

Protect your valuable and expensive electronic equipment

Since both Mother Nature and electricity are unpredictable, take steps to keep your expensive equipment safe from voltage variations

Due to the unpredictable nature of electricity, no utility can guarantee an unconditionally stable and consistent power supply. Several elements combine to offer the most effective protection for your home's electronics and electrical systems. The most important component is a functional service ground—see “a good ground helps to protect your home”.

Although Groton Electric strives to provide reliable power at the lowest price every day, there will be inconsistencies in the power supply that we have no control over. Because of this, we recommend you protect your valuable equipment with an adequate ground, surge protection, and a UPS (uninterruptible power supply).

A surge protector is a standard piece of equipment that should be included when purchasing computers and high-end electronic equipment. Surge Protectors as the name suggests, protect valuable equipment from sudden surges or spikes in voltage. A surge is a sudden, temporary increase in the normal current or voltage. Normal current in the U.S. is 120 volts, with an acceptable range between 114 and 126 volts. If the voltage rises above 126 volts, there is a problem, and a surge protector helps to prevent that problem from destroying your equipment.

Surge protectors send the surplus voltage to your service ground, diverting it from your equipment. It is important to regularly check your surge protectors because one large surge or a number of smaller surges can destroy the surge protector and then it is no longer protecting your equipment.

There are many types and price ranges of surge protectors, but we recommend purchasing a surge protecting power strip with a UL rating of at least 1449, a good warranty, and an audible alarm. An audible alarm warns you that the surge protector is no longer working and needs to be replaced.

Consider a back-up battery source when purchasing expensive equipment

A UPS (uninterruptible power supply) is a battery that maintains a continuous supply of electric power to connected equipment, by supplying power if utility power is not available or a voltage dip occurs.

A UPS is inserted between the source of power and the equipment it is protecting. When a power failure or dip in voltage occurs, the UPS will effectively switch from utility power to its own power source almost instantaneously. This is especially important in the

summer with the increased frequency of lightning and the increased use of air conditioners.

There are two common types of UPS devices: stand-by UPS and continuous UPS. A stand-by UPS runs the computer off of the normal utility power until it detects a problem. At that point, it very quickly switches to the UPS's battery. The battery “back-up” gives you time to save your work and shutdown your computer safely.

In a continuous UPS, the computer is always running off of battery power and the battery is continuously being recharged. If the power fails, there is no switchover time. This setup provides a very stable source of power.

A good “ground” helps to protect your home

The most important component to protect your valuable equipment is your home's “service ground.”

Without it, excess voltage can damage appliances or in extreme cases, cause a fire. The service ground wire connects directly from the electric service box to the ground via a “ground rod” or, in older homes, the water pipe. Be sure that your ground has not been removed or become loosened. A licensed electrician can determine the adequacy of your ground by measuring its resistance and by making any necessary adjustments.

Standby UPS systems are far more common for home or small-business use because they tend to cost about half as much as a continuous system. Continuous systems provide extremely clean, stable power, so they tend to

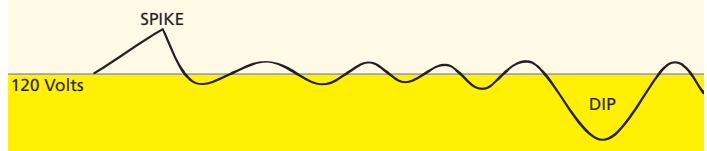
be used in server rooms and critical applications. As prices drop, continuous UPSs are becoming more commonly used.

We recommend doing some research to determine the best protective equipment for your needs. There are two key ratings to be aware of when choosing a UPS unit. The first is load rating—expressed as both volt amps and watts; the load typically should not exceed 80% of the load rating. The second is runtime: do you want enough time to safely turn everything off if an outage occurs or do you want to be able to operate your electronic equipment during an extended outage?

What causes voltage variations?

Large appliances such as refrigerators, air conditioners and heating pumps require a lot of energy to operate their compressors and motors. Switching them on and off creates sudden, brief demands for power, which causes the voltage flow to spike and dip. These variations in power flow can be severe enough to damage components immediately or gradually over time, and they regularly occur in most household electrical systems.

The most familiar source of surges is lightning, though it is actually one of the least common causes of power surges. If a surge is caused by a lightning strike it is likely that any surge protector will be overpowered. The best precaution to take during a lightning storm is to unplug your valuable equipment from the wall outlet.



Take a few minutes to be prepared

Even with the best planning, occasional power outages do occur. Prepare now so you'll be ready in a hurry if the unexpected happens.

Make a storm kit with things you will need if the power goes out. Keep enough supplies for at least three days. Include a battery-powered radio and a flashlight, along with a supply of batteries to run them. Also gather nonperishable food, a manual can-opener, bottled water, matches and candles, personal medications, and a first-aid kit. Don't forget baby formula and pet food, if needed.

You can find detailed information about preparing for the unexpected online at www.mass.gov/eopss/agencies/mema. Click "Homeland Security and Emergency Response" on the home page, then "Preparedness" (on left side), then "Family" to find guidelines for citizen preparedness.

Receive a copy of the 2011 Annual Report

GELD's 2011 Annual Report is now available! Stop by and pick up a copy at 23 Station Avenue or call and we will mail you a copy. Read all about YOUR utility, which is locally owned by you, the residents of Groton.

Equalize your payments with GELD's Budget Plan

The Groton Electric budget plan begins with the August 31 bill. If you would like to renew or would like information about this plan, please call Barbara at 978-448-1150. If you are interested in predictable budget payments during the winter months, please enroll by August 20.

See How Groton Electric Rates Compare!

The chart below shows Groton Electric's rate compared to the average and highest residential rate for Massachusetts investor-owned utilities as well as the lowest rate in Massachusetts. The highest rate in Massachusetts is Unitil (Townsend's supplier) and is currently 64% higher than Groton Electric.

