

Space-saving Two-wire Signal Conditioners B-UNIT

6: 1 – 5 V DC

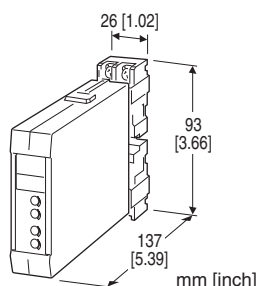
INPUT LOOP POWERED ISOLATOR

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: BSN-[1][2][3][4]

ORDERING INFORMATION

- Code number: BSN-[1][2][3][4]
- Specify a code from below for each of [1] through [4].
(e.g. BSN-2AA/Q)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] NO. OF CHANNELS

- 1: 1 channel
2: 2 channels

[2] INPUT

Current

- A: 4 – 20 mA DC
H: 10 – 50 mA DC

[3] OUTPUT

Current

- A: 4 – 20 mA DC

Voltage

[4] 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 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

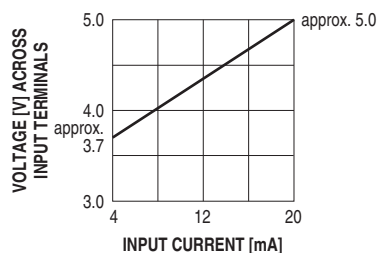
Equivalent input impedance: $90\ \Omega + [\text{load resistance} \times 0.16]$
with 50 mA input

Operational range: 7 – 55 mA DC

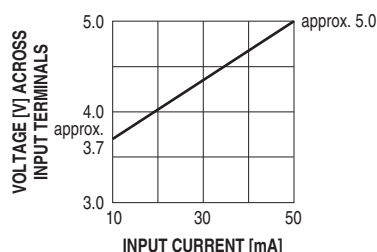
(Accuracy is assured within 8 – 55 mA)

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

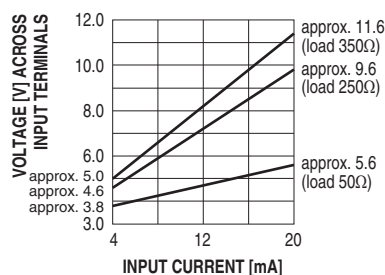
• INPUT 4 – 20 mA DC / OUTPUT 1 – 5 V DC



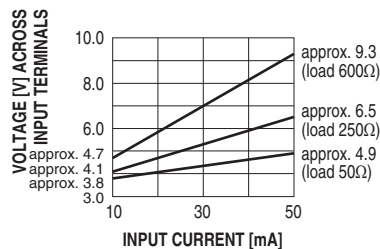
• INPUT 10 – 50 mA DC / OUTPUT 1 – 5 V DC



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



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



PERFORMANCE in percentage of span

Accuracy: $\pm 0.1\%$

Temp. coefficient

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

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

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

Dielectric strength:

500 V AC @1 minute (input to output)

1500 V AC @1 minute (between channels)

1500 V AC @1 minute (input or output to ground)

INSTALLATION

Operating temperature: -5 to $+55^{\circ}\text{C}$ (23 to 131°F)

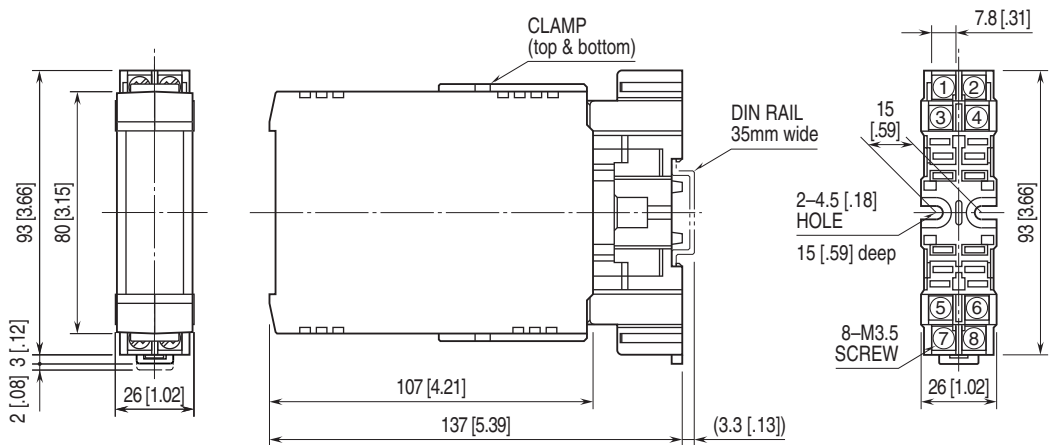
Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: Surface or DIN rail; Standard Rack Mounting

Frame BX-16H available

Weight: 200 g (0.44 lb)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

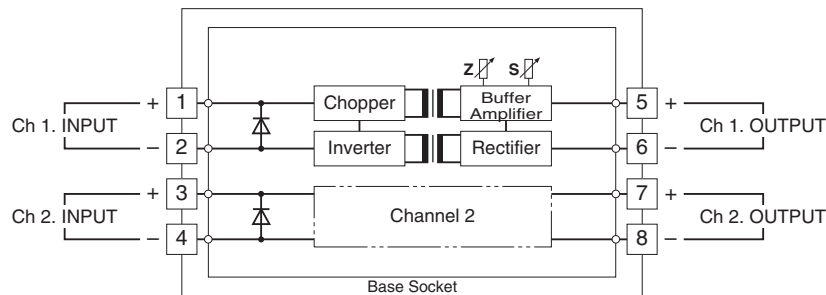


•When mounting, no extra space is needed between units.

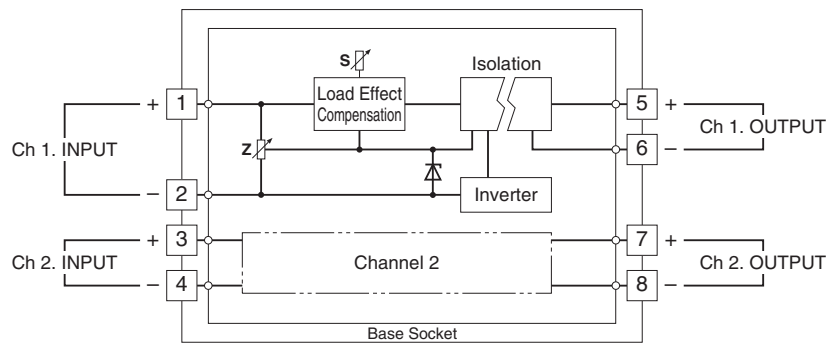
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

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.