

INPUT LOOP POWERED ISOLATOR

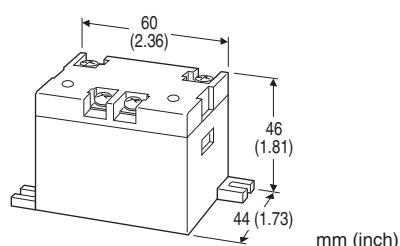
(super-miniature size)

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
- Can be used as field-I/O terminals



MODEL: LDSN-[1][2][3]

ORDERING INFORMATION

- Code number: LDSN-[1][2][3]
- Specify a code from below for each [1] through [3]. (e.g. LDSN-A6/D/Q)
- Specify the specification for option code /Q (e.g. /C01/S01)

[1] INPUT

Current

A: 4 – 20 mA DC
H: 10 – 50 mA DC

[2] OUTPUT

Current

A: 4 – 20 mA DC

Voltage

6: 1 – 5 V DC

[3] OPTIONS (multiple selections)

Mounting

blank: Surface

/D: DIN rail

Other Options

blank: none

/Q: Option other than the above (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: Stand-alone; terminal access at the front

Connection: M4 screw terminals (torque 1.2 N·m)

Screw terminal: Nickel-plated brass (standard) or stainless steel

Housing material: Flame-resistant resin (black)

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 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

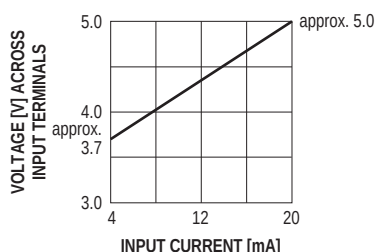
Equivalent input impedance: 90 Ω + [load resistance $\times$ 0.16] with 50 mA input

Operational range: 7 – 55 mA DC

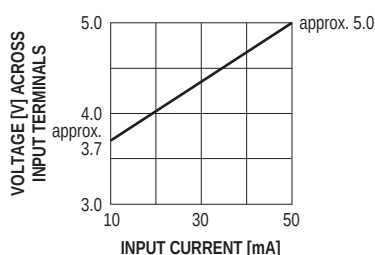
(Accuracy is assured within 8 – 55 mA)

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

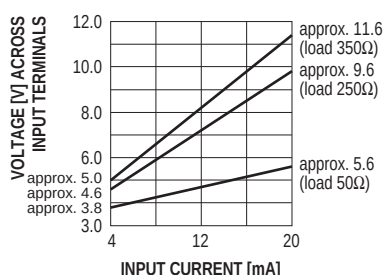
• **INPUT 4 – 20 mA DC / OUTPUT 1 – 5 V DC**



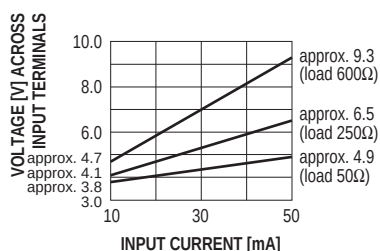
• **INPUT 10 – 50 mA DC / OUTPUT 1 – 5 V DC**



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



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



INSTALLATION

Operating temperature: -10 to +55°C (14 to 131°F)

Operating humidity: 30 to 85 %RH (non-condensing)

Mounting: Surface or DIN rail

Weight: 100 g (0.22 lb) for surface mounting

120 g (0.24 lb) for DIN rail mounting

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 M Ω with 500 V DC

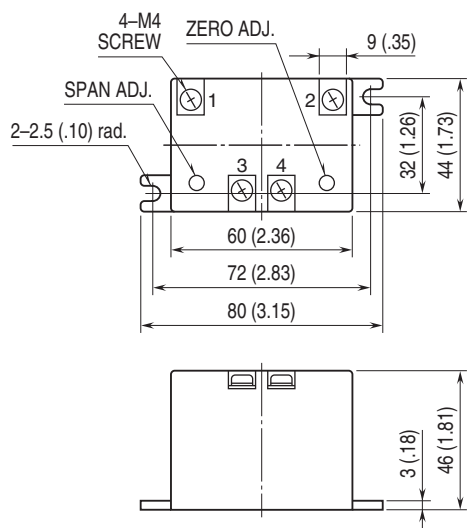
Dielectric strength:

500 V AC @1 minute (input to output)

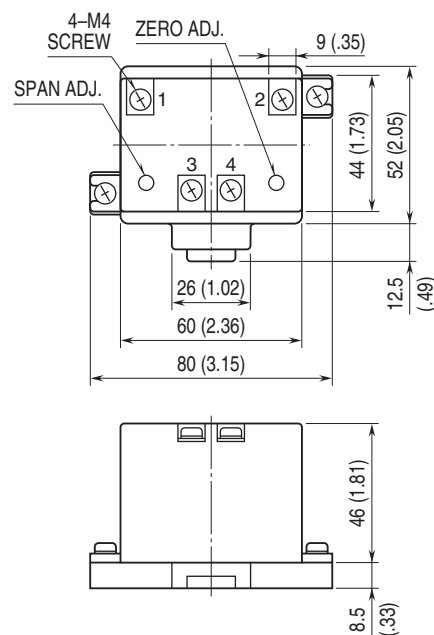
2000 V AC @1 minute (input or output to ground)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

■ SURFACE MOUNTING

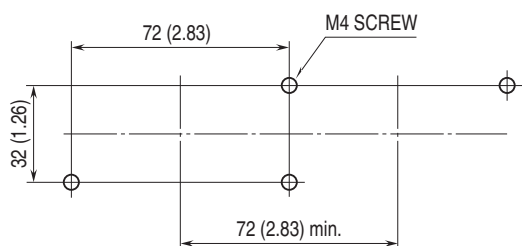


■ DIN RAIL MOUNTING

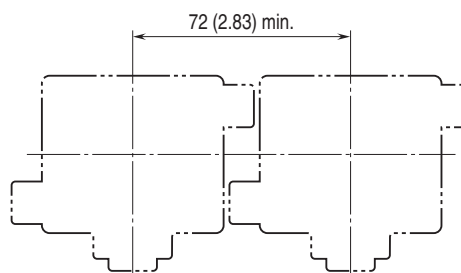


MOUNTING REQUIREMENTS unit: mm (inch)

■ SURFACE MOUNTING

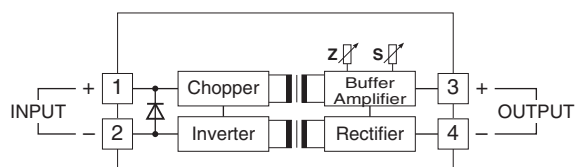


■ DIN RAIL MOUNTING

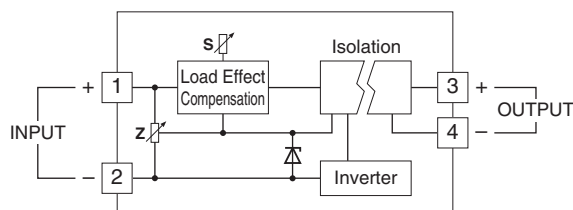


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

■ VOLTAGE OUTPUT



■ CURRENT OUTPUT



Specifications are subject to change without notice.