

Poor power quality and electrical interruptions are an increasing reality in South Africa, growing the demand for effective power backup.

Protection against power outages

by John Middlewick, Comztek

As companies become accustomed to power protection as a necessity, many are also worried that implementing a solution may be too complicated and costly.

Fortunately, power protection systems have progressed towards greater flexibility and lower total cost of ownership (TCO). At present, increasing numbers of IT resellers are taking ownership of holistic IT solutions which include power and the management thereof. In addition, many sales personnel are working closely with their customers to explore the various power options and technologies available and how these will affect the business now and into the future.

The first step to power protection is to gain an understanding of the actual power requirements of the business, taking the following into consideration:

- The impact of downtime on all facets of business including sales, logistics, customer care, etc.
- The mission-critical systems that cannot afford to be shut down
- Data corruption due to unmanaged shutdowns (particularly the time required to get these systems recovered and running again)
- Non-IT services such as lighting and air conditioning

Different companies will require different types of solutions and what may work more cost effectively for one company may not work as efficiently for another. Particular attention should be paid to the installation costs and deliveries of the various power solutions. Before implementation, it is good to obtain an overview of the total project cost and maintenance to avoid unwanted surprises.

Key power protection technologies in use today include:

- Uninterrupted power supply (UPS) with extra run-time from batteries – used in power outages ranging from ten minutes to one hour. These solutions allow for the orderly shutdown of mission critical systems and sufficient uptime during short power failures. The shortfall is that batteries require space, and runtimes longer than one hour may become costly. In addition, battery replacement cycles may be as frequent as every three years, resulting in considerable expense.
- UPS combined with a generator – used where maximum uptime is required during longer power failures. The initial costs of installing a generator may seem daunting, but companies realise a return on investment over time. However, here it is important to take fuel and maintenance (a generator may require a service every second month) costs into consideration.

Common UPS technologies consist of:

- Line interactive UPS technologies – depending on the location of the site and type of equipment being connected to the UPS, line interactive may be a more cost-effective solution which includes high voltage regulation. Many people shy away from this technology because they fear that there will be a break in power when changing from the mains to battery backup. However, the millisecond switch is not noticed by most IT equipment. A typical application of line interactive technologies is used with high end computers, servers and networking equipment. One line or double conversion technology guarantees a near perfect electrical output, ensuring consistent power quality for sensitive equipment and large loads, but at a higher cost.

- Centralised technologies – centralised solution protection is wired into a building's electrical system. These solutions most often offer superior technology and efficient use of batteries.
- Decentralised technologies – involves using a UPS per computer, for example, in a call centre of 20 people. In this case, the initial purchase is not as costly as a central unit, but in the long run maintenance costs, batteries and engineer support may become more costly.

Another aspect to take into consideration is the management of the backup power, for which there are a number of options:

- Intelligent power management of power involves central supervision and managed shutdowns. However, without stringent controls, the power solution could become yet another weak link in the constant drive for maximum uptime.
- Notification via SMS (sometimes via a GSM network, thus not relying on the internal IT network should there be problems) or email
- Environmental monitoring of temperatures and other variables
- Automated shutdown and restart of a system after the predetermined time
- Hot swap or bypass functionality

While it may be a necessity, after carefully weighing up the various options and considerations, a power protection solution can go a long way to ensuring business continuity and development.

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