

Bourns® Multi-Stage Protection Technology

The MSP® Advantage

“Multi Stage Protectors” - The MSP® 5-pins and station protectors provide superior protection by combining the best of two technologies: the high energy handling of a three-electrode Gas Discharge Tube with the quick response of solid-state Metal Oxide Varistors (MOVs). Advantages include:

- Solid state MOV for rapid response to surges
- Gas Discharge Tube gives robust surge energy handling
- Low capacitance for minimal bandwidth reduction
- Elimination of air-back-up gap provides extended service life
- Switch-grade fail-short provides maximum fire safety

As wireline telecom networks become shorter in length, modern electronic equipment is more susceptible to higher energy surges over progressively shorter cable runs and smaller pair counts. MSP® (Multi-Stage Protection) devices use patented technology to provide extremely high surge carrying levels while minimizing bandwidth-limiting capacitance. Service life is extended by the elimination of air-back-up gaps. Precision matched Metal Oxide Varistors ensure optimum safety with consistently low clamping levels.

MSP® technology exceeds all industry standards for Impulse-Life and AC Life. Field deployments throughout the years have shown excellent reliability. Recent uses with VDSL (12 MHz bandwidth with 50 Mbps data rates) have demonstrated enhanced system performance and reach parameters attesting to the technology's “future-proofing” electronic performance.

High-speed data is virtually unimpeded due to its low insertion loss and behaves transparently to the information flow due to its excellent return loss. In a recent deployment of a fiber optic-copper/LAN system with VOD (Video On Demand),

streaming video at a rate of 108 Mbps was sent through the copper loop flawlessly to the customer premises.

MSP® products meet or exceed requirements put forth by agencies such as Underwriter's Laboratories, Telcordia (formerly Bellcore), CSA and RUS.

MSP® technology is featured in the Bourns® circuit protection product line, and primary telephony products including 5-pin CO (Central Office) protectors and NID (Network Interface Devices) protectors.

Features

- 6th Generation Gas Discharge Tube, GDT
 - *2000 A 10/250 impulse capability*
 - *No failures during life tests*
 - *UL 497 listed for back-up gapless use*
- Metal Oxide Varistors
 - *Eliminates leading cause of premature failure of air-back-up gap*
 - *Better impulse limiting than GDTs alone*
- Patented Switch-Grade Fail-Short
 - *Reduces risk of thermal runaway*
 - *Maximum fire safety protection*