Reliability
in tough places
easier than ever

Powerware 9155
8-15 kVA

E·T·N | **Powerware**

Column 1 (left sidebar)
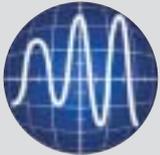
1. POWER FAILURE
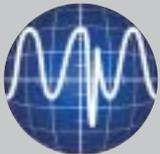
2. POWER SAG

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3. POWER SURGE
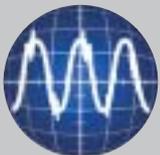
4. UNDERVOLTAGE

5

5. OVERVOLTAGE

6. SWITCHING TRANSIENT

7. LINE NOISE

8. FREQUENCY VARIATION

9

9. HARMONIC DISTORTION

Like never before

Powerware, the number one UPS manufacturer in the world in the above-5-kVA category*, introduces a new high-end product. The new single-phase Powerware 9155 combines good looks with uncompromised efficiency and reliability. It provides an affordable solution for 24/7 power protection across a wide range of critical IT and electrical engineering applications. The 9155 covers the power range 8–15 kVA and can be paralleled for redundancy and capacity using Powerware's patented Hot Sync® technology.

*Frost & Sullivan: World UPS market 2003

Never before has a UPS been so powerful, yet so slim.

And never before has a UPS had such a combination of features and benefits.

Powerware 9155 combines style and small footprint with high performance. With its elegant black casing and its fully graphic, blue backlit LCD display, its strikingly modern appearance sets it clearly apart from the computer-grey masses of older equipment usually found in offices and server rooms.

Reliable
But good looks are just the surface. The 9155 is a Series 9 UPS, meaning that it protects from all of the nine types of most common power disturbances.

Thanks to Powerware's patented Hot Sync technology, two or more 9155 units can be paralleled to provide no-compromise protection of the load even if one of the units is out of commission for service. More than that,

the 9155's design incorporates well thought-through solutions geared to keep its total life-cycle cost at the lowest possible level.

For example, it runs at 92-% efficiency, provides a 0.99 input power factor and is rated for 0.9 output power factor loads.

Easy to use
Floor space is expensive. That is why the 9155 was designed in a slim, compact tower to provide maximum power per square metre. Its small footprint also means that you will be able to increase your UPS capacity considerably without expanding your present server room. Not to mention easier transport and installation.

Even the standard battery configuration provides integral 25 minutes of backup time (at 10 kVA computer load), and you can extend it to several hours by adding extra battery packs.

The fully graphic LCD display with blue backlight makes the 9155 easy to control and monitor. For example, the inputs and outputs are configurable, enabling UPS customisation for the critical application.

With a bundled software suite and a wide range of communication options, the 9155 is easy to run remotely using a variety of protocols.

The 9155 offers you confidence that lets you stop worrying about power.

Powerware 9155 features inherent reliability. Only the most reliable hardware and technologies are used in its manufacture.

INFORMATION TECHNOLOGY SOLUTIONS
- Data networks, particularly in areas with frequent mains disturbances
- Web server hotels
- Telecom applications
- Financial institutions

ELECTRICAL ENGINEERING SOLUTIONS
- Office buildings
- Manufacturing machinery
- Process control

Reliable hardware, software and world-class service

If your business or application depends on a continuous power supply, look at the Powerware 9155. It will provide you with the most reliable and affordable power protection today, packed in an elegant box.

Thanks to its new advanced rectifier technology, the 9155 gives you the best in input power factor control (0.99 PF). Through its low harmonics content (< 5% THDi), the 9155 is extremely mains-friendly.

Reliability is increased by advanced battery management functions such as ABM™ (Advanced Battery Management), automatic discharge testing and temperature compensated charging voltage. Together, they can increase your battery lifetime up to 50% and will make sure your batteries — the most important component of the UPS —always remain in top condition!

Because the 9155 comes bundled with a software suite, you have total control over the system. The software package includes shutdown software, basic-level monitoring and integrates your 9155 to your data network.

No mechanical device will run forever without servicing. That is why Powerware offers you additional peace of mind through a range of service agreement options that can easily be customised to your needs and budget. Your Powerware representative will be happy to tell you more.

Powerware 9155 8-15 kVA	
Feature	Benefit
Double conversion topology	Trouble-free output. Solution for critical 24/7 applications. Zero-break thyristor transfer to bypass for fault clearing.
Input power factor control (PFC)	Active 0.99 input power factor control leading to low current distortion in the input. Network friendly and reduces harmonics up to 5% THDi level.
Hot Sync®	Patented paralleling technology requires no communication between modules, eliminating a system-level single point of failure.
Advanced Battery Management (ABM™)	Reduced battery corrosion resulting in up to 50% longer battery lifetime.
Self-diagnostics	No unexpected failures. Digital DSP technology constantly monitors internal UPS operation.
High output power factor rating	0.9 output power factor is suitable for today's PFC computer and server loads.
Communication options	Wide range of options for network and building management uses, selectable Web/SNMP or ModBus/Jbus as needed.

