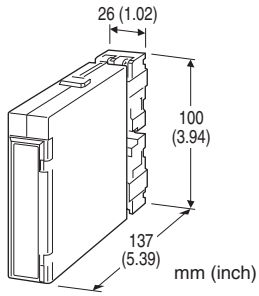
Space-saving Plug-in Signal Conditioners F-UNIT

INPUT LOOP POWERED ISOLATOR

Functions & Features
- Loop-powered design eliminates output loop power supply
- 500 V DC input-to-output isolation
- 2 isolators housed in one enclosure
- 350 Ω output drive with 4 – 20 mA
- High-density mounting

Typical Applications
- Isolation between control room and field instrumentation, between telemetering system and input device
- Eliminates ground problems in existing systems thanks to easiness of application without requiring additional power wiring



MODEL: FSN–[1][2]

ORDERING INFORMATION

- Code number: FSN-[1][2]

Specify a code from below for each of [1] and [2].
(e.g. FSN-2/Q)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT / OUTPUT

Single-channel
1: 4 – 20 mA DC / 1 – 5 V DC
1H6: 10 – 50 mA DC / 1 – 5 V DC
1AA: 4 – 20 mA DC / 4 – 20 mA DC
1HA: 10 – 50 mA DC / 4 – 20 mA DC
Dual-channel
2: 4 – 20 mA DC / 1 – 5 V DC
2H6: 10 – 50 mA DC / 1 – 5 V DC
2AA: 4 – 20 mA DC / 4 – 20 mA DC
2HA: 10 – 50 mA DC / 4 – 20 mA DC

[2] 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
TERMINAL SCREW MATERIAL
/S01: Stainless steel

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals (torque 0.8 N·m)
Screw terminal: Nickel-plated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output; between channels
Zero adjustment (front)
Voltage output: -5 to +5 %
Current output: -0.5 to +0.5 %
Span adjustment (front)
Voltage output: 95 to 105 %
Current output: 98.5 to 101.5 %

INPUT & OUTPUT

■ **Input 4 – 20 mA DC / Output 1 – 5 V DC**
Equivalent input impedance: Approx. 250 Ω with 20 mA input
Operational range: 3 – 22 mA DC
(Accuracy is assured within 4 – 22 mA)
Load resistance: ≥ 50 kΩ

■ **Input 10 – 50 mA DC / Output 1 – 5 V DC**
Equivalent input impedance: Approx. 100 Ω with 50 mA input
Operational range: 7 – 55 mA DC
(Accuracy is assured within 8 – 55 mA)
Load resistance: ≥ 50 kΩ

■ **Input 4 – 20 mA DC / Output 4 – 20 mA DC**
Equivalent input impedance: 230 Ω plus load resistance with 20 mA input
Operational range: 3 – 22 mA DC
(Accuracy is assured within 4 – 22 mA)
Load resistance: 50 – 350 Ω (min. 50 Ω required for adequate operation)

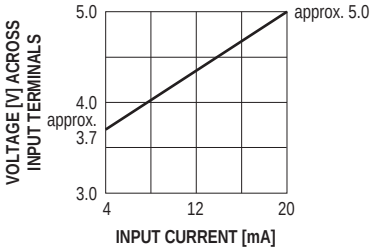
■ **Input 10 – 50 mA DC / Output 4 – 20 mA DC**
Equivalent input impedance: 90 Ω + [load resistance×0.16]

with 50 mA input

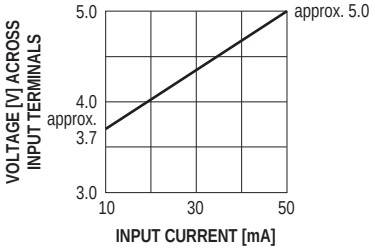
Operational range: 7 – 55 mA DC
(Accuracy is assured within 8 – 55 mA)

Load resistance: 50 – 600 Ω (min. 50 Ω required for adequate operation)

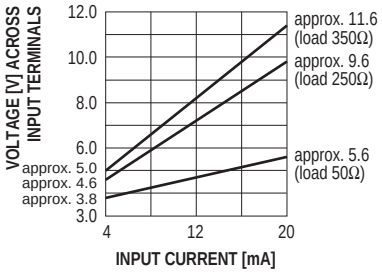
•INPUT 4 – 20 mA DC / OUTPUT 1 – 5 V DC



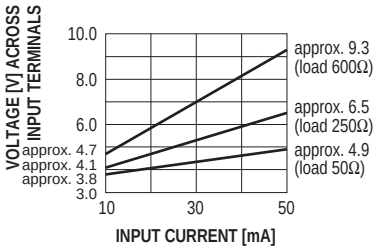
•INPUT 10 – 50 mA DC / OUTPUT 1 – 5 V DC



