ZeroDT I/O-24

The design of the ZeroDT I/O-24 utilizes the latest generation, non-degrading Silicon Avalanche Suppression Diodes (SASDs) to protect electronic equipment and systems from transient over-voltages. The unit is designed to limit the energy of these surges on 4-20 MA current loops, and RS-485/422/232, DeviceNet, FieldBus communication lines as well as low voltage DC power lines.

The unit easily mounts on a standard DIN rail and houses the 8 connection lugs (4 in, and 4 out) and the SASD suppression circuitry. This SASD technology provides continuous, bi-directional (eliminating installation issues), and bi-polar (both positive and negative) protection that returns to its original state (no loss or degradation of protection with usage) once the over-voltage has passed.

Electrical Specifications:

Response Time: <5 nanoseconds

Configuration: series connected, or pass-thru -- protects 2 pair or 4 wires

Nominal Operating Voltage: 24 V dc

Maximum Pass-thru Current (each line): 8 Amps

Maximum Continuous Operating Voltage (MCOV) Line-to-Ground: 36 V dc

Nominal Surge Current, I_{Nom} (able to withstand repeated applications):

8/20 µs (IEEE/ANSI C62.41 Combination Wave), Line-to-Ground: >1,200 Amps

10/1000 µs (IEEE/ANSI C62.41 Long Wave), Line-to-Ground: >130 Amps

Voltage Protection Level (VPL):

1,200 Amps, 8/20 µs, Line-to-Ground: ≤65 V_{peak}

130 Amps, 10/1000 µs, Line-to-Ground: ≤55 V_{peak}

Mechanical Specifications:

Input / Output Connection: compression lug, #26 to #14 AWG

Module Dimensions: 4.37" H x 3.90" D x 0.5" W (111 mm H x 99 mm D x 12.6 mm W)

DIN Rail Mount: DIN rail must be connected to a solid Ground for proper suppression operation.

Environmental Specifications:

Operating / Storage Temperature: -40ºC to +65ºC

Humidity: 0 to 95% non-condensing

Certifications:

UL Listed – Isolated Loop Circuit Protector (E499683)

UL Listed -- Isolated Loop Circuit Protector for use in Hazardous Locations (E502612)

Class 1, Division 2, Groups A, B, C and D Hazardous Locations T6

T_{amb} = -40ºC to 65ºC

RoHS Compliant

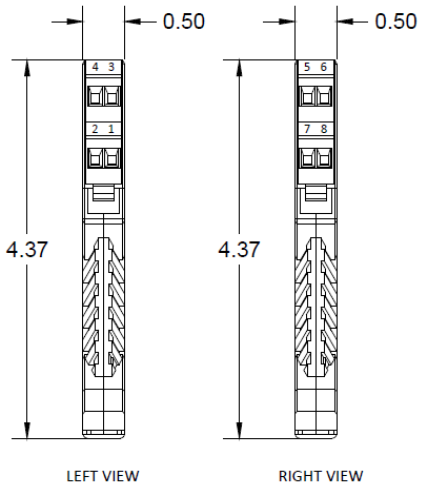
Note: DIN rail must be connected to a low-impedance Earth/Ground for proper suppressor operation.

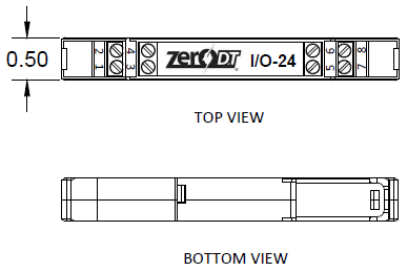
ZeroDT, LLC, Houston, TX www.zerodt.net **Phone:** (832) 532-7522 **Email:** sales@zerodt.net

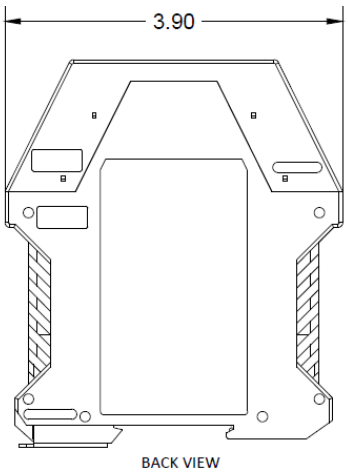
DIN Rail Mount, Two Pair Surge Protection

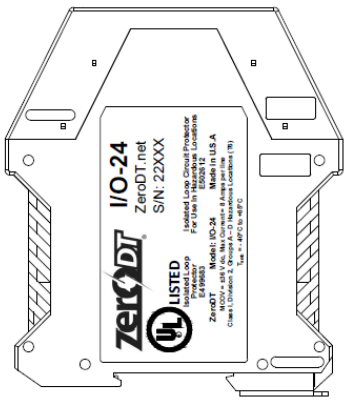
Isolated Loop Protector
E499683
Isolated Loop Circuit Protector
For Use In Hazardous Locations
E502612

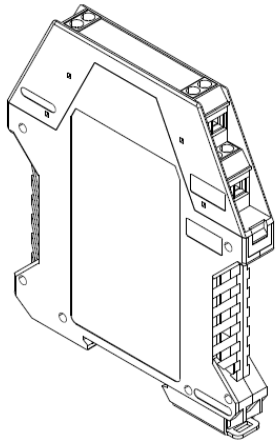
Model: ZeroDT I/O-24
Nominal Voltage: 24 Vdc
MCOV: 36 Vdc
Maximum Line Current: 8 Amp per line
Ambient Temperature Range: -40 to +65C









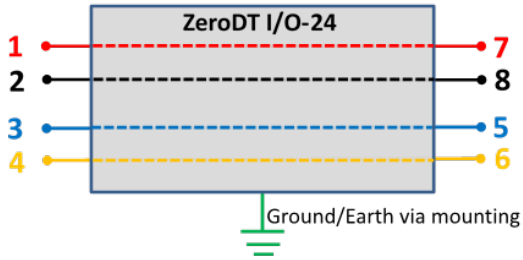


WARNING EXPLOSION HAZARD: Do not disconnect equipment while the circuit is live or unless the area is known to be free of ignitable concentrations.

Installation Procedure

This equipment is suitable for use in Class 1, Division 2, Groups A, B, C, or D (T6) as well as in non-hazardous locations.

1. For maximum overvoltage protection, mount the ZeroDT I/O-24 as close as possible to the equipment to be protected
2. The ZeroDT I/O-24 uses a self-grounding mounting foot designed to fit standard 35mm DIN rail. **DIN RAIL MUST BE PROPERLY BONDED TO A LOW RESISTANCE EARTH GROUND FOR PROPER OVERVOLTAGE PROTECTION.**
3. The ZeroDT I/O-24 unit is to be installed in accordance with the applicable requirements of the National Electric Code and the local authorities having jurisdiction.
4. Wiring Installation: Terminate either DC power or data/signal loop conductor to the screw terminals provided on the module according to the following legend below: (NOTE: Screw terminals are compatible with #26 - #14 AWG wire.)
5. When wiring a shielded cable, use feed thru terminal blocks to secure the shield for each loop.
6. In the unlikely event that the ZeroDT self-sacrifices, DC power and communications will be interrupted (unit is designed to fail with lines shorted to Ground).



The ZeroDT I/O-24 allows either side of the module to be the Input or the Output (module orientation does not matter).

ZeroDT, LLC, Houston, TX www.zerodt.net **Phone:** (832) 532-7522 **Email:** sales@zerodt.net Rev.04-2020