

# BRAVO COMMUNICATIONS, INC.



## SURE/FIRE® TERMINAL BLOCK 8-WIRE PROTECTORS

( Models TBS-8, TBS-8+, TBSB-8, TBSB-8+, TB/LAN8, TB/LAN8-30V )

### Description

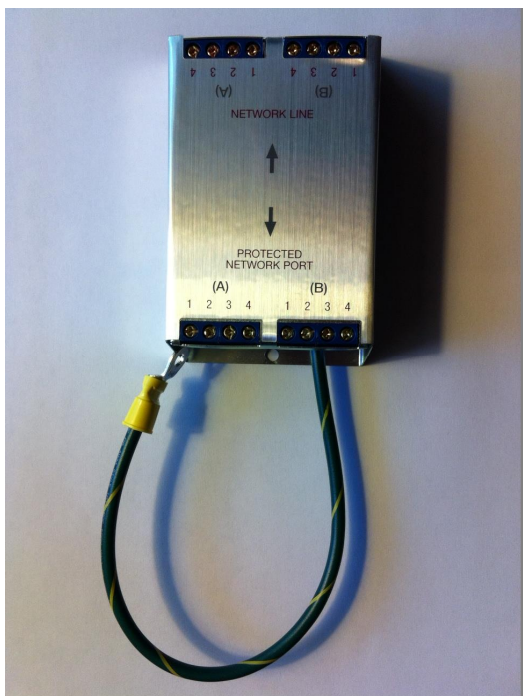
Bravo's Sure/Fire® Terminal Block 8-Wire Protectors stop all forms of damaging voltage transients (spikes and surges) that are prevalent in typical RS-232/V.24 Serial, differential serial (RS-422/423/485) or Cat.5 LAN cable environments. This unit provides protection on all 8 signals on the screw down terminal blocks for hardwiring connections to your equipment needing protection. The Protector installs near the signal interface port requiring protection and has mounting holes for flat surface mounting. Close proximity protection at the source provides the fastest response times and avoids sneak through transients that can otherwise occur on exposed cable runs (antennae). The mass of copper cable segments exposed in a typical Serial or LAN 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 signaling circuitry, severely exposes critical systems to the forces of electrical storms, ESD, induced transients, switching transients and various types of line faults.

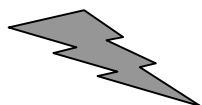
Bravo's Sure/Fire® 8-Wire Protectors include a built-in 12 AWG isolated ground wire for diverting/shunting abnormal and excessive voltage transients to your system or infrastructure ground system.

### Features

- ◆ Solid State protection on all 8 signal lines. 25KA and LAN models also include multi-stage protection.
- ◆ Stops all bidirectional voltage transients greater than  $\pm 8$  volts. Or  $\pm 30$  volts (see model chart).
- ◆ Protects from voltage transients up to 5KA or 25KA of energy in less than a pico-second.
- ◆ High-Quality data signal design allows speeds up to 100 Mhz .
- ◆ Solid State circuitry stops all voltage transients repeatedly and then automatically resets itself.
- ◆ Compact protection in a shielded all metal enclosure.
- ◆ Every unit has passed a rigorous set of signal and functional tests.
- ◆ Universal Protection for up to 8-signal applications.
- ◆ Stops spikes and surges covering a complete range of voltage, current, waveform speed and pulse duration transients. Saves equipment and prevents downtime costs.
- ◆ Quick Response sinking damaging energy to ground with precision.
- ◆ Negligible cable loading effect with with low capacitance won't disturb normal operation.
- ◆ Powerful enough to use for practically any application environment.
- ◆ Makes installation a snap for system integration where space is at a premium.
- ◆ Fails short if overstressed sacrificing itself due to an extreme transient effectively disconnecting your unprotected equipment.

### Benefits





# SURE/FIRE® TERMINAL BLOCK 8-WIRE PROTECTORS

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

## Installation & Operation

The Bravo Terminal Block 8-Wire Protector simply hardwires to the network interface port of the equipment you wish to protect. You then attach the unit's ground wire ring terminal to a proper equipment chassis/earth ground. The chassis ground serves as a zero voltage reference that determines proper voltage clamping levels. Therefore, it is critical that you ensure the integrity of your ground connection and ground location

Normal network cable interface signals are allowed to flow passively through the Protector without interruption. If an abnormal voltage level is sensed, the Bravo 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 Protector is recommended for every cable port 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.

## Physical.

- ◆ Weight: Approximately 4 ounces (0.11 kg.).
- ◆ Dimensions: 1.030" H x 3.060" W x 2.060" D;  
26.162 mm H x 77.724 mm W x 52.324 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 UL, FCC, NEC, CCITT, R.E.A. and worldwide standards.
- ◆ UL 94 V-0 transient voltage suppressors.

## Warranty

- ◆ 5-year limited warranty.

### MODEL

### DESCRIPTION

MODEL	DESCRIPTION
TBS-8	Terminal Block 8-Wire RS-232/V.24 Serial Up To 5KA Protection
TBS-8+	Terminal Block 8-Wire RS-232/V.24 Serial Up To 25KA Protection
TBSB-8	Terminal Block 8-Wire RS-422/423/485 Serial Up To 5KA Protection
TBSB-8+	Terminal Block 8-Wire RS-422/423/485 Serial Up To 25KA Protection
TB/LAN8	Terminal Block 8-Wire Cat.5 LAN Protector Up To 25KA Protection & 8.2 Volt Clamp
TB/LAN8-30V	Terminal Block 8-Wire Cat.5 LAN Protector Up To 25KA Protection & 30 Volt Clamp

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**BRAVO COMMUNICATIONS, INC.**  
 3463 MEADOWLANDS LN, SAN JOSE, CA 95135 U.S.A.  
 PH: (408) 297-8700 FAX: (408) 297-8701  
 WEB: BRAVOBRAVO.COM EMAIL: sales@bravobravo.com  
*Cost-Effective Networking Solutions*