POWERWARE® 9315 160-250 kVA

3-phase UPS for Data Centres and Enterprise Applications

9315		
TECHNOLOGY:	Series 9 Double conversion online Class VFI-SS-111 (by IEC 62040-3)	
RATING:	160-250 kVA	
VOLTAGE:	400VAC 400VAC	3xL in 3xL+N+PE out
AUTONOMY:	Typically 10 minutes to hours	
MODELS:	9315-160 9315-200 9315-250	160kVA/128kW 200kVA/160kW 200kVA/160kW 250kVA/200kW

- **Maximum availability through system reliability**
- **Versatile communication through connectivity options**

If you are considering a UPS, your electrical load is critical to your business. If the highest availability is what matters the most, then the Powerware 9315 UPS is the right choice for your power protection needs.

The 9315 deliveres industrial performance combined with advanced communication capabilities for critical information technology applications.

RELIABILITY AND PERFORMANCE FOR CRITICAL POWER

Powerware 9315 sets a new standard for performance in the UPS industry: superior output voltage regulation with minimum total harmonic distortion combined with tight output frequency regulation. All this comes with the highest system level efficiency for any kind of critical load.

Inherently reliable design combined with internal fault diagnosis, redundancy of critical sub systems, and modular design for serviceability yields highest availability of critical power. Our patented control algorithm for parallel systems takes reliability even one step higher; **Powerware HotSync®** offers the most reliable UPS topology today.

COMPLETE POWER MANAGEMENT FOR INFORMATION TECHNOLOGY NEEDS

A wide variety of options are available to keep your systems in touch with Powerware 9315 and to provide you desktop access to all information.

The **ConnectUPS™** network adapter provides easy SNMP-connectivity to your network. **OnliNet®** software suite provides graceful shutdown and basic network-wide UPS monitoring.

PowerVision® is the client/server software for UPS monitoring and performance analysis. PowerVision proactively alerts the user before anything goes wrong, thanks to enhanced statistical tools to maximise availability.

POWERWARE®
POWERING THE WORLD

Critical Power for Enterprise

TYPICAL APPLICATIONS

- Large computer systems / Industrial controls
- Manufacturing machinery / Process equipment
- Transportation
- Security
- Telecommunication

OPTIONS

- Hot Sync - Parallel for redundancy
- Hot Sync - Parallel for capacity/redundancy (200-250 kVA only)
- Sync control - for syncronising two independent UPS systems
- Input isolation transformer
- Matching battery cabinets, and more

DC Expert™ provides an accurate measurement of battery runtime, a battery health indicator and the information necessary to forecast battery problems. DC Expert constantly keeps you apprised of battery status and warns you of impending battery problems before they occur. DC Expert's real distinction is its ability perform consistent programmed load tests, regardless of load changes, giving it the capability to learn about the batteries. All of this without degrading battery life or endangering the load.

Intelligent Input Filter evaluates load and input power conditions, then chooses the input interface configuration that will provide the optimum operation. This automatic process enables the UPS and the utility to operate at the most compatible and efficient level. The intelligent input filter is unique with its ability to turn itself on and off when appropriate.

