

Powerware® 9170 Online

Uninterruptible Power System

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
- ▶ True double conversion online design
- ▶ PowerSaver™ technology increases unit operating efficiency
- ▶ Universal components fit in any order without affecting UPS operation
- ▶ Protection against all nine power problems



A dynamic innovative solution for the changing global customer landscape



Built to Protect

Power Rating: 3-18 kVA
Input Voltage: 200-240 Vac
Output Voltage: 100-127 or 208-240 Vac
Frequency: 50/60 Hz auto-sensing
Configuration: Tower or rackmount

The emergence of the e-business economy has demonstrated a new standard in system availability: zero downtime. This standard ranges from the largest data centers of the Internet and e-business infrastructure, to the server farms, networks, telecommunications and Internet service providers (ISP) that are quickly becoming the foundation of all business worldwide. This, in turn, has been driving the most aggressive wave of innovation in power technologies, specifically UPS, in decades. The new e-business economy is also driving a requirement that technological solutions be quickly and easily deployed on a global basis.

The Powerware 9170 is uniquely designed to meet these ever-changing customer needs. Built for a global audience, the 9170 is a scalable, modular, flexible solution that combines the highest level of reliability with the lowest cost of ownership in the 3-18 kVA range.

The 9170 enables customers to "build" a power solution specific to their needs, with an expandable level of redundancy and increase run times through plug-and-play 3 kVA UPS and battery modules. The 9170 can be configured to fit three-, six-, nine- or twelve-slot enclosures, and is available for rackmount applications. The 9170 also features a new "power-saver" high efficiency mode, a user-selectable feature that increases unit efficiency from 88% in normal operating mode to 97% in Power Saver mode. The combination of its low initial investment, double conversion online technology, and new high-efficiency power-saver mode, means you never have to compromise reliability for efficiency.

Unique to the Powerware 9170 is its global deployment capability. By using a high frequency design, housing both logic and power in the power module, and offering a single cabinet design, distributors and purchasing departments around the world will have fewer system components to contend with, regardless of where the system is deployed.

Technical Spotlight: Network-level N+X Redundancy

As business moves from a ‘bricks and mortar’ model to ‘clicks and mortar’, the need for system availability at all levels of enterprise is rising exponentially. From servers to routers to telecommunication installations, the interdependence of the technological components of the wired world can make systems vulnerable to downtime. Many precautions and preventive measures are figured in when designing the network, including power protection.

In this shifting world, however it’s becoming more evident that simple power protection isn’t enough; a new level of reliability is needed, which comes with redundancy, and thereby system

availability, users can opt for an even greater degree of redundancy, with N+1, N+2, N+3, etc. This level of redundancy however, can quickly become cost prohibitive if the user is creating redundant systems with single module UPS. The 9170 overcomes this potential obstacle with its modular design. Redundancy comes from the 3 kVA power modules plugged into the system. For example, if you have a 9 kVA solution, and are looking for N+2 redundancy, you only need a 15 kVA UPS (5 power module) with the 9170, instead of 18 kVA. That’s because the five UPS modules run in parallel in the system, giving you N+2 redundancy, without the additional cost and space requirements.

Powerware 9170 eliminates a system-level single-point-of-failure. Because both the logic and power are housed in the module and not in the enclosure, there is a redundancy for the entire UPS. This is a critical distinction when looking for multiple levels of redundancy in the UPS; there is inherent vulnerability in a UPS that limits redundancy in part of the system.

Technical Specifications

ELECTRICAL INPUT

| | |
|--------------------|--|
| Voltage | 208-240 V or 200/100, 208/120, 220/110,240/120 Vac |
| Voltage Range | 176-276 (152-239VAC for 208/120 & 220/127) |
| Input Power Factor | .98 |
| Frequency | 50/60 Hz (± 3Hz) |

ELECTRICAL OUTPUT

| | |
|-------------------------------|--|
| On Utility Voltage Regulation | ±3% of nominal |
| On Battery Voltage Regulation | ±3% of nominal |
| Efficiency | 88% normal operation 97% High performance (optional programmable) |
| Frequency Regulation | ±3 Hz online; ±0.1 Hz on battery |

COMMUNICATIONS

| | |
|---------------------------|--|
| LCD Display | 4 x 20 character backlit display, programmable |
| Language Support | English, French, Spanish and German |
| Communication slots | 2 Slots (standard) |
| Communication ports | RS232, (DB9) contact closures (std) |
| SNMP capability | SNMP/Web enabled |
| Emergency Power off (EPO) | Input for external EPO |

GENERAL

| | |
|------------------------|--------------------------------------|
| Topology | True online, double-conversion |
| Diagnostics | Full system self-test on power up |
| UPS Bypass | Automatic on overload or UPS failure |
| Dimensions and Weights | See Model Selection Guide |

