

Buying a Surge Protector

page 1 of 2

Being plugged in and wired is a good thing — until a sudden change in the power supply damages your tools or toys. Whether it's in the home office or game room, you've invested a lot in your electronic equipment. Safeguard your tools and toys from harmful power surges and spikes. Lowe's is happy to provide this information as a service to you.

Why You Need Surge Protectors

Surge control is important because even small surges or spikes can eventually destroy or affect the performance of expensive electronic equipment such as computers, phones, faxes, TVs, VCRs, stereos and microwaves. Damage can occur either instantaneously or over time as smaller surges cause the gradual deterioration of internal circuitry. The common use of microprocessors (chips) has increased the need for surge protection because these chips are generally very sensitive to voltage fluctuations.

What Are Surges and Spikes?

Surges and spikes are an increase in “normal” electrical line voltage, often caused by a sudden change or demand for more electricity, such as turning on a large appliance, garbage disposal, air conditioner, washer, dryer, etc.

- A surge typically measures less than 500V and lasts less than two seconds.
- A spike, by definition, is much shorter in duration - less than one-thousandth of a second (millisecond), but can measure into the thousands of volts.

Either type of disturbance can damage electronic equipment beyond practical repair. In addition to change in demand for electricity, bad weather (lightning) and everyday electric utility company switching and maintenance can produce damaging electrical surges on the power line.

How Surge Protectors Work

Surge protectors act like an electrical sponge, absorbing dangerous excess voltage and preventing most of it from reaching your sensitive equipment. Like a sponge, surge protectors have a limited capacity to absorb. Once the capacity is reached, the unit is no longer protecting your equipment and it should be replaced.

How to Choose a Surge Protector

Good idea: When shopping, note the difference between a power strip and a surge protector. Power strips offer additional outlet space. Surge protectors provide protection from changes in electrical current.

The following features are found on a quality surge protector:

- UL 1449 clamping voltage — Underwriters Laboratories (UL) rates the clamping voltage of surge protectors. The lower the rating, the better the protection. The lowest UL rating for clamping voltage is 330 volts. UL tests household surge protectors at 500 amps. Other types such as whole-house or heavy duty, industrial models have a multitude of differences in their testing program. When comparing clamping voltages, make sure the rating reflects 500 amp test results.
- 3-Line protection — Surges can occur between hot, neutral and ground lines. Choose a unit that protects along all three lines.
- Circuit breaker — A breaker stops the flow of electricity when a circuit is overloaded and is not related to surges or spikes.
- Ground indicator light — This light shows that the “ground” path is intact to provide safety.
- Response time — This rating indicates how fast a surge protector can react. The faster the better.
- Indicator light — This indicator lets you know the unit is protecting. Once the unit has reached its capacity and is no longer protecting, the light will go out.

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page 2 of 2

How to Choose a Surge Protector (Cont.)

- **Power shut down protection** — This feature shuts off power to all outlets once the unit has reached its capacity to protect. Power shut down prevents additional surges and spikes from reaching connected equipment before the surge protector is replaced. This assures you that if the unit has power, it is protecting.
- **Cable line protection** — Coaxial cable lines can carry surges and spikes. For complete protection of your TV/VCR, you should protect the cable line as well as the power line. To protect this equipment, select a surge protector with coax line protection.
- **Digital satellite line protection** — Digital satellite lines can also carry surges and spikes. These lines, however, cannot be connected to standard coax cable jacks. Be sure to choose a surge protector with specially designed digital satellite jacks.
- **Phone line protection** — Surges can occur on telephone lines. Phones, answering machines, fax machines and modems can be damaged from surges on the phone lines. To protect this equipment, select a surge protector with phone line protection.
- **EMI/RFI** — Electromagnetic interference (EMI) and radio frequency interference (RFI) are types of noise on the power line that can interfere with equipment performance and possibly cause memory loss. When comparing EMI/RFI specs, the wider the frequency range (kHz to MHz) and the greater the noise reduction in decibels (dB) across that frequency range, the better the filtering.
- **Joule rating** — A joule is a measurement of energy. The joule rating on a surge protector indicates the amount of energy that a device is capable of absorbing. In general, the higher the joule rating, the better the unit is able to protect your equipment and the longer it will last. The joule rating is determined by the total number of MOV's. An MOV (Metal Oxide Varistor) is a component in surge protectors that absorbs excess electrical energy and clamps the voltage to a safe level.
- **Alarm** — An audible alarm lets you know the surge protector is no longer protecting and should be replaced. This feature is important when the unit does not feature power shut down protection or when the indicator light is out of sight.
- **Guarantee** — Check the manufacturer's warranty. A data recovery program is an added bonus that will cover costs related to the task of recovering data on a malfunctioning hard drive as a result of a surge.