

DATA PROCESS LINE PROTECTOR

APPLICATIONS

- ✓ Data Processing Equipment
- ✓ Long Line Transmission Systems
- ✓ Control Processing Computers
- ✓ Building Management Systems

IEC COMPATIBILITY (EN61000-4)

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

FEATURES

- ✓ Designed for EIA Standard RS-422 Data Lines
- ✓ Automatic Reset - Does Not Interrupt Service
- ✓ Permanent Two-Stage Line Pair Protection
- ✓ Common Mode & Differential Mode Protection
- ✓ Subnanosecond Response Time
- ✓ Effective Against Lightning, Inductive Switching and ESD

MECHANICAL CHARACTERISTICS

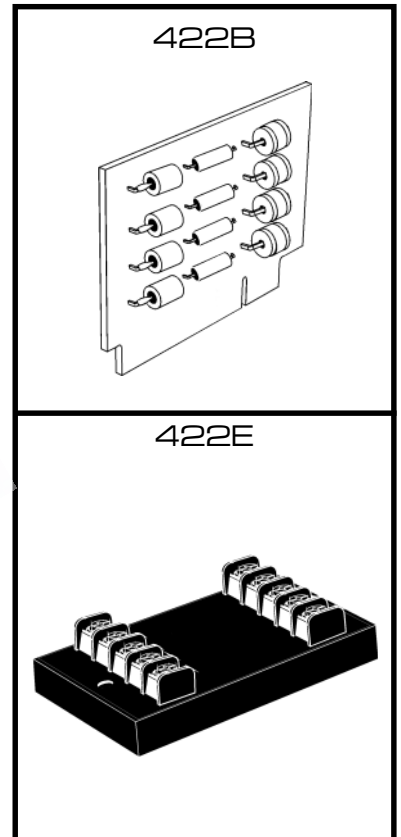
- ✓ Weight: 422B - 28 grams & 422E - 142 grams (Approximate)
- ✓ Flammability Rating UL 94V-0
- ✓ Device Marking:
 - Case - Logo, Terminal Designations & Part Number
 - Board - Logo, Date Code & Part Number

DESCRIPTION

The 422E/B series of protection 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 422E/B series is designed to protect data lines from differential (line to line) and common mode (line to ground) transients. Terminals 1 and 2, 3 and 4 for the 422E and pins 2 and 3, 4, and 5 for the 422B are designated as line pairs. Each line pair is referenced to ground. A transient voltage suppressor is connected across each line pair for differential mode protection. Each line pair is referenced to ground.

This product can also be used on telephone, signal/data lines, security, timing and control interface circuits. 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 voltage clamp between the line-to-ground connection.



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C						
Peak Operating Line Voltage (V_{OP})	±12V	MAXIMUM CLAMPING VOLTAGE	MAXIMUM CLAMPING VOLTAGE	MAXIMUM LINE THRUPTUT RESISTANCE	MAXIMUM LEAKAGE CURRENT	MAXIMUM CAPACITANCE
Operating Line Current (I_O)	200mA	Line - Line	Line - Ground		@ 12 V_{OP}	@ 0 V, 1 MHz
Maximum Transient Voltage	10kV	500A, 8/20µs	500A, 8/20µs	R	I_b	C
Maximum Transient Current (8/20µs waveform)	40kA/Wire	V_c	V_c	OHMS	µA	pF
Operating & Storage Temperature	-55°C to 100°C	±VOLTS	±VOLTS			
Response Time	< 1 nanosecond	24.0	24.0	12	5	5000

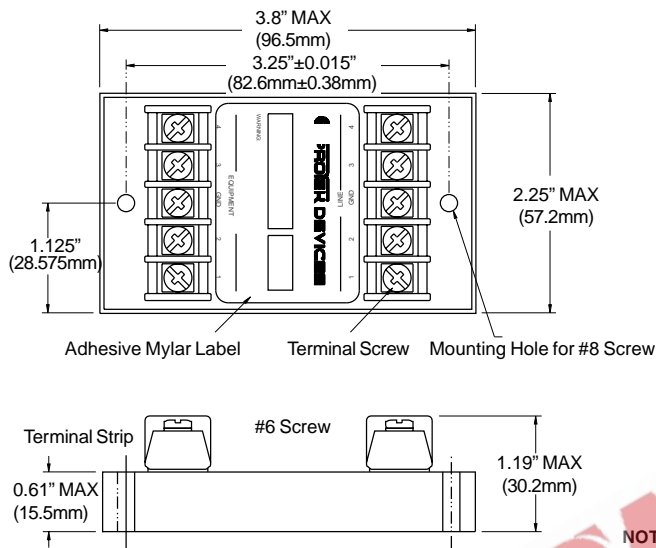
INSTALLATION INSTRUCTIONS

There are five (5) terminals on the **LINE SIDE** and five (5) terminals on the **EQUIPMENT SIDE** of the 422E, 4 data lines and one ground. Both grounds are connected together internally. A single low impedance is ground sufficient. Incoming data lines are cut or disconnected from the equipment to insert the 422E/B products. The incoming lines are to be connected to the line side terminals as the equipment side lines are connected to the equipment side terminals. The location of the product should be as close to the equipment as possible. The 422E/B series is designed with a short circuit failure mode to give maximum protection. A fuse, fusable link, or circuit breaker is recommended for each data/signal line on the input side for those that require an open circuit failure mode.

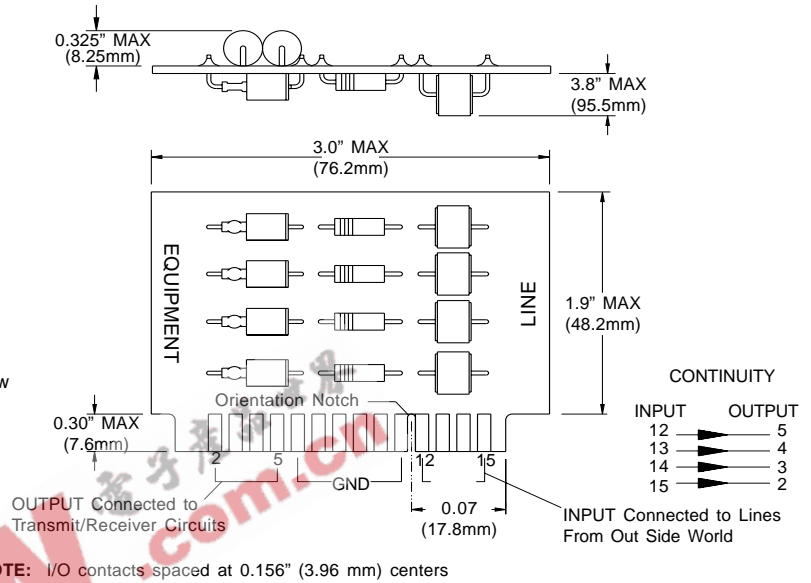
Caution: A low DC resistance ground may not be indicative of a good lightning ground. Lightning contains a broad spectrum of frequencies up to 1 MHz. A low impedance path to ground at the transient frequencies is necessary. A ground strap is recommended or a #6 AWG stranded wire. For wire lengths over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

PACKAGE OUTLINE & DIMENSIONS

422E CASE OUTLINE



422B BOARD OUTLINE



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SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice (except JEDEC).

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice, and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance, ProTek assumes no responsibility with respect to the selection or specifications of such products.

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