



Powerware

Powerware® 9390 Uninterruptible Power System

Product Focus

40-160 kVA



Features

- Provides unmatched power performance for efficiency, input current harmonic distortion (THD), and power factor
- Scalable for capacity and redundancy to meet present and future power needs
- Provides peace-of-mind that your batteries will be ready when you need them with innovative three-stage charging, battery health-checks, optional temperature-compensated charging, and remote monitoring
- Lowers installation time and costs with small footprint and the flexibility to install against walls, using top- or bottom-entry cabling
- Provides a two-year, limited factory warranty* on parts and labor, Start-up service, two years of remote monitoring, on-site preventive maintenance, and optional service plans

The Powerware® 9390 uninterruptible power system (UPS) is a double-conversion UPS that resolves all utility power problems and supplies clean, continuous, uninterruptible power to connected equipment. Whether you're selecting a UPS for a branch office, manufacturing floor, medical facility, or a large data center, there's a Powerware 9390 model that delivers just the right combination of performance and price for your needs.

Advanced design delivers unequaled power performance

The innovative design of the Powerware 9390 delivers the industry's best performance combination of efficiency, input current distortion and power factor.

The Powerware 9390 operates at a high efficiency of up to 94 percent, reducing utility costs and extending battery run times. Higher system efficiency produces cooler operating conditions, which reduces facility air conditioning cost, extends the life of UPS components, and increases overall reliability, availability, and performance.

A new input circuit design keeps input current THD low and input power factor near unity without compromising overall efficiency. As a result, the Powerware 9390 allows maximum transfer of power between power source and protected load and is exceptionally compatible with multiple power sources, especially auxiliary generators.

On the output side, the ultra high speed switching Pulse Width Modulation (PWM) inverter enables the Powerware 9390 to provide its full rated power capability to the load whether the load power factor is 0.9 lagging, unity, or 0.9 leading.

Double-conversion design offers the highest protection possible

Unlike some other commercially available UPS technologies, the double-conversion design completely isolates output power from all input power anomalies and delivers 100-percent conditioned, perfect sine-wave output—regulating both voltage and frequency.

Even when presented with the most severe power problems, power output remains stable. Output voltage THD is held within two percent of nominal specification for linear loads, within five percent for non-linear

A variable battery bus accommodates 384V to 480V configurations, so the battery capacity can be matched to your exact runtime requirements—either a specific runtime, an extension to

Beyond the warranty period, service plans are available to match any need—from basic UPS and/or battery support to all-inclusive packages with unique features, such as advanced remote monitoring with trending, customized UPS and battery capacity planning reports, and comprehensive power protection audits.



loads—making the Powerware 9390 ideal for supporting equipment that is sensitive to a distorted voltage input as a result of harmonic loads. In the event of a utility power failure, there is no delay transferring to backup power.

existing battery runtime, or legacy battery installations.

With remote monitoring of the UPS and battery system, Eaton is there with you—able to respond to alarms and real-time battery data to avert potential battery problems.

And of course, the Powerware 9390 UPS comes complete with the Powerware Software Suite of products, which provides monitoring, management, and optional shutdown capabilities over your network. Connectivity options are available to suit nearly any communication requirement, from standard serial communications to secure remote monitoring over the web.

UPS control innovations optimize battery performance and service life

Eaton's ABM® (Advanced Battery Management) technology uses a unique three-stage charging technique that significantly extends battery service life and optimizes recharge time, compared to traditional trickle charging. An integrated battery management system tests and monitors battery health and remaining lifetime, and provides advance notification to guide preventive maintenance. Optional temperature-compensated charging monitors temperature changes and adjusts the charge rate accordingly to properly charge the battery and greatly extend battery life.

Industry-leading warranty and service plans deliver peace of mind

We are so confident about the performance and reliability of the Powerware 9390 UPS and battery system that we back it up with the industry's most extensive warranty and service plans. The Powerware 9390 UPS features a two-year limited factory warranty (parts and labor)*. The Powerware 9390 also comes with a service protection package, which includes Start-Up service, a UPS Performance Check, two years of battery replacement labor coverage, and two years of web remote monitoring of both the UPS and batteries.



Scalable architecture meets your current and future load requirements

The Powerware 9390 UPS supports loads from 40 kVA to 160 kVA to deliver power protection for small branch offices to large corporate data centers and communication networks.

Up to four equivalent UPS modules can be paralleled for additional capacity or redundancy, without having to utilize a central paralleling cabinet. Up to eight UPS modules can be paralleled by utilizing a module tie cabinet. In all paralleling configurations, each UPS module operates independently yet is completely synchronized with the others. Parallel UPS modules can provide N+1, N+2, or greater redundancy.

Flexible installation options expedite deployment and save valuable space

The Powerware 9390 UPS offers the smallest footprint of any UPS in its class—35 to 50 percent smaller than competitive units. Cabling can enter the UPS from either the top or bottom of the cabinet to provide easier and flexible installation. The Powerware 9390 provides front panel access for all services and operation, increasing serviceability and reducing Mean Time to Repair (MTTR). And since the compact Powerware 9390 cabinet can be installed against back and side walls, you have more location options, installation is fast and easy, deployment cost is lower, and you save valuable data center space for future expansion.

