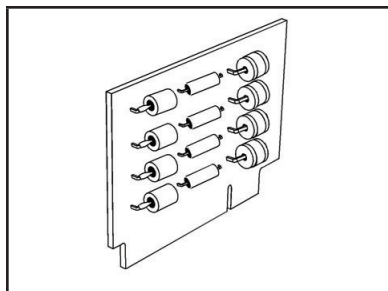
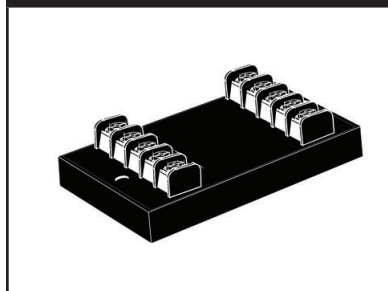


DATA PROCESS LINE PROTECTOR



422B



422E

DESCRIPTION

The 422B/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 422B/E 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.

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.

FEATURES

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

- Approximate Weight: 28 grams (422B) & 142 grams (422E)
- Flammability Rating UL 94V-0

APPLICATIONS

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

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Operating Line Voltage	V_{OP}	±12	Volts
Operating Line Current	I_O	200	mA
Transient Voltage	-	10	kV/Wire
Transient Current - 8/20µs waveform	-	10	kA/Wire
Operating Temperature	T_A	-55 to 100	°C
Storage Temperature	T_{STG}	-55 to 100	°C
Response Time	-	< 1	ns

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified					
PART NUMBER	MAXIMUM CLAMPING VOLTAGE (8/20µs) LINE-LINE @ 500A V_C ±VOLTS	MAXIMUM CLAMPING VOLTAGE (8/20µs) LINE-GND @ 500A V_C ±VOLTS	MAXIMUM LINE THROUGHPUT RESISTANCE R OHMS	MAXIMUM LEAKAGE CURRENT @ 12V _{OP} I_D µA	MAXIMUM CAPACITANCE @ 0V, 1MHz C pF
422B/E	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 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, fusible 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.

