 times span

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

Max. 1.25 mA output drive for negative voltage

Output code 01 (Not CE)

Voltage range: -1 - +1 V DC

Minimum span: 10 mV

Offset: Max. 1.5 times span

Load resistance: Min. 100 kΩ

Min. 1 MΩ for negative voltage

INSTALLATION

Power Consumption

• **AC Power input:**

Approx. 2 VA at 100 V

Approx. 3 VA at 200 V

Approx. 3 VA at 264 V

• **DC power input:** Approx. 2 W

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

0 to 40°C (32 to 104°F) for the input code 02

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

30 to 70 %RH (non-condensing) for the input code 02

Mounting: DIN rail

Weight: 80 g (2.8 oz)

PERFORMANCE in percentage of span

Accuracy: $\pm 0.1 \%$

$\pm 0.2 \%$ for the input code 02

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

$\pm 0.02 \%/^{\circ}\text{C}$ ($\pm 0.01 \%/^{\circ}\text{F}$) at input $< 1 \text{ V}$ and output $< 5 \text{ mA}$

$\pm 0.03 \%/^{\circ}\text{C}$ ($\pm 0.017 \%/^{\circ}\text{F}$) for the input code 02

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

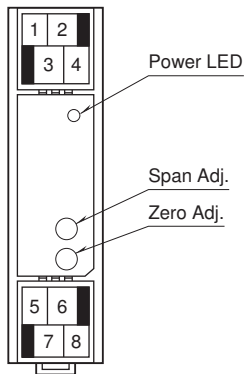
CE conformity:

EMC Directive (2004/108/EC)

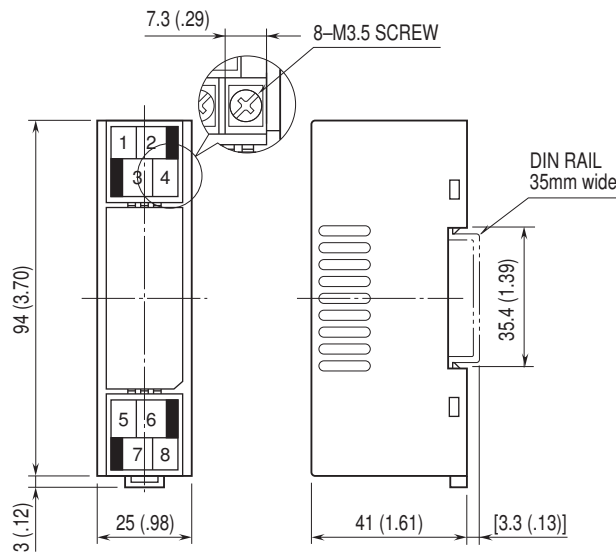
EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

FRONT VIEW

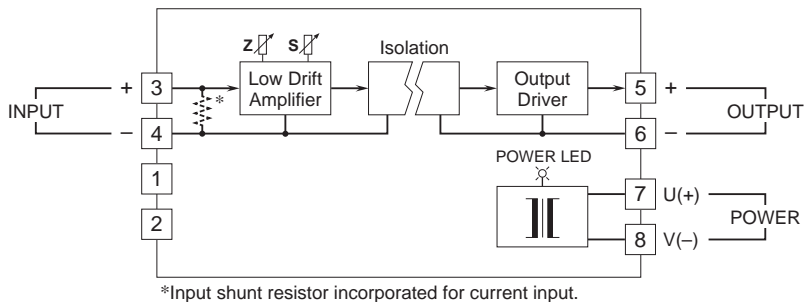


DIMENSIONS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.