

# BRAVO COMMUNICATIONS, INC.

## SURE/FIRE® PoE LAN / NETWORK PROTECTOR



### MODELS PoE/LAN1 & PoE/LAN2

#### Description

Bravo's Sure/Fire Power Over Ethernet (PoE) Protector stops all forms of damaging voltage transients (spikes and surges) that are prevalent in typical unshielded twisted-pair cable (UTP) PoE LAN or other UTP network environments, dedicated to delivering a vast array of media traffic. Applications include Cat.5/Cat.6 LAN, video/control monitoring, remote IP phone integration, remote camera control, remote time clock monitoring and control, as well as a wide range of emerging PoE requirements for remotely powered appliances. The mass of copper cable segments exposed in a typical LAN/network cable environment act as antennae for attracting (inducing) damaging lightning and electrostatic discharge (ESD) energy waveforms. This phenomena together with the sensitivity of low voltage LAN, video, control, PoE appliances and related circuitry, severely exposes critical systems to the forces of electrical storms, ESD, induced transients, switching transients and various types of line faults.

As part of Bravo's Sure/Fire LAN Protector Product Series, Models PoE/LAN1 and PoE/LAN2 are both designed as an in-line cable port protector that can be easily installed in close proximity to the circuit needing proper protection. The PoE unit has a built-in 12 gauge, 9.0-inch-long grounding wire with a #8 stud size ring terminal for fastening to a proper earth ground.

**Model PoE/LAN1** supports DATA on RJ45 connector pins 1 thru 8 as well as POWER on pins 4,5,7,8 up to 48 watts.

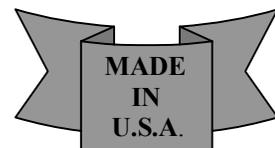
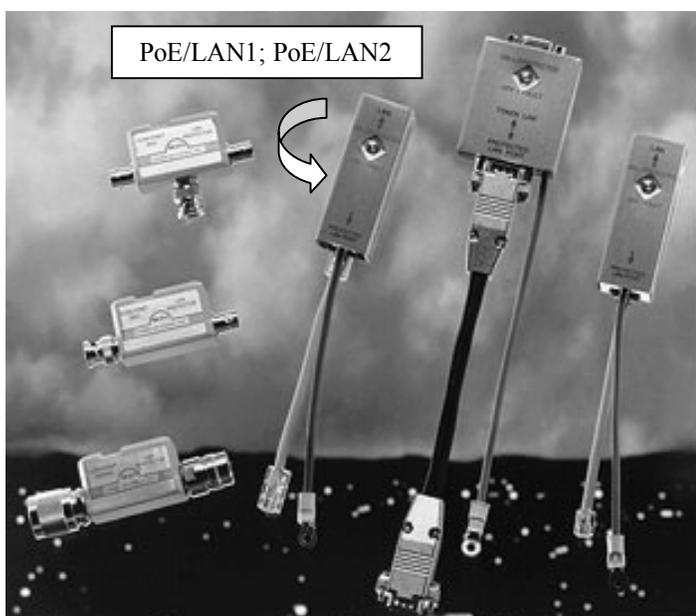
**Model PoE/LAN2** supports DATA on RJ45 connector pins 1 thru 8 as well as POWER on pins 1,2,3,6 up to 48 watts.

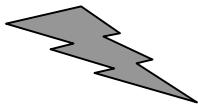
#### Features

- ◆ Unique hybrid protection protects All Cat.5 / Cat.6 PoE ports up thru Full Duplex Ethernet.
- ◆ Stops all voltage transients greater than  $\pm 8$  volts and up to 25K Amps per line in less than a pico-second for Data Only Signals; Nominally  $\pm 90$  volts and up to 20K Amps per line in less than a nano-second for Data Plus Power Signals.
- ◆ Meets All PoE Standards including IEEE 802.3af and major legacy vendor standards.
- ◆ High-Quality signal design allows UTP speeds up to 155 Mhz with straight-thru wiring, protecting 8 signals/wires per port.
- ◆ Solid State circuitry stops all voltage transients repeatedly and then automatically resets itself.
- ◆ Diamond-Shaped Protection Test Light
- ◆ Comes in a shielded all metal enclosure.
- ◆ Every unit has passed a rigorous set of signal and functional tests.

