



**BEST QUALITY<sup>®</sup>**  
**POWER INC.**

**THE POWER TO PROTECT**

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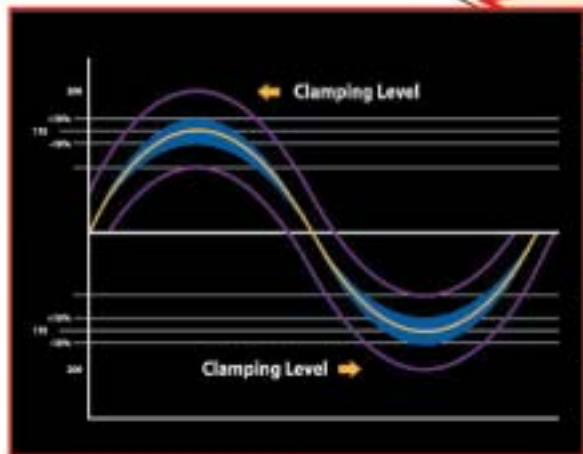
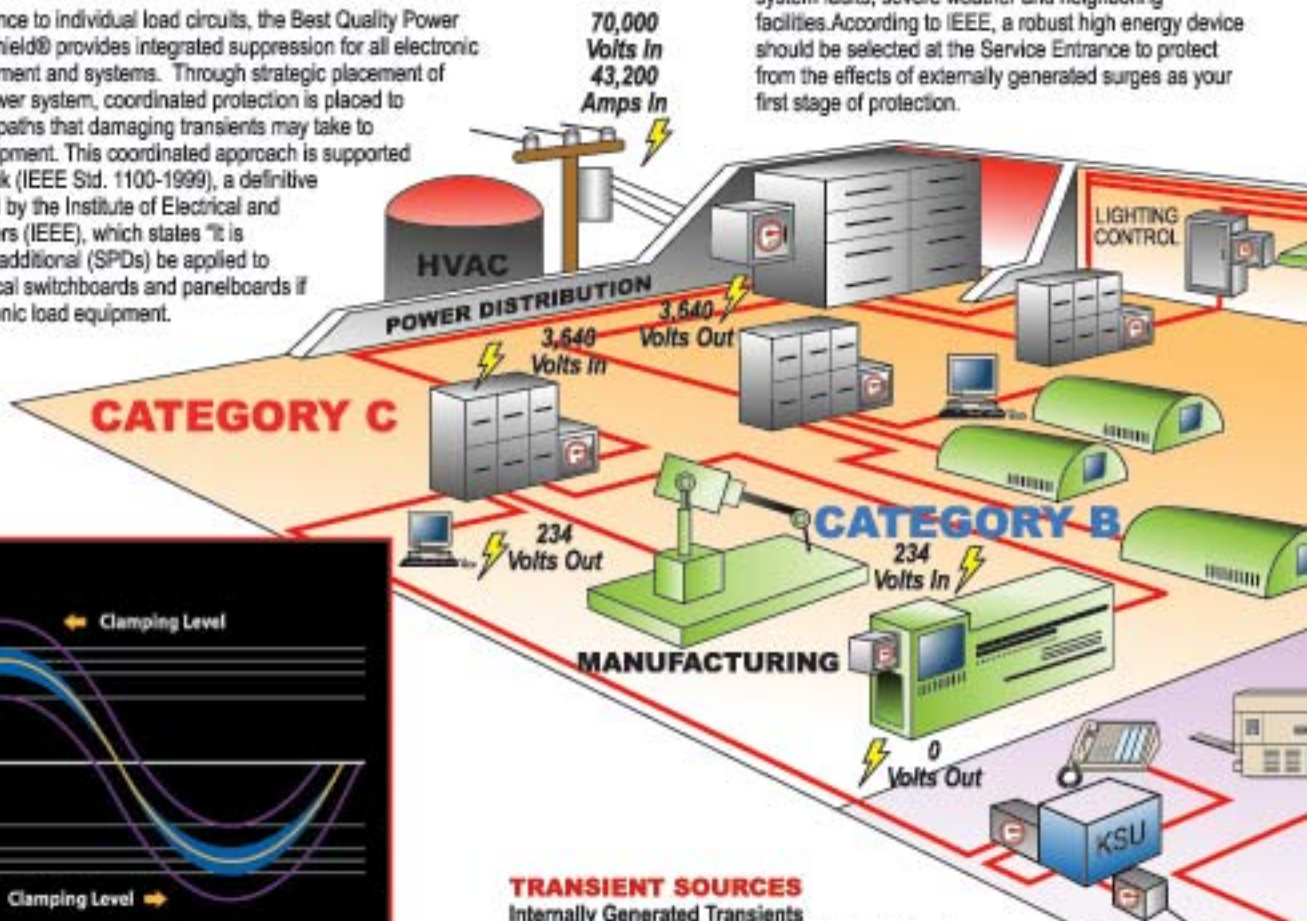
Best Quality Power continues to lead the worldwide surge suppression industry with new, innovative SPDs to suppress surges, transient voltage, and Hybrid Harmonic Power Conditioners to reduce harmonic distortion. We offer the most comprehensive system-wide protection plan available.

