Super-mini Signal Conditioners Mini-M Series

SIGNAL TRANSMITTER

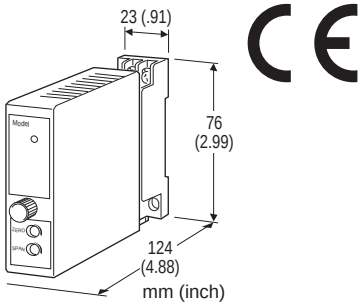
(field-configurable)

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 responce).

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

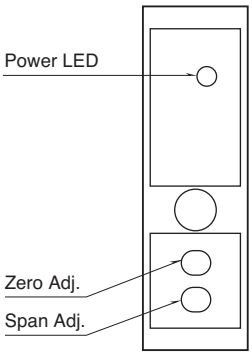
Accuracy: ±0.1 %
I/O setting accuracy: ±0.2 %
Temp. coefficient: ±0.015%/°C (±0.008%/°F)
Response time:
Standard response ≤ 0.5 sec. (0 – 90 %)
Fast response ≤ 30 msec. (0 – 90 %)
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

STANDARDS & APPROVALS

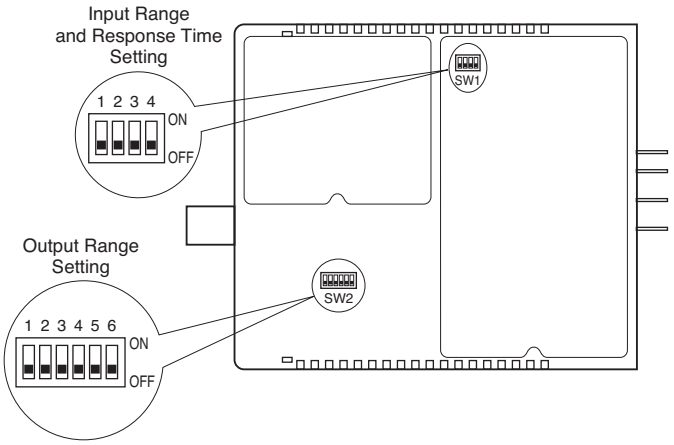
CE conformity:
EMC Directive (2004/108/EC)
EMI EN 61000-6-4: 2007/A1: 2011
EMS EN 61000-6-2: 2005
Low Voltage Directive (2006/95/EC)
EN 61010-1: 2010
Measurement Category II
Pollution degree 2
Input or output to power: Reinforced insulation (300 V)
Input to output: Basic insulation (300 V)

EXTERNAL VIEW

■ **FRONT VIEW**

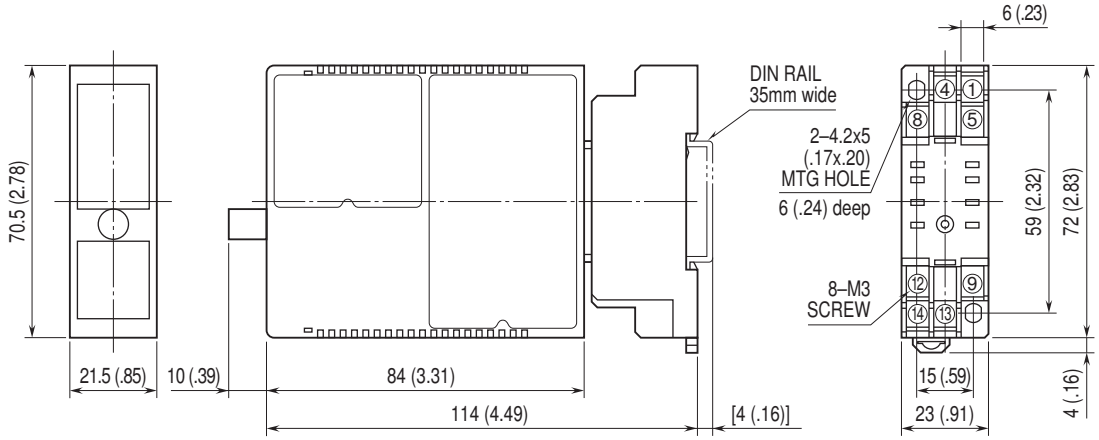


■ **SIDE VIEW**



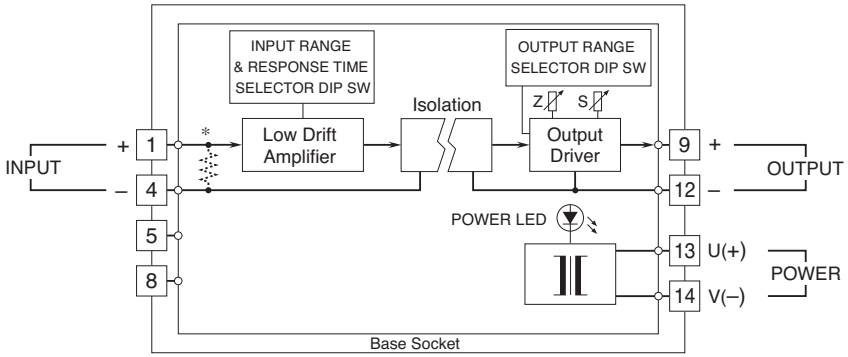
Refer to the instruction manual for detailed procedures.

DIMENSIONS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



* Input shunt resistor incorporated for current input.

⚠ Specifications are subject to change without notice.