Highlights that (almost) let you forget about power

Active power factor control for less disturbances in low-voltage networks

Thanks to its cutting-edge IGBT rectifier, the 9155 provides a perfect sine-wave input and 0.99 input power factor. This means that it avoids disturbances in the feeding mains network that energy converters tend to cause. With minimal current distortion (5% THDi) the 9155 is extremely "mains-friendly" and does not require special harmonics filtering.

HotSync—unbreakable security

Powerware's Hot Sync parallels two or more UPS units. Units are capable of load sharing without the need for communications wiring, hitherto the most vulnerable point of failure in all UPS systems. Each Powerware module has the ability to synchronise and support the critical load independently of the other modules. Thus all critical loads are supported by UPS-grade power, whatever maintenance needs—scheduled or unscheduled—should arise.

Hot Sync—redundant is an N+1 module system allowing full maintenance to be performed on all modules and the parallel cabinet without the need for an external maintenance bypass and without having to remove the critical load from conditioned power.

ABM—50% more battery life

ABM constantly monitors battery charge status and only recharges when necessary. Compared with the traditional trickle-charging method, this reduces battery corrosion enough to provide 50% longer battery lifetimes! ABM compensates for changes in ambient temperature for proper charging.

Battery monitoring provides real-time information on battery string health and remaining runtime. This allows you to proactively plan maintenance operations instead of reacting to emerging problems. 9155 tests the batteries regularly with the rectifier connected, thus providing consistent test results regardless of inverter load at testing time. Moreover, as the load is never supported by the battery alone, the 9155 will keep your critical load adequately protected at all times.
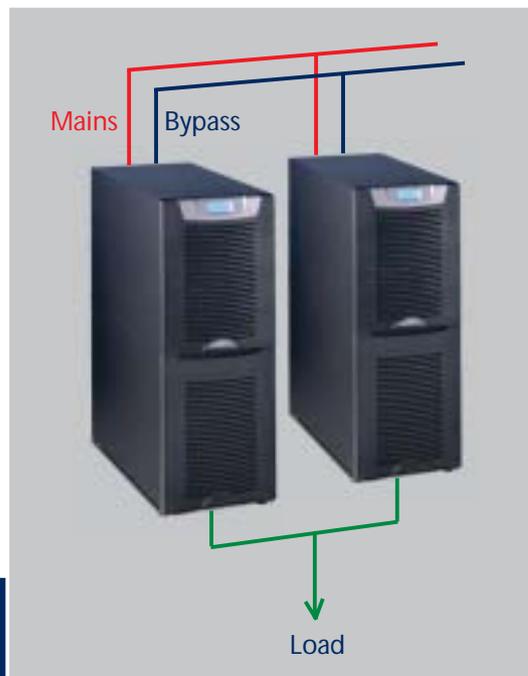
Hot Sync Redundant
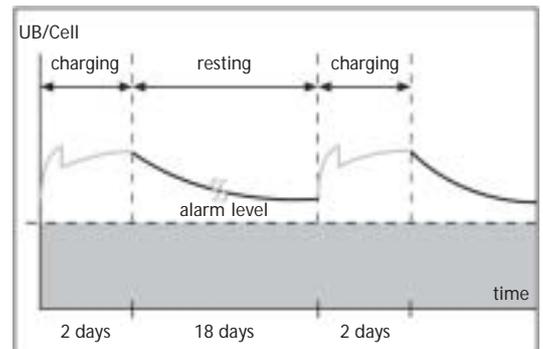
ABM™ with the intermittent charging method

Communication options—connect anywhere

ConnectUPS Web/SNMP card is a complete UPS monitoring, control and shutdown solution in a networked IT environment. In case of alert the Web/SNMP card can notify users and administrators through email and SNMP traps. In case of a prolonged power failure the protected computer systems can be shut down in a graceful manner with NetWatch and LanSafe software.

HTTP, SNMP, e-mail, WAP and Telnet compatibility enable dynamic and versatile support for a large variety of system configurations.

The X-Slot card for the 9155 also integrates a 3-port switching hub to support multiple PCs or networking equipment.

Environmental Monitoring Probe (EMP) enables you to remotely monitor environmental conditions as easily as you monitor power conditions. It adds temperature, humidity and two contact closure monitoring capabilities to ConnectUPS Web/SNMP card. It can trigger operating system shutdown if user-defined thresholds are exceeded or contact closure status changes.

Relay/AS400 card provides an easy connection to IBM AS/400 series computers as well as industrial and building management systems. You can also build a solution for
a remote ON/OFF function with the relay card.

Powerware Software Suite, our exclusive collection of software on a CD-rom, incorporates a full line of shutdown and monitoring software products to enhance the protection provided by Powerware UPSs. The software suite, conveniently packed on one CD-rom, follows every UPS free of charge.

