Super-mini Signal Conditioners Mini-M Series

SIGNAL TRANSMITTER
(field-configurable)

Functions & Features
• Converts DC input from a sensor into a standard process signal
• DIP switch configurable input & output range and response time
• High-density mounting
• Power indicator LED

Typical Applications
• Isolation between control room and field instrumentation

MODEL: M2FV-[1][2]

ORDERING INFORMATION
• Code number: M2FV-[1][2]
  Specify a code from below for each [1] and [2].
  (e.g. M2FV-M2/CE/Q)
• Specify the specification for option code /Q
  (e.g. /C01/S01)
Orders will be shipped at default factory settings for Input (4 – 20mA) and Output (4 – 20mA) and Response time (Standard response).

INPUT - Field-selectable
Current
4 – 20 mA DC (Input resistance 50 Ω)
0 – 20 mA DC (Input resistance 50 Ω)

Voltage
0 – 10 V DC (Input resistance 100 kΩ min.)
2 – 10 V DC (Input resistance 100 kΩ min.)
0 – 5 V DC (Input resistance 100 kΩ min.)
1 – 5 V DC (Input resistance 100 kΩ min.)

OUTPUT - Field-selectable
Current
4 – 20 mA DC (Load resistance 750 Ω max.)
0 – 20 mA DC (Load resistance 750 Ω max.)

Voltage
0 – 10 V DC (Load resistance 10 kΩ min.)
2 – 10 V DC (Load resistance 10 kΩ min.)
0 – 5 V DC (Load resistance 5000 Ω min.)
1 – 5 V DC (Load resistance 5000 Ω min.)

[1] POWER INPUT
AC Power
M: 85 – 264 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
(Select ‘/N’ for ‘Standards & Approvals’ code.)
M2: 100 – 240 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
R2: 11 – 27 V DC
(Operational voltage range 11 – 27 V, ripple 10 %p-p max.)
(Select ‘/N’ for ‘Standards & Approvals’ code.)
P: 110 V DC
(Operational voltage range 85 – 150 V, ripple 10 %p-p max.)

[2] OPTIONS (multiple selections)
Standards & Approvals (must be specified)
/N: Without CE
/CE: CE marking
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
TERMINAL SCREW MATERIAL
/S01: Stainless steel

GENERAL SPECIFICATIONS
Construction: Plug-in
Connection: M3 screw terminals (torque 0.8 N·m)
Screw terminal: Chromated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Overrange output: Approx. -10 to +120 %
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

**INSTALLATION**

**Power Consumption**

- **AC:**
  - Approx. 3 VA at 100 V
  - Approx. 4 VA at 200 V
  - Approx. 5 VA at 264 V
- **DC:** Approx. 3 W

**Operating temperature:** -30 to +60°C (-22 to +140°F)

**Operating humidity:** 30 to 90 %RH (non-condensing)

**Mounting:** Surface or DIN rail

**Weight:** 150 g (0.33 lb)

**PERFORMANCE in percentage of span**

**Accuracy:** ±0.1 %

**I/O setting accuracy:** ±0.2 %

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

**Response time:**
  - Standard response ≤ 0.5 sec. (0 - 90 %)
  - Fast response ≤ 30 msec. (0 - 90 %)

**Line voltage effect:** ±0.1 % over voltage range

**Insulation resistance:** ≥ 100 MΩ with 500 V DC

**Dielectric strength:** 2000 V AC @1 minute  (input to output to power to ground)

**STANDARDS & APPROVALS**

**EU conformity:**

- EMC Directive
  - EMI EN 61000-6-4
  - EMS EN 61000-6-2
- Low Voltage Directive
  - EN 61010-1
  - Measurement Category II
  - Pollution Degree 2

Input or output to power: Reinforced insulation (300 V)
Input to output: Basic insulation (300 V)

**RoHS Directive**

- EN 50581
EXTERNAL VIEW

FRONT VIEW

- Power LED
- Zero Adj.
- Span Adj.

SIDE VIEW

- Input Range and Response Time Setting
- Output Range Setting

Refer to the instruction manual for detailed procedures.

DIMENSIONS unit: mm (inch)

- DIN RAIL: 35mm wide
- 2-4x5 (.17x.20) MTG HOLE: 6 (.24) deep
- 8-M3 SCREW: 23 (.91)

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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

- INPUT
- OUTPUT
- Isolation
- Low Drift Amplifier
- Output Driver
- POWER LED
- Base Socket

* Input shunt resistor incorporated for current input.
Specifications are subject to change without notice.