

Description

Bravo's Sure/Fire family of TELECOM Protectors stops all forms of telecom damaging voltage transients (spikes and surges) as well as hazardous overcurrent fault conditions that are prevalent in Telecom networks. The mass of cable segments exposed in a typical telecom environment act as antennae for attracting (inducing) damaging lightning and electrostatic discharge (ESD) energy waveforms. Telecom lines represent the longest antennae usually seen in a business or home environment and their exposure to outside natural phenomena such as storms and downed transformers can easily disrupt your business or can even be the source of a disastrous fire.

Bravo's Sure/Fire TELECOM Protectors are in-line protectors that are easily and directly plugged into the telecom ports of PCs, modems, multiplexers, fax machines, answering

machines, digital phone sets, CSU/DSU equipment, T1/E1/ISDN/WAN systems and virtually all types of analog and digital telecom equipment.

Unlike hybrid AC outlet powerstrip approaches that simply include a telephone jack and are remote from the actual ports to be protected, Bravo's TELECOM Protectors provide the advantages of being dedicated telecom guardians plugged directly into the telecom port you want to protect for superior response times. Because Bravo's protectors are protection plugged directly into telecom port circuitry, they eliminate the possibility of "sneak thru" damage that can otherwise occur on the remote telecom cable paths connected to hybrid AC powerstrips. Our protectors also isolate your critical telecom network lines away from nearby AC outlet high voltage lines thereby reducing a susceptibility to damage and interference.

Features

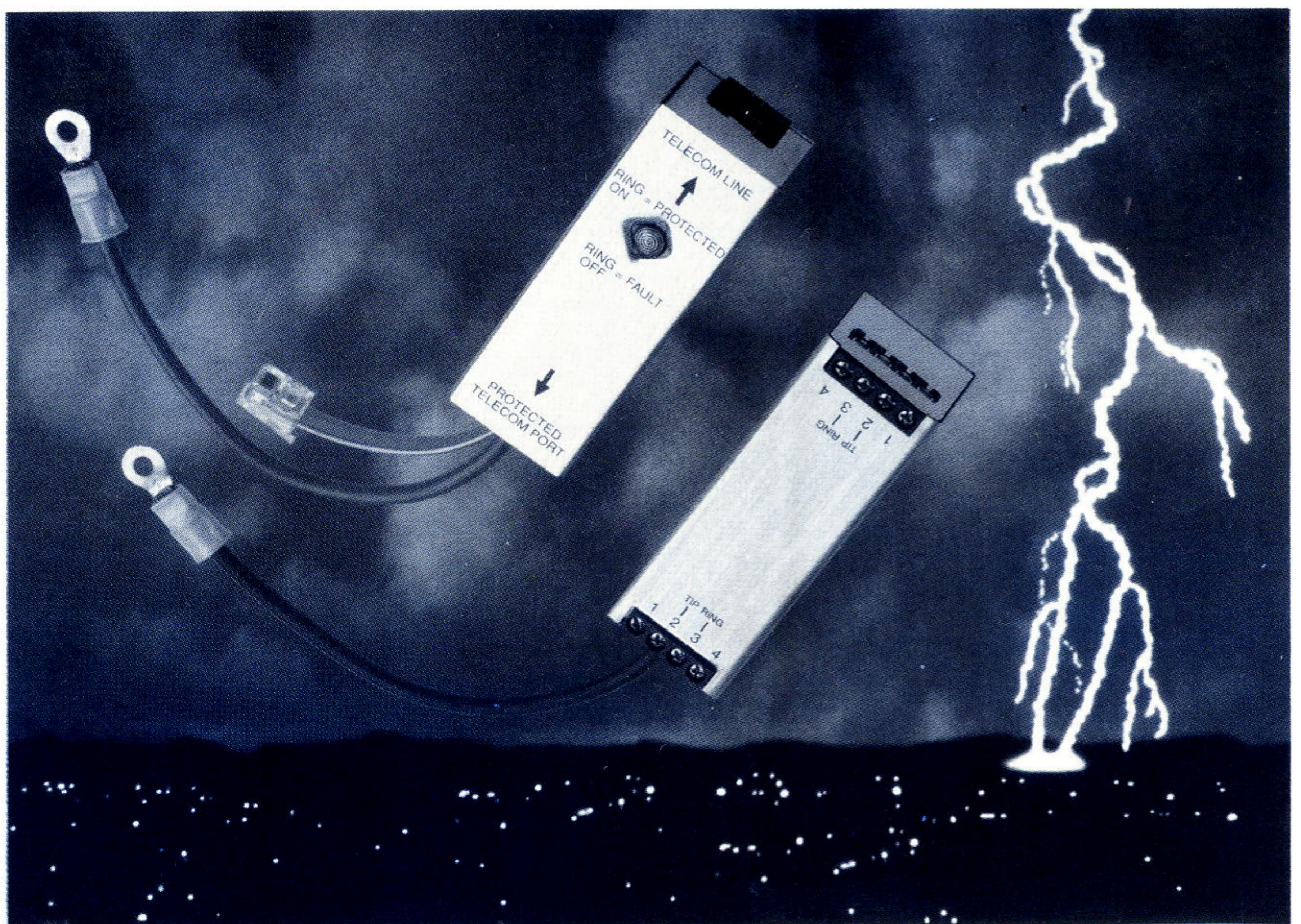
- TELECOM close proximity in-line port protection.
- Both modular telephone jack and screw-down terminal block styles available.
- Protects dial-up (switched analog), dedicated (leased analog) and high-speed digital lines.
- Advanced balanced thyristor technology on all signal lines.
- AUTOMATICALLY RESETTABLE high precision fuses never need replacement.
- Stops all voltage transients and high current faults repeatedly in less than a nano-second and then automatically resets itself.
- Shielded EMI/RFI all-metal enclosures or shielded plastic fire-proof enclosures.
- Diamond-Shaped Ringer Protection Light (Models DDD / TEL1 & DDD / TEL2).
- High-Speed TELECOM design allows signal speeds up to 100 Mhz.