#### Benefits

- ◆ The highest performance hybrid network protection dedicated for protecting UTP PoE circuits.
- ◆ Stops spikes and surges covering a complete range of voltage, current, waveform speed and pulse duration transients. Saves equipment and prevents downtime costs.
- ◆ Compatible with both PoE and Non-PoE equipment installations for universality.
- ◆ Negligible network loading effect with  $< 8$  pf capacitance, and  $< .5$ db insertion loss.
- ◆ Powerful enough to use for both Inter-Building and Intra-Building cable run installations.
- ◆ Ensures foolproof grounding, indicates active protection and provides a valuable LAN circuit monitoring tool.
- ◆ Helps RFI/EMI immunity.
- ◆ Fails short if overstressed sacrificing itself due to an extreme transient effectively disconnecting your unprotected equipment.





# SURE/FIRE® PoE LAN / NETWORK PROTECTOR

## MODELS PoE/LAN1 & PoE/LAN2

There are Bravo UTP Protectors to protect all major Cat.5 / Cat.6 networks/circuits including LAN, PoE LAN, video and control circuits, and RS-232/422/423/485 Serial in various footprints and connector styles.

Inquire at Bravo or your Bravo Distributor if you need more information regarding your specific protection requirements.

### Installation & Operation

- ◆ The Bravo UTP PoE LAN Protector simply plugs into the interface port of the equipment you want to protect using the supplied patch cable. You then attach the Protector's ground wire securely to a proper chassis or earth ground. You can remove the Bravo supplied patch cable and supply an equivalent 4-pair patch cable if desired.
- ◆ Normal UTP network cable interface signals are allowed to flow passively through the Protector without interruption. If an abnormal voltage level is sensed, the Bravo PoE Protector will instantly activate and clamp the damaging voltage transient and divert it through its isolated ground wire to earth ground, thereby safeguarding your valuable equipment. Afterwards, the Protector safely resets itself and assumes its normal guardian/watchdog operation.
- ◆ A Bravo PoE Protector is recommended for every PoE cable port/appliance you want to protect. Because damaging voltage transients can originate anywhere on a cable conductor or be induced through the cable jacket anywhere along the cable run path, only equipment ports having properly installed protectors will be safeguarded.

### Transient Protection

- ◆ Tripolar gas tube crowbar protection on all lines with a nominal DC breakdown voltage of  $\pm 90$  volts for brute force. Maximum impulse discharge current (8/20 us) is 20K Amps. Impulse life (10/1000 us) @ 500 Amps is 100 times.
- ◆ High precision Automatically Resettable Solid State Technology.
- ◆ 1500 Watt Avalanche Diode Fine protection for pico-second clamping nominally @  $\pm 8.2$  volts.
- ◆ Proprietary intermediate stage circuitry acts as a buffer and performs in harmony with other protection stages.

### Physical

- ◆ Weight: Approximately 3 ounces (0.09 kg.).
- ◆ Dimensions: 1.094"H x 3.031"W x 1.094"D;  
27.788 mm H x 76.987 mm W x 27.788 mm D

### Environment

- ◆ Operating temperature: -20° to +80° C; -4° to 176° F.
- ◆ Relative Humidity: 0-90% (non-condensing).

### Certifications

- ◆ Meets or exceeds all applicable IEEE 802.3af, Legacy PoE, UL, FCC, NEC, CCITT, R.E.A. and worldwide standards.
- ◆ UL 94 V-0 transient voltage suppressors.

### Warranty

- ◆ 5-year limited warranty.

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