

## **Buying guide – SURGE SUPPRESSOR**

### **Introduction**

A [surge suppressor](#) is essentially an electronic device that protects the internal circuits of electrical gadget from getting damaged during sudden voltage surges or spikes. A voltage surge or spike is an instant rise in the voltage across a circuit. Voltage surges or spikes are caused by lightning, short circuits, power company equipment problems, and inductive spikes, among many other causes. Surges or voltage spikes are represented by sudden jumps in the electrical energy beyond the voltage and amperage capacity of the concerned equipment, causing harm to the equipment if not instantly suppressed. A surge is a small transitory wave of power in an electrical circuit. It characteristically measures less than 500V and lasts less than two seconds. A spike is an immediate rise in the voltage, much shorter in duration than a surge. Even though it exists for less than one-thousandth of a second (millisecond), its magnitude could be thousands of volts.

Even the most minor and shortest surge can damage and cause to stop functioning equipment such as [TVs](#), [VCRs](#), gaming consoles, computers, phones, faxes, stereos, and [microwaves](#). Some miniscule undetected surges may not cause instantaneous damage, but over a period of time could result in a gradual corrosion of internal circuitry. Surge suppressors are useful nowadays especially where there is widespread usage of microprocessor chips that are highly sensitive to voltage fluctuations. Surge suppressors are usually available in a "strip" or box form. They have multiple power outlets into which appliances to be plugged.

### **Working of a surge suppresser**

As soon as a potential surge or spike is detected, the surge suppressers either jam or short to the ground this excess voltage. Thus, by using a surge suppressor you are assured that the voltage to your precious electronic and electrical gadgets will never go beyond a certain safe limit. The surge suppresser performs its voltage regulating tasks by using either a metal oxide varistor, a transient suppression diode, a gas discharge tube (GDT), a selenium voltage suppresser, a quarter-wave coaxial surge arrester, a crowbar circuit, or a carbon block spark gap overvoltage suppressor. Some other secondary components of the surge suppresser that also play a part in the voltage regulation capability of the surge suppresser include inductors, capacitors, and resistors. A detailed explanation of the roles each of these components play in getting the surge suppresser to perform its task of protecting your equipment from electrical damage is lies outside the scope of this buying guide. However, a surge suppresser is guaranteed to ensure that the motherboard of your electronic equipment or any other internal circuit will never be damaged by voltage rises.

### **What to look for in a surge suppresser**

Considering the technical nature of this gadget, going out there and buying a surge suppresser can be a little tricky. Below, we have listed the main features you need to check at the time of making the purchase. The information should help you make an informed decision:

#### **1. Circuit breaker**

The circuit breaker stops the flow of electricity when a circuit could get overloaded. The circuit breaker is not directly associated with surges or spikes.

#### **2. Response time**

This time measurement indicates the time required for the surge suppresser to respond to a surge or spike. It is obvious that faster is the response time, better is the surge suppresser.

### **3. 3-Line protection**

Surges usually occur between the hot, neutral, and ground lines. Therefore, one must opt for a surge suppresser that provides surge suppression along all three lines.

### **4. Cable line, Digital satellite line & Phone line protection**

Surges and spikes can also occur in cable lines, digital satellite lines, and phone lines. It is, thus, required to have surge suppression along here too, alongside the power lines. Surge suppressors with specially designed digital satellite jacks, coax line jacks, and phone line jacks are apt for these lines.

### **5. EMI/RFI**

Electromagnetic Interference (EMI) and Radio Frequency Interference (RFI) are caused due to the effect of electromagnetic energy and radio-frequency electromagnetic radiation respectively. These effects cause early wear of electronic components. As far as EMI/RFI specs are concerned, wider the frequency range (kHz to MHz) greater is the noise reduction in decibels (dB) across that frequency range and also better is the filtering.

### **6. Power shut down protection**

This facility causes the power to all outlets to shut down instantly as soon as the unit reaches its maximum power capacity. This feature eliminates the chances of further surges and spikes reaching attached appliances prior to the surge suppressor being replaced.

### **7. UL 1449 clamping voltage**

The surge suppressor you opt for should have a clamp voltage that has been rated by the Underwriters Laboratories (UL). Lower the rating, better the protection. The lowest UL rating for clamping voltage is 330 volts.

### **8. Ground indicator light**

Most surge suppressors come with ground indicator lights. Ground indicator lights are important as these lights indicate that the ground line is intact and is able to offer protection.

### **9. Indicator light**

Indicator lights indicate that the unit is under surge protection. When the unit crosses its capacity, the light goes off, indicating the unit is now prone to surges and spikes.

### **10. Alarm**

The alarm feature comes in handy when a unit does not have a power shut down facility or when the indicator light does not work or is beyond the range of vision. In these

cases, the alarm intimates the concerned persons of the surge suppressor not being functional. Thus, it can be immediately replaced.

### **Making the right decision**

After going through the above information, you should now have an idea of what a surge suppresser is all about and what is its function. Browse pages on [www.etrronics.com](http://www.etrronics.com) to hunt for surge suppressors. Check surge suppressors and other related accessories arranged by price at the following links: [\\$50 - \\$100](#), [\\$100 - \\$200](#), [\\$200 - \\$300](#), [\\$300 - \\$500](#). Surge suppressors from reputed brands such as [Tripp Lite](#) are a safe bet.

In addition to the functionality and the features of the surge suppresser, another point worth considering is the after-sales support offered by the manufacturer and the warranty of the product. This is an important consideration as only a few manufacturers offer to bear the cost of recovering lost data in a computer due to hard disk failure caused by surges or spikes. Some of the high-end surge suppressors are shipped with a Connected Equipment Warranty (CEW). This means that if any device is damaged due to a surge or a spike, the surge suppresser company is under obligation to reimburse the cost of replacing the product.