

POWERWARE
9120

Powerware UPS product catalog



Invensys Powerware

Invensys Powerware® has been protecting mission-critical operations since the days when a mainframe needed its own room. That's over 40 years of experience in the power protection industry. The result is an expansive product line with advanced solutions for any application, from desktops to data centers.

Powerware offers UPSs ranging from 300 VA to more than 4,000 kVA as well as Intergy DC Power Systems available in mini, medium and large sizes. Our award-winning software incorporates all the features you need to proactively manage your systems, from basic monitoring and shutdown to predictive analysis and power management. Powerware Integration Services offers complete solutions tailored for the specific requirements of federal, telecom, and commercial markets. But whatever your industry, Powerware provides the answer with customized power management solutions backed with 7x24 Global Services support.



Whether you're sending a proposal over e-mail or transferring money between bank accounts, your transactions are critical and power protection is essential. Powerware provides you with the highest caliber of power protection so you don't have to think about whether or not you're protected. Because you're always protected with our products.

Powerware UPSs ensure uptime for customers like you, all over the world. From the FAA and NASA to Citibank, Time Warner Cable or MSNBC, Invensys Powerware's client list covers the spectrum of diverse and high-profile applications.

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Powerware Single Phase Solutions

Power protection as easy as 3, 5, 9

Powerware's method of power protection revolves around the nine most common power problems present in any environment. This unique approach will make your decisions about power protection much simpler. The nine most common power problems are: power failure, power sags, power surges, brownouts, line noise, overvoltage, frequency variation, switching transients and harmonic distortion.



These nine power problems are potentially harmful to your valuable data and your computer hardware. Not every UPS protects against all of them. Powerware offers three levels of power protection to choose from: **Series 3**, **Series 5**, and **Series 9**.

Each series is designed to fit a different level of power protection requirements and allows you to match your needs precisely with the appropriate level of power protection. Using the Series 3, 5, and 9 approach to power problems, Powerware eases your selection process, and your worries.

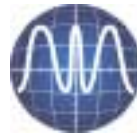
Visit the Single Phase Product Selector on our website to identify the best UPS solution for your specific needs: www.powerware.com/Products/selector.



POWER FAILURE



UNDERVOLTAGE



FREQUENCY VARIATION



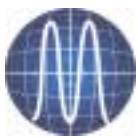
POWER SAG



OVERVOLTAGE



SWITCHING TRANSIENT



POWER SURGE



LINE NOISE



HARMONIC DISTORTION

Powerware Series 3

Single Phase UPSs

Primarily protect against three of the nine power problems including power failures, power sags and power surges. This basic protection is necessary in order to prevent damage such as data loss, file corruption, flickering lights, hardware damage, and equipment shutoff. For example, if your utility fails you could lose all of your work in progress. Series 3 UPSs offer a degree of protection against other power problems and are most commonly used to protect single workstations.



Powerware 3110

(300-700 VA)

Ideal for PC-based applications, the **Powerware 3110** provides affordable protection in a sleek, well-designed unit that can easily fit under a desk or can be wall-mounted.

Features and Benefits

- ▶ Available in cabinet and wall-mount configurations
- ▶ LED indicators and audible alarms warn of power problems and low battery conditions
- ▶ User-replaceable batteries extend the service life of the UPS
- ▶ Compact size saves space and makes installation easy
- ▶ Data line protection isolates network/phone wiring
- ▶ Warranty
 - 2-Year Limited Warranty
 - 5-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22

Powerware 3115

(300-650 VA)

The **Powerware 3115** provides cost-effective power protection for PCs, network nodes, point-of-sale (POS) systems, and computer peripheral devices.

Features and Benefits

- ▶ Power management software bundle provides monitoring and shutdown capabilities
- ▶ User-replaceable batteries extend the service life of the UPS
- ▶ Compact size saves space and makes installation easy
- ▶ Warranty
 - 2-Year Limited Warranty
 - 5-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22



Powerware Series 5

Single Phase UPSs

Series 5 UPSs are most effective against five power problems (power failures, power sags, power surges, undervoltage and overvoltage) and offer a degree of protection against other power problems. Some of the damages you risk by not using a Series 5 UPS include premature hardware failure, data loss and corruption, data error, keyboard lockup, storage loss and system lockup. Series 5 UPSs are recommended for small network systems – all the way up to enterprise networking environments.



Powerware 5115

(500-1400 VA)

The **Powerware 5115** offers excellent protection for PCs, small-office-home-office (SOHO) equipment, NT workstations, and small Internet-working devices.

Features and Benefits

- ▶ Advanced Battery Management (ABM™) doubles battery service life
- ▶ Pure sine wave output delivers smooth, continuous power
- ▶ Buck and Boost voltage regulation corrects incoming voltage fluctuations
- ▶ Hot-swappable batteries simplify service
- ▶ Network Transient Protector isolates network/phone wiring
- ▶ Power management software bundle provides monitoring and shutdown capabilities
- ▶ Warranty
 - 2-Year Limited Warranty
 - 10-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22

Powerware 5125

(1000 VA-3000 VA)

The **Powerware 5125** provides advanced power management for PCs, workstations, servers and other applications. Available in both rack-mount and tower configurations, the Powerware 5125 is the most flexible UPS in the 1–3 kVA power range.

Features and Benefits

- ▶ Extended Battery Modules (EBMs) extend run time capability
- ▶ Advanced Battery Management Plus (ABM™ Plus) doubles battery service life
- ▶ Load segments enable scheduled shutdowns and maximize run time for each critical device
- ▶ Two-in-one rack and tower form factor provides versatility
- ▶ Buck and Double Boost voltage regulation ensures sine wave output without using batteries
- ▶ Hot-swappable batteries simplify service
- ▶ Power management software bundle provides monitoring and shutdown capabilities
- ▶ Warranty
 - 2-Year Limited Warranty
 - 10-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22



Powerware 5140

(6000 VA/6000 Watt)

The **Powerware 5140** is designed with a unity power factor rating, meaning it is ideally suited to meet the requirements of today's Power Factor Corrected (PFC) loads. With proven and reliable technology, it delivers up to a third more power than traditionally rated UPSs while still occupying only 6U of rack space.



