

Super-mini Signal Conditioners F2 Series

SIGNAL TRANSMITTER

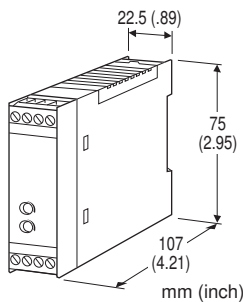
(high speed response)

Functions & Features

- Converts DC input from a sensor into a standard process signal
- Isolation between input and output
- 180-microsecond response

Typical Applications

- Isolation for a vibration analyzing system



MODEL: F2VF-[1][2]-R[3]

ORDERING INFORMATION

- Code number: F2VF-[1][2]-R[3]

Specify a code from below for each of [1] through [3].
(e.g. F2VF-6A-R/Q)

- Special input and output ranges (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01)

[1] INPUT

Current

- A: 4 - 20 mA DC (Input resistance 250 Ω)
- B: 2 - 10 mA DC (Input resistance 500 Ω)
- C: 1 - 5 mA DC (Input resistance 1000 Ω)
- D: 0 - 20 mA DC (Input resistance 50 Ω)
- E: 0 - 16 mA DC (Input resistance 62.5 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 100 Ω)
- GW: -1 - +1 mA DC (Input resistance 1000 Ω)
- FW: -10 - +10 mA DC (Input resistance 100 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 750 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1500 Ω max.)
- C: 1 - 5 mA DC (Load resistance 3000 Ω max.)
- D: 0 - 20 mA DC (Load resistance 750 Ω max.)
- E: 0 - 16 mA DC (Load resistance 900 Ω max.)
- F: 0 - 10 mA DC (Load resistance 1500 Ω max.)
- G: 0 - 1 mA DC (Load resistance 15 kΩ max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 - 10 mV DC (Load resistance 10 kΩ min.)
- 2: 0 - 100 mV DC (Load resistance 100 kΩ min.)
- 3: 0 - 1 V DC (Load resistance 1000 Ω min.)
- 4: 0 - 10 V DC (Load resistance 10 kΩ min.)
- 5: 0 - 5 V DC (Load resistance 5000 Ω min.)
- 6: 1 - 5 V DC (Load resistance 5000 Ω min.)
- 4W: -10 - +10 V DC (Load resistance 10 kΩ min.)
- 5W: -5 - +5 V DC (Load resistance 5000 Ω min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

POWER INPUT

DC Power

- R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS

blank: none

/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to M-System's web site.)

/C01: Silicone coating

/C02: Polyurethane coating

GENERAL SPECIFICATIONS

Construction: Stand-alone; terminal access at the front

Connection: Euro type connector terminal

(applicable wire size: 0.2 to 2.5 mm², stripped length 7 mm)

Housing material: Flame-resistant resin (black)

Isolation: Input to output to power

Zero adjustment: -5 to +5 % (front)

Span adjustment: 95 to 105 % (front)

INPUT SPECIFICATIONS

- **DC Current:** Input resistor incorporated
Specify input resistance value for code Z.
($R \leq 0.5 \text{ W} \div [\text{F.S. Current}]^2$)
- **DC Voltage:** -30 - +30 V DC
- Span:** min. 1 V, max. 30 V
- Offset:** Max. 1.5 times span
- Input resistance:** 1 M Ω min.

OUTPUT SPECIFICATIONS

- **DC Current:** 0 - 20 mA DC
- Minimum span:** 1 mA
- Offset:** Max. 1.5 times span
- Load resistance:** Output drive 15 V max.
- **DC Voltage:** -10 - +12 V DC
- Minimum span:** 5 mV
- Offset:** Max. 1.5 times span
- Load resistance:** Output drive 1 mA max.; at $\geq 0.5 \text{ V}$

INSTALLATION

- Current consumption**
 - DC: Approx. 80 mA
- Operating temperature:** -5 to +55°C (23 to 131°F)
- Operating humidity:** 30 to 90 %RH (non-condensing)
- Mounting:** DIN rail
- Weight:** 150 g (0.33 lb)

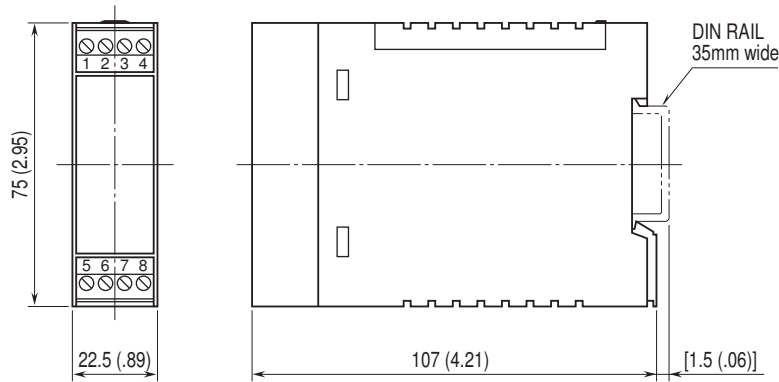
PERFORMANCE in percentage of span

- Accuracy:** $\pm 0.1 \%$
- Temp. coefficient:** $\pm 0.015 \%/^{\circ}\text{C}$ ($\pm 0.008 \%/^{\circ}\text{F}$)
- Response time:** $\leq 180 \mu\text{sec.}$ (0 - 90 %)
- Line voltage effect:** $\pm 0.1 \%$ over voltage range
- Insulation resistance:** $\geq 100 \text{ M}\Omega$ with 500 V DC
- Dielectric strength:**
 - 1000 V AC @1 minute (input to output)
 - 2000 V AC @1 minute (input or output to power to ground)

STANDARDS & APPROVALS

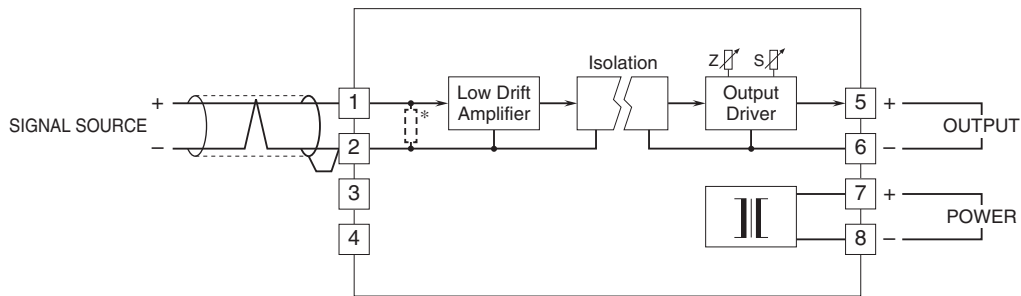
- EU conformity:**
 - EMC Directive
 - EMI EN 61000-6-4
 - EMS EN 61000-6-2
 - RoHS Directive
 - EN 50581
- Approval:**
 - UL/C-UL general safety requirements
(UL 3111-1, CAN/CSA-C22.2 No.1010-1)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Input shunt resistor incorporated for current input.

The F2VF, 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.