

# Intrinsic Safety Barrier

## Special Hazard Applications

• Prevent Accidental Ignition of Flammable Materials

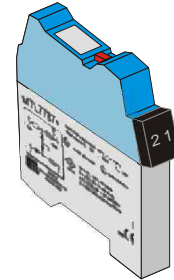
# THERMO LHD Cable™

## Cut Sheet

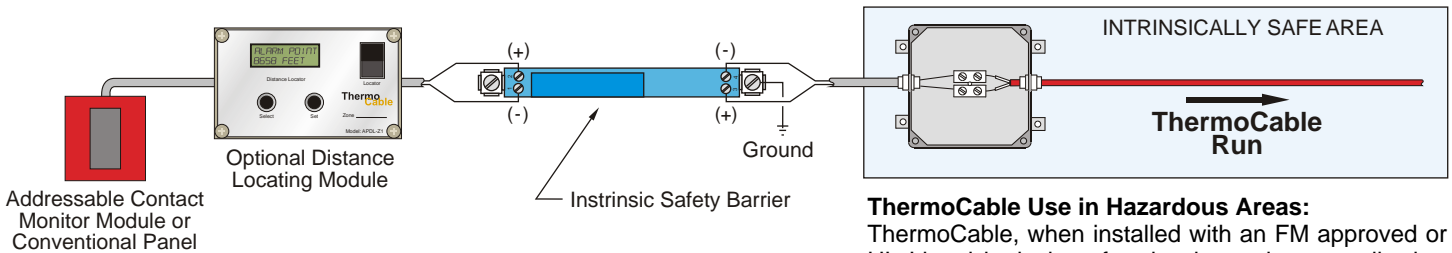
Part Number: TC4406

### Description

Intrinsic safety barriers are used in hazardous installations to prevent accidental ignition of flammable materials. These barriers are energy limiting and utilize zener diodes which direct voltage spikes to ground. Each barrier contains a replaceable 160mA fuse which protects the barrier from pole reversal and voltage spikes at the input side. Grounding wires are run in conduit or raceways separate from any non-intrinsically safe wiring. One barrier is required for each zone of detection.



### Intrinsic Safety Barrier Connection Example



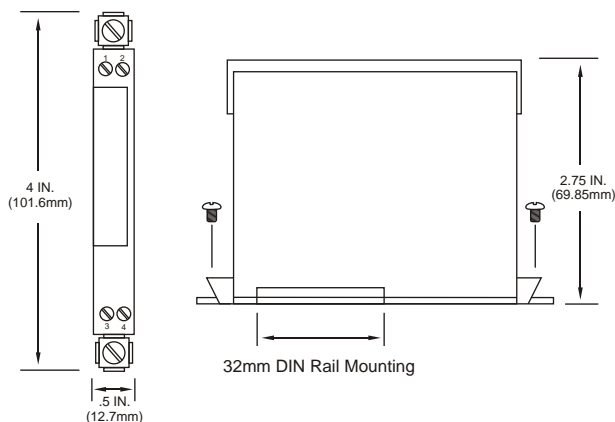
#### ThermoCable Use in Hazardous Areas:

ThermoCable, when installed with an FM approved or UL Listed intrinsic safety barrier and meets all other appropriate local and national codes, is suitable for use in Class I, II, or III Division 1, Gas Groups A-G hazardous areas.

### Installation Notes

- Intrinsically safe wiring must always be routed in conduit or raceways separate from non-intrinsically safe wiring.
- Barrier to Ground must not exceed 1 ohm.
- A ground fault on the positive leg of the initiating circuit will result in a false alarm condition.
- Ground conductor wire shall not be smaller than 12 AWG
- Where possible, the barrier should be mounted as close to the hazardous area as possible. This will minimize the length of intrinsically safe conductors within the nonhazardous location.

