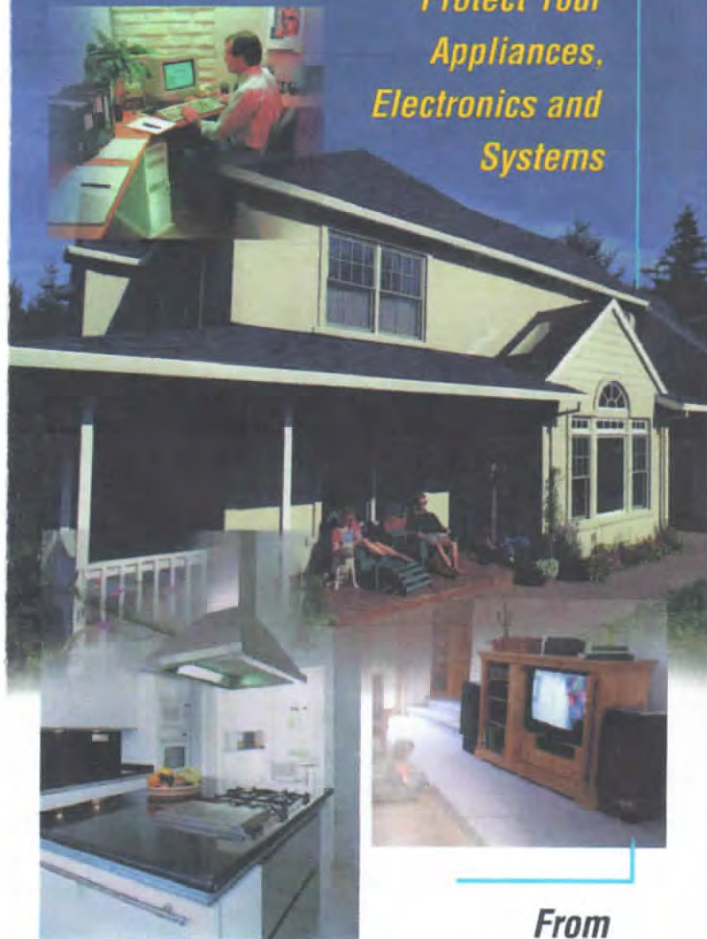


# Is Your Home Surge Protected?

*Protect Your Appliances, Electronics and Systems*



*From Damaging Surges*



## Computer chips in everyday appliances are at risk from power surges

When we purchase a new appliance today, many of us do not realize that computer technology is buried inside. From electronic displays on your kitchen range through power management systems inside refrigerators, microprocessors are simplifying our lives.

However, with that simplification comes the increased risk of damage from even minor power surges in your home. In some instances, a minor voltage spike can damage the electronics in these devices.



Today's homeowner needs to be more proactive in protecting their investments. Everyone knows about placing surge protectors on the home computer, but what about the microwave? Electronic range (gas or electric)? Telephones? Answering machines? The list of computer chip devices grows everyday. As you add these convenience items to your home, part of the purchase decision should be electrical protection.

### *What are power surges?*

Power surges in the home can be caused by a number of events. The most obvious is lightning. In some areas, you can expect to have a lightning strike within a square mile of your home at least once a year or more. That strike, should it hit a power line, can send a damaging surge into your home that may spread housewide.

Another type of surge can be caused by power switching at your utility. Either from generator to generator or from utility feeds. These smaller surges occur regularly. In the past, most home appliances could handle the smaller surges, but over time they can damage computer chip based devices.

## Where do surges enter the home?

Surges can enter the home through a couple of paths. Several examples are:

- **Electrical Line**
- **Telephone Line**
- **Cable or Satellite TV Line**

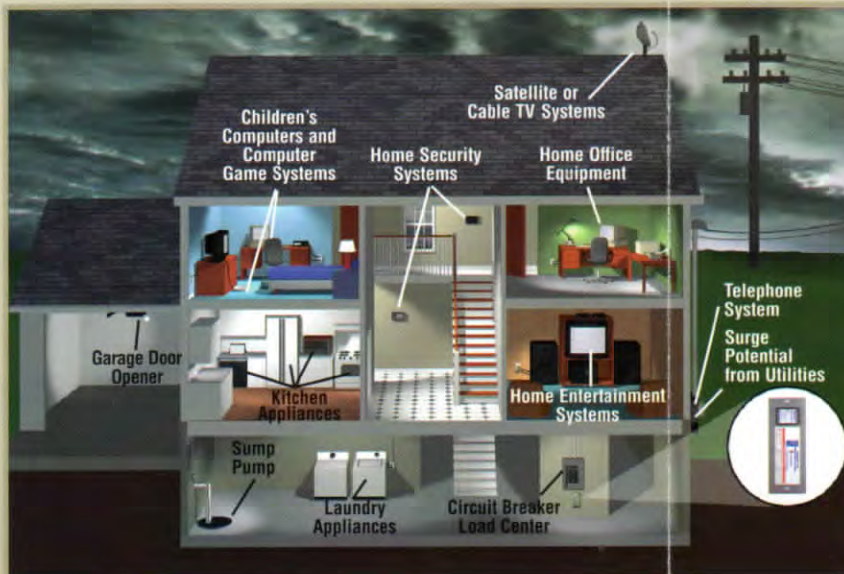
To assure the maximum protection, you should consider protecting all equipment in contact with these sources. Some home entertainment systems, as well as computers, use more than one of these systems simultaneously. Insurance company research has shown that some surge damaged equipment can be traced to the telephone system. Modems, satellite TV systems, telephones and answering machines can all be damaged from phone surges. They also can occur from lightning strikes, since the transmission lines are usually located below the power lines.