A Voltage Transient is a subcycle disturbance in the ac waveform that is evidenced by a sharp, brief discontinuity of the waveform. (IEEE Std 1100-1999 2.2.83). ANSI/IEEE Standard waveforms for demonstrating surge susceptibility within a facility go up to 6,000 volts for branch panels and outlets (ANSI/IEEE C62.41-1991). Harmonic Distortion causes overheating of electrical distribution conductors and transformers, nuisance tripping of breakers and can cause microprocessor controlled equipment to malfunction.

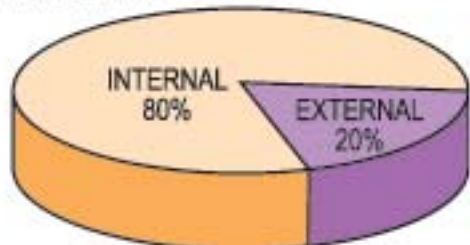
From service entrance to individual load circuits, the Best Quality Power Modular Network Shield® provides integrated suppression for all electronic and electrical equipment and systems. Through strategic placement of SPDs within the power system, coordinated protection is placed to effectively close all paths that damaging transients may take to mission-critical equipment. This coordinated approach is supported by the Emerald Book (IEEE Std. 1100-1999), a definitive reference published by the Institute of Electrical and Electronics Engineers (IEEE), which states "It is recommended that additional (SPDs) be applied to downstream electrical switchboards and panelboards if they support electronic load equipment.

ANSI/IEEE C62.41-1991 separates a typical facility into three location categories, each characterized by differing exposure levels, transient wave shapes, voltage/current levels and transient sources. The category locations illustrated here (C, B & A) serve as the basis for a simplified explanation of the Best Quality Power Modular Network Shield.

**Category C** locations are subject to externally generated impulse transients resulting from events such as lightning, power company grid switching, power system faults, severe weather and neighboring facilities. According to IEEE, a robust high energy device should be selected at the Service Entrance to protect from the effects of externally generated surges as your first stage of protection.



Over 95% of TVSS devices can only address a transient after it has passed a fixed threshold beyond the sinewave. Best Quality Power products featuring Sinewave Phase Angle Tracking can actually suppress damaging transients inside the sinewave.



**TRANSIENT SOURCES**

**Internally Generated Transients**

Up to 80% of transients are generated from internal sources such as load switching and normal equipment operations, causing:

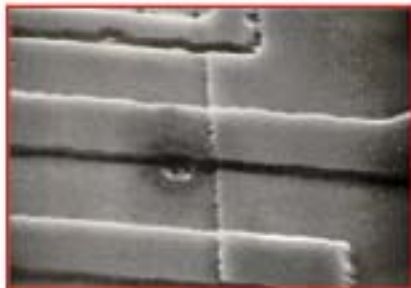
- Cumulative damage
- Premature equipment failure
- Data losses and system resets
- Downtime, lost business and opportunities

**Externally Generated Transients**

At least 20% of transients are generated from external sources such as lightning and power company grid-switching. They can cause:

- Catastrophic equipment failure
- Immediate operation shutdown
- Long-term disruption of business
- Expensive equipment repair and replacement costs

# Best Quality Power Modular Network Shield® Protection



## Effects Of Transients On Electronic Equipment

As the repetitive transients continue to "hit the spot" over time, the blister grows until it effectively blocks the power or data flow on that circuit.

