

DUAL 4-20mA CONTROL LOOP PROTECTOR

APPLICATIONS

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

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 4-20mA Current Loops
- ✓ Automatic Reset - Will Not Interrupt Service
- ✓ Permanent Two-Stage Line Pair Protection
- ✓ Line-to-Ground (Common) & Line-to-Line (Differential) Protection
- ✓ Subnanosecond Response Time
- ✓ Effective Against Lightning, Inductive Switching & ESD

MECHANICAL CHARACTERISTICS

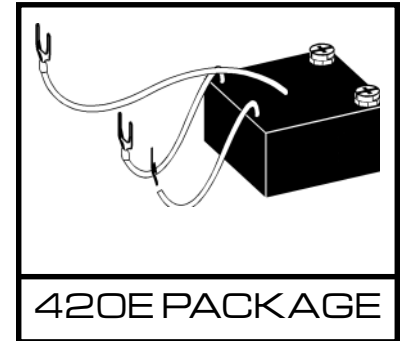
- ✓ Weight 50 grams (Approximate)
- ✓ Flammability Rating UL 94V-0
- ✓ Device Marking: Part Number, Date Code, Logo, and Terminal Designations

DESCRIPTION

The 420E2 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 420E2 series is designed to protect 4-20mA analog control loops from differential and common mode transients. Terminals 1 and 2 are designed as the line pairs for both the line and 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.



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified		
PARAMETER	VALUE	UNITS
Operating Line Current	100	mA
Operating Temperature	-55°C to 100°C	°C
Storage Temperature	-55°C to 100°C	°C
Transient Source Voltage	6kV	V
Transient Current (8/20µs)	10kA per line	A

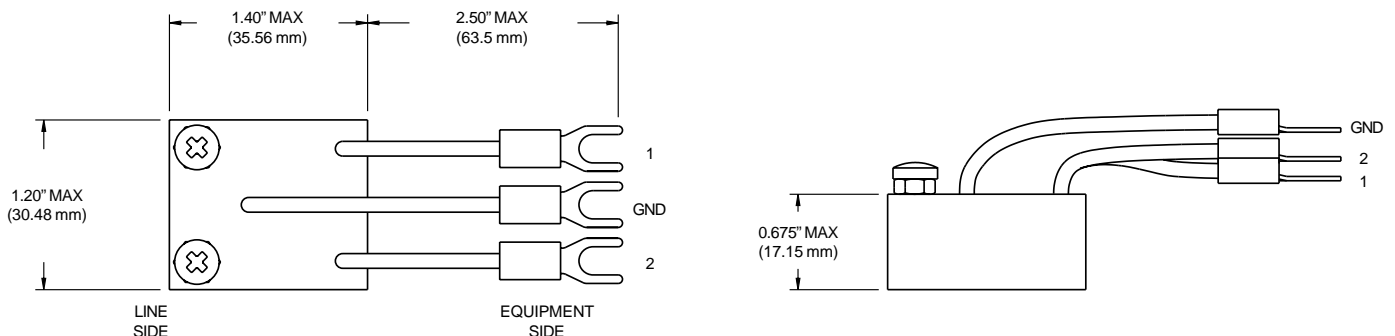
ELECTRICAL CHARACTERISTICS @ 25°C Ambient Temperature					
PROTEK PART NUMBER	MAXIMUM OPERATING LINE VOLTAGE V_{OP} ± VOLTS	MAXIMUM LEAKAGE CURRENT @ V_{OP} I_b µA	MAXIMUM CLAMPING VOLTAGE (8/20µs) @ 2,000A V_c VOLTS	MAXIMUM CAPACITANCE @ 0 V, 1 MHz C pF	MAXIMUM LINE THRUPTUT RESISTANCE R OHMS
420E212	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 stranded 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 420E2 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/ receiver/controller, etc. The location of the protector should be as close to the equipment requiring protection.

420E2 CASE 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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