•INPUT 4 – 20mA DC / OUTPUT 4 – 20 mA DC



•INPUT 10 – 50 mA DC / OUTPUT 4 – 20 mA DC



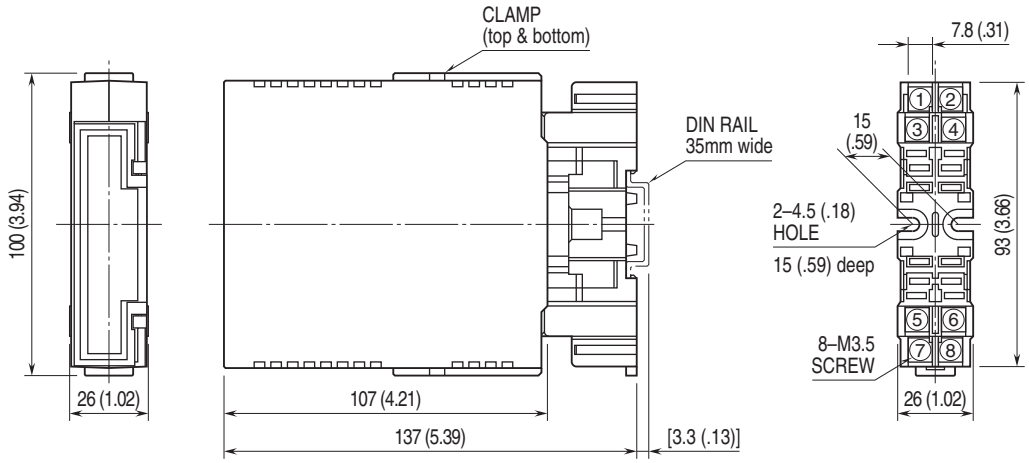
INSTALLATION

Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail; Standard Rack Mounting Frame BX-16H available
Weight: 200 g (0.44 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.1 %
Temp. coefficient
Voltage output: ±0.015 %/°C (±0.008 %/°F)
Current output: ±0.02 %/°C (±0.01 %/°F)
Response time
Voltage output: ≤ 0.5 sec. (0 – 90 %)
Current output: Approx. 15 msec. (0 – 90 %)
Load effect (current output)
4 – 20 mA input: 0.015 %/Ω (50 – 150 Ω)
0.003 %/Ω (150 – 350 Ω)
10 – 50 mA input: 0.015 %/Ω (50 – 100 Ω)
0.003 %/Ω (100 – 600 Ω)
(The unit is calibrated with 250 Ω load at the factory.)
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength:
500 V AC @1 minute (input to output)
1500 V AC @1 minute (between channels)
1500 V AC @1 minute (input or output to ground)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

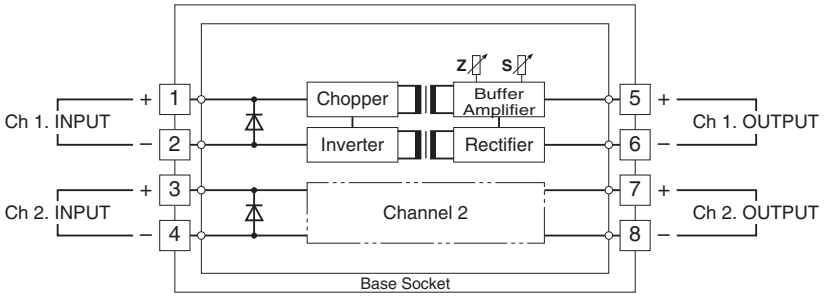


•When mounting, no extra space is needed between units.

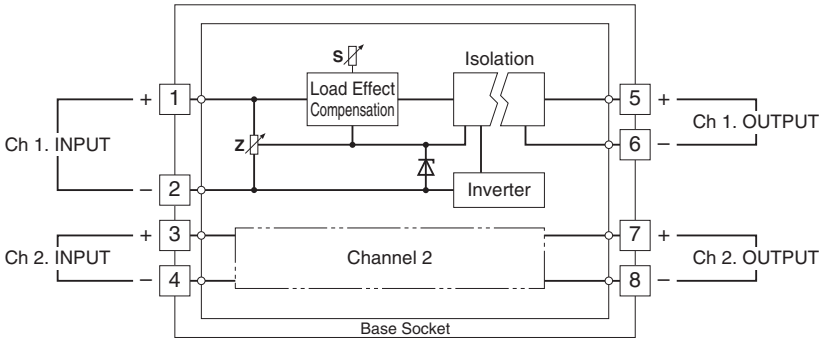
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

Note: For the single-channel model, the terminals 3 – 4 and 7 – 8 are used.

■ **VOLTAGE OUTPUT**



■ **CURRENT OUTPUT**



⚠ Specifications are subject to change without notice.