DUAL 4-20mA CONTROL LOOP PROTECTOR

420E

DESCRIPTION

The 420E series 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 420E series is designed to protect 4-20mA analog control loops from differential (line to line) and common mode (line to ground) transients. Terminals 1 and 2 are designated as line pairs for both the line and the equipment side of the protector. A transient voltage suppressor is internally 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.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 95A, 8/20µs, Level 4 (Line-Gnd) & 48A, Level 4 (Line-Line)
- Designed for 4-20mA Current Loops
- 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

APPLICATIONS

- Security Alarm Systems
- Industrial Control and Monitoring Systems
- Remote Tech Site Station
- Process Control Loops

MECHANICAL CHARACTERISTICS

- Approximate Weight: 50 grams
- Flammability Rating UL 94V-0

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Operating Line Current	I_O	100	mA
Transient Source Voltage	-	6	kV
Transient Current (8/20µs) - per Line	-	10	kA
Operating Temperature	T_A	-55 to 100	°C
Storage Temperature	T_{STG}	-55 to 100	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified					
PART NUMBER	MAXIMUM OPERATING LINE VOLTAGE V_{OP} ±VOLTS	MAXIMUM LEAKAGE CURRENT @ V_{OP} I_D µA	MAXIMUM CLAMPING VOLTAGE (8/20µs) @ 2000A V_C VOLTS	MAXIMUM CAPACITANCE @ 0V, 1MHz C pF	MAXIMUM LINE THROUGHPUT RESISTANCE R OHMS
420E212	12.0	5.0	22	6000	12
420E225	25.0	5.0	44	3000	12
420E228	28.0	5.0	46	2800	12
420E236	36.0	5.0	60	1500	12
420E250	50.0	5.0	80	1200	12
420E260	60.0	5.0	95	1000	12

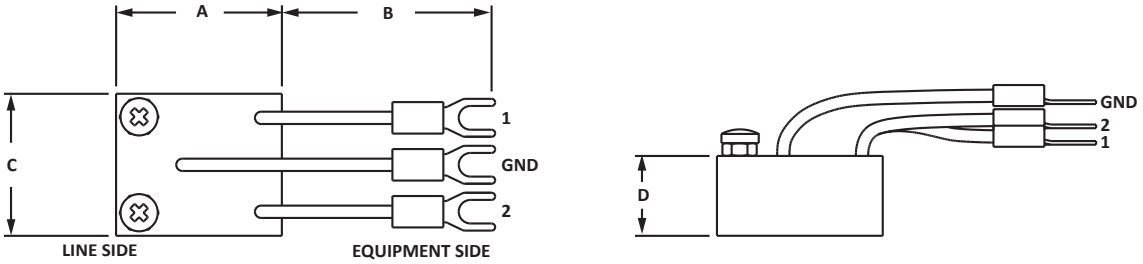
INSTALLATION INSTRUCTIONS

There are two (2) terminals on the **LINE SIDE** and three (3) wires on the **EQUIPMENT SIDE** of this surge protection device (SPD). The Ground lead is considered ground for both the input terminal and the equipment wire connections. For the best results, the ground wire should be connected to a low impedance ground or the green wire AC power ground. It is recommended that a #14 standard wire be used for this connection.

Field (current) loops or incoming signal/data lines are to be cut or disconnected from the equipment to insert the SPD. The **LINE SIDE** terminals of the protector are to be connected to the field loop wires. The **EQUIPMENT SIDE** of the protector is connected to the equipment/controller, etc. The location of the protector should be as close to the equipment requiring protection.

PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	35.56	-	1.40
B	63.50		2.50	
C	-	30.48	-	1.20
D	-	17.15	-	0.675



ORDERING INFORMATION	
BASE PART NUMBER (xx = Voltage)	MARKING
420Exxx	Logo, Date Code, Terminal Designations and Part Number

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 years, ProTek Devices™ is a privately-held company located in Tempe, Arizona, that offers a product line of transient voltage suppressors (TVS); avalanche breakdown diodes; steering diode TVS arrays and other surge suppressor component products. These TVS devices protect electronic systems from the effects of lightning, electrostatic discharge (ESD), nuclear electromagnetic pulses (NEMP), inductive switching and EMI / RFI. ProTek Devices also offers high performance interface and linear products that include analog switches; multiplexers; LED drivers; audio control ICs; RF and related high frequency products. The analog devices work in a host of consumer; industrial; automotive and other applications.

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