Powerware delivers a new level of confidence

The culmination of 40 years of R&D excellence, the new Powerware 9390 UPS means confidence—confidence that your organization’s critical systems are protected by the most reliable, efficient, and full-featured protection available, and confidence that Eaton will be there with you for the long term with premium warranty coverage and expert technical support.

To find out more about the new Powerware 9390 UPS, visit our website at www.powerware.com/9390, or contact us at 1.800.356.5794.



Modbus Card ConnectUPS Web/SNMP/xHub Card



Two standard, embedded communication bays provide “plug-and-play” support for multiple communication cards. A total of four communication bays are available with the communication expansion option.

Technical Specifications¹

UPS Rating (0.9 power factor)

| | | | | | | | |
|-----|----|----|----|----|-----|-----|-----|
| kVA | 40 | 50 | 60 | 80 | 100 | 120 | 160 |
| kW | 36 | 45 | 54 | 72 | 90 | 108 | 144 |

General Characteristics

| | |
|---------------------|---|
| Efficiency | Up to 94% |
| Parallel Capability | 4x modules w/o tie cabinet; 8x with tie cabinet |
| Audible Noise | <65dBA @ 1 meter |
| Altitude (max) | 2000m at 40°C |

Input Characteristics

| | |
|--------------------------|----------------------------------|
| Voltage | 208, 480, 600 ² |
| Voltage Range | +10% / -15% |
| Frequency Range | 55-65 Hz |
| Power Factor | 0.99 (min) |
| Input Current Distortion | <4.5% (no input filter required) |
| Soft Start Capability | Yes |
| Internal Backfeed | Yes |

Protection

Output Characteristics

| | |
|-------------------------|--|
| Voltage | 208 ³ , 480 ³ , 600 ⁴ |
| Regulation | ±1% |
| Inverter | PWM with IGBT Switching |
| Voltage THD | <2% (100% linear load); <5% (non-linear load) |
| Load Power Factor Range | 0.9 lagging to 0.9 leading |

Battery

| | |
|-----------------|--|
| Battery Types | VRLA, AGM, Gel, Wet |
| Battery Voltage | 384 - 480V |
| Temperature | Optional |
| Compensation | |
| Charging Method | Advanced Battery Management Technology |

Dimensions & Weights

| | |
|-----------------------|------------------------------|
| 40 - 80 kVA Modules | 18.9" w x 31.6" d x 73.7" h |
| 120 - 160 kVA Modules | 35.6" w x 31.6" d x 73.7" h |
| 40 - 80 kVA Modules | 640 lb (208V); 568 lb (480V) |
| 100 - 160 kVA Modules | 1,060 lb (208V, 480V) |

User Benefits

| | |
|-----------------------|-------------------------|
| Control Panel (LCD) | 8 lines x 40 characters |
| Battery Start-up | Standard |
| Frequency Conversion | Standard |
| Remote Display Panel | Optional |
| Multi-language | Standard |
| Building Alarm Inputs | 2 (galvanic isolated) |

Serviceability

| | |
|------------------------|----------|
| Back/Side Against Wall | Standard |
|------------------------|----------|

Installation

Accessories

| | |
|---------------------------------|----------|
| Module Tie Cabinet | Optional |
| External Maintenance | Optional |
| Bypass | |
| Integrated Distribution Cabinet | Optional |
| Isolation Transformer | Optional |

Certification

| | |
|--------|-----------------------|
| Safety | UL1778, cUL |
| EMC | FCC Class A |
| Surge | ANSI C62, 41 Cat. A&B |

Web Remote Monitoring Service

7 x 24 remote monitoring of 43 UPS and battery alarms, daily heartbeat check and monthly report

Communications

Software Compatibility - PowerVision®, LanSafe™, FORESEER®
Communication Cards - Standard system includes one ConnectUPS Web/SNMP card with an Environmental Monitoring Probe. Two communication bays standard. Maximum of four communication bays with the communication expansion option. The following connectivity options can be installed at any time:
- ConnectUPS Web/SNMP/xHub Card
- Modbus Card
- Relay Interface Card (Use for AS/400s)
- Industrial Relay Card (5A@120V)
- Hot Sync CAN Bridge Card provides CAN communications, isolated RS-485 port
- Environmental Monitoring Probe (EMP)**

Remote Inputs/Outputs - Two building alarms inputs and one summary alarm contact (5A@120V) standard

Four more building alarm inputs available with the Communication Expansion Option
Remote Monitor Panel - Eight backlit status indicator lamps plus an audible horn**

*See the Limited Factory Warranty for Powerware 9390 Products for details. Batteries are warranted by the battery manufacturer and not by Eaton.

**Requires the ConnectUPS Web/SNMP/xHub card.

*** Requires the Parallel Card option (RS-485 port) and requires an external 120V power supply to drive the remote monitor panel.

1. Due to continuing improvements, specifications are subject to change without notice.
2. 600V applications require an input transformer. 3. Output transformers are required if the desired output voltage is not the same as the input voltage. 4. 600V applications require an output transformer. 2-4. Please refer to Integrated Distribution Cabinet brochure 9390IDC for more information.

Powerware®, PowerVision®, FORESEER®, LanSafe™ and ABM® are trademark(s) of Eaton Power Quality Corporation.

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