

Space-saving Plug-in Signal Conditioners F-UNIT

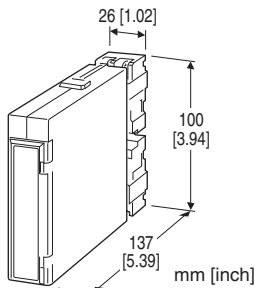
INPUT LOOP POWERED ISOLATOR

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 our 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]

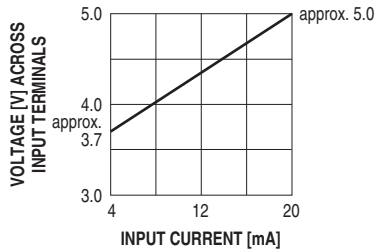
with 50 mA input

Operational range: 7 – 55 mA DC

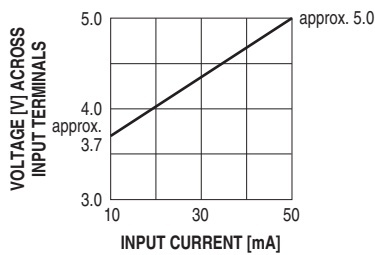
(Accuracy is assured within 8 – 55 mA)

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

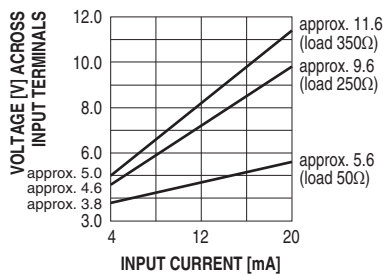
•INPUT 4 – 20 mA DC / OUTPUT 1 – 5 V DC



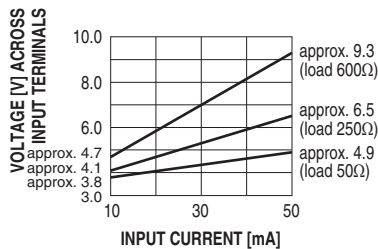
•INPUT 10 – 50 mA DC / OUTPUT 1 – 5 V DC



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



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



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

4 – 20 mA DC input: Approx. 15 msec. (0 – 90 %, 50 Ω load)

10 – 50 mA DC input: Approx. 8 msec. (0 – 90 %, 50 Ω load)

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)

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

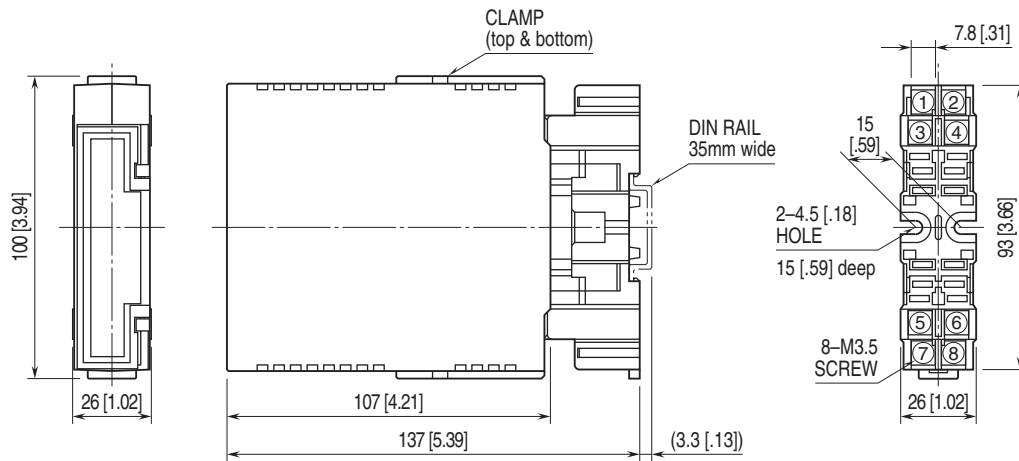
Weight: 200 g (0.44 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.1 %

Temp. coefficient

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

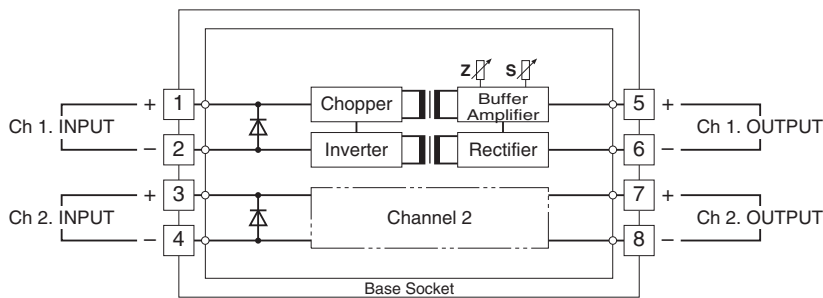


•When mounting, no extra space is needed between units.

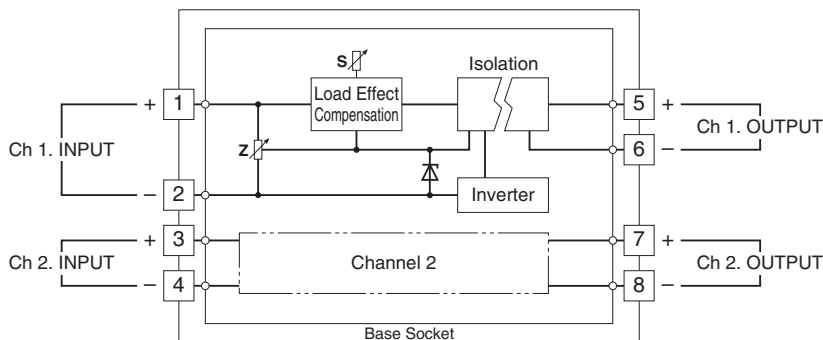
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

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.