The Software Suite includes LanSafe network shutdown software, PowerVision performance analysis and monitoring system for multiple UPSs (30-day trial license), and NetWatch shutdown agent for ConnectUPS Web/SNMP cards. The suite also includes a Software

Installation Wizard that takes all guesswork out of UPS software installation, selects the right software for your system and provides links to new downloads.

Powerware Modbus Card is an X-slot™ UPS connectivity device that provides continuous, reliable and accurate remote monitoring of your UPS system through a Building Management System (BMS) or Industrial Automation System (IAS). The card integrates data from the UPS into the user's management system using Modicon®, Modbus RTU Protocol. Key power quality and UPS status information may be monitored in real time
to aid in the management of the UPS and notification of potential power problems.

Multi-Server card is a power quality connectivity product designed to enable multiple devices connected to a single UPS system to be managed and controlled independently. The Multi-Server Card allows separate communication with up to six connected servers with mixed operating systems.

X-slot modem card connects your UPS device to Powerware's remote monitoring centre for a 24/7 software based, fully automatic remote UPS inspection over the telephone network.

Dimensions

1214mm

730mm

305mm

Accessories
Isolation output transformer
External Mechanical Bypass Switch (EMBS) PW9155-MBS-15kVA　　　　15 kg PW9155-MBS-10kVA　　　　15 kg
Battery cabinets (BAT) PW9155-BAT5-64x7Ah　　　　195 kg　(5 years) PW9155-BAT5-96x7Ah　　　　310 kg　(5 years) PW9155-BAT10-64x7Ah　　　195 kg　(10 years) PW9155-BAT10-96x7Ah　　　310 kg　(10 years)
Connectivity X-slot: Web/SNMP X-slot: AS/400 relays X-slot: Modem X-slot: USB port X-slot: RS232 port X-slot: Modbus/Jbus X-slot: Hot Sync CanBUS
Specials: Isolation output transformer Special colours MarineUPS version

Technical specifications

Rating		8 kVA	10 kVA	12 kVA	15 kVA
Part number		PW9155-8I-S	PW9155-10I-S	PW9155-12I-N	PW9155-15I-N
		PW9155-8I-N	PW9155-10I-N		
Capacity (VA/Watts)		8 / 7.2	10 / 9	12 / 10.8	15 / 13.5
Dimensions HxWxD (mm)		817x305x702	817x305x702	817x305x702	817x305x702
With extra runtime		1214x305x702	1214x305x702	1214x305x702	1214x305x702
Weight		155 kg	155 kg	155 kg	155 kg
		265 kg	265 kg	265 kg	265 kg
Input connection		Hardwired	Hardwired	Hardwired	Hardwired
Output connection		Hardwired	Hardwired	Hardwired	Hardwired
Typical runtime	Full load	6 min	5 min	3 min	6 min
	Half load	30 min	25 min	20 min	11 min
Operational					
Nominal input voltage (Vac)		S models: 240 Vac single phase;			
		N models: 240/415 Vac three phase			
Input voltage range		S models: 176 to 276 Vac;			
		N models: 276/478 Vac			
Operating frequency		50/60 Hz (45 to 65 Hz)			
Input power factor		S models: 0.99			
		N models: 0.99			
Input current distortion		5% THD in normal network condition			
Nominal output voltage		240 VAC single phase			
Output voltage regulation		±2% static;			
		±5% dynamic at 100% load change, <1 ms response time			
Overload capacity		150% for 5 sec / 125% for 1 min (online),			
		1000% for 20 msec (bypass)			
Efficiency		92% with rated non-linear load;			
User interface					
LCD display		Graphical LCD with blue backlight			
LED		4 LED			
Standard communication ports		1 x RS232 for local support, 2 x X-slot (empty);			
		1 x relay contact, 1 x emergency power-off input, 2 x environmental input			
Optional		External battery cabinets;			
		isolation transformer; external mechanical bypass switch			
		X-slot: Web/SNMP, Modbus/Jbus, relay card			
Environmental					
Operating temperature		0ºC to +40 ºC			
Storage temperature		-15ºC to +40 ºC			
Altitude		< 1000 m			
Audible noise at 1 meter		< 50 dB			
Certification					
Quality		ISO 9001			
Markings		CE marking			
Safety		IEC 62040-1-1, IEC 60950, EN 62040-1-1			
EMC		EN 50091-2 Class A			

Specifications subject to change without notice.

About Powerware

Powerware Corporation is a global leader in power quality and management solutions. Offering the broadest range of product and services available today, Powerware integrates a full line of AC and DC power systems, power management software, remote monitoring, turnkey integration services and site support, providing a seamless solution with more than 40 years of experience.

Powerware systems and services deliver the high nines of availability demanded by today's digital economy. Powerware products and services are used in local and wide area networking, data and voice over IP, co-location facilities, fixed-line and wireless communication networks and industrial manufacturing. Powerware Corporation is head-quartered in Raleigh, North Carolina, US, and is part of Eaton Corporation.

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