

Choosing the Right Surge Suppressor

A Surge Suppressor, also known as a Surge Protector, is a device that is designed to protect computers and other electronic devices from damaging power surges and line noise common on AC, telephone/modem, network and coax lines. A Surge Suppressor usually includes multiple outlets and a power cord, allowing you to connect multiple components to a single power outlet.

Power Surges

Definition: A brief increase in the voltage on an AC, telephone/modem, network or coax line.

Line Noise

Definition: Distortion of AC, telephone/modem, network or coax line voltage caused by Electromagnetic Interference (EMI) and/or Radio Frequency Interference (RFI).

What Causes Damaging Power Surges and Line Noise?

In this power-hungry computer age, utility power systems are often pushed beyond their capacity, resulting in unstable, unreliable power for consumers. Overburdened power grids can generate powerful surges as they switch between sources, or generate "rolling surges" when power is momentarily disrupted. Local sources can also generate surges. For example, if your neighbor starts up an electrical motor or the office on the floor below you blows a fuse, a surge could result. In addition, lightning strikes, wind, freezing rain, wildlife and other environmental causes can send a large surge along power lines, damaging equipment that is plugged into nearby AC and phone outlets.

Line noise is typically generated by turning on other power-drawing devices connected to the same electrical system. Turning on florescent lights, laser printers or appliances, working near a radio station, using a power generator or simply working during a lightning storm can all introduce line noise into connected equipment. Ever notice the "snow" on your TV when you use a blender or a hair dryer? That's line noise being sent back into your electrical system and into your TV.

What are the Effects of Power Surges and Line Noise?

Power surges and line noise can result in computer system lockups, lost productivity, audio static, video snow, slow electronic degradation and ultimately catastrophic equipment damage.

How Does a Surge Suppressor Work to Protect Against Power Surges and Line Noise?

A standard Surge Suppressor passes the electrical current along from the outlet to a number of electrical and electronic devices plugged into the power strip. If the voltage from the outlet surges—rises above the accepted level—the Surge Suppressor diverts the extra electricity to ground through the outlet's ground wire. In order to channel the excess energy of a surge from connected equipment, a Surge Suppressor requires connection to a properly wired and grounded AC outlet. Running a Surge Suppressor from an ungrounded outlet prevents the Surge Suppressor from doing its job. Most Surge Suppressors include a "LINE OK" or "PROTECTED" diagnostic LED that will alert you to potential grounding problems.

Most Surge Suppressors include special noise filters that remove line noise. The amount of filtration is indicated in the technical specifications for each unit. Noise suppression is stated as Decibel level (Db) at a specific frequency (KHz or MHz). The higher the Db, the greater the protection. Be wary of "surge/noise suppressors" that don't provide this information!

How Can I Compare and Choose the Level of Surge Protection I Need?

There are many rating systems that measure surge protection:

Joule Ratings

Joule ratings measure a surge suppressor's ability to absorb surges. Joules are a way of measuring energy. In general, 200 joules will give you basic protection; 400 joules provide good protection and

anything with over 600 joules can be considered exceptional. Tripp Lite Surge Suppressors boast ratings of up to 5700 joules.

Surge Amp Ratings

Higher ratings offer more protection. Although often replaced by Joule ratings, Amp levels are another important factor in determining surge strength. Once again, you should go for the highest amp protection levels you can afford.

UL 1449 Voltage Let-through Ratings (500, 400 & 330)

Underwriter Laboratories tests each Surge Suppressor and rates them according to the amount of voltage they "let-through" to your equipment. The lower the let-through voltage, the better the surge suppressor. UL established the 330-volt let-through as the benchmark because lower ratings did not add significantly to equipment protection.

Typical Surge Suppressor Applications

Surge Suppressors are designed to protect computers and all electronics from damaging surges and line noise. Visit our Application Notes Section for more specific application information.

Purchasing a Surge Suppressor

Tripp Lite offers a wide range of Surge Suppressors to meet your specific application. When choosing a Surge Suppressor, you should consider the following:

1. The Surge Suppressor style: strip, rackmount, in-line, direct plug-in, under monitor, low-profile or rack/console
2. The number of outlets required for electronic components that will need to be protected
3. The distance between the AC outlet and the equipment to be protected
4. The data lines that you need to protect: telephone/modem/DSL, network and/or coax

Tripp Lite Surge Suppressors

- Premium Isobar® Surge Suppressors
- Economical Protect It!™ Surge Suppressors
- Safety Surge Suppressors
- Surge Suppressors with Hospital-Grade Plugs & Receptacles
- Audio/Video Surge Suppressors
- Waber-by-Tripp Lite Industrial Surge Suppressors
- Computer Network Surge Suppressors

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