

Power innovation a necessity for South African business

ESKOM's recent announcement that the utility will reintroduce load shedding this winter is not good news for South Africans. Apart from the inconvenience of having no electricity, businesses may have to face the fact that, for a few hours each day, revenue-generating activities will come to a standstill and staff will be sitting idle.

Master Power Technologies manufactures power solutions that ensure it will be 'business as usual' and profit is not compromised by power outages. In a competitive market where local and international companies are vying for power-related business, however, simply manufacturing UPSs, generators and supporting products does not guarantee happy customers. To ensure it remains at the forefront of power management solutions, Master Power Technologies launched its research and development (R&D)

department four years ago.

Headed by Ruan du Toit, the R&D department is responsible for ensuring Master Power's products and services remain at the forefront of power management on the continent. Today there are six skilled engineers working full time in the R&D department, creating innovative hardware and software solutions.

The department's first goal was to develop Master Power's testing centre. The testing centre was built to ensure the company's UPSs met IEC (International Electrotechnical Commission) standards. Du Toit explains that the tests are fully automated to ensure consistency and accuracy every time. The R&D department then went on to develop the hardware and software for Master Power's Universal Controller (UC), which, as its primary function, ensures a reliable changeover between utility power and

generators. "It's critical to manage the changeover reliably to maintain a stable power supply to the whole facility or datacentre to eliminate data loss or equipment damage," says Du Toit.

The UC was then expanded to include building management system (BMS) functionality, which constantly monitors the status of electrical equipment, such as fire alarms and panels, batteries, generators, HVAC (heating, ventilation, and air conditioning) and more. Today, multiple clients' equipment is monitored and reports are sent to a remote site to provide a constant overview of the status of their systems and warn of impending or existing failures. "We then extended this to produce our battery module management system (BMMS)," says Du Toit. "This allows clients and Master Power to continually monitor the status and health of batteries and manage corrective actions, if needed.

"We are able to tell if a single battery or a string of batteries is failing well before the situation turns into an emergency. More importantly, by identifying and replacing a single failing battery, we can significantly extend the life of the UPS battery."

On the software side, the R&D department has developed an Android tablet app that allows for the management of the UC. In keeping with the company's sustainability commitment, the R&D department is in the process of developing a solution that will monitor solar panels to ensure they perform optimally. The testing centre will be expanded to include generator testing in the near future.

"The R&D department boasts a range of engineering skills that allow

us to design and develop both hardware and software innovations that provide our clients with better control over their power management systems," notes Du Toit. "Effective monitoring and management means a longer system life, and greater system reliability which means more value for the customer and an increased return on investment (ROI)."

as well as other market sectors where power supply and operational uptime are critical.

The company has its head office, as well as design, R&D and manufacturing facilities in Randburg with branches in Durban and Cape Town. The company also has satellite offices in Kitwe and Lusaka in Zambia.

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