



Like a good neighbor, State Farm is there.®

statefarm.com®

WELCOME

MY ACCOUNT

INSURANCE

BANKING

MUTUAL FUNDS

PLANNING & LEARNING

AGENTS

ABOUT STATE FARM

insurance & financial learning

prevention & safety

life events & stages

retirement planning

college planning

small businesses

calculators

taxes

kid stuff

Search statefarm.com®



Powered by Google?

Prevention & Safety

[Vehicle & road safety](#)

[Child passenger safety](#)

[Home safety](#)

[Disaster Survival House](#)

[Natural disasters](#)

[Educational programs](#)

[Business safety](#)

Find an agent by zip/postal code



[Advanced Search](#)

Facts About Power Surges

What Are Power (Voltage) Surges?

A power surge is one form of electrical power disturbance. There are four main types of power disturbances:

- Voltage dips (also called "sags" or "brownouts")
- Electromagnetic interference
- Radio frequency interference
- **Power surges** (also referred to as "voltage surges" or "transient voltages")

Power surges are generally considered to be the most destructive of the four types of electrical power disturbances.

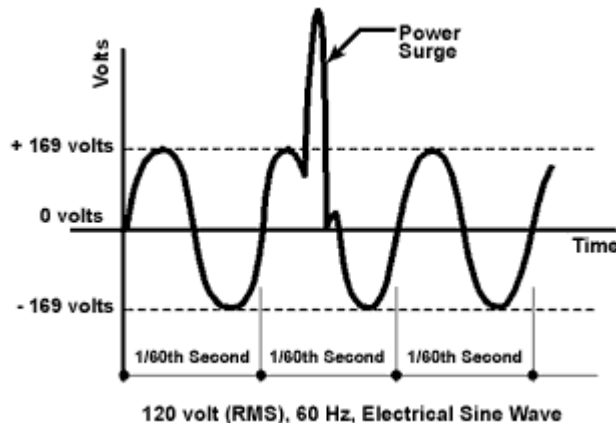
Power surges are spikes in voltage. They are very brief, usually lasting millionths of a second. Power surges can vary in duration and magnitude, varying from a few hundred volts to several thousand volts.

No matter where you live, your home experiences power surges.

How Does a Power Surge Cause Damage?

In the United States, most homes use electrical power in the form of 120-volt, 60 Hz, single phase, alternating current. However, the voltage is not delivered at a constant 120-volts. With alternating current the voltage rises and falls in a predetermined rhythm. The voltage oscillates from 0 to a peak voltage of 169 volts. Most appliances and electronics used in the United States are designed to be powered by this form of generated electricity.

During a power surge, the voltage exceeds the peak voltage of 169 volts.



A spike in voltage can be harmful to appliances and electrical devices in your home. An increase in voltage above an appliance's normal operating voltage can cause an arc of electrical current within the appliance. The heat generated in the arc causes damage to the electronic circuit boards and other electrical components.

Smaller, repeated power surges may slowly damage your electronic equipment. Your computer or stereo may continue to function after small surges occur until the integrity of the electronic components finally erode and your satellite system, cordless phone, or answering machine mysteriously stops working. **Repeated, small power surges shorten the life of appliances and electronics.**

Where Do Power Surges Come From?

There are several sources of power surges. They can originate from the electric utility company during power grid switching. A common cause of power surges, especially the most powerful ones, is lightning. Power surges can originate inside a home when large appliances like air conditioners and refrigerator motors turn on and off.

There are over 20 million cloud-to-ground lightning strikes detected per year in the 48 contiguous states of the US.¹

Power surges can enter a home through several paths. In the case of lightning, it can take the path of the cable TV or satellite dish cable, through the incoming telephone lines, or through the incoming electrical service line.

Knowing that power surges can take several paths and do not have to enter through the electrical panel indicates a good surge protection system should include:

- Protection of the incoming electrical service
- Some type of protection of phone lines and cable TV lines
- Point-of-use surge protectors at sensitive and expensive appliances

When deciding on what type of and how much surge protection is needed, each house and its contents should be assessed individually. An electrician knowledgeable about power surge protection systems and the history of problems in your area is a valuable resource.

To learn about what products are available to protect against power surges, read the Article, ***Surge Protection***.

¹National Severe Storms Laboratory of the National Oceanic and Atmospheric Agency's Frequently Asked Questions Webpage: <http://www.nssl.noaa.gov/edu/ltg/>

State Farm® believes the information contained in the Disaster Survival House is reliable and accurate. We cannot, however, guarantee the performance of all items demonstrated or described in all situations. Always consult an experienced contractor or other expert to determine the best application of these ideas or products in your home.

01-16-2001

[home](#) > [planning & learning](#) > [vehicle & road safety](#)

 [TOP](#)

[[home](#) | [sitemap](#) | [my account](#) | [login](#) | [register](#) | [contact us](#) | [privacy](#) | [terms of use](#)]

[[insurance](#) | [banking](#) | [mutual funds](#) | [planning & learning](#) | [agents](#) | [about us](#)]

Search statefarm.com®



Powered by Google™