

The benefits of using an Uninterruptible Power Supply (UPS)....

By A1 Computers And Service - 2012

Electricity has become a life line of the home and the corporate world. Without electricity our computers would cease to work. Most of the world depends heavily upon their computers for work and entertainment. An uninterruptible power supply (UPS) can be a life savior when the power goes out; it will let you continue to work for a short time and allow you to safely close any open documents and thus allowing you time to properly shutdown the computer. A UPS will protect your computer and electronics from a variety of power related problems.

WHAT IS A UPS?

UPS is an acronym for ***Uninterruptible Power Supply***.

A UPS is a power protection device that will regulate the incoming power to acceptable parameters and will also supply a limited amount of power when there is no mains power.

It has a number of functions, designed to protect almost all electronic devices.

To understand why this device is so important, it may help to understand power a little better.

If you have witnessed in the past flickering lights in your home or office, computer freezing up or restarting, then you may be suffering a power supply problem.

What many people do not realize is that the power provided to their home or office is at times irregular and not necessarily continuous 120volts supply. The ideal voltage supply is 120v. However, even in residential areas, this can often be over 160volts or under 100volts. It can get even worse in industrial areas if you live near or work in these zones due to machinery being used and the drop in power that is drawing from these zones.

A basic standby UPS can sense the voltage is not good enough or within tolerance, and will automatically go to battery power until normal power returns.

Other units can adjust the voltage for the connected equipment to keep it at safe levels. High-end UPS models can give a perfectly stable output of 110v at all times regardless of input power.

Other common power problem can be surges and spikes. This is where the incoming voltage jumps rapidly. A UPS can help fix most power problems.

WHY USE A UPS?

Power problems can and do occur every day

Lightning strikes against power lines and electrical substations can cause substantial damage to electrical equipment, even to domestic and commercial users tens to hundreds of miles away. However, many spikes, surges and noise occurring every day in homes and offices can have

the same devastating effect on your computer hardware and software equipment as a lightning strike...

An Overview of Electrical Disturbances:

SPIKES:

A Spike is a dramatic increase in voltage normally lasting only a few milliseconds.

Cause: Car accidents resulting in fallen power lines and lightning during an electrical storm.

Result: Data corruption during a hard disk read/write cycle as well as component break down due to over-specified voltage and/or out-of-range voltage.

BLACKOUT:

Total loss of mains power

Cause: Power grid overload, lightning, car accidents and earthworks.

Result: Loss of unsaved current work and possible loss of entire hard drive contents due to a head crash or disruption of the file allocation table.

SURGE:

A short term increase in supply voltage

Cause: The switching off of large electrical loads e.g., commercial air conditioners, fridges and industrial motors.

Result: Damage or premature failure of delicate electronic components due to excessive dissipation of heat.

BROWNOUT:

A long-term decrease in supply voltage lasting up to several hours

Cause: The switching on of large electrical loads e.g., commercial air conditioners, fridges and industrial motors. Other common causes are due to the over demand of utility power e.g., increased use of domestic air conditioners during summer months.

Result: Possible head crash or disruption to the file allocation table due to the equipment's power supply hovering between power-on and power-off states many times per second; also damage or premature failure of delicate electronic components due to excessive dissipation of heat.

SAG:

A short-term decrease in supply voltage

Cause: As Brownout. Result: As Brownout.

NOISE:

EMI (Electronic Magnetic Interference) and RFI (Radio Frequency Interference) more commonly referred to as noise is induced into the power supply.

Cause: Radiation from high energy equipment such as welders, radio transmitters, fluorescent lights and electric switching equipment. These devices superimpose a distorted signal onto the sine wave.

Result: Keyboard lock-up and data corruption through unsynchronized radical impulses being saved as legitimate data.

HOW DOES A UPS WORK?

A UPS is used in many ways. For the sake of this explanation we will use a computer as an example of a typical UPS application.

A UPS works by regulating power to the electronic items you have connected to it (in the event of power surges or brownouts)

In the event of a power failure a UPS will alert you to the fact there is no power and depending on the size of the UPS can either; Shut down your computer, Let your computer keep on running, Alert you to the fact there is a power failure which will allow you to shut down your equipment yourself.

This means that anything you are working on can be saved and then shut your computer down and it also means that in the event of any form of power surge your computer is protected from damage.

So hopefully we have given you enough information to stress how important it is to use a UPS on your computer and electronic equipment. By using a UPS you can keep your equipment running safely from power problems mitigating any damage or incurring replacement and repair costs.