

Eaton Powerware BladeUPS

The Powerware BladeUPS is a power quality solution, which expands power protection from 12 kW to 60 kW in a single industry standard 19-inch rack, and most significantly, providing this robust, compact solution without generating the additional heat associated with legacy end-of-row, modular UPS products. The BladeUPS is designed to be the most flexible UPS on the market. It can be deployed in a number of configurations from a distributed architecture (one in every rack), to end of row (up to six units in a rack), to a central system (not on the IT floor, but in the electrical closet). In addition, the exceptionally high efficiency rating is not a large energy cost burden when installed inline with the output of a large, central UPS or in highly critical computing areas where dual UPS redundancy (2N) is required.



Powerware BladeUPS

Why use Powerware BladeUPS?

High-density computing environments demand more power!

Today, the management of a data center or network operations center places you under the intense pressure to reduce costs while dealing with inescapable operational realities:

Expanding power demands - The blade servers that are satisfying business demands can also raise the demands for power consumption in the same footprint. Rack power requirements that were once at 60 watts per U may now have to be delivered at levels up to 600 watts per U with redundant power supplies.

Increasing power costs - Utility rates have a common recurrence. They always go up. IDC research reports that energy costs represent a dominant influence on IT spending (IDC U.S. Market Watch Survey, Q2 2006, September 7, 2006). Most organizations are researching and developing plans for the selection of new data center sites based on the proximity of affordable power facilities. The need for more cost-effective power solutions is confirmed in a recent Gartner research report. Power will



Rack w/ BladeUPS

be 50% of data center operational costs (Gartner RAS Core Research, August 18, 2006).

Excessive heat - Blade servers generate a lot of heat-translating into a high demand for additional energy. A fully loaded rack of blade servers can use close to 30kW of power. This equals over 100,000 BTU/hr in heat generation that requires cooling-wasted heat that is not utilized in any way. Since cooling adds huge costs to data center operations, IT organizations are forced to increase their power efficiency to counteract the inefficient heat and cooling problems.

If you manage, engineer, or plan the present and future of a data center or network operations center, you are already aware of these critical issues and their impact on operations. Your challenge is to make decisions that provide efficient power protection and distribution for growing loads, while managing the heat.

BladeUPS UPS System Features & Benefits:

- Grows with expanding IT applications using scalable architecture
- Reduces operating expenses with more flexible, compact configuration options than traditional end-of-row solutions
- Extends battery life and optimizes battery recharge time with ABM technology
- Reduces single point of failure with an intelligent bypass design to eliminate human error
- Simplifies service with hot-swappable battery and electronics modules
- Protects mission-critical applications with innovative backup power technology designed specifically for high-density computing environments
- Supports the constant moves, adds, and changes (MAC) of today's dynamic data center with a modular, scalable, and flexible backup power architecture
- Conserves valuable rack space with 12 kW of power in only 6U of rack height, including batteries
- Accommodates growth by enabling building-block upgrades from 12 kW to 60 kW in a single rack enclosure
- Reduces energy costs and cooling needs through best-in-class efficiency performance
- Delivers highest levels of reliability at the rack with patented Powerware Hot Sync paralleling technology and intelligent bypass design, field proven in thousands of large data centers globally
- Simplifies installation and service with true plug-and-power connections and hot-swappable batteries and electronics modules
- Increases battery life through ABM technology, resulting in more uptime and fewer battery replacements

Powerware BladeUPS Technical Specifications:

General Characteristics	Power Rating	12 kW per UPS Module
	Efficiency	>97%
	Heat Dissipation	<371W/1266 BTU/hr. at 100% rated load
	Cooling	Fan cooled, temperature microprocessor monitored; front air entry, rear exhaust
	Audible Noise, Normal Operation	50 dBA at 1 meter
	Altitude Before Derating	1000 meters (3300 ft. ASL)
Input Characteristics	Input Voltage	208 Vac and 400 Vac models
	Voltage Range	208V model: 180 to 265 Vac 400V model: 311 to 519 Vac
	Frequency Range	50 or 60 Hz, ± 5 Hz
	Input Current Distortion	<5% with IT loads (PFC power supplies)
	Input Power Factor	>.99 with IT loads (PFC power supplies)
	Inrush Current	Load dependent
	Input Requirements	Three-phase, four wire + ground
	Bypass Source	Same as input, (single feed)
	Generator Compatibility	Fast sync slew rate for generator synchronization
Output Characteristics	Rated Output Voltage	208V model: 180 to 255 Vac, Ph to Ph 400V model: 180 to 240 Vac, Ph to N
	Output Configuration	Three-phase, four wire + ground
	Output Frequency (nominal)	50 or 60 Hz auto-detection on startup
	Frequency Regulation	0.1 Hz free running
	Load Power Factor Range	Lagging: 0.7 Leading: 0.9
	Total Output Voltage Distortion	<3% with IT loads (PFC power supplies) <5% non-linear or non-PFC power supplies
Battery Characteristics	Battery Type	VRLA - AGM
	Battery Runtime (Internal)	13 minutes at 50% load 4.8 minutes at 100% load
	Battery String Voltage	240 Vdc
	Battery Test	Automatic battery test standard (remote scheduling capable). Manual battery test from front display
	Battery Recharge Profile	ABM three-stage charging technology

	Battery Cut-off Voltage	Variable from 1.67 VPC at <5 min. runtime to 1.75 VPC at >90 min. runtime	
	Battery Low Condition	Announced with alarm	
	Extended Battery Capability	Yes, add up to four additional 3U battery enclosures (~34 min at 100% load, >1 hour at 50% load)	
Physical Characteristics	Dimensions (HxWxD) UPS	10.3 (6U) x 17.4 x 26.0 inches 267 x 442 x 660 mm	
	EBM	5.2 (3U) x 17.2 x 26 inches 132 x 437 x 660 mm	
	Note:		
	Total Chassis Weight without batteries or electronics	100 lb. (46 kg)	
	Total Chassis Weight with batteries or electronics	307 lb. (140 kg)	
	Total UPS Weight without Batteries	135 lb. (61 kg)	
	Total UPS Weight with Batteries	307 lb. (140 kg)	
	EBM Weight	170 lb. (77 kg)	
Communications and User Interface	Software Compatibility	UPS ships with Software Suite CD containing LanSafe power management software and trial version of PowerVision	
	X-Slot Bays	Two available for the cards listed below	
		Application	Powerware Card
		WEB - TCP/IP	ConnectUPS-X Web/SNMP Card
		Modbus RTU	Modbus Card
	Operating Temperature Optional X-Slot	IBM eServer (i5, iSeries, or AS/400)	Relay Interface Card
	Communication Cards	N/O, N/C (dry contacts)	Industrial Relay Card
		Parallel	Powerware Hot Sync CAN Bridge Card
		Remote Monitoring	Modem card
	Control panel LCD	Two lines by 20 characters Four menu-driven interface buttons Four status at a glance LEDs	

	Multi Language	English standard; 20 other languages available
	Configuration Changes	User capable, firmware auto configures
	Dry Contact Inputs	Two, user configurable
	Dry Contact Outputs	One, user configurable
Certifications	Safety	208V model: UL1778, cUL 400V model: CE
	EMI	208V model: FCC Part15 Class A 400V model: EN62040-2 Class A
	Surge Protection	ANSI C62.41, Cat B-3
	Hazardous materials (RoHS)	EU Directive 2002/95/EC Category 3 (4 of 5)



Power Tech International Group

sales@powertech-group.com

www.powertech-group.com