

Surge Suppression for a Digital World™



Surge Suppression® Incorporated

Manufacturer and Supplier of Quality TVSS Systems

PRODUCTS



The SPD Industry's Most Complete and Capable Product Line

Surge Suppression Incorporated® is proud to offer the industry's most complete and capable line of high quality Surge Protective Devices (SPDs) for Industrial, Commercial and Department of Defense applications. Manufactured in our ISO 9001 Certified factory, we cover the full range of applications for AC/DC power, data, current loop, and telecommunications. From .5 volts (DC) to 7200 volts (AC) applications, we have your surge suppression!

Our quarter century of hands on, real world field experience can be seen in the simplicity, functionality, and user friendly design of all our products. Simply stated, these are the finest, highest quality, best performing Surge Suppression products available anywhere in the world today.

"Power Quality Is Our Only Business"

Industry Leading Design & Performance

A Surge Protective Device is only as good as it's durability, let-through voltage capability and user friendly functionality. Our engineering and design emphasis has always been focused on these simple yet critical factors and they are what separates our products from all others. A few of the key features include:

• Voltage Responsive Circuitry

Designed to mitigate repetitive high energy impulse transients generated by lightning, power system faults and load switching, the Voltage Responsive Circuitry is standard on all **Surge Suppression Incorporated®** models. This multi-level hybrid network provides the brute strength and durability needed to handle repetitive high amplitude transients. *Patented*, internal, over-current fusing techniques and component level thermal fusing assure these are the safest SPDs available today.

• Frequency Responsive Circuitry

Protecting critical electronics and microprocessors requires the most advanced and capable suppression circuit available – The Frequency Responsive Circuitry circuit. Employing multi-stage hybrid technology, this circuit blends the high energy handling capability of the Voltage Responsive Circuitry with advanced sinewave tracking performance. The resulting hybrid circuit suppresses internally generated ringwave transients down to harmless levels, yet it is still capable of handling thousands of repetitive high energy surges. This combination provides a level of durability and performance that is unmatched. It is the absolute best suppression circuit available today.

• Circuit Encapsulation

All **Surge Suppression Incorporated®** power suppression devices utilize high dielectric circuit encapsulation. Circuit encapsulation is widely used in high-end, mil-spec, industrial and commercial applications. The encapsulation enhances the Let-through Voltage performance by reducing the overall size of the device. Durability is improved by increasing circuit integrity.

The Discrete "All Mode" Protection Advantage

Surge Suppression Incorporated® is the only SPD manufacturer to offer a complete line of products featuring Discrete "All Mode" Protection (10 modes for 3 phase, 4 wire Wye and Delta circuits). This advanced circuit provides important benefits and performance advantages over "Reduced Mode" (7 or 4 modes) devices that are commonly marketed. A few of these benefits include:

- Increased Surge Current Sharing
- Improved Durability
- Increased Operational Life
- Bonding All Modes to the Same Potential
- Lowered Component Stress
- Improved Let-through Voltage

Leading Industry Guidelines Support the Need For "Discrete All Mode" Protection

IEEE Std 1100-2006
(Emerald Book section 8.6.1)

"Surge protective devices used for three phase, four wire circuits are generally recommended to be connected in all combinations of line to line, line to neutral, line to ground and neutral to ground".

Your One Stop For Total Protection

- AC Panel – 120VAC to 7200VAC
- DC Panel – 12VDC to 650VDC
- AC Series – Dedicated Loads to 80V
- DC Series – Dedicated Loads to 240V
- Telecom – POTS to T1
- Data – Up to 100mbps
- Current Loop – Up to 200kb/sec
- Point-of Use – 120-250V, 15A-60A
- OEM & Custom Apps. – **Give Us A Call!**

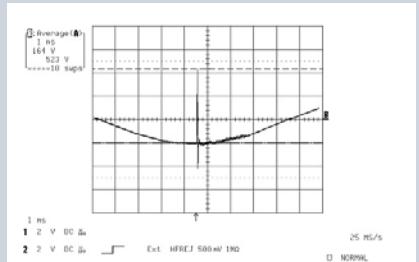


Fig.1 – Actual scope trace illustrating the effectiveness of the Voltage Responsive Circuitry on a IEEE C62.41 specified 2000V 67A 100kHz ring wave at the 270 degree phase angle.
LTV = 523V at 6" external lead length.

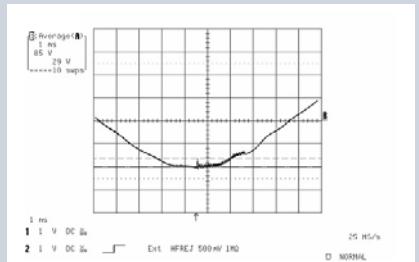


Fig. 2 – Actual scope trace illustrating the effectiveness of the Frequency Responsive Circuitry on a IEEE C62.41 specified 2000V 67A 100kHz ring wave at the 270 degree phase angle.
LTV = 29V at 6" external lead length.

