**MODEL: M5VF**

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

**SIGNAL TRANSMITTER**

*(high speed response)*

### Functions & Features
- Converts a DC input into an isolated DC signal
- Ultra-high speed response 150 μsec.
- High-density mounting
- Power LED

### MODEL: M5VF-[1][2]-[3][4]

#### ORDERING INFORMATION
- Code number: M5VF-[1][2]-[3][4]
- Specify a code from below for each [1] through [4].
  (e.g. M5VF-4W4W-R/Q)
- Special input and output ranges (For codes Z & 0)
- Specify the specification for option code /Q
  (e.g. /C01/V01)

#### [1] INPUT

**Current**
- A: 4 - 20 mA DC (Input resistance 249 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)

#### [2] OUTPUT

**Current**
- A: 4 - 20 mA DC (Load resistance 550 Ω max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)
  (Not selectable with the power input code M)

**Voltage**
- 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.)
  (For the input suffix codes 4W and 5W only)
- 5W: -5 - +5 V DC (Load resistance 4000 Ω min.)
  (For the input suffix codes 4W and 5W only)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)
  (Not selectable with the power input code M)

#### [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

- blank: none
- /Q: With options (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

**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)
  (+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 among followings for code Z. |
| 20Ω, 49.9Ω, 61.9Ω, 100Ω, 249Ω, 499Ω, 1000Ω |
| (0.125\(W \geq (\text{Input current})^2 \times R)\) |

| DC Voltage: | -30 ~ +30 V DC |
| Minimum span: | 1 V |
| Offset: | Max. 1.5 times span |
| Input resistance: | 1 MΩ min. |
| (10 kΩ min. at power loss) |

**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.; 9 V max. for the full-scale output < 3 mA |

| DC Voltage: | 0 ~ 10 V DC |
| Minimum span: | 1 V |
| Offset: | Max. 1.5 times span |
| Load resistance: | Output drive 10 mA max.; at ≥ 1 V |

**INSTALLATION**

**Power Consumption**

- **AC:**
  - Approx. 2 VA at 100 V
  - Approx. 2 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
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

The M5VF, by its fast-response feature, is not designed to eliminate noise present in the input signal. Use a shielded twisted-pair cable for preventing noise entering through the input wiring.

⚠ Specifications are subject to change without notice.