Features and Benefits

- ▶ Unity power factor rated design protects more equipment
- ▶ Advanced Battery Management (ABM™) doubles battery service life
- ▶ 6U (10.5 inches) rack height conserves valuable rack space
- ▶ Extended Battery Modules (EBMs) prolong backup times
- ▶ Buck and Double Boost voltage regulation ensures sine wave output without using batteries
- ▶ Modular design eases setup and service
- ▶ Load segments enable scheduled shutdowns and maximize backup time for critical devices
- ▶ Hot-swappable batteries and manual bypass switch simplify service
- ▶ Warranty
 - 2-Year Limited Warranty
 - 10-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22

Powerware Series 9

Single Phase UPSs

Series 9 UPSs protect against all nine power problems: power failures, power sags, power surges, undervoltage, electrical line noise, overvoltage, frequency variation, switching transients and harmonic distortion. Powerware Series 9 comprehensive protection prevents all of the damages mentioned earlier as well as component stress, burned circuit boards, data crashes and program failures. Series 9 UPSs offer the highest level of power protection available and are always recommended for mission-critical applications like server farms and hospitals.



Powerware 9 Prestige

(600-6000 VA)

The **Powerware 9 Prestige** is a modular UPS designed to accommodate virtually any mission-critical application for a few minutes or for several hours. The Powerware 9 Prestige protects AS/400 servers, industrial applications, and internetworking devices such as ATM switches.

Features and Benefits

- ▶ True online design ensures continuous, clean power
- ▶ Cell Saver® technology reduces battery replacement costs
- ▶ Additional, hot-swappable battery packs extend backup times
- ▶ Power management software bundle provides monitoring and shutdown capabilities
- ▶ Versatile, modular design provides easy setup and service
- ▶ Automatic internal bypass adds redundant power path
- ▶ Warranty
 - 2-Year Limited Warranty
 - 10-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22



Powerware 9120

(700-3000 VA)

The **Powerware 9120** provides maximum protection in the 700 VA–3000 VA range. The Powerware 9120 is the ideal solution for networks, web servers, telecommunications and other critical applications.

Features and Benefits

- ▶ Advanced Battery Management (ABM™) doubles battery service life
- ▶ True double conversion online technology
- ▶ Simple installation and operation
- ▶ Intuitive LCD screen providing real-time updates of UPS status, power usage, battery run time remaining, and other critical parameters
- ▶ Hot-swappable batteries simplify service
- ▶ Network Transient Protector isolates network/ phone wiring
- ▶ Load segments enable scheduled shutdowns and maximize backup time for critical devices (1000/1500 VA)
- ▶ Power management software bundle provides monitoring and shutdown capabilities
- ▶ Warranty
 - 2-Year Limited Warranty
 - 10-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22

Powerware 9125

(700-3000 VA)

Combining superior performance with innovative features, the **Powerware 9125** is the ultimate UPS in its class. The Powerware 9125 delivers superior power protection for banking and security systems, manufacturing process control, heavily configured servers and telecommunications/PBX equipment.



Features and Benefits

- ▶ Fourth-Generation Online™ topology ensures continuous, clean power
- ▶ Advanced Battery Management Plus (ABM™ Plus) doubles battery service life
- ▶ Additional, hot-swappable Extended Battery Modules (EBMs) extend backup times
- ▶ Load segments enable scheduled shutdowns and maximize backup time for critical devices
- ▶ Two-in-one rack and tower form factor provides versatility
- ▶ 2U (3.5 inches) rack height conserves valuable rack space
- ▶ Power management software bundle provides monitoring and shutdown capabilities
- ▶ Warranty
 - 2-Year Limited Warranty
 - 10-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22
- ▶ Also available in black (700-2000 VA models)

Powerware 9150

(8.0-12.5 kVA)

The **Powerware 9150** is the power protection solution for network server farms, enterprise telecommunications systems, clustered PCs, and LAN gateways, bridges and routers.

Features and Benefits

- ▶ Double conversion online technology ensures continuous clean power
- ▶ Advanced Battery Management (ABM™) doubles battery service life
- ▶ Matching battery cabinets extend backup times
- ▶ Automatic voltage and frequency selection ease startup
- ▶ Standard static bypass and manual bypass switches mean zero transfer time
- ▶ Power management software bundle provides monitoring and shutdown capabilities
- ▶ Efficiency Optimizer minimizes power loss, reduces power consumption and cuts your power bill
- ▶ Compatible for engine generator applications
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22



Powerware 9170+

(3-18 kVA)

The **Powerware 9170+** offers the highest level of reliability and the lowest cost of ownership of any UPS in the 3-18 kVA range; available in three-, six-, nine-, and twelve-slot configurations.

Features and Benefits

- ▶ N+X redundancy for both power and logic eliminates system level single point-of-failure
- ▶ Easily scalable to adapt to changing IT environments by simply adding power and/or battery modules
- ▶ Advanced Battery Management (ABM™) doubles battery service life
- ▶ Universal components fit in any order without affecting UPS operation
- ▶ Protection against all nine power problems
- ▶ Complete offering of power management software included to ensure data integrity
- ▶ Warranty
 - 2-Year Limited Warranty
 - 10-Year Pro-Rated Warranty
 - \$25,000 Load Protection Guarantee
- ▶ True double conversion online design
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22

Powerware FERRUPS® (500 VA–18 kVA)

Powerware FERRUPS uninterruptible power systems deliver unmatched reliability in configurable power protection for computers and telecommunications equipment. Patented ferroresonant technology delivers “bulletproof” power protection, safeguarding against all nine common power problems.