## What equipment should be protected?

The house diagram in this brochure represents the "typical" electronic house today. Each of these areas are vulnerable to surge damage.

## What can I do to protect my investments?

There are three basic areas to address: The electrical system, telephone system and TV lines. Any item that you believe can be easily damaged by surges should be protected.



The Square D SURGEBREAKER™ PLUS Whole House Surge Protector can cover all three systems simultaneously.

## ■ Electrical System



There are two ways to address electrical surge protection. The first is to protect the "whole house" wiring system.

The Square D

SURGEBREAKER™ PLUS Whole House Surge Protector can cover the system up to 60,000 amps surge per phase.

In a home where the telephone and cable TV cannot be routed to the load center, the Square D SURGEBREAKER™ Secondary Surge Arrester can be installed into your circuit



breaker load center to handle the larger "surges" that enter from the power company or via storms (except direct strikes).

Square D offers a \$10,000 warranty on major appliances as a part of its protection plan for homeowners using Square D SURGEBREAKER products.

The second level of electrical protection is outlet based. Known as "surge suppressors" these are usually sold as "surge protection power strips" or "surge cubes" that you plug the appliance or computer into for protection and then into the wall outlet.

Surge suppressors are rated to protect electrical devices plugged into them from surges up to 6000 volts. This may protect the one device plugged into them, but for larger surges this protection is not adequate and does not cover other items in your home. Used in combination with the whole house surge devices, they provide a one-two punch against electrical surges. Any sensitive electronic device should be plugged into one of these surge suppressors before connecting to an outlet.



## ■ Telephone System



Most telephones and answering machines today are microprocessor based and require protection. In addition, the modems for our computers are as easily damaged by surges as are the computers themselves.

The Square D SURGEBREAKER PLUS product can also handle this system. The purchase of telephone surge protectors for the outlet may also be a wise investment. These units usually plug into the wall outlet and use the electrical system ground to discharge the harmful surges. The addition of a phone cable jumper from the telephone jack to the surge protector is all that is usually needed to reconnect your phone, answering machine, modem or DSS dish phone line.

## ■ Cable or satellite TV system



Your cable system is similar to a phone system. Local lightning activity can induce energy surges into the coaxial cable leaving the dish causing damage to the sensitive satellite receiver. The addition of a coax surge protector is called for here as well. The receiver of a TV can be easily destroyed by a surge looking for "ground" through your TV.

Satellite TV systems can also be damaged. The satellite receiver is quite sensitive and local lightning activity can focus the energy surge into the dish amplifier sending the surge down the cable into your satellite receiver. A special surge protector can be purchased that you can place between the satellite dish and the receiver or you can use the SURGEBREAKER PLUS product for your cable TV and master antenna line protection.

## The importance of grounding

As you can see from these many examples, the properly protected home discharges surges through the electrical grounding system. If your home is over 20 years old, you may want to have an electrical professional review your grounding system. Some use a water pipe connection, others a ground rod. Copper plated ground rods are only UL rated for 20 years, so it's possible that your ground may need to be updated to be effective for discharges. Without a solid ground, the surge protection equipment will not function properly.

Also determine that all the incoming systems (electric, telephone & cable TV) share a common ground point rather than individual grounds. The SURGEBREAKER PLUS can provide this balanced ground. Or, you tie all the systems together at the electrical utility ground. This provides a balanced system should a surge occur.

## *Where can I go if I want to purchase equipment for grounding and surge protection or for updating my grounding system?*

The National Electrical Code (NEC) which is published by the National Fire Protection Association is the standard for electrical installations and includes the guidelines for the proper grounding and wiring of your home.

Your home improvement retailer offers a number of devices in the electrical department that can immediately begin to offer you protection for your equipment. In addition, your Square D retailer or distributor can also offer you the whole house surge units that can be installed into your Square D load center. If you are unsure how to install whole house surge equipment or how to update your ground, contact a professional electrician for assistance.




The total cost for creating a home safe from electrical surges is minimal when compared to the replacement cost of equipment. We hope this guide helps you in protecting your electrical system and those devices which use electricity in your home from damaging electrical

surges. The Square D Company is a manufacturer of circuit breakers, load centers, surge protectors and other residential electrical equipment.



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