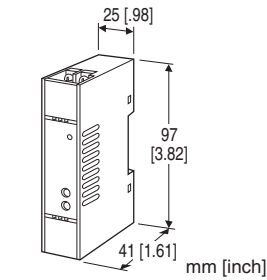


## Super-mini Terminal Block Signal Conditioners M5-UNIT

### 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 our 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.

10Ω, 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:**

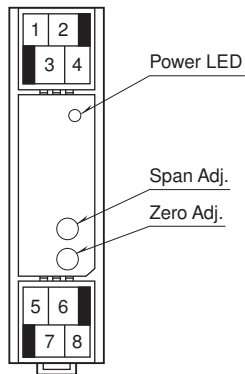
EMC Directive

EMI EN 61000-6-4

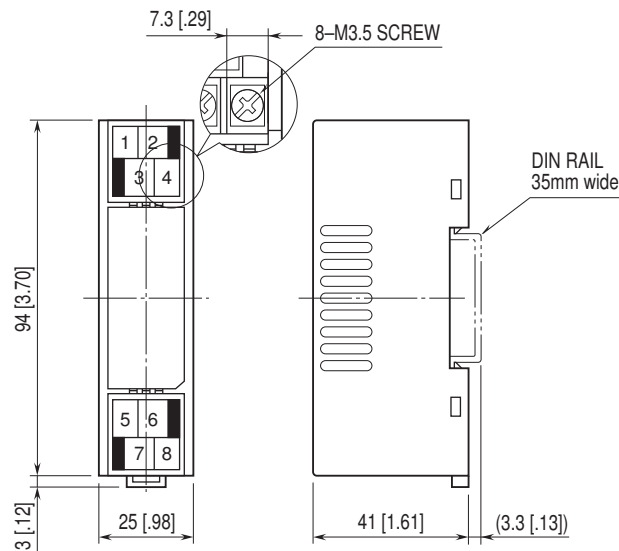
EMS EN 61000-6-2

RoHS Directive

## FRONT VIEW

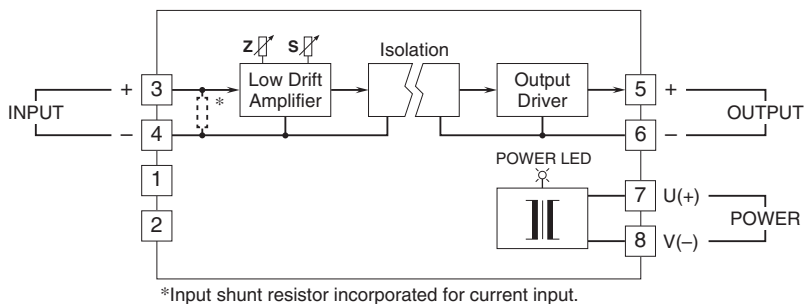


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.