



The importance of surge and lightning protection for the SOHO Market

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Request the assistance of power solution experts when designing the most effective and cost-effective solution for your business.

Unstable power and voltage fluctuations are common occurrences in South Africa, and when the summer season is in full swing, lightning strikes are increasingly frequent in certain areas. Power surges and dips, as well as the massive voltage fluctuations caused by lightning, can damage sensitive equipment and can cause data loss or corruption on computers, servers and storage devices. This leads to lost productivity and unnecessary costs to repair or replace equipment. Large organisations typically have full surge protection solutions in place to safeguard against this damage, the Small Office Home Office (SOHO) market tends to overlook this and regards it as an unnecessary expense. However, the cost of surge protection is minimal compared to the cost of failed or damaged equipment and it is a small price to pay to ensure both equipment and data are protected.

The effects of unstable power, including voltage surges, dips and lightning strikes, will have severe damaging consequences on all electronic equipment. In fact, voltage problems can potentially damage any equipment that uses electricity, from computers, printers and even fridges to microwaves and other miscellaneous equipment. Lightning strikes have the potential to 'blow' equipment due to the massive surge in voltage they can produce. In addition, small dips and

surges, common in South Africa's unstable power environment, can degrade equipment over time, shortening the lifespan and ultimately resulting in damaged and premature failure of said equipment.

Some of this equipment has no particular impact on productivity and business. It costs money to repair or replace, and is an unforeseen expense in many instances. In addition, there is also a significant inconvenience factor involved. Should insurance claims need to be submitted, weeks can elapse before product replacements or the insurance pay-out is delivered.

Aside from the challenges and unnecessary expense created by the need to replace failed equipment, power surges, spikes and dips can have other disastrous consequences. All components in the IT environment are vulnerable to the fluctuation in voltage. Unstable power conditions can corrupt data, which can be detrimental to any business. Over time, voltage fluctuations can cause equipment, such as hard drives and storage devices to fail completely, which will result in information loss.

For the smaller business, especially, recovering after a data loss event can be difficult. Even if recovery is possible, lost productivity and resulting lost income during any downtime, is yet another expense these businesses cannot afford. The costs of unstable power add up

over time, which is a concern for an already budget-conscious market. Protecting electronic equipment from power and voltage fluctuations is therefore essential for the SOHO market.

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The majority of users in South Africa are aware of the problems with power fluctuations. However, there is a misconception about surge protection plugs. Not all of these so called surge protection plugs, that are freely available, will provide sufficient and adequate protection. These plugs should also not be confused with voltage regulators. Voltage regulators regulate power to optimum voltage levels in the event of spikes and dips. Once a surge device has been hit by lightning, it should be replaced to ensure the continuation of surge protection. There are certain brands of surge protection plugs available that can offer you more than just multi-plug surge protection, such as telephone and fax line protection. There are surge protection devices to suit most possible electronic devices and equipment. These include, notebook surge protectors, telephone, data and fax line protectors.

An Uninterrupted Power Supply (UPS) is commonly used to prevent problems associated with unstable electricity supply. UPS's do offer very limited surge protection, although it is not primarily a surge protection device. A UPS is a device to provide stable power and back-up power, to safely shut down IT equipment. It can sustain power for a limited time frame only until the generator starts or the main power is restored.

Effective surge protection requires the use of specialised solutions, which are readily available for a wide range of equipment. These solutions are cost effective, providing layers of protection to minimise damage. The multi-plug surge protection plug is one available solution. Manufacturers at the forefront of this technology offer additional features and most electronic equipment can be used with these multi-plug surge protection devices. These include IT equipment and miscellaneous office equipment as well as household equipment like microwaves, kettles and fridges which can also be protected by surge protection devices.

It is also important to protect equipment from a phenomenon known as a 'back door' electric surge. These travel through data lines into equipment, and can cause the same damage as surges through power lines, however surge protection plugs which protect only the mains side of the equipment, will not protect against these types of surges. Specialised surge protection is necessary to protect against this, protecting Ethernet, coaxial and telephone lines. These solutions have the added benefit of protecting the phone and data lines themselves from the danger and damage associated with lightning and power surges. For larger organisations, solutions for CAT 6 or CAT 5/5e network lines can be added to protect Ethernet data ports from damaging transients. These solutions offer replaceable surge protection modules that allow for any combination of rack-mount surge protection modules to be replaced quickly and conveniently, and are compatible with Power Over Ethernet (POE) and network speeds up to 10 GbE.

AVR	– Automatic Voltage Regulators
IT	– Information Technology
POE	– Power Over Ethernet
SOHO	– Small Office Home Office
UPS	– Uninterruptible Power Supply

Abbreviations

For notebooks, surge protection devices are available that include lightning and surge protection for a variety of devices in a compact portable form factor. This single device can provide surge protection for ac power, phone and network lines and is available in two- and three-pin connectors, all in one, making it an ideal solution for the SOHO market.

In addition to surge protection for office equipment, Automatic Voltage Regulators (AVRs) can be used to protect equipment from both dips and spikes. AVR solutions automatically step up low voltage and step down high voltage to levels that are suitable for sensitive equipment, ensuring a constant, stable supply of clean power. AVRs incorporate lightning and surge protection to protect sensitive computing equipment, and leading brands include a resettable circuit breaker switch, meaning there is no need to change a blown fuse to get back-up and running after a high voltage power event. It is important for organisations to remember, however, while these solutions supply clean power, they must not be confused with a UPS. While some UPS solutions include an AVR, an AVR on its own does not deliver back-up-power functionality like a UPS.

For the SOHO market there are various solutions available. The offerings range from mains protection, telephone line protection, network protection and many more – and a single piece of equipment can provide protection for multiple devices. When purchasing surge and lightning protection solutions from a reputable supplier, they are not only cost effective, but often offer a lifetime warranty. The warranty will allow the user to replace the item at no cost should lightning strike and blow the fuse in the protective equipment – allowing the user to simply return the damaged equipment for replacement.

Conclusion

When it comes to protecting sensitive equipment, such as IT equipment and other electronic devices, from the dangers of unstable power, a multi-layered solution is most effective. A UPS for servers, along with specialised surge protection for plugs, notebooks, data and phone lines, is the most effective. However, users must examine their needs and the set-up of their office, and seek the assistance of power solution experts, in order to design the most effective and cost-effective solution for their business.



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