MODEL: M5MV

Super-mini Terminal Block Signal Conditioners M5-UNIT

SIGNAL TRANSMITTER
(narrow span input)

Functions & Features
- Converts a narrow span (≤ 100 mV DC) input into an isolated DC signal
- High-density mounting
- Power LED

MODEL: M5MV-[1][2]-[3][4]

ORDERING INFORMATION
- Code number: M5MV-[1][2]-[3][4]
Specify a code from below for each [1] through [4].
(e.g. M5MV-14W-R/K/Q)
- Special input and output ranges (For codes Z, 0 & 01)
- Specify the specification for option code /Q
  (e.g. /C01)

[1] INPUT
Current
K: 0 – 100 μA DC (Input resistance 1000 Ω)
Z: Specify current (See INPUT SPECIFICATIONS)
Voltage
1: 0 – 10 mV DC (Input resistance 10 kΩ min.)
15: 0 – 50 mV DC (Input resistance 10 kΩ min.)
0: Specify voltage (See INPUT SPECIFICATIONS)

[2] OUTPUT
Current
A: 4 – 20 mA DC (Load resistance 550 Ω max.)
Z: Specify current (See OUTPUT SPECIFICATIONS)
Voltage
18: 0 – 80 mV DC (Load resistance 100 kΩ min.)
(CE not available)
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.)
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.)
Other Options
blank: none
/Q: Option other than the above (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
Overrange output: Approx. -10 to +110 % at 1 – 5 V
Zero adjustment: -2 to +2 % (front)
Span adjustment: 98 to 102 % (front)
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: -100 – +100 mV DC
Minimum span: 5 mV
Offset: Max. 1.5 times span
Input resistance: ≥ 10 kΩ
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**: 0 – 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**: 0 – 999 mV DC
    - **Minimum span**: 10 mV
    - **Offset**: 0 V
    - **Load resistance**:
      - 10 mV ≤ Span < 100 mV: Min. 10 kΩ
      - 100 mV ≤ Span < 1 V: Min. 100 kΩ

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 %
- **Temp. coefficient**: ±0.015 %/°C (±0.008 %/°F)
- **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
**FRONT VIEW**

![Front View Diagram]

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

![External Dimensions Diagram]

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

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**

![Schematic Diagram]

- Input shunt resistor incorporated for current input.

⚠️ Specifications are subject to change without notice.