

## 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 $\mu$ s - 95A, Level 4 (Line-Gnd) & 48A, Level 4 (Line-Line)

## FEATURES

- ✓ 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

## MECHANICAL CHARACTERISTICS

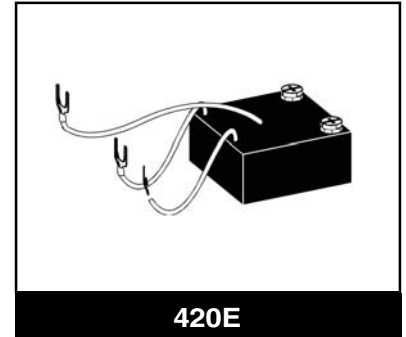
- ✓ Weight: 50 grams (Approximate)
- ✓ Flammability Rating UL 94V-0
- ✓ Device Marking: Logo, Terminal Designations, Date Code & Part Number

## DESCRIPTION

The 420E2 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 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.


**420E**

# 420E212 thru 420E260

## DEVICE CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified					
PART NUMBER	MAXIMUM OPERATING LINE VOLTAGE	MAXIMUM LEAKAGE CURRENT	MAXIMUM CLAMPING VOLTAGE (8/20µs)	MAXIMUM CAPACITANCE	MAXIMUM LINE THRU PUT RESISTANCE
	$V_{OP}$ ±VOLTS	@ $V_{WM}$ $I_b$ µA	@ 2000A $V_C$ VOLTS	@ 0V, 1MHz C PF	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

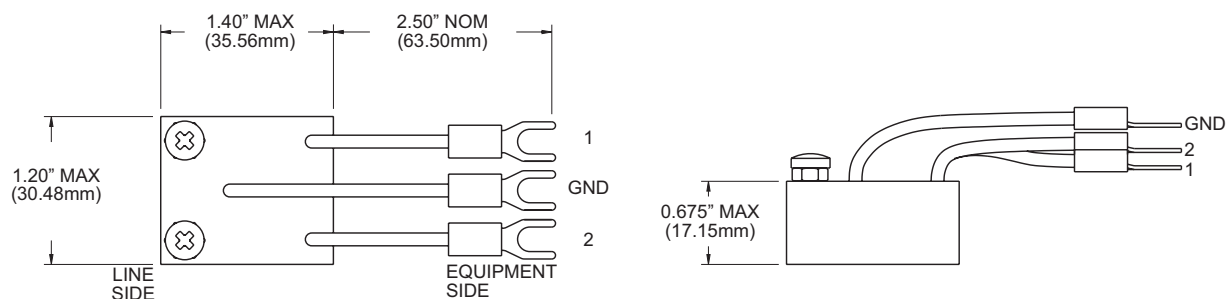
## INSTALLATION INSTRUCTIONS

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 OUTLINE & DIMENSIONS

420E2 CASE OUTLINE



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