ZeroDT 12-2

The design of the ZeroDT 12-2 utilizes the latest generation, non-degrading Silicon Avalanche Suppression Diode (SASD) stack array encapsulated in urethane, to protect transmitters, gas detection sensors & systems, level equipment, flow measurement devices as well as other field instrumentation transient over-voltages. 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) once the over-voltage has passed. The unit is designed to limit the energy of these over-voltage surges on 4-20 mA current loops, and RS-485/422, DeviceNet, Fieldbus communication lines as well as low voltage DC power lines.

The module is small enough to allow it to be mounted directly into a measurement device's explosion-proof housing or other small electrical housings, eliminating the need for additional enclosures and getting the protection as close as possible to the device to allow for the best possible protection.

Electrical Specifications:

Response Time: <5 nanoseconds

Configuration: parallel connected -- protects 2 pair or 4 wires

Nominal Operating Voltage: 12 V dc

Maximum Continuous Operating Voltage (MCOV) Line-to-Ground: 18 V dc

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

8/20 µs (IEEE/ANSI C62.41 Combination Wave), Line-to-Ground: >600 Amps

10/1000 µs (IEEE/ANSI C62.41 Long Wave), Line-to-Ground: >65 Amps

Voltage Protection Level (VPL):

1,200 Amps, 8/20 µs, Line-to-Ground: ≤55 V_{peak}

130 Amps, 10/1000 µs, Line-to-Ground: ≤65 V_{peak}

Mechanical Specifications:

Module Dimensions: 0.74" H x 0.79" W x 0.5" D (18.7 mm H x 25.1 mm W x 12.7 mm D)

Wire Leads: #16 AWG stranded copper, 12 inches (allows cutting to length)

- Qty. 2 Red -- Positive or Negative
- Qty. 2 White -- Positive or Negative
- Qty. 1 Green -- Ground / Earth

Environmental Specifications:

Operating / Storage Temperature: -40°C to +80°C

Humidity: 0 to 95% non-condensing

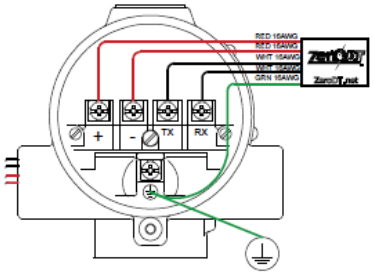
Certifications:

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} = -40°C to 80°C

RoHS Compliant



Dual Loop or 4-Wire Devices
ZeroDT 12-2 & ZeroDT 24-2
2 RED WIRE (Voltage + or -)
2 WHITE WIRE (Voltage + or -)
1 GREEN WIRE (GND)

ZeroDT, LLC, Houston, TX www.zerodt.net **Phone:** (713) 614-8737 **Email:** sales@zerodt.net

Two Pair Instrument Surge Protection

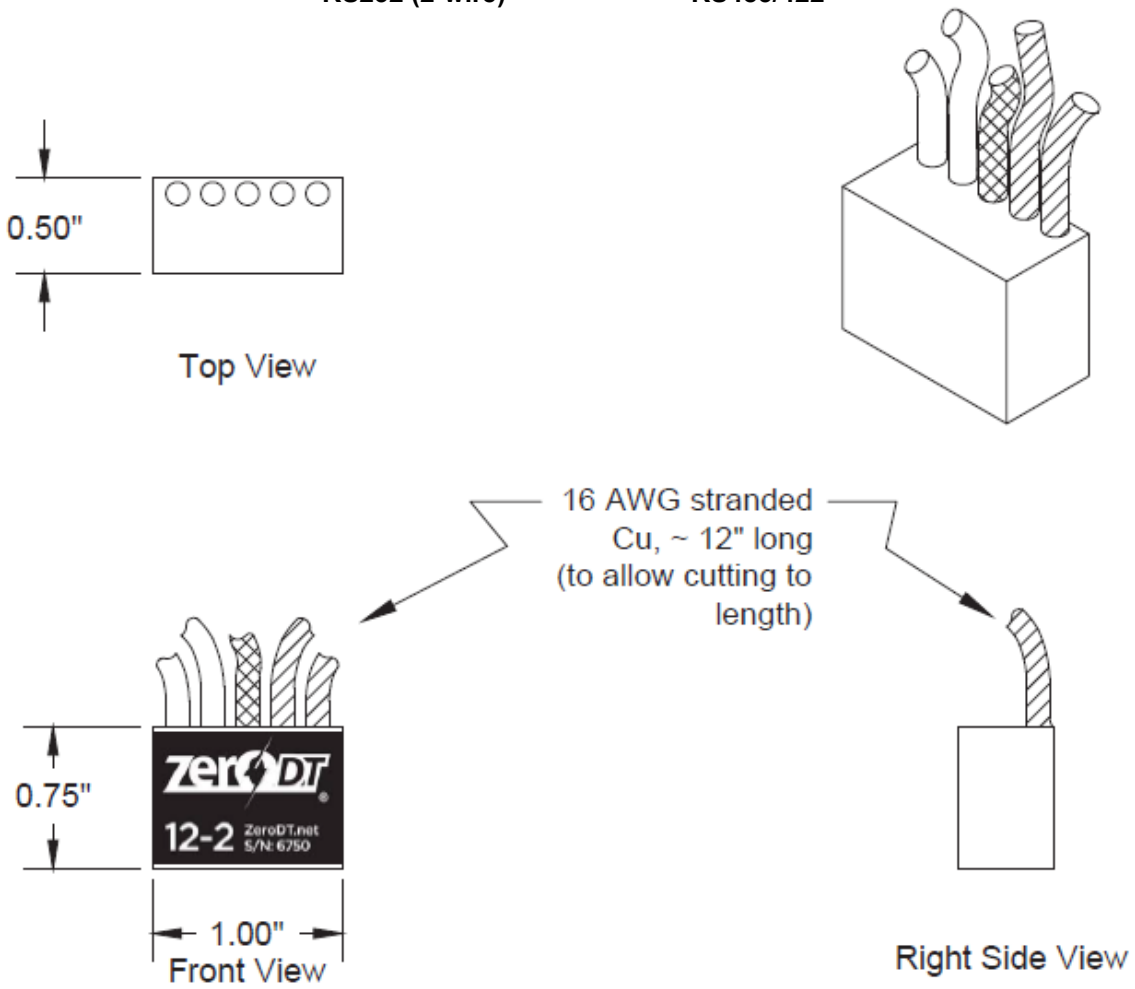
Model: ZeroDT 12-2,
Nominal Voltage: 12 Vdc
MCOV: 18 Vdc

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

Class 1, Division 2, Groups A-D
Hazardous Locations (T6)
T_{amb}=-40°C to +80°C

Protects 4 Wires or 2 Loops including (and combinations):

Analog 4-20 mA (2-wire)
RS232 (2-wire)
DC or AC power protection (2-wire)
RS485/422



Installation Procedure

1. For maximum overvoltage protection, mount the ZeroDT 12-2 as close as possible to the device/equipment to be protected
2. The ZeroDT 12-2 unit is to be installed in accordance with the applicable requirements of the National Electric Code and the local authorities having jurisdiction.
3. Wiring Installation: Terminate the red and white leads on either the positive or negative power or data communication lines. Each line is independent, you can pair the red leads, or the white leads or a red lead and a white lead. **THE GREEN LEAD MUST BE PROPERLY BONDED TO A LOW RESISTANCE EARTH GROUND FOR PROPER OVERVOLTAGE PROTECTION.** The leads wire leads should be trimmed and cut to fit keeping them as straight and short as possible for the best protection.
4. 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).