Rack-mount



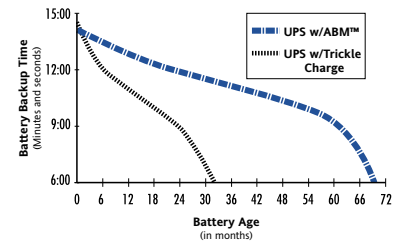
Features and Benefits

- ▶ Active voltage regulation converts power from almost any AC source into computer grade power
- ▶ Eliminates harmful harmonic currents from entering a building's wiring, where they can disrupt computer operations
- ▶ Enhanced diagnostics initiate automatic startup and scheduled tests on the logic board, battery and other critical systems
- ▶ Provides regulated output voltage without drawing power from batteries, keeping the batteries fully charged from unexpected blackouts
- ▶ Complete offering of power management software included to ensure data integrity
- ▶ Warranty
 - 2-Year Limited Warranty
 - \$25,000 Load Protection Guarantee
- ▶ Powerware Gold Plan service maximizes uptime and system availability – see page 22

Single Phase UPS Feature Focus

Advanced Battery Management (ABM™)

The lead-acid batteries typically used in a UPS are considered viable as long as they can maintain backup times of at least half that of new batteries. Virtually all other UPSs on the market today have batteries that are constantly trickle charged. Those batteries reach the end of their useful life in less than half the time of batteries that are charged using ABM. Using a three-stage charging technique that not only doubles battery service life, ABM also optimizes battery recharge time and provides up to a 60-day advanced notification of the end of useful battery life.



Data based upon tests performed by an independent battery manufacturer.

Featured on the following UPSs: 5115, 5125, 5140, 9104, 9120, 9125, 9150, and 9170+.

Load Segments

Load Segments are groups of receptacles that can be independently controlled via LanSafe™ power management software, which is bundled with the UPS. Load segments extend battery backup times for critical equipment.



UPS Rear Panel

Featured on the following UPSs: 5125, 5140, 9120 and 9125.

To preserve battery power for more critical equipment connected to **load segment 1**, shut down **load segment 2** supporting less critical equipment.

Shut down and power up Load Segments in user-defined sequence.

Extended Battery Module (EBM)

For applications requiring extended battery backup times, Powerware has several UPSs that accommodate optional EBMs. Featured on the following UPSs: Powerware 9 Prestige, 5125, 5140, 9104, 9120, 9125, 9150, 9170 and Ferrups.



Powerware 9125 with two EBMs

Powerware Three Phase Solutions

Centralized 7 X 24 power availability

The rise of the Internet, telecommunications, and other digital technologies have driven greater dependence on both business-to-business and business-to-consumer technologies. Things we take for granted, like easy access to cash from ATMs, broadband cabling for fast Internet service, or instant access to disparate databases located all over the world, are now a requirement to keep the global economy working and growing.



These technologies are made possible through a vast and complex infrastructure of hardware and software. This infrastructure is housed in corporate data centers, isolated locations, and within business offices. Keeping this infrastructure working at all times means understanding what could be threatening your system availability and finding the best way to manage, and if possible, eliminate those risks. It will come as no surprise to anyone who has spent any time working with technology to find that power anomalies and failures are the chief cause of system downtime and lost revenue. Prevent these power problems, and you've gone a long way toward zero downtime.

Building on its status as the industry's leading developer of innovative three phase power solutions, Powerware eliminates the risks power can pose to your critical infrastructure, increasing system reliability and availability.

Powerware three phase UPS products provide the critical elements you need for a power solution tailored to your requirements, including:

- ▶ High reliability
- ▶ Long battery run times
- ▶ Extensive warranty service plans
- ▶ Superior electrical performance

Powerware 9315

(30-750 kVA)

More than the power standard for data centers, facilities and network solutions, the **Powerware 9315** is the industry's most reliable and flexible three phase UPS. The Powerware 9315 uses intelligent communications and parallel configurations to provide maximum uptime and 99.9999% availability. And, the Powerware 9315 can be paralleled for both redundancy and capacity using patented Powerware Hot Sync® technology.

Features and Benefits

- ▶ Flexible battery runtime option to customize your application
- ▶ ProActive Service Plan included for the first year following installation, providing maximum uptime for mission-critical systems
- ▶ True double conversion online technology protects the critical load from any power variation on the input
- ▶ DC Expert™ monitors and maintains battery health; provides state-of-charge and dynamically updates information on battery time remaining
- ▶ UPS initiates outcall for user-selected events
- ▶ Intelligent Input Filter provides superior generator interface, and provides additional isolation between input and output
- ▶ Intelligent design reduces component count significantly, which reduces points-of-failure, maximizing availability
- ▶ Monitor panel provides single-button start, along with pushbutton controls to easily access data regarding UPS status
- ▶ Intelligent controls with digital signal processing (DSP) provides more pristine output signal
- ▶ True pulse width modulation (PWM) technology enables IGBTs to switch at their highest capacity, increasing system reliability and ensuring perfect power on the output
- ▶ Powerware Hot Sync patented paralleling technology requires no communication between modules, eliminating a system-level single point-of-failure

The Powerware 9315 is available in the following system configurations:

- ▶ Single Module – Reverse Transfer
- ▶ Multi-Module – Parallel for Redundancy
- ▶ Multi-Module – Parallel for Capacity

The Powerware 9315 is designed for a wide range of critical applications, including:

- ▶ Data Centers
- ▶ Server Farms
- ▶ Facilities
- ▶ Telecommunications
- ▶ Enterprise Networks
- ▶ Internet Service Providers



9315 Models:

9315-40
 9315-50
 9315-65
 9315-80
 9315-130
 9315-160
 9315-200
 9315-225
 9315-250
 9315-300
 9315-400
 9315-500
 9315-750

Powerware 9330

(10-40 kVA)

Powerware once again sets the standard for availability higher than any other UPS company with the introduction of the **Powerware 9330**. This product integrates all of Powerware’s award-winning technology, software and service capabilities into a single module capable of supporting critical servers, ISPs, telecommunications or process control equipment from 10–40 kVA.

