**MODEL: M5VS**

**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

**ORDERING INFORMATION**
- Code number: M5VS-[1][2]-[3][4]
- Specify a code from below for each [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)

**[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 Q)
- 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.)

**[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 kΩ min.)
- 4: 0 – 10 V DC (Load resistance 1000 kΩ 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 kΩ min.)
- 4W: -10 – +10 V DC (Load resistance 8000 kΩ min.)
- 5W: -5 – +5 V DC (Load resistance 4000 kΩ 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**
- /C01: Silicone coating
- /C02: Polyurethane 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
Overrange output: Approx. -10 to +110 % at 1 – 5 V
Zero adjustment: -2 to +2 % (front)
(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 among followings for code Z.
20Ω, 49.9Ω, 61.9Ω, 100Ω, 249Ω, 499Ω, 1000Ω
(0.125 W ≥ [Input current]^2 × 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.; at ≥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)
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: ±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
EN 50581
**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**

- **DIN RAIL**
  - 35mm wide
  - 8-M3.5 SCREW

- **When mounting, no extra space is needed between units.**

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**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**

- **Isolation**
- **S**
- **Z**
- **Low Drift Amplifier**
- **Output Driver**
- **Output**

- **INPUT**
  - 1
  - 2
  - 3
  - 4

- **OUTPUT**
  - 5
  - 6
  - 7
  - 8

- **POWER LED**
  - U(+)
  - V(–)

- **POWER**

*Input shunt resistor incorporated for current input.*

⚠️ Specifications are subject to change without notice.