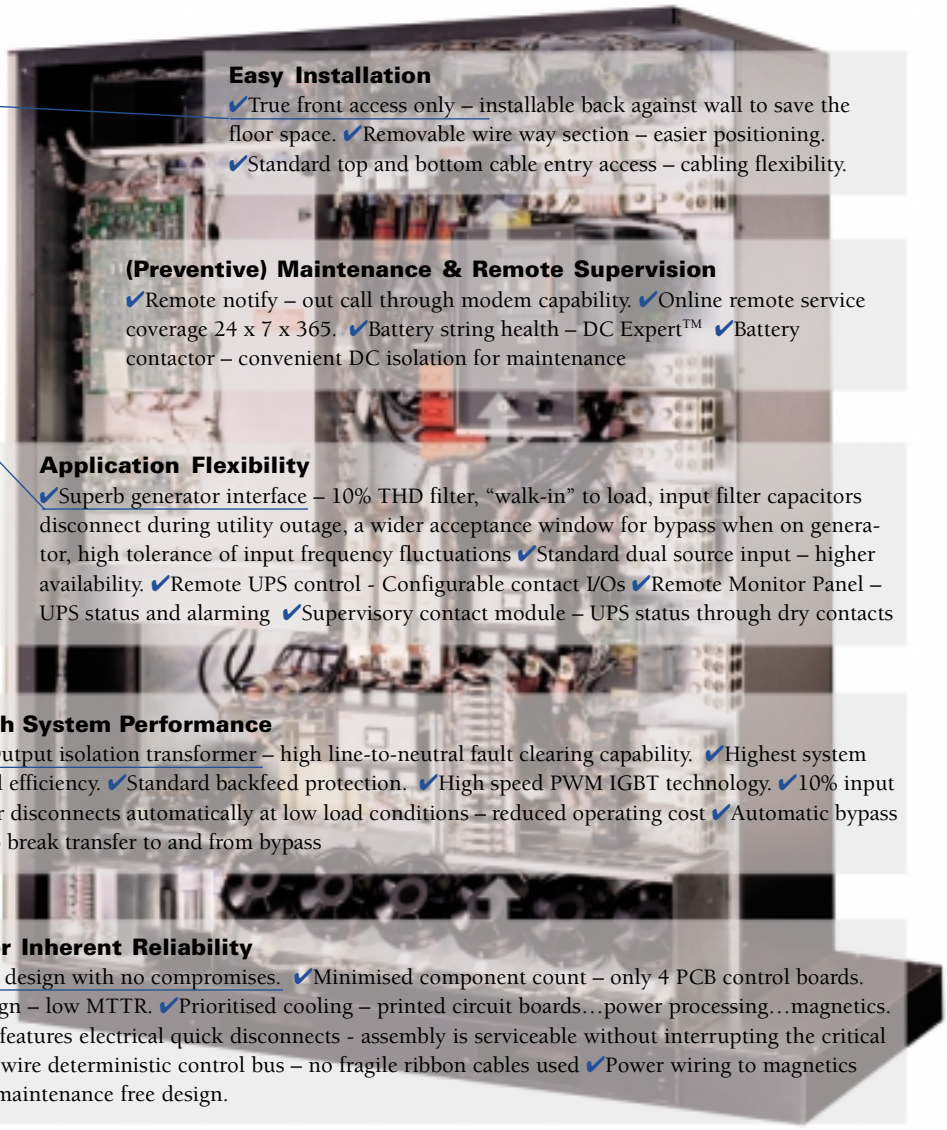
The Powerware Design Philosophy

Periodic retorquing of fasteners and rear access requirement is eliminated.

UPS/Generator interface aspects: Intelligent Input Filter reduces the effects of line notching and current THD and the need to derate the generator. The possibility of capacitive reactance causing excitation problems in anternators or motor loads is eliminated.

The DSP-controlled IGBT-technology results in high system efficiency, e.g. > 93%. Load or utility input fluctuations do not effect the efficiency of double conversion topology. A modern double conversion technology yields same high efficiency also at partial loads, thus resulting overall lower running costs for real operating conditions.

The Powerware 9315 power processing components (e.g. IGBTs) are sized for worst conditions (vs. sizing for typical conditions).



Easy Installation
✔True front access only – installable back against wall to save the floor space. ✔Removable wire way section – easier positioning. ✔Standard top and bottom cable entry access – cabling flexibility.

(Preventive) Maintenance & Remote Supervision
✔Remote notify – out call through modem capability. ✔Online remote service coverage 24 x 7 x 365. ✔Battery string health – DC Expert™ ✔Battery contactor – convenient DC isolation for maintenance

Application Flexibility
✔Superb generator interface – 10% THD filter, "walk-in" to load, input filter capacitors disconnect during utility outage, a wider acceptance window for bypass when on generator, high tolerance of input frequency fluctuations ✔Standard dual source input – higher availability. ✔Remote UPS control - Configurable contact I/Os ✔Remote Monitor Panel – UPS status and alarming ✔Supervisory contact module – UPS status through dry contacts

High System Performance
✔Output isolation transformer – high line-to-neutral fault clearing capability. ✔Highest system level efficiency. ✔Standard backfeed protection. ✔High speed PWM IGBT technology. ✔10% input filter disconnects automatically at low load conditions – reduced operating cost ✔Automatic bypass – no break transfer to and from bypass

Designed for Inherent Reliability
✔Fundamental design with no compromises. ✔Minimised component count – only 4 PCB control boards. ✔Modular design – low MTTR. ✔Prioritised cooling – printed circuit boards…power processing…magnetics. ✔Static switch features electrical quick disconnects - assembly is serviceable without interrupting the critical load. ✔A three wire deterministic control bus – no fragile ribbon cables used ✔Power wiring to magnetics cold-welded – maintenance free design.