Features and Benefits

- ▶ Double conversion online topology delivers superior performance levels under varying load conditions
- ▶ Ergonomically designed control panel features a large LCD (8 line x 40 character) and status LEDs with soft keys for easy navigation to access critical-status information at the touch of a button
- ▶ Compact footprint includes 14 minutes of backup time and a maintenance bypass switch for complete UPS isolation during maintenance
- ▶ Full-featured monitoring with active mimic bus and diagnostics helps prevent risks to availability before they occur
- ▶ DC Expert Plus™ built-in battery monitoring provides the most comprehensive battery management system in the industry
- ▶ 7 x 24 availability with Powerware Hot Sync® paralleling for redundancy and/or capacity
- ▶ ProActive Service Plan comes standard for one year, providing maximum uptime for mission-critical systems



Powerware Hot Sync technology is a paralleling system that reduces the risks of traditional UPSs by eliminating connections that can fail and shut down a critical load. Each UPS module operates independently of other modules to synchronize and support the load. Powerware Hot Sync samples the output power over 3,000 times per second, adjusting and synchronizing accordingly. This unique approach to paralleling provides redundancy and capacity capability with system availability of 99.9999 percent or greater.

<p>9330 Models:</p> <p>9330-20</p> <p>9330-40</p>	<p>The Powerware 9330 is capable of supporting critical applications including:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Server Farms</td> <td style="width: 50%;">Branch Offices</td> </tr> <tr> <td>Networking</td> <td>Medical</td> </tr> <tr> <td>Telecommunications</td> <td>Process Central</td> </tr> </table>	Server Farms	Branch Offices	Networking	Medical	Telecommunications	Process Central
Server Farms	Branch Offices						
Networking	Medical						
Telecommunications	Process Central						

IPM Three Phase Industrial

BPIV

The BPIV delivers enhanced system reliability and the highest efficiency ratings of any online UPS in the 10-30 kVA range for industrial equipment required to operate in many extremes, which include less-than-ideal environments. Factors such as temperature extremes, dust and dirt, and high inrush loads make it difficult for a UPS designed for an office or computer room to provide adequate protection. Designed specifically for harsh industrial environments, the BPIV contains high-end features and benefits that only existed in larger capacity UPS systems until now.



BPIII Industrial

The Balanced Power III Industrial features digital network control (DNC) logic, providing maximum reliability through individual inverter, rectifier, and monitoring control circuitry. A high-speed digital network enables internal communications while the Advanced Battery Management system and high-speed pulse width modulated (PWM) inverter add to its reliability. In addition to a variety of standard and optional features typically provided with on-line UPSs, the BPIII Industrial offers features ideal for industrial applications.

BPII HE and BPII-S HE*

The BPII HE provides many of the same features and benefits of the BPII. However, the BPII HE is designed to withstand the abuse of typical industrial environments and applications.



BPIII HE

The BPIII HE provides many of the same features and benefits of the BPIII. In addition, the BPIII HE offers features designed to withstand the abuse of many typical industrial environments and applications.

*Single-phase output

	BPIV	BPIII Industrial	BPII HE/BPII-S HE	BPIII HE
Internal Batteries	X			
Internal input filter				
10% THD (optional)	X		X	X
Internal maintenance bypass	X		X	X
Internal input and output isolation transformers (standard)			X	X
Internal input isolation transformer (optional)	X			
Remote control and diagnostics	X		X	
Phone Home alarm reporting (with optional modem)	X	X	X	X
Single or dual inputs	X			
Dual input only			X	X
14-gauge heavy-duty panels	X	X	X	X
Heavy-duty filtration (optional)		X	X	X
ANSI 61 gray paint on exterior panels		optional	X	X
50°C continuous operation		10% derated capacity	20% derated capacity	X
120 VDC link (compatible with existing rectifiers and batteries)			X	X
Blocking diodes (optional)			X	X
DC ground fault detection (optional-requires IsoTrans)		X	X	X
Start on battery (optional)			X	X
Inrush overload inverter capability		up to 160 kVA	X	X
Conformal coated boards			X	X
Oversized rectifiers (optional)			X	X

Additional features and options available; please contact your sales representative.

Powerware Feature Focus

Powerware Hot Sync®



Ensuring the reliability and availability of critical systems has been the hallmark of Powerware's three phase solutions for more than 30 years. Each technological innovation has represented another step in the evolution of maximizing reliability. The latest step in this development is Powerware Hot Sync, an enabling technology that allows parallel for redundancy and parallel for capacity configurations of UPSs, without a system-level single point-of-failure. This is a significant capability, and unique to Powerware Hot Sync. Field-tested and installed in thousands of locations around the world, Powerware Hot Sync has become the global standard of availability for technology infrastructure applications.

How it works

Powerware Hot Sync enables UPS modules to work in tandem in complete synchronization without being wired together. This wireless design means that while the modules are in sync, they are functioning independently of each other in a true peer to peer system. The modules are tied together only on the output, with each monitoring the output and using a digital algorithm to make adjustments 6000 times per second. This unique technology not only makes redundancy even more reliable, but can also be used to increase capacity, so your power solution easily grows to protect your system as it expands.