Benefits

- The highest performance telecom protection isolated from AC circuits.
- The best protection available against both metallic (line-to-line) and common (line-to-ground) damaging transients.
- Eliminates "Blown Fuse" nuisance service calls and downtime.
- Ringer Protection Light indicates an incoming call, proper grounding and that TELECOM protection is active.
- Fails open if overstressed in an overcurrent fault to prevent fires.

SURE/FIRE[®] TELECOM PROTECTORS

*The "Sure/Fire"
TELECOM Protection
For Your Enterprise
Networks & Telephony
Applications.*



SURE/FIRE[®] TELECOM PROTECTORS

There are Bravo TELECOM Protectors to protect all major telecom networks including Switched, Dedicated/Leased, WAN, ISDN, DDS, T1/E1, and most other types of voice/data networks. Inquire at Bravo if you need more information regarding your specific protection requirements.

Installation & Operation

- Bravo TELECOM Protectors simply plug into the telecom interface port of the equipment you want to protect and you fasten the isolated ground wire to your equipment's chassis ground. For models DDD / TEL1 & DDD / TEL2, the diamond-shaped Ringer Protection Light will flash "RED" when the phone line rings indicating an incoming caller, that you have properly installed and grounded the protector, that the resettable fuse has not tripped, and that telecom protection is active.
- Normal telecom network interface signals are allowed to flow passively through the protector without interruption. If an abnormal voltage level is sensed, the Bravo TELECOM 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 telecom installation. Afterwards, the Protector safely resets itself and assumes its normal guardian/watchdog operation.
- In addition, Bravo TELECOM Protectors feature a unique resettable line fuse for each signal line that will effectively disconnect the telecom line in the event of a hazardous and damaging over-current condition such as a power transformer fault. Once the hazardous overcurrent condition is removed from the line, the Bravo Protector will automatically reset its fuse circuit and reconnect the line.
- A TELECOM Protector is recommended for every telecom node/port you want to protect. Because damaging voltage and current transients can originate anywhere on a cable conductor or be induced through the cable jacket anywhere along the cable run path, only telecom equipment ports having properly installed Protectors will be safeguarded.

Transient Protection

- Advanced Balanced Thyristor Crowbar Protection on all lines with a nominal voltage clamping of ± 265 volts for all DDD / TEL models and a nominal voltage clamping of ± 77 volts for LL / TEL and HS / TEL models. Clamps in less than a nano-second.
- High Precision Automatically Resettable Fusing Technology on all lines that effectively disconnects a line with a current fault above 150 ma of current.
- Metallic and Common telecom line protection.
- EMI/RFI shielding.
- Isolates telecom lines away from AC power line faults and interference.

Physical

- Size: All models are within these maximum dimensions – (excludes cables)
1.2" H x 1.3" W x 3.5" D;
3.0 cm H x 3.3 cm W x 8.9 cm D
- Weight: All models are 2 oz. (.06 kg.)

Environment

- Operating Temperature:
0° - 50° C; 32° - 122° F.
- Relative Humidity:
0 - 90% (non-condensing).

Certifications

- Meets or exceeds all applicable UL, FCC, NEC, CCITT, R.E.A. and world-wide standards.
- UL 94 V-0 transient voltage suppressors.

Warranty

- 1-year limited warranty.
- Extended warranty option.

Advanced TELECOM Protection Stops Lightning, ESD & All Damaging Voltages & Current.

Model Number	Description & Equipment Protected
DDD / TEL1	Modular Switched Analog Telecom Line (DDD) Protector. Provides single voice circuit phone line equipment protection on the 2 center pins (pins 4 & 5) for Tip & Ring. Includes a 4" RJ12 telephone insertion cable.
DDD / TEL2	Terminal Block Switched Analog Telecom Line (DDD) Protector. Provides the same protection as DDD/TEL1 but uses 4-position terminal block connectors. Only the two center pins are protected.
DDD / TEL3	Modular Switched Analog Dual Telecom Line (DDD) Protector. Provides two voice circuit phone line equipment protection on the 4 center pins (pins 3, 4, 5 & 6). Includes a 4" RJ12 telephone insertion cable.
DDD / TEL4	Terminal Block Switched Analog Dual Telecom Line (DDD) Protector. Provides the same protection as DDD/TEL3 but uses 4-position terminal block connectors. All 4 pins are protected.
LL / TEL1	Modular Leased Analog Telecom Line Protector. Provides dedicated analog leased line protection on pins 1, 2, 7 & 8. Includes a 4" RJ45 telephone insertion cable.
LL / TEL2	Terminal Block Leased Analog Telecom Line Protector. Provides the same protection as LL/TEL1 but uses 4-position terminal block connectors.
HS / TEL1	Modular High-Speed Telecom Line Protector. Provides high-speed phone line protection for digital phone systems, digital leased lines, T1/E1 lines, ISDN equipment, CSU/DSU devices, WAN connections and other high-speed telecom interfaces. Four-Line Protection is provided on pins 1 or 3, 2 or 4, 5 or 7 and 6 or 8. Includes a 4" Level 5 insertion cable.
HS / TEL2	Terminal Block High-Speed Telecom Line Protector. Provides the same protection as HS/TEL1 but uses 4-position terminal block connectors.

BRAVO

COMMUNICATIONS, INC.

Bravo Communications, Inc. reserves the right to change any specification without prior notice.

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