PROTEK DEVICES
Only One Name Means ProTek'Tion™

TEL185B & TEL185E

TELEPHONE INTERFACE PROTECTOR

APPLICATIONS

✔ Telcom Equipment Connected to Telcom Lines
✔ Line Connected Modems & Fax Machines
✔ Remote Telephone Extensions
✔ Private Wire/Leased Phone Lines

IEC COMPATIBILITY (EN61000-4)

✔ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
✔ 61000-4-4 (EFT): 40A - 5/50ns
✔ 61000-4-5 (Surge): 8/20µs - 95A, Level 4 (Line-Gnd) & 48A, Level 4 (Line-Line)

FEATURES

✔ Designed for ±185 Volt (Peak) Telephone Lines
✔ 4 Wire, Line-to-Ground Protection
✔ Permanent Two-Stage Protection
✔ Subnanosecond Response Time
✔ Automatic Reset - Does Not Interrupt Service
✔ Effective Against Lightning, Inductive Switching and ESD

MECHANICAL CHARACTERISTICS

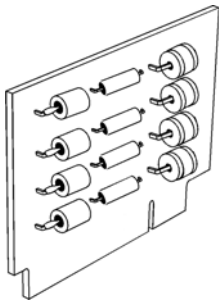
✔ Weight: TEL185B - 28 grams & TEL185E - 142 grams (Approximate)
✔ Flammability Rating UL 94V-0
✔ Device Marking:
Case - Logo, Terminal Designations & Part Number
Board - Logo, Date Code & Part Number

DESCRIPTION

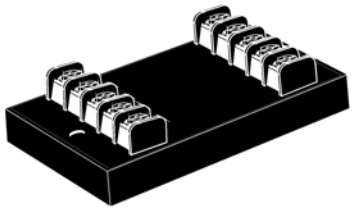
The TEL185B/E is a two-stage transient voltage protector that provides primary and secondary protection against lightning, inductive switching and electrostatic discharge (ESD) transient threats. The first stage diverts the transient current through the ground terminal return path and the second stage clamps the voltage to a safe level without interruption of service.

The TEL185B/E is designed to protect telcom lines from common mode (line-to-ground) transients. There are four (4) independent lines referenced to the ground terminals.

TEL185B



TEL185E



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C		ELECTRICAL CHARACTERISTICS @ 25°C			
Peak Operatiing Line Voltage (V_{OP})	±185V_{PEAK}	MAXIMUM CLAMPING VOLTAGE (8/20µs) @ ±500A V_C VOLTS	MAXIMUM LINE THRUPUT RESISTANCE R OHMS	MAXIMUM LEAKAGE CURRENT @ ±185V_{OP} I_D µA	MAXIMUM CAPACITANCE @ 0V, 1MHz C pF
Operating Line Current (I_O)	200mA				
Maximum Transient Voltage	20kV				
Maximum Transient Current (8/20µs waveform)	10kA/Wire 40kA/Protector				
Operating & Storage Temperature	-55°C to 100°C				
Response Time	< 1 nanosecond	330	12	5	800

INSTALLATION INSTRUCTIONS

There are five (5) terminals on both the **line** and **equipment** side of the TEL185E - four telcom line terminals and one ground terminal. The ground terminal, as shown on the label, is connected internally. A single ground connection is sufficient. However, it is recommended that both ground connections be used for a lower impedance path to earth. This connection can be made through the green AC power ground wire or a known earth ground. The ground wire should be #14 stranded wire.

Incoming telcom lines are cut or disconnected from the equipment to insert the TEL185E product. The **line** side of the terminals are to be connected to outside telephone or telecommunication lines that carry the transient threats into the equipment to be protected. The **equipment** side of the terminals are to be connected to the equipment to be protected. The location of the product should be such that these wires are as short as possible. A #18 or 20 gauge wire can be used for these connections.

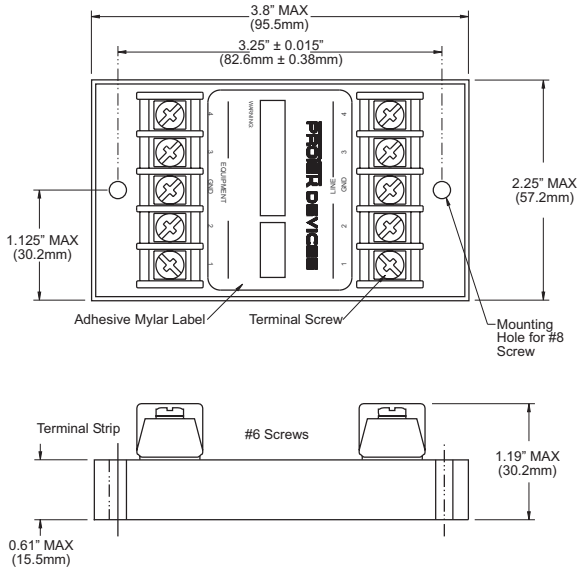
The TEL185B requires an edge connector interface for installation. A standard 15 position edge connector can be used. When mounting or wiring the connectors onto a printed circuit board, be sure that the correct terminals are soldered. The line side of the board connections are finger contacts 2 thru 5. The boards are conformal coated for limited protection against moisture.

ProTek's telcom line protector is designed with a short circuit failure mode to give maximum protection. A fuse, PTC, fussable link, or circuit breaker is recommended for each signal line on the input (line) side of the protector for those applications that require an open circuit failure mode.

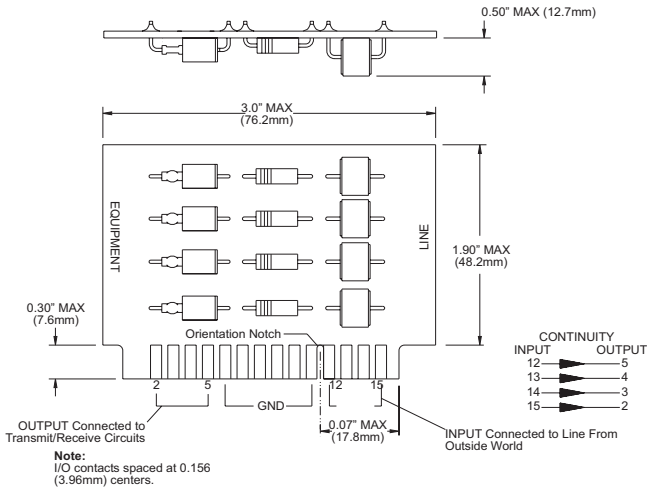
Caution: A low DC resistance ground may not be indicative of a good lightning ground. Lightning contains a broad spectrum of frequencies - up to 1 MHz. A low impedance path to ground at the transient frequencies is necessary. A ground strap is recommended or a #6 AWG stranded wire. For wire lengths over 1.5 meters, there may be some excessive line to earth potential under severe thunderstorm conditions. For these applications, an additional protector may be necessary at the equipment interface.

PACKAGE OUTLINE & DIMENSIONS

TEL185E CASE OUTLINE



TEL185B BOARD OUTLINE



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