Load sharing

In an optimum parallel configuration, the two UPS modules must share the load equally. In a traditional analog configuration, this requires wire communications between the modules, which in turn creates multiple points-of-failure. Powerware Hot Sync eliminates the necessity for wire communications, providing true wireless paralleling for the first time, and eliminating single points-of-failure. The load-share control algorithms maintain synchronization and load balance by means of advanced adaptive control logarithms. Each module monitors its own output power and tracks fluctuations from one output power cycle to the next. In this manner, each module need only look at its own output power to remain phase-locked.

Powerware Hot Sync Benefits

- ▶ Elimination of system-level single point-of-failure
- ▶ UPS components operate at their optimal capacity, increasing reliability and perfect power on the output
- ▶ Digital synchronization for automatic load sharing
- ▶ Selective tripping to automatically remove units in need of repair, thereby maintaining uninterrupted power to the critical load

Selective tripping

In addition to enabling precise load sharing, Powerware Hot Sync enables a module to employ a unique selective tripping approach; that is, each module need only look at itself to see if it has failed. Because each module in a Powerware Hot Sync system monitors itself for a failure, the faulty module will isolate itself from the critical bus (as opposed to identifying a faulty module from a system level, which is commonly used in conventional parallel redundant systems). Though most of the module failure modes are benign, there are several failure modes that will affect the critical bus. For instance, a component failure, such as a shorted IGBT, will appear as a fault on the critical bus. For these types of failures, it is essential that the failure be quickly identified and that the failed module be removed from the critical bus. As with the load sharing routine, Powerware Hot Sync employs wireless selective tripping. In other words, there are no inter-module communications required to perform this function. This eliminates the single point-of-failure associated with critical bus failure modules in conventional parallel redundant systems.

The development of Powerware Hot Sync is the culmination of Powerware's expertise, the availability of high-speed digital processors, the development of component technology and the creation of enabling software. With all of the technological elements falling neatly into place, Powerware Hot Sync is ushering in a new era of critical system reliability.

Additional System Solutions

Invensys Powerware also offers a broad selection of additional system solutions to complement our UPS products. Whether you're simply looking for surge protection-or all the key components of the Powerware High 9's PowerTrain™ total solutions strategy-we have the answer.

Powerware Netsurge

Powerware Netsurge provides the ultimate in configurable surge protection platform through the unique patented design of seven high-performance AC outlets plus three easy slide-in communication protection bays. The Powerware NetSurge line of power protection complements not only AC line protection, but also protection for critical data lines.

Features and Benefits

- ▶ Easy slide-in communication modules allow for mix-and-match protection for ADSL, Digital Satellite Connections, Cable TV, Internet, Cable Modems, FAX/modems, and other critical communication options.
- ▶ All seven outlets are conveniently located on one side for superior cable management
- ▶ Recessed on/off switch-is large enough for easy access, but recessed to prevent accidental shut-off
- ▶ Protection status indicator assures that the suppressor is protecting the equipment
- ▶ Site wiring fault indicator
- ▶ Lifetime Product Warranty
- ▶ Lifetime Connected Equipment Warranty of up to \$25,000



Powerware PowerGuardian & DataGuardian



Powerware PowerGuardian and DataGuardian surge suppression devices are designed to provide the maximum protection to improve availability of your complex network systems. By using a modular design, you can easily re-configure your solution to suit your changing technological needs.

Features and Benefits

- ▶ Patented five-stage hybrid circuit protects more than hardware by controlling all transients to a low level, minimizing system downtime and corrupted software
- ▶ Automatic grounding is achieved through a common reference for both AC surge protection and communication protection modules. This eliminates the most common error in suppression installation
- ▶ Built-in fail safe protection is provided through both in-line thermal and short circuit fusing
- ▶ 10-Year Product Warranty
- ▶ \$25,000 Load Protection Guarantee



Maintenance Bypass Module

This floor-mounted, enclosed cabinet provides continuous support for critical loads during servicing or testing of the UPS module. The MBM includes the maintenance isolation breaker (MIS) and maintenance bypass breaker (MBP).

Powerware PDM

The power distribution module (PDM) provides distribution of output power from the UPS to critical applications. A PDM includes two panels, each containing 42 poles that can be assigned depending upon application requirements. If additional distribution is required, these cabinets can be daisy-chained to increase distribution capacity.

Remote Monitor Panel

The remote monitor panel (RMP) allows customers to monitor the operational status of the UPS system from virtually any location within a facility. The RMP utilizes simple backlit status indicators and an alarm horn that notify customers of changes in the operational status of the UPS system. This option can be installed in multiple locations throughout a customer's facility.

Relay Interface Module

The RIM provides a critical communications link to optimize reliability, utilizing serial interface and relay contact closures to support up to eight critical loads. The RIM notifies customers of operational status changes, allowing them to respond with the appropriate action.

Powerware PDU

Protects your critical computer equipment and applications from electrical noise and spikes, and acts as a single point reference ground. Each Powerware PDU can be configured to meet your specific needs for isolation, voltage transformation, harmonic reduction and voltage regulation with virtually limitless distribution options. Built-in system monitoring and diagnostics facilitate load balancing and warn of potential threats to your critical equipment.

Powerware PDU-R

The Powerware PDU-R provides additional distribution capabilities without consuming valuable floor space. A freestanding device, the PDU-R allows you to effectively use all of your existing capacity before investing in additional distribution. To "expand" your system, simply connect the PDU-R to any standard sub-feed circuit breaker, a PDU or a 208 V distribution board.

Powerware PF2 Flywheel

The Powerware PF2, a DC battery-free energy storage technology, is an integrated motor-generator-flywheel that stores kinetic energy in a constantly spinning, quiet, low friction steel disc. Compared to traditional battery systems, the Powerware PF2 dramatically reduces space requirements, temperature restrictions, replacement cycles, and maintenance costs while improving UPS system reliability and operational integrity.

