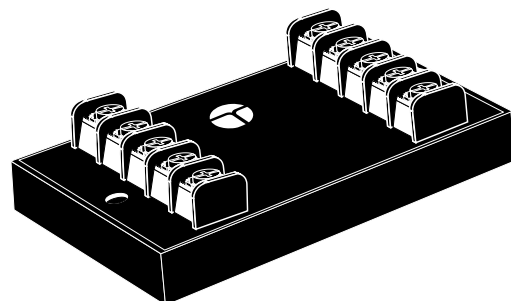


TELEPHONE INTERFACE PROTECTOR

APPLICATIONS

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



TEL185E PACKAGE

FEATURES

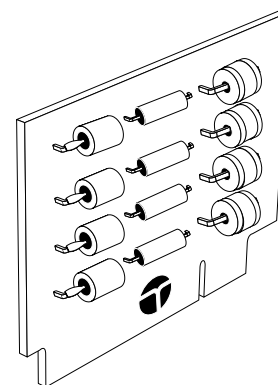
- Meets IEC 1000-4-5, Level 4 & 5 Requirements
- Designed for 185 Volt Telephone Lines
- Automatic Reset - Will Not Interrupt Service
- Permanent Two-Stage Protection
- 4 Wire, Line-to-Ground Protection
- Subnanosecond Response Time
- Effective Against Lightning, Inductive Switching & ESD

DESCRIPTION

The TEL185E/B is a two-stage transient voltage protector providing 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 TEL185E/B is designed to protect telecom lines from common mode (line-to-ground) transients. There are four (4) independent lines referenced to the ground terminals

This product can also be used for the protection of Key Service Units (KSU) and handset stations. For most applications, the product should be located as close as possible to the equipment being protected. A low impedance grounding system is important to maintain a low clamping voltage between the line-to-ground connection. Single point grounding is recommended.



TEL185B PACKAGE

MAXIMUM RATINGS @ 25° C		ELECTRICAL CHARACTERISTICS @ 25° C			
Peak Operating Line Voltage (V_{OP})	±185V	MAXIMUM CLAMPING VOLTAGE (8/20μs) @ 500A V_C VOLTS	MAXIMUM LINE THRUPUT RESISTANCE R OHMS	MAXIMUM LEAKAGE CURRENT @ 185 V_{OP} I_D μA	MAXIMUM CAPACITANCE @ 0 V, 1 MHz C pF
Operating Line Current (I_O)	200mA				
Maximum Transient Voltage	20kV				
Maximum Transient Current (8/20μs waveshape)	10kA/ Wire 40kA/ Protector				
Operating & Storage Temperature	-55° to +100°C				
Response Time	< 1 nanosecond				
Approximate Weight	TEL185E: 142 grams TEL185B: 28 grams	330	12	5	300

INSTALLATION INSTRUCTIONS

There are five (5) terminals on both the **line** and **equipment** side of the TEL50E, four telecom line terminals and one ground terminal. Both ground terminals, shown on the label, are 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 telephone lines are to be cut or disconnected from the equipment to insert the TEL50E/B product. The **line** side of the terminals are to be connected to outside telephone or telecommunication lines that carry the transient threat 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 this connection.

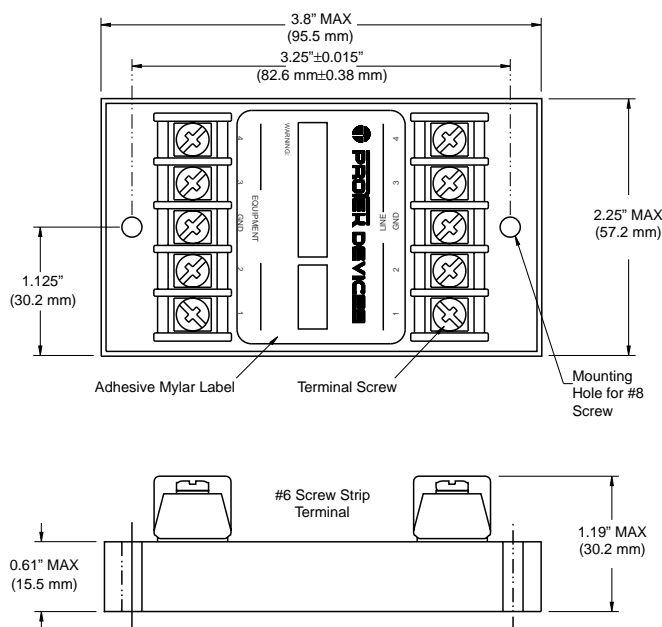
The TEL50B requires an edge connector interface for installation. A standard 15 position edge connector can be used. When mounting

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 12 thru 15. The **equipment** side of the board connections are finger contacts 2 thru 5. The boards are conformal coated for limited protection against moisture.

ProTek's data line protector is designed with a short circuit failure mode to give maximum protection. A fuse, PTC, fusable link, or circuit breaker is recommended for each data/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.

TEL185E CASE OUTLINE



TEL185B BOARD OUTLINE

