

Plug-in Signal Conditioners M-UNIT

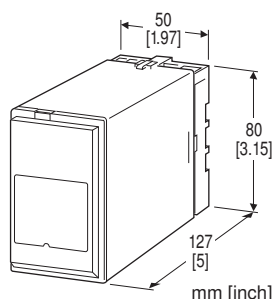
INPUT LOOP POWERED ISOLATOR

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: SN-2[1][2]

ORDERING INFORMATION

- Code number: SN-2[1][2]
- Specify a code from below for each of [1] and [2].
(e.g. SN-2A6/Q)
- Specify the specification for option code /Q
(e.g. /C01/S01)

NO. OF CHANNELS

2: 2 channels

[1] INPUT / OUTPUT

A6: 4 – 20 mA DC / 1 – 5 V DC

H6: 10 – 50 mA DC / 1 – 5 V DC

AA: 4 – 20 mA DC / 4 – 20 mA DC

HA: 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

Screw terminal: Chromated 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 k Ω

■ **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 k Ω

■ **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 $\times$ 0.16] with 50 mA input

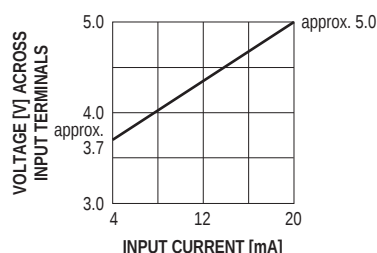
Operational range: 7 – 55 mA DC

(Accuracy is assured within 8 – 55 mA)

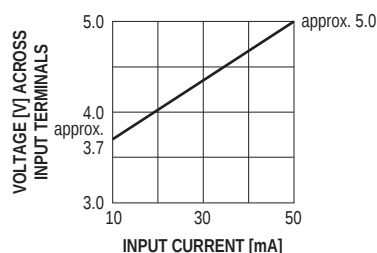
Load resistance: 50 – 600 Ω (min. 50 Ω required for

adequate operation)

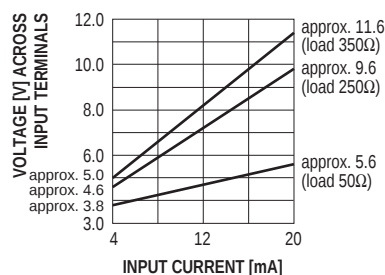
•INPUT 4 - 20 mA DC / OUTPUT 1 - 5 V DC



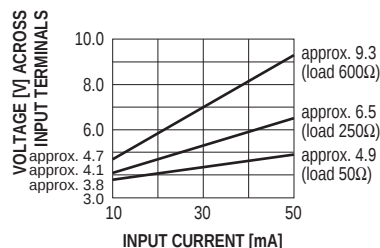
•INPUT 10 - 50 mA DC / OUTPUT 1 - 5 V DC



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



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



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: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength:

500 V AC @1 minute (input to output)

1500 V AC @1 minute (between channels)

2000 V AC @1 minute (input or output to ground)

INSTALLATION

Operating temperature: -5 to +60°C (23 to 140°F)

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

Mounting: Surface or DIN rail

Weight: 200 g (0.44 lb)

PERFORMANCE in percentage of span

Accuracy: $\pm 0.1 \%$

Temp. coefficient:

• Voltage output: $\pm 0.015 \text{ %/}^\circ\text{C}$ ($\pm 0.008 \text{ %/}^\circ\text{F}$)

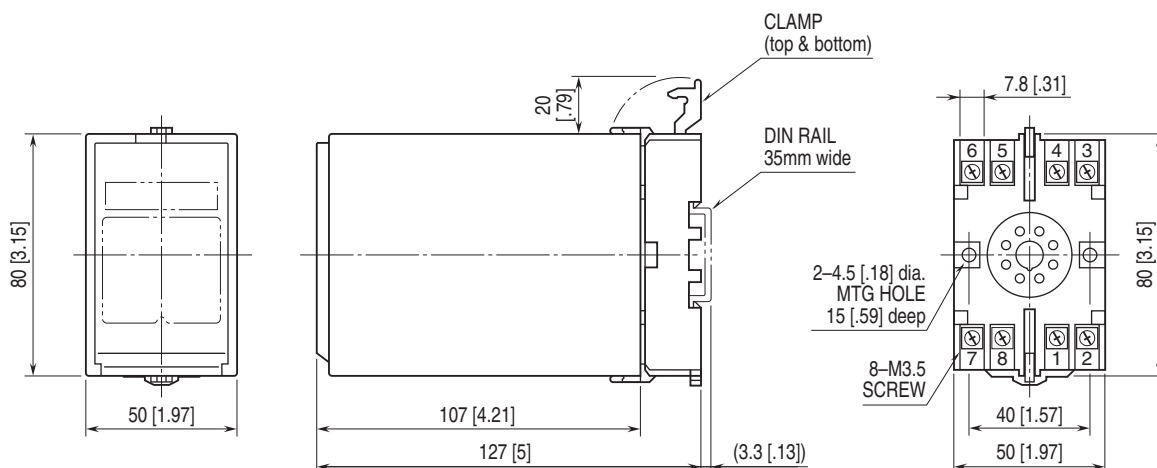
• Current output: $\pm 0.02 \text{ %/}^\circ\text{C}$ ($\pm 0.01 \text{ %/}^\circ\text{F}$)

Response time

Voltage output: $\leq 0.5 \text{ sec.}$ (0 - 90 %)

Current output

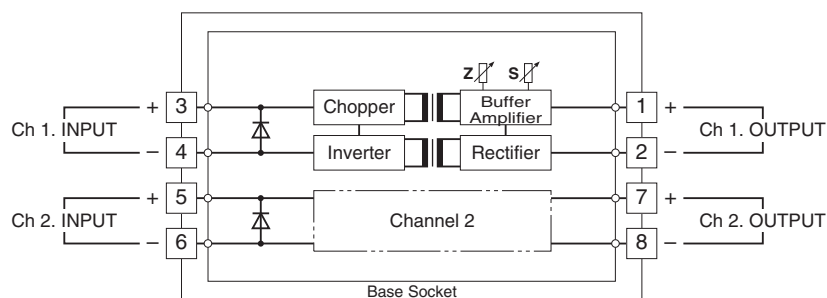
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



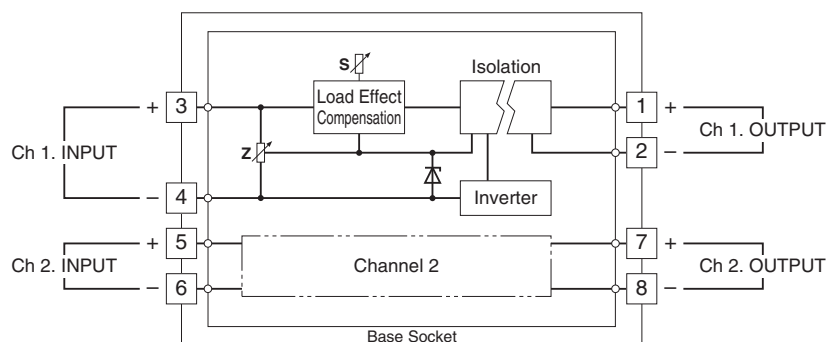
• When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

VOLTAGE OUTPUT



CURRENT OUTPUT



Specifications are subject to change without notice.