Powerware 9315-250 shown with safety shields removed

Solutions for Information Technology

TYPICAL APPLICATIONS

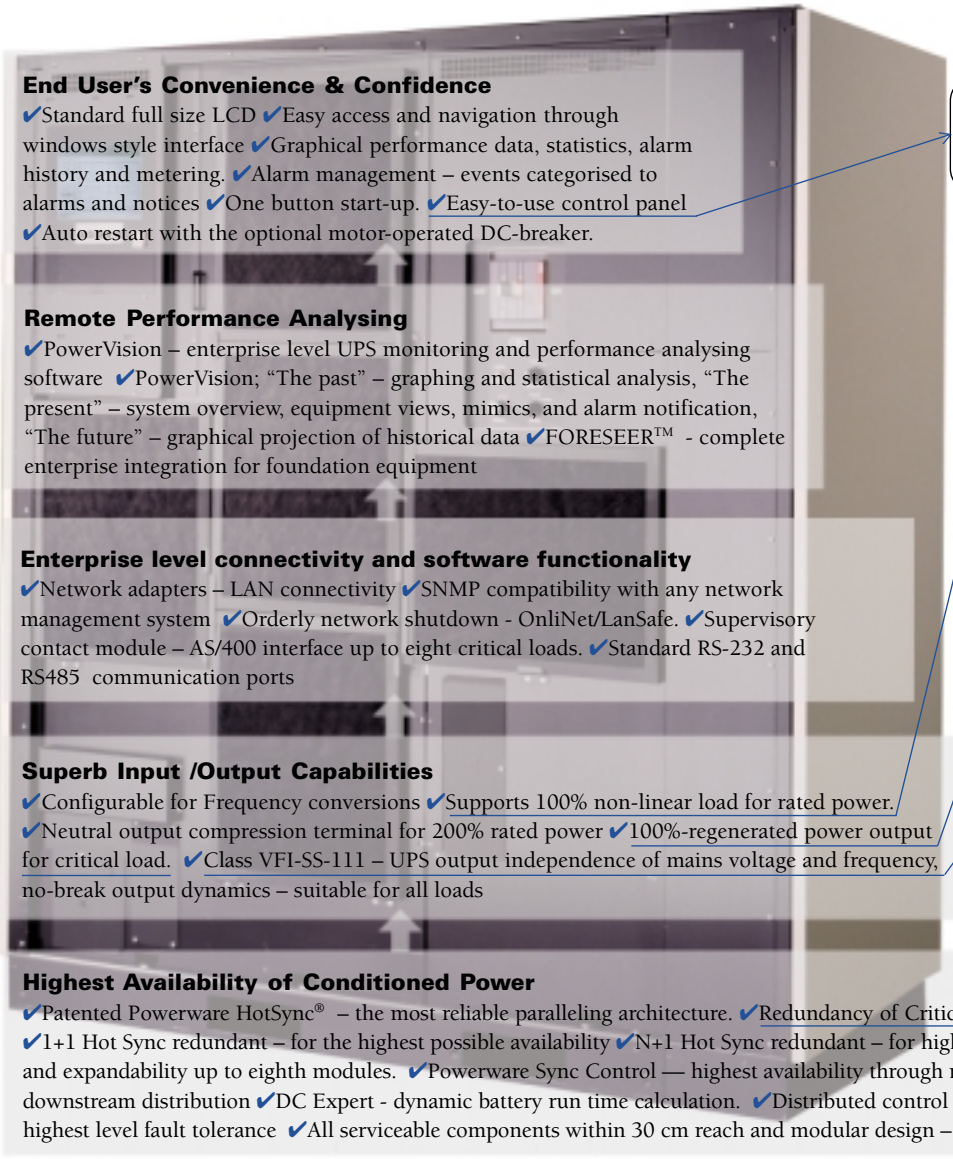
- Data Centres
- Server Farms
- Broadcasting and entertainment
- eBusiness

OPTIONS

- Connect UPS® - SNMP Adapters
- OnliNet® - UPS monitoring & shutdown
- PowerVision® - UPS performance monitoring
- Relay Interface, Remote Monitor Panel, etc.

