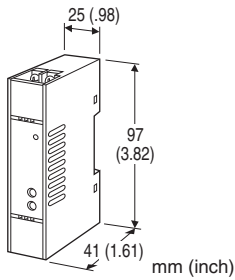


Super-mini Terminal Block Signal Conditioners M5-UNIT

SIGNAL TRANSMITTER

Functions & Features

- Converts a DC input into an isolated DC signal
- High-density mounting
- Power LED



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

ORDERING INFORMATION

- Code number: M5VS-[1][2]-[3][4]
- Specify a code from below for each of [1] through [4].
(e.g. M5VS-4W4W-R/K/Q)
- Special input and output ranges (For codes Z, 0, 01 & 02)
- Specify the specification for option code /Q
(e.g. /C01/V01/S01)

[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

TERMINAL SCREW MATERIAL

/S01: Stainless steel

GENERAL SPECIFICATIONS

Construction: Terminal block

Connection: M3.5 screw terminals (torque 0.8 N·m)

Screw terminal: Nickel-plated steel (standard) or stainless steel

Housing material: Flame-resistant resin (black)

Isolation: Input to output to power

Overrange output: Approx. -10 to +110 % at 1 - 5 V

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 indicator LED: Green LED turns on when the power is supplied.

INPUT SPECIFICATIONS

■ **DC Current:** Input resistor incorporated

Specify input resistance value among followings for code Z.

20Ω, 49.9Ω, 61.9Ω, 100Ω, 249Ω, 499Ω, 1000Ω

($0.125 \text{ W} \geq [\text{Input current}]^2 \times R$)

■ **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.

Max. 1.25 mA output drive for negative voltage.

Min. 1 MΩ when output < 1 V.

• **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:**

Approx. 2 VA at 100 V

Approx. 3 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: ±0.1 %

±0.2 % for the input code 02

Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)

±0.02 %/°C (±0.01 %/°F) at input <1 V and output <5 mA

±0.03 %/°C (±0.02 %/°F) for the input code 02

Line voltage effect: ±0.1 % over voltage range

Insulation resistance: ≥ 100 MΩ 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

EU conformity:

EMC Directive

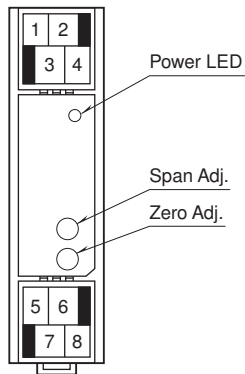
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EMS EN 61000-6-2

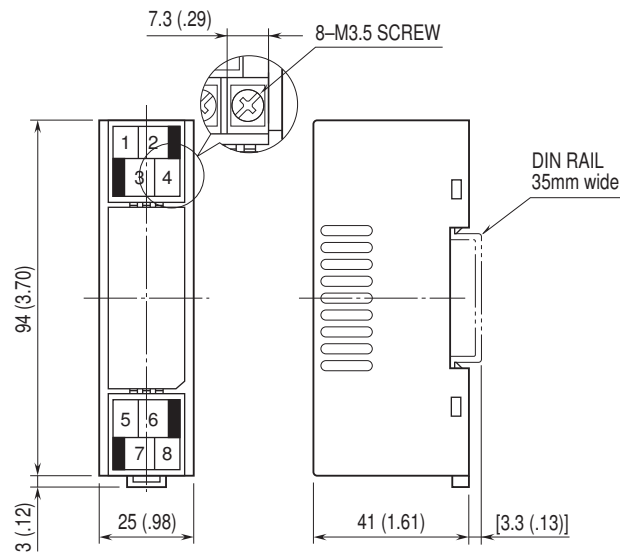
RoHS Directive

EN 50581

FRONT VIEW

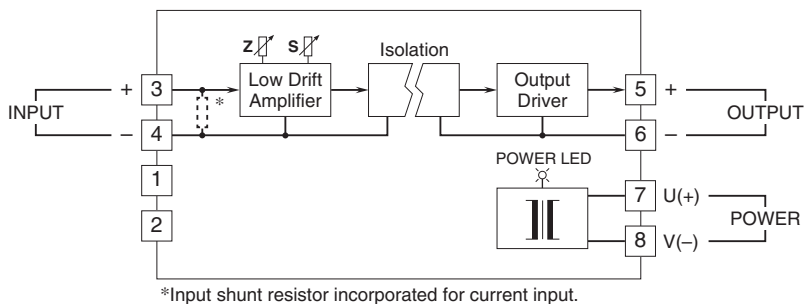


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.