Parallel Connected Panel Models

Brute Strength Plus Refined Performance

Surge Suppression Incorporated® parallel connected panel devices have, time after time, provided the brute strength and unsurpassed durability needed to protect mission critical systems during lightning strikes and severe power system faults. These models provide the refined performance levels necessary to safeguard delicate microprocessor based electronics, allowing your critical systems to stay up and running. This capability has literally kept companies in business when neighboring facilities have suffered extensive damage, extended downtime and lost revenue. This is a competitive "Advantage" that is critical to your company's well-being, bottom line and future.



The Most Advanced Surge Suppressor Available Today

The **Advantage™** series of parallel connected panel models represent the latest in surge suppression design and performance. The **Advantage™** project started with one very simple goal – designing the best performing, safest, surge suppression device in the world. The **Advantage™** design team met this goal by blending advanced computer circuit modeling with tried-and-true design principals learned over the past quarter century. One key design goal, established at the very start of the project, was that the **Advantage™** must have the absolute lowest **Let-through Voltage**. No other performance metric is as vital to the survival of your mission critical electronics. Advanced, low impedance surge paths and high quality suppression components assure that the **Advantage™** will provide the highest possible protection levels.

The **Advantage™** series utilizes both **component level thermal fusing** and **patented, internal, circuit board mounted, over-current fusing**. These advanced fusing circuits, combined with the performance capability of the Voltage Responsive and Frequency Responsive Circuitry, provide a level of performance and safety that is unmatched. *The **Advantage™** Series is the absolute best suppression device available today!*

STANDARD FEATURES

- ANSI/UL 1449-2006, Type 1 and Type 2
- ISO 9001 Manufactured Quality
- Industry Leading Let-through Voltage Performance
- Circuit Encapsulation
- Voltage Responsive Circuitry
- Discrete "All Mode" Circuitry
- Patented, Internal Circuit Board Mounted, Over-current Fusing
- Advanced Internal Diagnostics
- NEMA 4 Enclosure
- Component Level Thermal Fusing
- Peak Surge Current Levels From 90kA to 900kA per phase

25-Year Free Replacement Warranty

OPTIONAL FEATURES

- Multi-stage, Hybrid Frequency Responsive Circuitry
- Integral Surge Counter
- Form "C" Dry Relay Contacts
- Internal or Remote Audible Alarm
- Remote Lights
- External Alarm Module
- Integral Disconnect
- External Disconnect
- NEMA 12, 4 and 4X Enclosures
- Application Specific Design Modifications Upon Request

Available in all Single and Three Phase configurations including:
120, 240, 480, 120/240, 120/208, 220/380, 230/400,
240/415, 277/480, 347/600 120NN, 240NN, 480NN,
600NN, 2500NN, 4160NN

Dedicated Load Circuit Protection

Sophisticated and highly integrated microprocessor based equipment and systems are utilized across every sector of today's fast-paced digital world. Protecting these mission critical systems must be given the highest priority. By the very nature of their design, these systems are increasingly prone to damage from even low level transient activity. The Dedicated Load Circuit Protection models provide the level of protection needed to assure these mission critical systems survive and perform as designed.

- Optimal Response Network™ and Frequency Responsive Circuitry
- Series Connected Dedicated load circuit protection
- Compact Size
- Terminal and Hardwire
- Simple Installation
- Lowest Let-through Voltage Levels



Data Line & Current Loop Models

Data communications lines and current loops are the very life blood of highly integrated systems and networks. By the nature of their design, these circuits are extremely susceptible to failure from even extremely low level transient activity. Protecting these circuits is another key element of the Optimal Protection Network™.

- Multi-stage hybrid design
- Data Rates to 100Mbps
- Low Impedance/insertion loss
- Terminal, Coax and Hardwire
- Lowest Let-through Voltage Levels



Telecom Line Models

Telecommunication lines are frequently the overlooked "back door" for transients to enter your facility. Telecommunication equipment often suffers the highest rate of catastrophic damage of any system within a facility. Protecting incoming telecommunications lines and lines running from one building to another is not only prudent, it is an NEC requirement.

- POTS, T1, T10, DSL, fax and modem lines
- Terminal strip, modular jack and punch-down block configurations
- Lowest Let-through Voltage Levels



Custom and Specialty Models

Our staff of professional design and application engineers have the experience and knowledge needed to successfully solve your most difficult surge protection applications. We are very proud of our ability to solve ANY surge protection problem. If one of our thousands of standard models will not fit your unique requirements, we will work hand-in-hand with your personnel to make whatever modifications and design changes necessary to provide the right protection solution. From a single unit to an entire protection system, no job is too small, too large or too complex.

- Medium Voltage Applications (up to 7200VAC)
- External Lighting and Audio Controls
- Casino and Gaming Controls
- Amusement Ride Controls
- FAA Required Obstruction Lighting
- Integrated Load Centers
- Din Rail Mount Kits



ANSI/UL1449-2006
UL1283

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