Communication can be customised to fit your needs, whether they are simple or complex. Information can be displayed in a variety of formats from LED to a network notification. Information available through the Standard Graphical LCD includes: real time UPS metering, event history log, active alarms and notices, statistical information and UPS mimic screen, etc. In addition to UPS interface, any alarm can be used to incite an action. For example, the Remote Notify feature can be programmed to continuously page you or a Powerware service centre until a response is received. The level of communication can be optimised to provide the most efficient form of notification for your needs.

Powerware® HotSync redundant and Hot Sync Capacity paralleling technology delivers the highest level of reliability providing complete coverage of your critical load without a single point of failure. HotSync enables two UPS modules to operate and load share without inter module communication. This wireless design means that while the modules are in sync, they are functioning independently of each other. If one module fails the other takes up the slack with no downtime. This patented technology expands the capabilities of a UPS beyond anything previously available.



End User's Convenience & Confidence
✔Standard full size LCD ✔Easy access and navigation through windows style interface ✔Graphical performance data, statistics, alarm history and metering. ✔Alarm management – events categorised to alarms and notices ✔One button start-up. ✔Easy-to-use control panel ✔Auto restart with the optional motor-operated DC-breaker.

Easy-to-use control panel and highly automated functionality reduces operator actions; a risk of a load loss due to an operator error is minimised.

Remote Performance Analysing
✔PowerVision – enterprise level UPS monitoring and performance analysing software ✔PowerVision; "The past" – graphing and statistical analysis, "The present" – system overview, equipment views, mimics, and alarm notification, "The future" – graphical projection of historical data ✔FORESEER™ - complete enterprise integration for foundation equipment

Typical switch-mode-type computer power supply is a non-linear load with power factor 0.7 or less. Powerware 9315 UPS is designed to handle non-linear load as well as linear load.

Enterprise level connectivity and software functionality
✔Network adapters – LAN connectivity ✔SNMP compatibility with any network management system ✔Orderly network shutdown - OnliNet/LanSafe. ✔Supervisory contact module – AS/400 interface up to eight critical loads. ✔Standard RS-232 and RS485 communication ports

Only AC/DC – DC/AC double conversion technology can protect of all anomalies of utility power.

CENELEC ENV-50091-3 classifies UPSs by output dependency, waveform and dynamics.

Superb Input /Output Capabilities
✔Configurable for Frequency conversions ✔Supports 100% non-linear load for rated power. ✔Neutral output compression terminal for 200% rated power ✔100%-regenerated power output for critical load. ✔Class VFI-SS-111 – UPS output independence of mains voltage and frequency, no-break output dynamics – suitable for all loads

Highest Availability of Conditioned Power
✔Patented Powerware HotSync® – the most reliable paralleling architecture. ✔Redundancy of Critical Subsystems. ✔1+1 Hot Sync redundant – for the highest possible availability ✔N+1 Hot Sync redundant – for higher availability and expandability up to eighth modules. ✔Powerware Sync Control — highest availability through redundant downstream distribution ✔DC Expert - dynamic battery run time calculation. ✔Distributed control architecture – highest level fault tolerance ✔All serviceable components within 30 cm reach and modular design – low MTTR

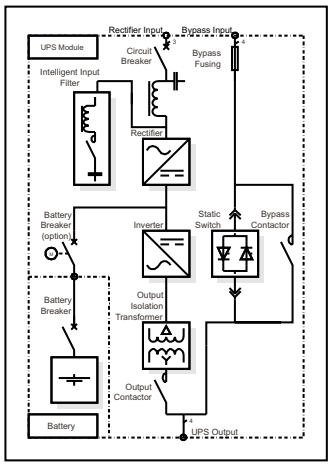
Redundant DC-power supplies support control logic. Redundant cooling fans ensure direct consistent cooling and quiet operation. Both the power supplies and the cooling fans provide local and remote failure notification.

