

Eaton's New Energy Advantage Architecture Maximises Efficiency of Large Data Centres

4 December 2009 – Diversified industrial manufacturer Eaton Corporation today launched its new Energy Advantage Architecture in Europe, the Middle East and Africa (EMEA). Energy Advantage Architecture incorporates two innovative three-phase UPS technologies that address one of the key challenges for customers – improving overall infrastructure energy efficiency. The two complementary Eaton-proprietary technologies, Variable Module Management System (VMMS) and Energy Saver System (ESS), maximise UPS efficiency and significantly reduce energy consumption, environmental impact and power costs without compromising reliability.

“In data centres – our main customers for high-end UPSs – energy costs are now overwhelming equipment costs, and UPS electrical losses account for 5–10 percent of the overall electrical expenditure. The major objectives for data centre managers include optimisation of energy costs and operational expenses as well as dealing with environmental concerns. Eaton's Energy Advantage Architecture technologies are designed to help them deal with these challenges,” says **Mathieu Verley**, Manager, Three-Phase Product Management, Eaton's Power Quality Division EMEA.

Variable Module Management System (VMMS)

The efficiency of a UPS increases with the load level; however, UPS systems are rarely loaded at full capacity. The VMMS technology featured in Eaton 9395 UPS maximises system efficiency in double-conversion mode even at lower load levels – thanks to the UPS's modular design.

At low load levels, VMMS automatically concentrates the load on the minimum number of UPS power modules (UPMs) and switches the remaining UPMs to ready state, thus maximising the load levels of the operating UPMs as well as overall system efficiency. When the load increases again, the VMMS shifts the load into additional modules in less than two milliseconds.

VMMS offers the customer significant flexibility in terms of system configuration, as it is available both on single-UPS systems consisting of multiple power modules and multiple-UPS parallel systems.

“VMMS is particularly useful when the load level has not yet reached its maximum, for example in data centres where the UPS system is designed with future expansion in mind, or when the load varies, for instance between weekdays and weekends,” Verley says.

Energy Saver System (ESS)

Eaton’s innovative ESS technology enables the UPS to reach an industry-leading efficiency level of 99 percent by allowing the UPS to safely provide mains current directly to a load when the input is within acceptable voltage and frequency limits. ESS’s fast detection algorithms continuously monitor incoming power quality. If the predefined limits are exceeded, ESS immediately engages the UPS power converters, allowing transition to full voltage and frequency independent (VFI) double-conversion mode in less than two milliseconds. ESS is available in Eaton 9395 and Eaton 9390 UPSs.

“ESS ensures clean power to the load while simultaneously maximising efficiency. It drives electrical losses down to almost zero, leading to significant energy and cost savings. Compared to conventional ‘eco-mode’ capabilities available with legacy products, ESS offers the best possible efficiency and the fastest transition times to double conversion when power disturbances occur,” says Verley.

For more information on Eaton’s Energy Advantage Architecture, please visit

www.eaton.com/powerquality

Eaton’s Electrical Sector is a global leader in power distribution, power quality, control and automation, and monitoring products. When combined with Eaton’s full-scale engineering services, these products provide customer-driven PowerChain Management™ solutions to serve the power system needs of the data center, industrial, institutional, public sector, utility, commercial, residential, IT, mission critical, alternative energy and OEM markets worldwide. PowerChain Management solutions help enterprises achieve sustainable and competitive advantages through proactive management of the power system as a strategic, integrated

asset throughout its life cycle, resulting in enhanced safety, greater reliability and energy efficiency.

Eaton Corporation is a diversified power management company with 2008 sales of \$15.4 billion. Eaton is a global technology leader in electrical components and systems for power quality, distribution and control; hydraulics components, systems and services for industrial and mobile equipment; aerospace fuel, hydraulics and pneumatic systems for commercial and military use; and truck and automotive drivetrain and powertrain systems for performance, fuel economy and safety. Eaton has approximately 70,000 employees and sells products to customers in more than 150 countries.