SSBM

To enhance the reliability of redundant power systems we offer the PowerHandler Plus Switchboard System Bypass Module (SSBM). Designed specifically for the Powerware 9315 family of UPSs, the PowerHandler Plus allows up to eight UPSs to operate in parallel to provide more capacity than a single UPS, and as backup for each other. The Parallel Capacity/Redundant system can supply up to 4,000 Amps, depending on the SSBM used.

Powerware TVSS

Powerware TVSS devices are designed to improve the availability of your complex network systems. Powerware surge suppression equipment provides an added level of protection for both electrical and data communication lines, plus telephone line protection for a complete, integrated power protection solution.



Software & Connectivity

With the increasing complexity of today's networks, power issues are becoming more critical to IT, process and manufacturing control, and telecom functions. Seamlessly integrated, enterprise-wide power protection systems are needed to safeguard business-critical information. Well-engineered UPS hardware, redundant power systems, and advanced battery technology, while very important, are simply not enough to ensure system availability.

Today, a variety of communication methodologies may be used to monitor critical equipment on the network, and attaining the highest availability for vital equipment is a top priority. Realizing that goal requires thorough planning, careful design, superior equipment, proper installation, and reliable power.

Delivering a full line of software, strategic equipment, and connectivity devices, Invensys Powerware provides the perfect solution. Implementing these key components as a part of the Powerware High 9's Powertrain™ strategy will allow you to capture the high 9's of availability in any UPS environment.

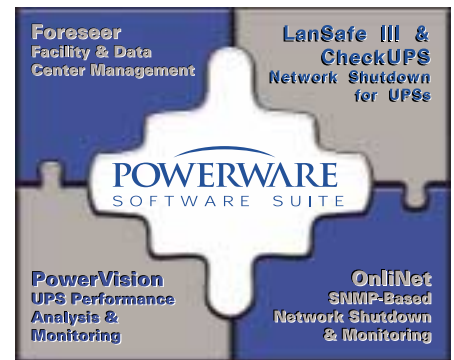
Software Suite

Complete set of power management software solutions

Features and Benefits

- ▶ Free and bundled with all Powerware UPSs*
- ▶ Software Wizard guides you through software selection and installation
- ▶ In addition to multimedia demonstrations, product data sheets, and video clips, the Software Suite CD contains the following power management software:
 - **LanSafe™ III and CheckUPS:** Network shutdown for UPSs
 - **OnliNet®** (Vista/Centro): SNMP-based network shutdown and monitoring for UPSs
 - **PowerVision®** (30-day trial version): UPS performance analysis and monitoring
 - **Foreseer®** (demonstration): Facility and data center management

*NOTE: (not bundled with Powerware 3110)



LanSafe™ III

Network shutdown for UPSs

LanSafe III is Powerware's software solution that allows you to establish a prioritized, sequential shutdown of all network devices and most popular client/server applications.

Features and Benefits

- ▶ Preserves data integrity system-wide with automatic, unattended network shutdown during an extended power failure
- ▶ Reduces cost per device for power protection with UPS groups
- ▶ Conserves power by means of scheduled on/off times
- ▶ Receives system-wide control via cross-platform functionality and support for other manufacturers' UPSs
- ▶ Tests all networked UPSs from one node
- ▶ Determines overall operating environment with extensive graphical displays
- ▶ Keeps you informed of power problems by pager and e-mail
- ▶ Analyzes conditions with voltage logging

PowerVision®

UPS power management software for enterprises

PowerVision is a Windows®-based client/server software package that's easy to use yet powerful. A comprehensive, fully integrated monitoring system, PowerVision helps to ensure the highest availability of power for mission-critical systems.



Features and Benefits

- ▶ Real-time, enterprise-wide monitoring analyzes critical power conditions and identifies problems
- ▶ Drill-down monitoring of individual meter or status for the UPS isolates the issue and speeds diagnosis
- ▶ Monitoring via client (local or remote), server, the Web (computer or PDA) or optional Building Management System interface (Modbus, gateway) provides easy "anywhere/anytime" access
- ▶ PowerVision's scalable architecture allows network managers flexibility in extending the umbrella of protection across the enterprise
- ▶ Supports Powerware 9315 Hot Sync Redundant UPS monitoring
- ▶ Emergency computer shutdown option provides graceful, unattended, enterprise-wide shutdown of computers to protect critical data
- ▶ Alarm notification through any combination of alphanumeric paging, SMTP e-mail or optional SNMP trap speeds corrective action
- ▶ Customizable alarms tailor notification to user needs
- ▶ Powerful data collection, graphing and report writing toolset provides trend analysis and diagnosis of chronic power problems



Foreseer® Software

Integrated technology for a single solution

Imagine seeing the solution before the problem...

Foreseer is the ultimate solution to proactively monitoring and managing foundation equipment. Regardless of manufacturer, from UPS, air handlers and battery monitoring to simple intrusion detectors, Foreseer monitors them all.