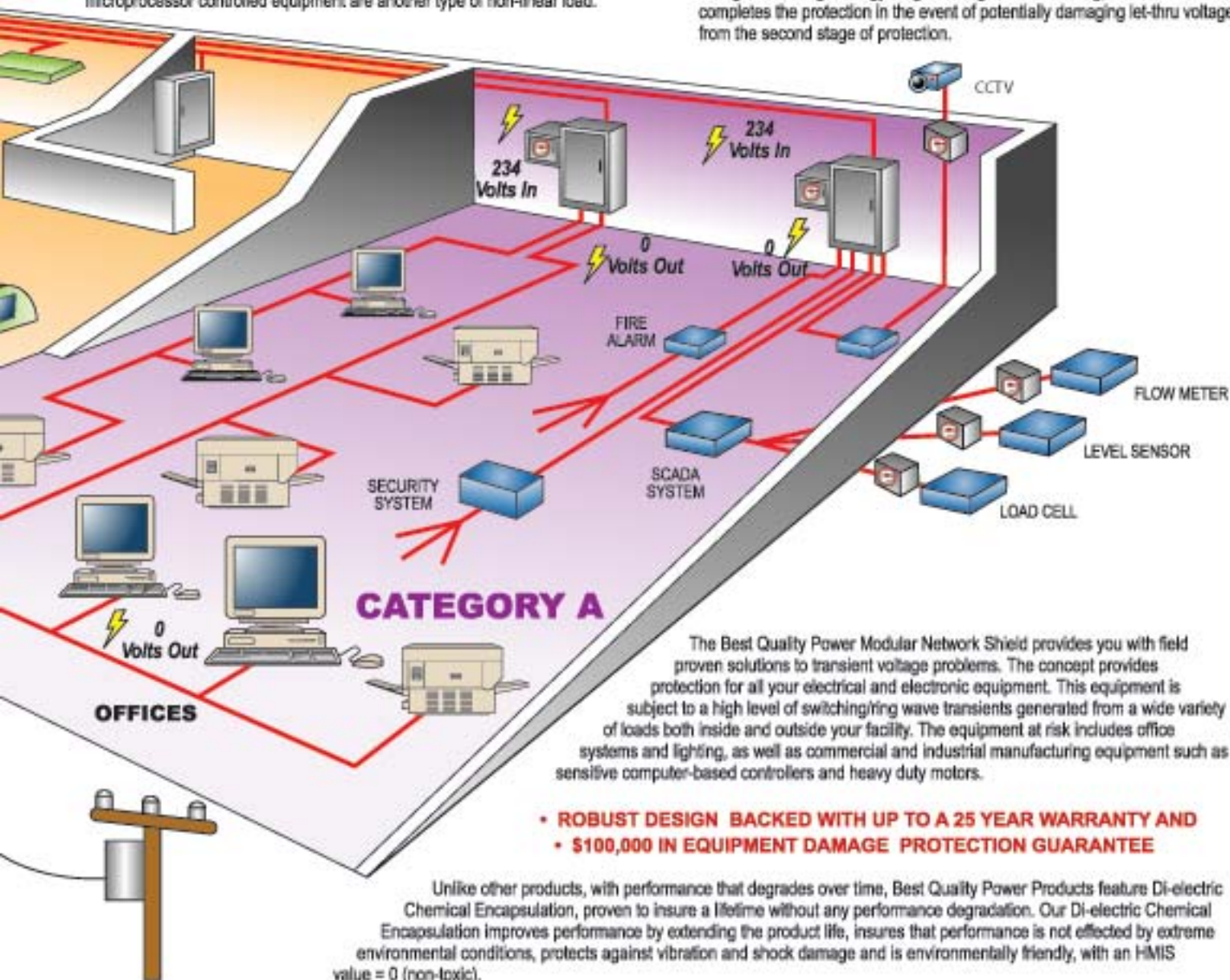
**Category B** locations are subject to a mixture of externally generated impulse transients and internally generated switching/ring wave transients generated by a broad spectrum of load equipment such as motors, environmental control equipment, manufacturing and office equipment.

Electronic Equipment used in this part of the building are also a source of harmonic distortion. Switch mode power supplies, common to all types of microprocessor controlled equipment are another type of non-linear load.

Every Best Quality Power Modular Network Shield is tailored to fit your requirements. Our Certified Power Partners can provide you with a comprehensive, facility-wide survey including system exposure levels. This surge risk assessment forms the basis for product selection and application to assure the most effective Modular Network Shield possible.

**Category A** locations are subject to a high level of switching/ring wave transients generated from a wide variety of load equipment, including office equipment and commercial and industrial manufacturing systems. Studies cited in a *Specifying Engineering Magazine* study confirm that as many as 432,000 transients per hour may occur in industrial facilities. While this may sound like a lot, it is only two per cycle.

Devices at this Level should be designed to protect against the affects of internally generated transient voltages. And to clean up any remnant let-thru voltage from a high energy surge coming into the building, this device completes the protection in the event of potentially damaging let-thru voltage from the second stage of protection.



The Best Quality Power Modular Network Shield provides you with field proven solutions to transient voltage problems. The concept provides protection for all your electrical and electronic equipment. This equipment is subject to a high level of switching/ring wave transients generated from a wide variety of loads both inside and outside your facility. The equipment at risk includes office systems and lighting, as well as commercial and industrial manufacturing equipment such as sensitive computer-based controllers and heavy duty motors.