Powerware 9315-250 shown with doors removed

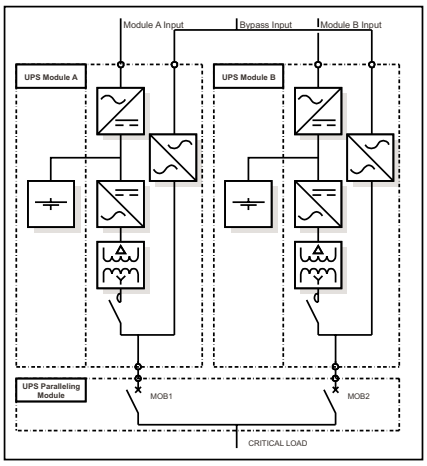
POWERWARE® 9315 160-250 kVA

One Line Diagrams

Single Unit System

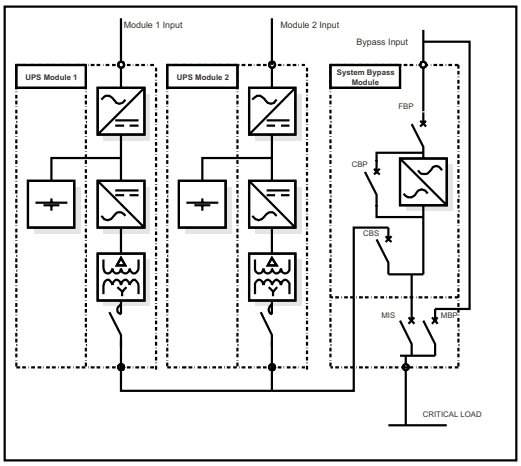


Parallel for Redundancy



1 + 1 configuration, two UPS modules

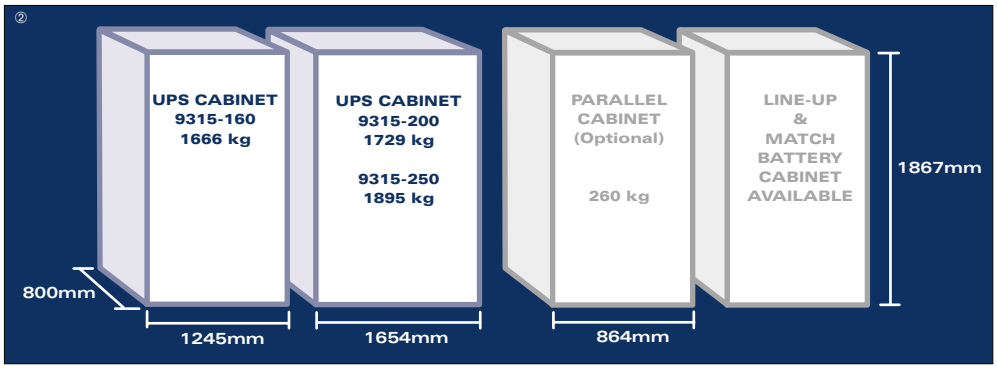
Parallel for Capacity / Redundancy



N + 1 configuration, up to eigth UPS modules (200 & 250 kVA)

SPECIFICATIONS ①		9315 - 160/160 160kVA/128kW	9315 - 200/200 200kVA/160kW	9315 - 250/200 200kVA/160kW	9315 - 250/250 250kVA/200kW
Input voltage	Volts	380/400/415	380/400/415	380/400/415	380/400/415
Input voltage range	Volts	340 - 440	340 - 440	340 - 440	340 - 440
Output voltage	Volts	380/400/415	380/400/415	380/400/415	380/400/415
Input / Output frequency	Hz	50Hz or 60Hz	50Hz or 60Hz	50Hz or 60Hz	50Hz or 60Hz
AC input nominal - max (with ≤ 10% input THD filter)	Amps	209 / 240	254 / 317	340 / 440	340 / 440
Nominal bypass input	Amps	231	290	290	360
AC output nominal	Amps	231	290	290	360
Output distortion at linear load		<3%	<3%	<3%	<3%
Output distortion at 100% non-linear load		<5%	<5%	<5%	<5%
Transient voltage stability (100% load step)		<5%	<5%	<5%	<5%
Overload capability on inverter		125% 10 min, 150% 30 sec.	125% 10 min, 150% 30 sec.	125% 10 min, 150% 30 sec.	125% 10 min, 150% 30 sec.
System efficiencies (typical) including output isolation					
100% load	%	92	93	93	93
75% load	%	92	93	93	93
50% load	%	92	93	92	93
Ambient operating temperature	Centigrade	+0°C to +40°C and 1500m altitude			
Safety		EN 50091-1, UL1778 listed, CUL CAN/CSA C22.2 NO.107.1-M91			
EMC and FRI protection		EN 50091-2, and FCC class A			

Specifications subject to change without notice.



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① For further details, please refer to technical specification no. 1015287.

② Refer to installation manual for actual system line-up.

Powerware solutions available from small offices to data centers, including UPSs (300 VA–625 kVA), power management software and service.

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