Features and Benefits

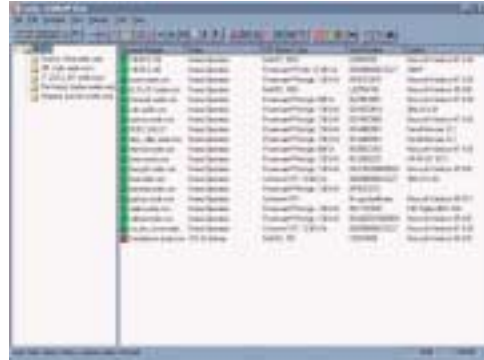
- ▶ Easily configured to your unique environment, regardless of the complexity, size, or number of distributed sites
- ▶ Advanced alarm management capability: alpha numeric OutCall Paging™ ensures that the right personnel are automatically notified of alarms and potential problems
- ▶ Custom report generator produces management reports and other specific information whenever needed
- ▶ Installed, serviced and supported by Powerware Global Services Group. A range of installation packages are available to meet your specific needs including complete turn-key project management and on-site training
- ▶ Graphical views to accurately depict your site

OnliNet[®] Centro/Vista Software

SNMP-based network shutdown and monitoring for UPSs

Features and Benefits

- ▶ Automatic, unattended shutdown of UPSs via SNMP
- ▶ Allows user to view all network UPSs on a single screen
- ▶ Manages and monitors one, several, or all networked UPSs
- ▶ Diagnoses chronic power problems through event logs
- ▶ Displays graphical representation of system and UPS
- ▶ Delivers paging and e-mail capabilities



ConnectUPS[™] Web/SNMP Cards

Solutions for the changing global customer landscape

The ConnectUPS-X and ConnectUPS-BD Web/SNMP (Simple Network Management Protocol) cards are powerful, intelligent devices designed for the rigorous task of managing the UPSs that protect equipment and, ultimately, the critical data residing throughout the network.

Features and Benefits

- ▶ Monitoring via Web (computer, PDA, or cell phone) or network management software packages (e.g. HP Overview) provides easy, "anytime, anywhere" access
- ▶ Analyzes chronic power problems and determines trends through data logging and sophisticated graphing tools
- ▶ Supports 10Mb and 100Mb networks
- ▶ Built-in three port switching hub (in X-slot[™] version) adds three 10/100Mb network connections with no additional expense
- ▶ Alarm notification through any combination of e-mail, SNMP traps, or NetWatch network message speeds corrective action
- ▶ Integrated NetWatch software provides graceful, unattended shutdown of computer operating systems to preserve data integrity in the event of an extended power failure
- ▶ ConnectUPS MultiView software allows simultaneous monitoring of multiple ConnectUPS-X and -BD cards



Powerware Expansion Chassis

Increasing the flexibility and effectiveness of power protection systems

The Expansion Chassis is a three-slot peripheral device that expands communication methods for a UPS through its support for X-slot™ cards. Expansion Chassis are pre-configured with the Powerware Modbus card, which serves as the interface to Modbus networks and as the integral communications controller for the other two slots.

Features and Benefits

- ▶ Creates a wide array of communication options for UPSs
- ▶ Acts as the framework for protocol conversion via compatible X-slot cards to: Modbus, SNMP, HTTP
- ▶ Supports wide range of UPSs: Powerware 5115; 5125; 5120; 9125; 9170+; Powerware 9 Prestige; Powerware Plus 12, 18, 36; Powerware 9315 Reverse Transfer Module; Powerware 9315 Hot Sync Parallel Redundant Module; Powerware 9315 Hot Sync Parallel Capacity UPM; Powerware 9315 Hot Sync Parallel Capacity SBM
- ▶ Flexible mounting options (via included feet, rack or wall mounting kits); redundant power inputs
- ▶ Compatible with X-slot cards
 - **Modbus** (one included)–Connect to another Modbus network, monitor via Building Management System (BMS)
 - **ConnectUPS™-X SNMP/Web Adapter**–monitor via SNMP or the Web
 - **ConnectUPS-M SNMP Module**–monitor via SNMP
 - **Single Port Serial Card**–connect an additional server for monitoring and graceful shutdown
 - **Multi-Server Card**–connects up to three servers for monitoring and graceful shutdown; supports load segment control and RS-232 signals for low battery and AC Fail

Powerware Modbus Card

Real-time monitoring of critical power conditions via a Building Management System (BMS)

The Powerware Modbus Card is an X-slot connectivity device that provides continuous, reliable, and accurate monitoring of a UPS through a Building Management System (BMS). The card uses the Modicon®, Modbus RTU Protocol to integrate data from the UPS into many widely used BMS packages such as Wonderware®, Johnson Controls' Metasys® and Siemens' Apogee™. Key power information may be monitored in real-time to aid in the diagnosis of problems.



Features and Benefits

- ▶ Real-time monitoring of power conditions through a BMS
- ▶ Supports Modbus RTU/Jbus protocol
- ▶ Seamless data integration via included Profiler software package
- ▶ Flexible network connections (RS-485 via DB-9 port or terminal block)
- ▶ User-selectable communication topologies (two-wire and four-wire)
- ▶ Supports wide range of UPSs
 - Via native X-slot: Powerware 5125; 9125; 9330; 9340
 - Via Expansion Chassis: Powerware 9 Prestige; Powerware Plus 12, 18, 36; Powerware 5115; 9120; 9170+; Powerware 9315 Reverse Transfer Module; Powerware 9315 Hot Sync Parallel Redundant Module; Powerware 9315 Hot Sync Parallel Capacity UPM; Powerware 9315 Hot Sync Parallel Capacity SBM
- ▶ Includes Profiler utility to create custom Modbus register map

POWERWARE®

GLOBAL SERVICES



With 40 years of experience in training field technicians, we offer superior service extending through the life of our products. Powerware Global Services supports a wide array of industry sectors including Telecom, IT, Industrial, Financial, and Government institutions, with around the clock coverage. Technical support teams and 7x24 Call Centers support our comprehensive line of service offerings, including corrective and preventative maintenance, battery solutions, service training, kVA upgrades, UPS enhancements, power distribution system maintenance, on-site spare parts, and remanufactured UPS products.

Where there is a need, Global Services delivers a solution with more than 2,000 trained service professionals worldwide. Office locations include the United States, Canada, Finland, France, Germany, United Kingdom, Sweden, China, Singapore, Japan, India, Australia, Brazil, Mexico, and Argentina. Corporate headquarters are located in Raleigh, North Carolina.

