

# Batteries: the key to UPS performance

Once you have sorted out the best-suited uninterruptible power supply for the job, there are two key decisions to be made that will determine how well that UPS will deliver standby power for the next eight to ten years: which batteries to use and how they should be monitored.

"If you don't select the right batteries, they won't last the distance and could end up costing a lot more over the life of the UPS than the little extra investment required for pure lead batteries that are proven to perform," says Graham Blackmore of UPS Power Solutions Ltd.

"With batteries comprising up to 50 percent of the cost of a UPS installation, it pays to get the right engineering advice and invest in a battery bank that will ensure your standby batteries are actually standing by when they are needed."

As a specialist UPS supplier, Blackmore recommends CSB batteries manufactured by Hitachi Chemical Energy Technology Co. Hitachi sells over 50 million CSB batteries a year in over 100 countries and provides seven different ranges designed for UPS applications.

According to CSB, the company has become a world leading manufacturer of valve regulated lead-acid (VRLA) batteries because of its strict adherence to its ISO certified set of manufacturing procedures, the use of 99 percent pure lead and the series of tests performed on each individual battery to ensure its quality and consistency before leaving the factory.

Blackmore says CSB also has a strong focus on upgrading battery performance in vital areas such as energy density, discharge and charge efficiency, and temperature endurance.

"As a result, the HR, HRL and XHRL series we supply can deliver 20 percent more performance than comparable sized batteries."

He says UPS Power Solutions' engineers



***Dr Martin Spencer now relies on a CSB battery and PowerShield battery monitoring system to protect his expanding DataCentre220***

know how to size and select the right batteries for every UPS installation and also how to provide PowerShield monitoring for sites that don't want to discover an aging battery string is failing at the time it is most needed in a mains power outage.

PowerShield's Rhys Cole says PowerShield provides the most advanced and most cost-effective tool for monitoring and managing standby battery banks.

"By installing permanent monitoring, you can provide continuous data sampling, alarming, reporting and battery management without having to carry out physical testing of every cell in a string.

"PowerShield reduces maintenance costs, optimises battery life, improves safety and avoids unscheduled downtime. It's about giving end-users peace of mind and making sure the batteries perform when needed."

Graham Blackmore says, as a PowerShield Accredited Service Provider, UPS Power Solutions can provide a solution scaled for any battery configuration and set it up with full reporting, alerts and 24/7 alarm notifications.

"If one battery in a string begins to degrade, the performance of the whole string

is compromised. PowerShield not only picks up any performance issue for pre-emptive maintenance, it also picks up a temperature rise on any loose battery terminal."

With PowerShield continuously measuring temperature, voltage, current, and impedance, end-users gain real visibility into their UPS performance and can achieve an unmatched level of reliability, says Blackmore.

"Poorly designed and maintained batteries can fail in less than half the term of the design life, but with CSB batteries and PowerShield, UPS installations will serve out their designed life."

Blackmore cites a recent large installation of 4 x Eaton 93PM 80/100 kVA UPS systems supported by 40 x CSB XHRL12360W 10-year-design-life batteries monitored by a PowerShield Sentinel system. Dr Martin Spencer, owner of the DataCentre220 selected this solution to provide power protection for the expansion of its Auckland facility last year.

"This expansion has been driven by customer demand and the investment in the quality CSB battery and PowerShield battery monitoring system was designed to ensure a healthy battery string for the design life.

"With battery systems making up to half the cost of a UPS system, to get the best return on this investment we recommend selecting CSB batteries and implementing regular proactive maintenance and monitoring." ■

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