

■ Power Protection - Part II

Last month we discussed the necessity of surge protectors for protecting your electronic equipment. Another means of power protection is with an Uninterruptible Power Supply (UPS). For this newsletter, we'll discuss UPS units and how they can provide insurance for all of your electronic devices.

What is an Uninterruptible Power Supply (UPS)?

A UPS is a battery that provides power during an electrical outage. They are most often connected to PCs and servers but UPSs can also be used for media and telecommunication equipment as well.

As we discussed last month, surge protectors and arresters send excess voltage they receive to ground. A UPS provides surge protection as well but they also keep your devices running for a specified amount of time during an outage so you can safely shutdown your equipment or give yourself enough time to attach the device(s) to a standby generator.

■ Tip of the Month

Blackout – complete loss of power lasting several minutes to several weeks. They are caused by short circuits, power line faults, or overloaded circuits.

Dropout – momentary total loss of power (e.g., lights flicker, equipment turns off and restarts itself). They are usually caused by a fault on the power line.

Brownout (sag) – a drop in voltage (e.g., if a light bulb dims, you are experiencing a brownout). Sags are usually caused when a high power device, like an air conditioner, is started. Brownouts can do harm but the damage is usually not noticeable right away.

Note that some UPSs offer outlets with surge protection only while other UPSs offer battery backup plus surge protection in all of the outlets. Offering surge protection only outlets generally reduces the cost of the unit.

Advantages

A major benefit of a UPS is that, as long as the unit is functioning properly, no user input is needed for the device to work - it automatically detects a loss in power and goes to work immediately.

UPS units also protect against brownouts and overvoltages and, like many surge protectors, they act to stabilize the current that flows to your PC and peripherals. Voltage regulators and line conditioners are gaining popularity as we increasingly acquire more electronic devices. Because electricity cannot be seen (in most cases), we hardly think about its quality. But in most buildings, the flow of electricity is erratic - there are dips, peaks, and sags throughout the day that can impact any device connected. For expensive and/or sensitive equipment, regulating the electric flow can improve performance and prolong the life of many devices. Nearly all UPSs offer voltage regulation; some offer better results than others.

UPSs are standard business equipment and they are becoming standard for consumers as well. There are many different types of UPSs on the market offering various features at varying price points. With the number of options available, everyone who uses electronic devices would benefit from using a UPS.

■ Websites Worth Watching

1. www.bt.cdc.gov/disasters/poweroutage/ - Get prepared and plan for a disaster. Excellent tips on emergency preparedness and response.
2. www.redcross.org/www-files/Documents/pdf/Preparedness/checklists/PowerOutage.pdf - Be Red Cross Ready - Prepare for a power outage.

Types of UPS Units

There are several different types of UPS units. While all UPSs provide backup battery power, what differentiates models are the hardware and software components as well as the features (e.g., LCD screens, user replaceable hot-swappable batteries, audible alarms, etc.).

In general, the more robust the components and features, the more expensive the unit will be. Likewise, longer runtimes generally elicit a higher cost.

The first step in choosing a UPS is to figure out which devices you want connected and then calculate the volt-amps (VA) needed to support those devices. [*Note: the VA will always be equal to or greater than the watts.*] For example, if you want to hook up your PC and monitor (avg = 250 watts), the equivalent VA would be 400. UPS units are always sized higher to provide a cushion and also to allow room to grow, so for this example, we recommend using a UPS that has an output power capacity of at least 500 VA.

Servers and telecommunications equipment require more power so UPS units need to be more robust. If you want to connect a server to a UPS, you would need a unit that provides at least 1500 VA (which is about 940 watts).

The second step is to determine the runtime of your devices if the power goes out. If you monitor your equipment around the clock, you can use a unit that runs for 5 - 10 minutes. If you frequently walk away from your computer, you may want a UPS with a longer runtime so you can return and shutdown your device safely. Alternatively, you can purchase a unit with software that provides unattended, automatic shutdowns.

As UPSs have matured, the features available have expanded as well. Mid to high end UPSs offer a LCD screen that shows the real-time unit and power status which immediately alerts you to how much power the connected devices are using. User replaceable batteries keep recurring costs low and units that offer external battery packs will enable you to provide extra power when you need it most.

Finally, like all computer equipment, UPSs require maintenance. Test the units regularly and replace the batteries every few years so they remain effective.

If you're interested in installing a UPS or upgrading the model you already have, give our office a call. We can provide you with specific options tailored to your current equipment and needs.

How to Choose a UPS

- 1. Choose the correct size unit** - decide which devices you want connected to the UPS and tally the total VA needed. Always upsize so the UPS can comfortably run all of your hardware. Normally, you will only need to hook up your CPU and monitor but if you need Internet access, you will also need to hook up your modem, router, switch, etc. Never attach a laser printer to a UPS (they draw too much power).
- 2. Compare warranties** - some manufacturers offer full replacement for damaged hardware attached to the UPS (not including data). Others have limited warranties. A typical warranty would be 2 years repair/replace (UPS) with \$100,000 equipment protection policy. Others may cover more years but reduced equipment protection. Like any insurance policy, choose a warranty/device that meets your needs and comfort level.
- 3. Runtimes** - how long the UPS will run on battery power solely. There are many options from 5 minutes to an hour or longer. You'll have to weigh the pros and cons based on your usage, the hardware/applications you need to support, cost, and your comfort level.
- 4. Choose the features you want** - examples include:
 - user replaceable, external battery packs for extended runtimes
 - LCD screens that show unit and power status
 - automatic restart of peripherals upon power return
 - remote management over the network
 - early warning fault analysis to alert you to problems before they occur

Ready Net Go, Inc.

610-856-0990

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