ProActive Service Plan

Available for new 9315 systems, 50-750 kVA and 9330 systems, 10-40 kVA (USA only; first year included in UPS purchase price). Features include 7x24 corrective maintenance coverage, annual performance check, annual power protection audit, remote monitoring service, monthly UPS performance report and web access to account information and site service activity.

Start-Up Service

Ensuring that all is well from the start, our Customer Support Engineers: validate the integrity of your UPS, perform a full mechanical inspection, start-up your UPS system, verify all operating and monitoring parameters, and provide basic operational training.

Gold Plan Service

Gold Plans are ideal for modular or plug and play AC single phase or DC power systems. Delivering coverage for up to five years, four Gold Plan versions are available: Gold Plan, Gold Plan Plus, On-Site Gold Plan, and On-Site Gold Plan Plus.

UPS Preventative Maintenance

A vital component of any comprehensive maintenance plan, our UPS Preventative Maintenance service provides the security of knowing your system will function when you need it most. This service will maximize UPS efficiency and uptime, and help prevent load loss.

Comprehensive Battery Solutions

Powerware Global Services offers a comprehensive line of battery solutions specifically designed to minimize the risk of system downtime and provide you with peace of mind. Services include battery coverage, updates, additions, preventative maintenance, and monitoring.

Powerware® Cellwatch®

A full-featured battery monitoring system that is an ideal solution for the most critical applications where battery health must be checked on a continuous basis to avoid any degradation in battery performance and back-up time. Ensures that mission-critical systems are fully protected.

Multi-Vendor Services

Provide service for an array of critical power equipment, regardless of manufacturer, allowing you to maintain a single-business relationship for all your power equipment protection needs. Powerware Global Services experienced technicians will maximize the uptime of all your mission-critical equipment.

Remote Monitoring

Armed with state-of-the-art communication tools, Invensys Powerware stands guard over your equipment, managing critical system alarms, performing remote diagnostics, and providing informative periodic reports. A wide variety of monitoring solutions is available, delivering 24-hour surveillance and immediate professional service when you need it most.

Enterprise Monitoring

Using DataTrax Foreseer, a state-of-the-art hardware and software solution, Powerware Global Services can provide a comprehensive monitoring solution for all mission-critical foundation equipment and life safety systems. Providing 7x24 monitoring and diagnostics, managing multi-vendor services, and delivering system optimization recommendations are key features of this comprehensive solution for maximum uptime of your critical systems.



Invensys Powerware UpTime Guarantee

We guarantee your critical applications will be up all the time. At Powerware Global Services, we are serious about keeping your equipment running at optimal effectiveness. We are convinced that with proper maintenance, there is no reason you should suffer a load loss due to a malfunction of your UPS or batteries. To prove this, we give you our UpTime Guarantee.

Powerware Integration Services

Federal, telecom and commercial markets



Powerware Integration Services offers a complete AC and DC engineering, installation and program management resource to commercial and government facilities, data centers, communication network operators and telecommunication providers. From installation of Powerware UPS or DC Power systems to global design/build programs for the largest networks, we have the expertise and team to implement cost-effective engineering, furnish and installation (E, F & I) infrastructure solutions. The in-house design and project management staff, coupled with our equipment supplier, OEM and installation contractor relationships, enables you to draw together a proficient team to quickly assess and implement your power protection needs. Powerware Integration Services delivers comprehensive offerings of products and services for the ultimate in power reliability.

Tel: 1.800.472.8041

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Power Protection Products

- ▶ UPSs (single & three phase)
- ▶ TVSSs
- ▶ Flywheels
- ▶ PDUs
- ▶ Transfer Switches
- ▶ HVAC Systems
- ▶ Transformers & Voltage Regulators
- ▶ Batteries
- ▶ Switchgear
- ▶ Software
- ▶ Power Generation Systems (standby and prime)
- ▶ Load Banks
- ▶ DC Rectifiers

UPS System Configurations

- ▶ Single Module
- ▶ Redundant Module
- ▶ Parallel for Capacity
- ▶ Double Redundant Module
- ▶ Hot Tie Separate Multi Module System (w/automatic paralleling capability)

Integrated Solutions Services

- ▶ Installation
- ▶ Maintenance
- ▶ Project Management
- ▶ Testing
- ▶ Training
- ▶ Engineering
- ▶ Logistics Support
- ▶ Modifications

Telecom

- ▶ Wireless Services
- ▶ Rack and Stack Integration

We have various contracts available for the procurement of single or program purchases for government, commercial, industrial and institutional customers.

- ▶ Fixed Price
- ▶ Cost Plus Fee
- ▶ Time and Material (T & M)
- ▶ Performance Based
- ▶ GSA Schedule #GS07F-7465C

Invensys Energy Management Division

Invensys Powerware is a member of the Invensys Energy Management Division, one of three divisions comprising UK-based Invensys plc. Energy Management businesses actively work with customers involved in the supply, measurement, and demand of energy and water, delivering innovative technologies and solutions that help reduce costs and conserve resources. As both system providers and consultants, Energy Management helps customers improve the quality, reliability, and continuity of energy supply in many sectors, ranging from utilities to health care and data communications.



The Appliance Controls, Climate Controls, Energy Management Solutions, Home Control Systems, Metering Systems, Global Services, and Powerware businesses help customers realize maximum return on their investments – whether in the effective performance of their own assets or in the efficient management of rising costs, finite resources and environmental pressures.

Invensys plc, the international production technology and energy management group, specializes in helping companies to improve efficiency, performance and profitability. With close to 48,000 employees worldwide, Invensys is headquartered in London, England.

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