

Residential LIGHTNING & SURGE

PROTECTION



Lightning Rod

Lightning Rods properly placed on the roof of a house or building provide a dedicated path for the discharge of lightning energy safely to the earth.



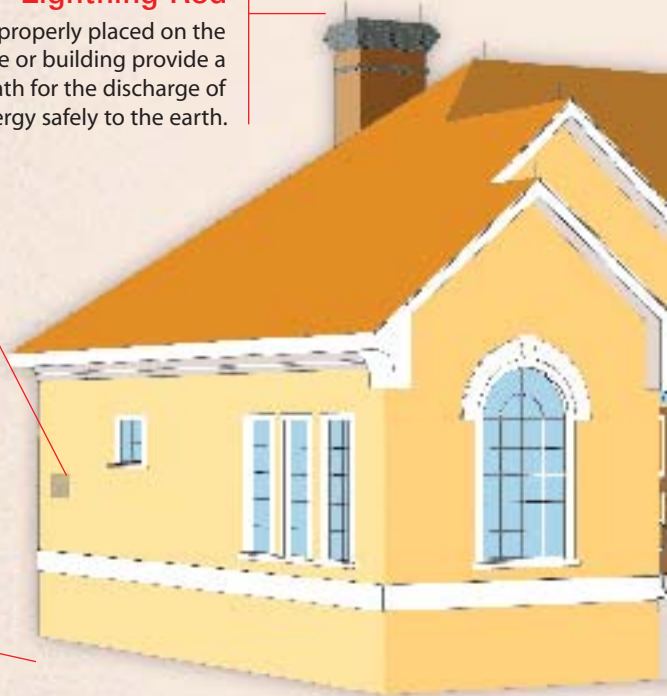
AC Power

AC power surge suppressors protect all power in the house or building from transient disturbances. It is installed at the main power distribution panel.



Ground Rods

Ground Rods provide a safe path for lightning to discharge into the ground without any damage to your home or building. They are placed in the earth around a house or building.



R E S I D E N T I A L L I C

LIGHTNING

Lightning is the visible discharge of static electricity within a cloud, between clouds, or between the earth and a cloud. Scientists still do not fully understand what causes lightning; however, most experts believe that within a typical thundercloud there is a turmoil of wind, water and ice in the presence of a gravitational field and a temperature gradient. Out of the interaction of these elements, emerge the charge regions of the thundercloud. Typically, the lower region of the cloud is negatively charged.

Negatively charged columns, "Stepped Leaders," move downward toward the earth. The leaders rush toward the earth in 150 foot discrete steps. As the negatively charged leaders reach the ground, they induce a positive charge on the ground and the objects beneath them. The positive charge is drawn upward toward the negative stepped leader in the form of a "Streamer," like a magnet. When a stepped leader and a streamer meet, the channel for the lightning strike is complete.

Even with the advances in lightning protection technology, lightning strikes cannot always be prevented. The basic principle of a lightning protection system is to provide the means of controlling the strike and preventing damage by providing a dedicated path for the discharge of lightning energy safely to the earth.*

POWER SURGES

Lightning, short circuits, poles knocked down by cars, or some other accident can make voltages jump to hundreds, even thousands of volts. There are two primary origins for the surges that occur in your power system: lightning surges and switching surges.

Lightning Surges occur when a lightning bolt strikes between a cloud and objects on earth. The effect can be direct - injection of the lightning current into the object, or indirect - inducing a voltage into electrical circuits. A nearby lightning strike has more severe consequences than an equal strike occurring farther away. Protection of the house against the direct effects of lightning is done by properly installed lightning rods, a job to be done by trained professionals. Well-protected electrical systems can survive a direct strike, perhaps with some momentary disturbances from which they recover.

Switching Surges occur when electrical loads are turned on or off (by "Mother's gentle touch" or by some appliance controls) within your home, as well as by the normal operations of the power company.

A surge will last only a few millionths of one second (the "blink of an eye" is thousands of times longer than the typical surge.) It is enough to destroy or upset your electronics.*



Telephone

Telephone surge suppressors for telephone lines protect telephones, fax machines, answering/recording machines and modems.



Computer

Computer surge suppressors protect your hardware, software and stored data. The power strip connects right into your computer.



Cable/Satellite Television

Cable/Satellite Television surge suppressors protect televisions and or other audio/video equipment.

L I G H T N I N G A N D S U R G E P R O T E C T I O N

YOUR APPLIANCES

Your appliances are designed to run on the normal 120/240 volt AC supply, with some tolerance for more or less, but they can be damaged, or their controls can be upset by surges.

The following are four kinds of appliances, with examples listed by order of increasing sensitivity to surges, either because of their nature or because of their exposure.

Motor-Driven and Heating Appliances

Washers (dish and clothes), food processors, power tools, heating and ventilation motors, pumps, etc. Water heaters, space heaters, toasters, and incandescent light bulbs.

Freestanding Electronic Appliances

Computers without a modem, table radios, TV sets with rabbit ears. Compact fluorescent and modern tube-type fluorescent lamps.

Communications-Connected Appliances






Computers with modem, TV sets with cable or satellite antennas. Fax machines, telephone answering/recording machines.

Signal Systems

Intruder alarms, garage-door openers, sprinklers, intercoms.*



Why you should protect your home

-  According to the latest codes and standards, properly installed lightning protection systems are over 99% effective in preventing lightning damage.
-  A properly installed system with secondary surge suppression will eliminate nuisance damage to sensitive equipment in your home.
-  Not only is your home protected from structural lightning damage but your family, valuable possessions, heirlooms and furnishings are completely safe during thunderstorms.
-  This is a one time investment that provides peace of mind and should not need frequent maintenance.
-  All homeowner insurance policies now include deductibles, paid by the owner, on first dollar loss. Nuisance claims and lightning losses invoking the deductible can virtually be eliminated for you.

**Commercial, Industrial and Residential
Structural Lightning Protection**

Electrolytic Grounding Systems

Transient Voltage Surge Suppression

Exothermic Welding

Uninterruptible Power Supplies

Consulting and Supervision

Custom Design and Engineering

Sales, Installation and Service

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