### Details



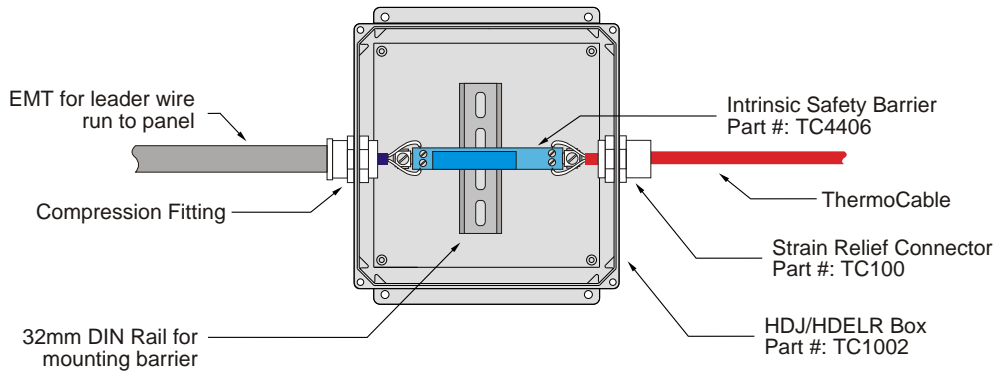
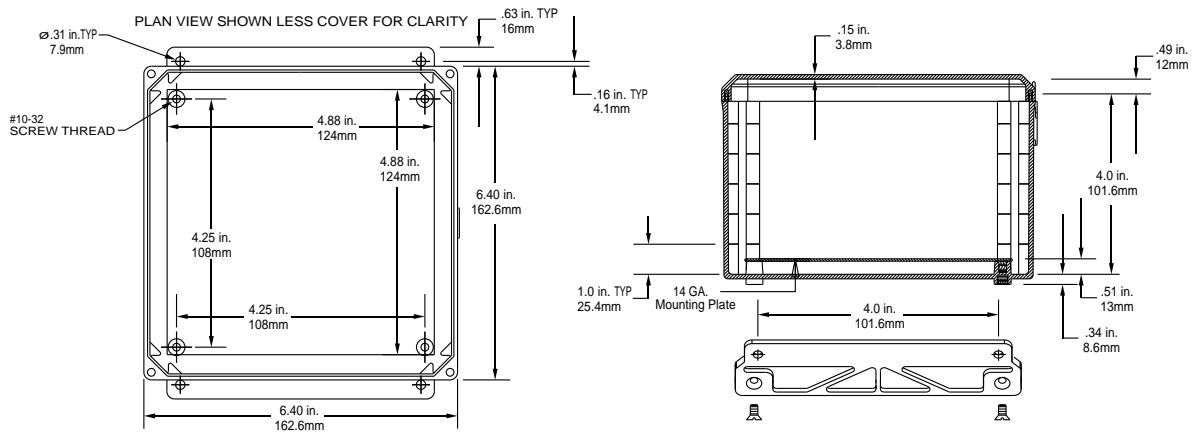
### Specifications

#### Intrinsic Safety Barrier Part #: TC4406

Dimensions (W x H x D):	.5" x 2.75" x 4" 12.7mm x 69.85mm x 101.6mm
Weight:	.22 lbs (100 g)
Current Limitation:	Resistive
Rated Voltage:	24VDC - 28VDC max.
Rated Current:	100 mA max.
Leakage Current:	1µA unless stated otherwise
Replaceable Fuse Rating:	160mA per channel
Mounting Location:	Non-Hazardous or Class 1 Div.2
Temperature Effect:	<0.25%/10K
Short Circuit Proof:	Yes, unless stated otherwise
Frequency Range:	100kHz @ I <sub>sc</sub> > 50mA
Grounding Method:	Through mounting platform
Operating Temperature:	-4° to +140°F (-20°C to 60°C)
Enclosure Mounting:	32mm DIN Rail in HDJ/ELR Box
Humidity Range:	To 95%, non-condensing

## Installation in HDJ / HDELR Box (sold separately)

Illustrated below is an Intrinsic Safety Barrier mounted in a NEMA 4 moisture proof Heavy Duty Junction Box (Part #: TC1002). A Strain Relief Connector (Part #: TC100) must be used for all ThermoCable penetrations in and out of the enclosure. This will prevent moisture and dirt build up in the enclosure to help maintain the integrity of the connections.



**Note:** Please refer to all federal, state and local codes, and manufacturer's recommendations prior to design or installation.



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