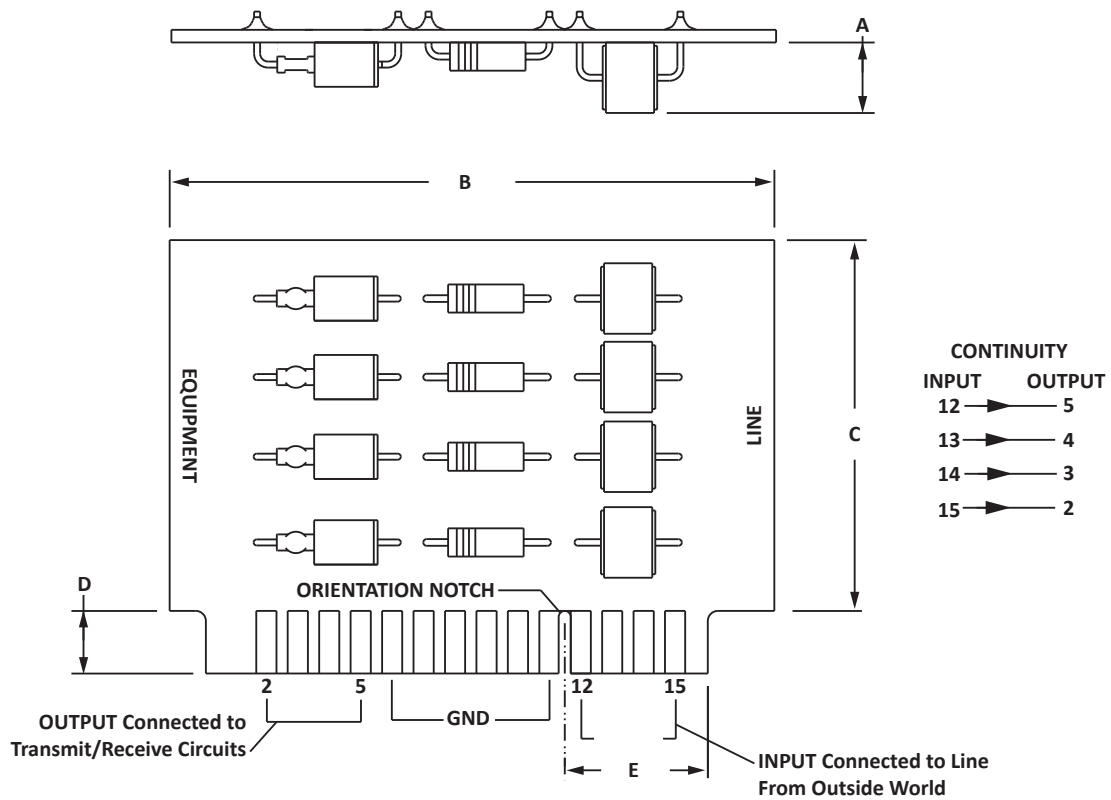
PACKAGE INFORMATION

422B OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	12.7	-	0.50
B	-	76.2	-	3.0
C	-	48.2	-	1.90
D	-	7.6	-	0.30
E	-	17.8	-	0.7

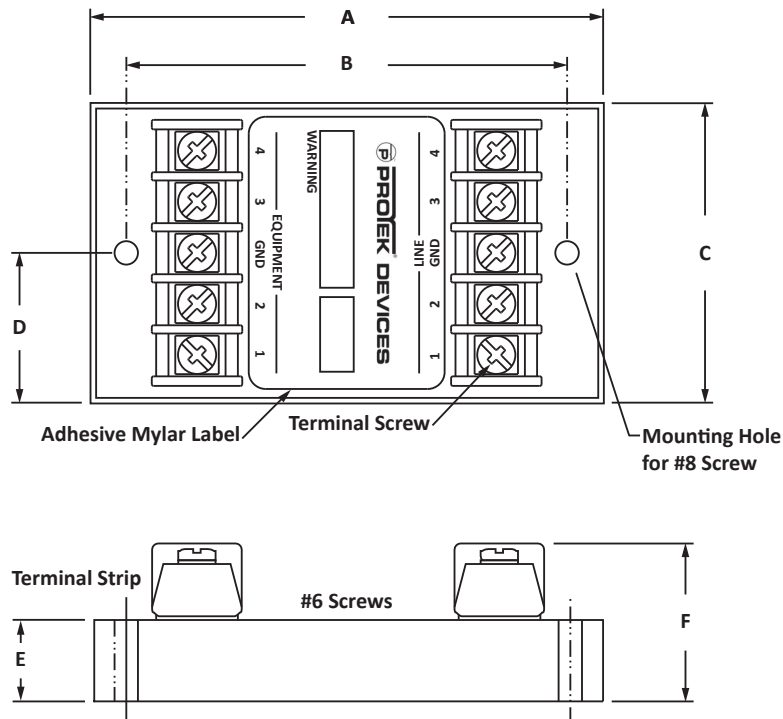
NOTES

- I/O contacts spaced at 0.156" (3.96mm) centers.



PACKAGE INFORMATION
422E OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	95.5	-	3.8
B	82.22	82.98	3.235	3.265
C	-	57.2	-	2.25
D	-	30.2	-	1.125
E	-	15.5	-	0.61
F	-	30.2	-	1.19


ORDERING INFORMATION

BASE PART NUMBER	MARKING
422B	Logo, Date Code, Terminal Designations and Part Number
422E	Logo, Date Code, Terminal Designations and Part Number

COMPANY INFORMATION

COMPANY PROFILE

ProTek Devices, based in Tempe, Arizona USA, is a manufacturer of Transient Voltage Suppression (TVS) products designed specifically for the protection of electronic systems from the effects of lightning, Electrostatic Discharge (ESD), Nuclear Electromagnetic Pulse (NEMP), inductive switching and EMI/RFI. With over 25 years of engineering and manufacturing experience, ProTek designs TVS devices that provide application specific protection solutions for all electronic equipment/systems.

ProTek Devices Analog Products Division, also manufactures analog interface, control, RF and power management products.

CONTACT US

Corporate Headquarters

2929 South Fair Lane
Tempe, Arizona 85282
USA

By Telephone

General: 602-431-8101
Sales: 602-414-5109
Customer Service: 602-414-5114

By Fax

General: 602-431-2288

By E-mail:

Sales: sales@protekdevices.com
Customer Service: service@protekdevices.com
Technical Support: support@protekdevices.com

Web

www.protekdevices.com
www.protekanalog.com

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