

Benefits

- ▶ **Maximum Availability** – with true double conversion online design, the proven technology that is used for the most mission-critical applications in the world. It's unusual to find line-interactive, pseudo-online or any other kind of UPS, other than double conversion online, supporting 24/365 data centers, facilities, ISPs and major telecommunications installations.
- ▶ **Maximum Reliability** – with Powerware Hot Sync®, the award-winning, patented technology that achieves paralleling for redundancy and capacity (up to four modules) with no system-level single-point-of-failure. The preferred paralleling technology installed around the world with such major customers as E*Trade, Colo.com, and Citibank, Powerware Hot Sync will be available in the 10-40 kVA range with the Powerware 9330*.
- ▶ **Maximum Efficiency** – the Powerware 9330's advanced design features efficiency of up to 93%, the highest for a double conversion online UPS in this kVA range. No need to compromise reliability for efficiency with the Powerware 9330.
- ▶ **Maximum Performance** – the Powerware 9330 delivers the highest performance by using digital signal processing, true pulse-width-modulation and maximum IGBT responsiveness. This provides easy setup, drift-free operation and a pristine output.
- ▶ **Global Services** – Powerware service professionals provide round-the-clock monitoring, remote diagnostics, and on-site maintenance programs. More than just a material warranty, this is the most comprehensive service coverage available in the industry. Powerware Global Services provides you with peace of mind that potential downtime is prevented by proactive service and monitoring.

*Available late-2001

The Powerware® 9330

How operational efficiency requirements and 24/365 availability are driving intelligent power infrastructure innovations

The "dot com" world is more than a new retailing model or a get-rich-quick-scheme for IPO-happy day traders. It is representative of a monumental paradigm shift, not just in technology, but in the fundamental operation of how businesses are run. The technology pundits postulate that businesses are being required to change not just the front end of their customer communications (i.e. being able to order products and services online), but to change their entire IT infrastructure, all the way down to the nuts and bolts. After all, new companies now start with Internet, intranet and extranet business models – they are not required to retrofit these emerging technologies into an old, and increasingly irrelevant and obsolete, business structure. They can come on the scene with a competitive edge in using technology to drive customer satisfaction, and bottom-line efficiency.

This phenomenon is sending ripples throughout organizations, from the top floor executive suites to the facility manager in the basement, and every department in between. From finance to marketing, from sales to service, no part of a business is going to be untouched by this wave of change.

How do we eat this elephant?

The old clichés of tackling tough problems are more than appropriate as companies face the seemingly insurmountable odds of turning their companies into dynamic, Internet-centric businesses: "How do you eat an elephant? – one bite at a time." As they set about eating this elephant, power technology rises up as a critical, but often underestimated, element of an enterprise's infrastructure. According to The Meta Group in a 1999 report on "The 21st Century Data Center," the top issues facing IT managers are operational efficiency, 24/365 availability, integration migration and modernization. This means that IT managers must implement the most efficient solutions possible, without compromising the business need for 24/365 availability.

Critical IT Issues:

- ▶ Operational efficiency, lower total cost of ownership
 - ▶ Server strategies – fewer is better
 - ▶ Consolidation – clustering
 - ▶ Manageability – shared services
 - ▶ Availability
 - ▶ 24/365 requirements
 - ▶ Integration: applications and infrastructure levels
 - ▶ Unix, NT, OS/390, OS/400, et al.
 - ▶ Migration/modernization: not if, but when, for system, applications, and hardware platforms

Source: The Meta Group, 1999

This, in turn has been driving the most aggressive wave of innovation in power technologies, specifically UPS, in decades. UPS vendors' traditional customers, under pressure to deliver shareholder value and innovative Internet-centric technology solutions, have demanded more reliable UPS technology with lower total cost of ownership. With the possibility of a leap in UPS sales looming under this drive for IT infrastructure re-working, UPS vendors have sent their engineers back to the drawing board (or CAD machine) to meet these demands.

Power System Customer Demands

- ▶ **High reliability**
Maximum uptime; 99.9999% availability for all business systems
- ▶ **Interoperability**
Integrated solution that can be managed across the enterprise
- ▶ **Total solution**
Includes centralized (data center, server farm, etc.) and distributed (departmental, branch offices, global offices, etc.) UPS, and communications
- ▶ **Low total cost of ownership**
High unit efficiency with minimal service requirements; battery management systems to prolong battery life.

Powerware's approach to a changing customer landscape

Powerware's solution is to create products that integrate into a streamlined, manageable whole across kVA ranges and the enterprise. This has come to fruition through an internal corporate paradigm shift of its own. By building on a history of success, including the most patents of any power technology company, Powerware took a look at what was being innovated in its research and development divisions around the world, studied the change in customer needs, and began developing its products from a more global perspective, using "lean enterprise" manufacturing processes, and advanced software and firmware both within the UPS and outside it to meet uptime requirements and low total cost of ownership.

As Powerware looked at the customer landscape, it was evident that it was already well on the way to meet these customer demands – it has dealt with stringent reliability requirements for its high-kVA three-phase products for years. The challenge was to migrate that level of reliability down kVA ranges to mid-range (10 –40 kVA) three-phase products, while decreasing the cost of ownership at the same time.

To that end, the Powerware 9330, a new product from Powerware that has been developed specifically to address both its current customers facing major IT infrastructure changes, and for new customers that are already working with a 24/365 Internet-centered business model.

The Powerware 9330

The Powerware 9330 is the flagship product of Powerware's new, innovative engineering and manufacturing excellence. The 9330 will be Powerware Hot Sync-enabled for redundancy and capacity, features DC Expert Plus™ Built-In Battery Monitoring, reduced component count and wire harnessing, double conversion online technology providing high unit efficiency, up to 93%, without compromising reliability. The unit incorporates the latest generation of IGBTs utilizing high frequency power conversion stages under DSP control while eliminating all 50/60 Hz iron core magnetics for highest operating efficiency. Under digital

control, all 'Pots' have been eliminated, facilitating easy setup and drift-free operation. Soft start is also an inherent feature that helps prevent nuisance up-stream over currents, such as breaker trips or fuse fatigue that can also affect power availability. An integral internal and external local area network (specifically CAN) is incorporated into the unit, which assists in seamlessly integrating peripherals and options, controllable from the control panel. Extensive user interface and comprehensive communication facilities are provided as standard, with a dedicated microprocessor just for this function. Additional communication options, such as Ethernet network links and modems, will be available for direct plug and play capability.

The Powerware 9330 is available in three system configurations

- ▶ Single Module – reverse transfer
- ▶ Multi-Module – Powerware Hot Sync™ - Redundant
- ▶ Multi-Module – Powerware Hot Sync™ - Capacity

The mark of a true enterprise solution is technological strength to meet increasing uptime requirements, and manageability across the enterprise. Disparate UPS solutions, scattered throughout an organization, without any unifying communications, will not be enough for a 24/365 world. The Powerware 9330 overcomes such chaos by offering a modular, scalable, enterprise-wide suite of products that can be managed locally, remotely and via the network. It can communicate with any other Powerware UPS, and offers built-in flexibility, reducing the amount of time IT personnel are required to monitor the health of the power feeding their entire enterprise. It also proactively notifies them when an event has occurred anywhere in the network, letting them resolve potential problems before they put the system at risk. With multiple layers comprising the new IT infrastructure, an acceptable power solution will not only include advanced UPS and power train hardware, but software and unit intelligence as well. The Powerware 9330 stands a breed apart in all aspects of reliability and enterprise-wide appeal.

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