

Rack-mounted DCS Signal Conditioners 18-RACK

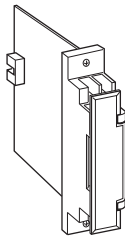
INPUT LOOP POWERED ISOLATOR

Functions & Features

- Loop-powered design eliminates output loop power supply
- 500 V DC input-to-output isolation
- 350 Ω output drive with 4 - 20 mA

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: 18SN-[1][2]0

ORDERING INFORMATION

- Code number: 18SN-[1][2]0
- Specify a code from below for each of [1] and [2]. (e.g. 18SN-A60)

[1] INPUT

- Current
- A: 4 - 20 mA DC
 - H: 10 - 50 mA DC

[2] OUTPUT 1

- Current
- A: 4 - 20 mA DC
- Voltage
- 6: 1 - 5 V DC

OUTPUT 2

- 0: None

GENERAL SPECIFICATIONS

Construction: Rack-mounted; terminal access via screw terminals on the front and connector on the rear; terminal cover provided

Connection

- Input:** M3.5 screw terminals (torque 0.8 N·m)
- Output:** M3.5 screw terminals (torque 0.8 N·m) and connector

Screw terminal: Nickel-plated steel

Isolation: Input to output

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**

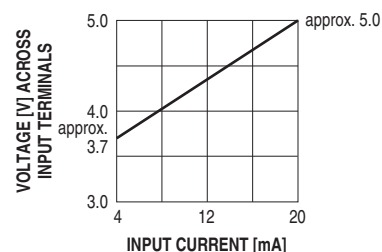
Equivalent input impedance: 90 Ω + [load resistance × 0.16] with 50 mA input

Operational range: 7 - 55 mA DC

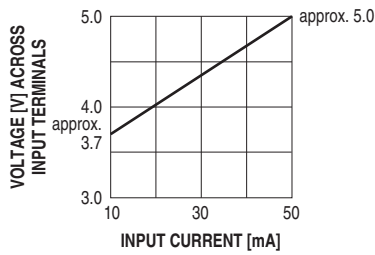
(Accuracy is assured within 8 - 55 mA)

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

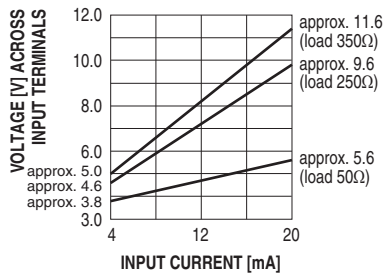
• INPUT 4 - 20 mA DC / OUTPUT 1 - 5 V DC



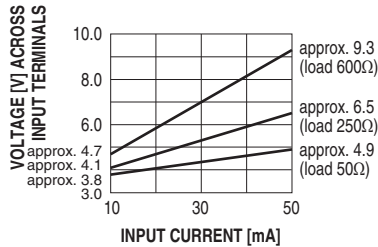
•INPUT 10 - 50 mA DC / OUTPUT 1 - 5 V DC



•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: Standard Rack 18BXx or 18KBXx
Weight: 150 g (0.33 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

4 - 20 mA DC input: Approx. 45 msec. (0 - 90 %, 50 Ω load)

10 - 50 mA DC input: Approx. 15 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

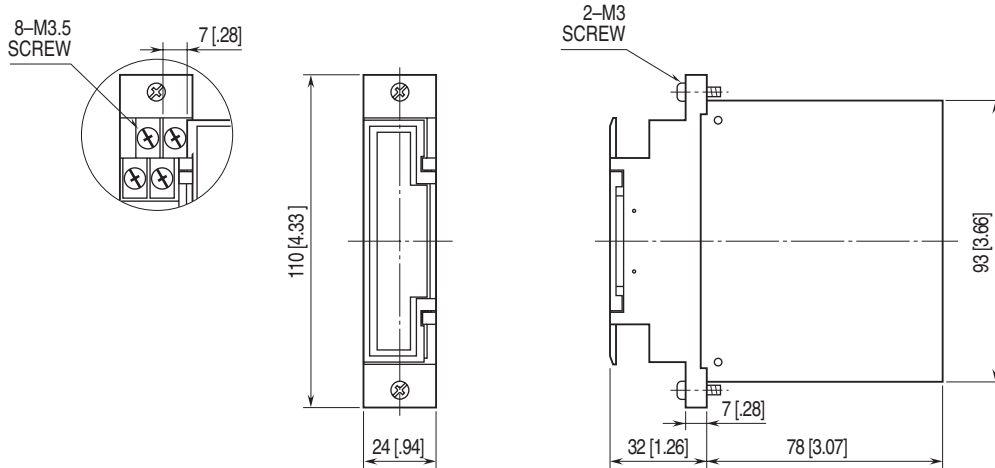
Dielectric strength: 500 V AC @ 1 minute

(input to output)

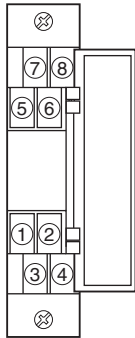
1500 V AC @ 1 minute

(input or output to ground)

EXTERNAL DIMENSIONS unit: mm [inch]

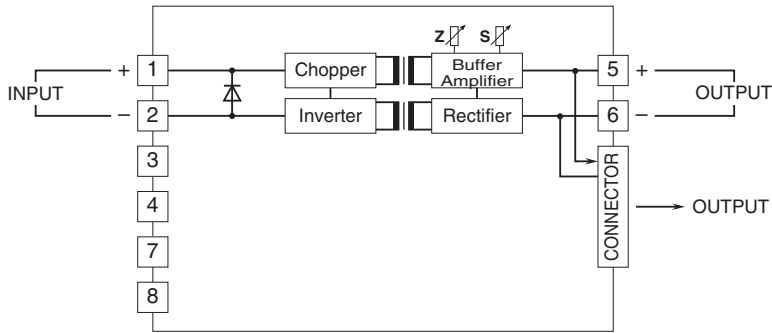


TERMINAL ASSIGNMENTS

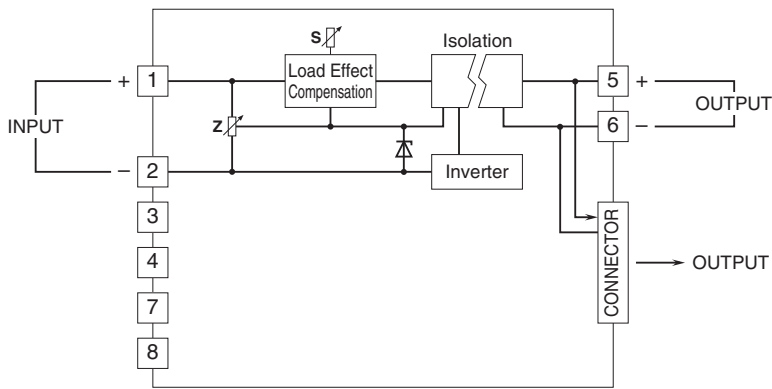


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

■VOLTAGE OUTPUT



■CURRENT OUTPUT



Specifications are subject to change without notice.