- **ROBUST DESIGN BACKED WITH UP TO A 25 YEAR WARRANTY AND**
- **\$100,000 IN EQUIPMENT DAMAGE PROTECTION GUARANTEE**

Unlike other products, with performance that degrades over time, Best Quality Power Products feature Di-electric Chemical Encapsulation, proven to insure a lifetime without any performance degradation. Our Di-electric Chemical Encapsulation improves performance by extending the product life, insures that performance is not effected by extreme environmental conditions, protects against vibration and shock damage and is environmentally friendly, with an HMIS value = 0 (non-toxic).



# PRODUCTS AT A GLANCE



**FC Series:** Facility AC Distribution ProtectionFeaturing our unique Hybrid Threshold Clamping Technology combined with Electro-Chemical Encapsulation and a 15 year warranty. FC Series units may be selected with peak surge current ratings from 40 kA to 600 kA per phase and are an economical solution for applications that require a robust device for installation at service entrances or main distribution panels.



**ST Series:** Facility AC Distribution ProtectionFeaturing our unique Sinewave Phase Angle Tracking Technology combined with Electro-Chemical Encapsulation and a 15 year warranty. ST Series units may be selected with peak surge current ratings from 40 kA to 600 kA per phase and are the ideal solution for applications that require a robust device for installation at load centers, or critical pieces of sensitive electronics.



**CF Series:** Facility AC Distribution ProtectionFeaturing our unique Component Level Bubble Encapsulation and a industry leading 25 year warranty, the CF Series is the most advanced TVSS technology in the industry. CF Series units may be selected with peak surge current ratings from 40 kA to 200 kA per phase and may be configured with either Hybrid Threshold Clamping or Sinewave Phase Angle Tracking technology.



**Series 519-EHGTP:** Facility AC Distribution ProtectionFeaturing our patent pending Electronic Harmonic Grade TVSS Panelboards. This is the only panelboard device in the world that reduces harmonic distortion and voltage transients and noise. This package reduces the cost for this level protection by several thousand dollars per distribution point. Combined with a CFM Series TVSS featuring Component Level Bubble Encapsulation and Sinewave Phase Angle Tracking, Series 519-EHGTP has truly set a new standard against which all others will be measured.



**Series 519-IPH:** Facility AC Distribution ProtectionFeaturing our patent pending Harmonic Power conditioners with CFM Series TVSS This Harmonic Power conditioner reduces harmonic distortion and voltage transients and noise and is available in sizes from 10-2,500 kva. Combined with a CFM Series TVSS featuring Component Level Bubble Encapsulation and Sinewave Phase Angle Tracking, Series 519-IPH features a very cost effective approach that solves distribution related harmonic, surge and noise related power protection issues.



**Series 519-RxHR:** Facility AC Distribution ProtectionFeaturing our patent pending point of use Harmonic Power Conditioner,combined with our CFM Series TVSS module, voltage transformation and your choice of receptacles. Series 519-RxHR is the only commercially available product designed for direct buss bar connection on 480 or 600 vac distribution systems, that supplies computer grade power on the plant floor. This a cost effective solution that will solve the problems that most frequently disrupt sensitive electronic equipment.



**Telco:** Protection Featuring robust solid state technology with Electro-Chemical Encapsulation. Our Telco devices feature exceptional Let-Thru voltage performance for Modular plug, terminal style or Punch Down Block applications. Designed to handle receive surge impulses with degradation, we back our Telco units with a 25 year warranty.



**Dataline:** ProtectionFeaturing a Hybrid design that is closely matched to the Dataline transmission characteristics. This insures error free transmission. Combine that with excellent Let-Thru Voltage performance, high energy capability, robust solid state technology with Electro-Chemical Encapsulation and a twenty five warranty, we won't find a better product than Best Quality Power Telco units.



**Series/OEM:** ProtectionBest Quality Power Series/OEM units are ideal for the load level protection in a Modular Network Shield or a component for manufacturers building microprocessor controlled products. Available in a variety of configurations including Sinewave Phase Angle Tracking and Hybrid Threshold Clamping technology, these units regularly leave the competition wondering how their Let-Thru voltage is so high and ours is so low. These units feature Electro-Chemical Encapsulation. They are robust and are backed with a 25 year warranty



**Special Application:** ProtectionThese products insure that 4/20 mA Telemetry lines, Co-Ax lines, and Residential applications can be protected with the right product. Best Quality Power has a complete product line that will insure complete protection for your entire facility.