ENVIRONMENTAL AND SAFETY

| | |
|---------------------------------------|--|
| Safety Markings | UL, CUL |
| EMC Markings | FCC class A |
| Surge Suppression | IEEE/ANSI C62.41 |
| Audible Noise | <50dBA |
| Ambient Operating/Storage Temperature | 0 to 40°C (32 to 104°F)/ -20 to 40°C (60°C w/o batt) -4 to 104°F (140° F w/o batt) |
| Relative Humidity | 5% to 95%, non-condensing |
| REPO Port | Meets NEC code 645-11 intent and UL requirements |

BATTERY

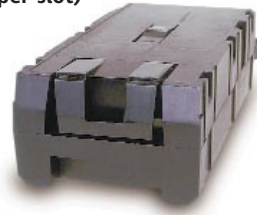
| | |
|-----------------------|-------------------------------------|
| Internal Battery Type | Sealed, lead-acid; maintenance free |
| Battery Runtime | See Battery Runtimes on back page |
| Battery Replacement | Hot-swappable |
| Recharge Time | <4 hours standard |

Powerware 9170 Features



Powerware 9170 6-slot configuration

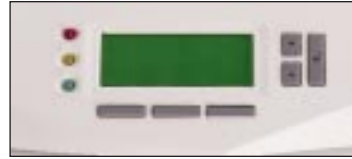
**Battery Module
(2 per slot)**



**3kVA Power Module
(1 per slot)**



LCD Panel



Communication Cards



Maximum Reliability

- ▶ N+X power and logic redundancy eliminates single point-of-failure providing highest reliability and availability
- ▶ Redundant modularity virtually eliminates downtime and enhances serviceability

Maximum Availability

- ▶ Double conversion online technology is universally recognized as providing the highest availability in an internet-centric global marketplace.
- ▶ Provides protection against power surges, spikes, sags, line noise, and lightning

Maximum Flexibility

- ▶ Modular design delivers scalable flexible solutions to constantly changing equipment requirements
- ▶ Easily expanded by installing additional power or battery modules to support additional critical applications and devices
- ▶ Internal Options:
Galvanic isolation, Line cord, Receptacles
- ▶ External options:
Rackmount kit, casters (standard on 9- and 12-slot enclosures), extended runtime battery cabinets (housing up to 8 hours of additional runtime), wall-mounted maintenance bypass cabinets, seismic zone 4 anchoring kit

Maximum Performance

- ▶ The lowest overall cost of ownership is a direct result of the low initial investment, higher operating efficiencies and programmable high efficiency
- ▶ A UPS solution that is as easy to install and operate as a PC. Universal components fit in any order in any slot without affecting the operation of the system or its protection of the critical load
- ▶ Featuring user-friendly LCD display and two internal communication slots, which accept a wide variety of connectivity devices and the new SNMP/Web adapter card.
- ▶ Lightweight, high-performance power and battery modules weigh under 30lbs. for easy service and hot swapping.



Rackmount Configurations

Adding yet another level of flexibility to the unique design of the Powerware 9170 is the ability to transform a solution configured in a free-standing enclosure into a rackmount solution by simply adding a rackmount kit. Imagine all the standard benefits of the Powerware 9170 in 3-and 6-slot configurations installed in a standard 19" computer rack.

Powerware 9170 Model Selection Guide

| MODEL NUMBER | PART NUMBER | POWER RATING | INPUT/OUTPUT VOLTAGE (1) | INPUT/OUTPUT CONNECTION(S) | DIMENSIONS (HxWxD, IN.) | WEIGHT (LB.) |
|--------------------------|------------------|--------------|--------------------------|----------------------------|-------------------------|--------------|
| HARDWIRED | | | | | | |
| PW9170 3 SLOT | 0650C030AAAAAAP | 3 TO 6 kVA | 208-240 VAC | HARDWIRED INPUT & OUTPUT | 17.8 x 17 x 25.4 | 66 |
| PW9170 6 SLOT | 0650C060AAAAAAP | 3 TO 9 kVA | 208-240 VAC | HARDWIRED INPUT & OUTPUT | 31.5 x 17 x 25.4 | 103 |
| PW9170 9 SLOT | 0650C090AAAAAAP | 3 TO 18 kVA | 208-240 VAC | HARDWIRED INPUT & OUTPUT | 47 x 24 x 28.4 | 158 |
| PW9170 12 SLOT | 0650C120AAAAAAP | 3 TO 18 kVA | 208-240 VAC | HARDWIRED INPUT & OUTPUT | 60.7 x 24 x 28.4 | 196 |
| LINECORD | | | | | | |
| PW9170 3 SLOT | 0650C030GCEBRBOP | 3 TO 6 kVA | 208-240 VAC | NOTE 3 | 17.8 x 17 X 25.4 | 68 |
| PW9170 6 SLOT | 0650C060HCXBRB1P | 3 TO 9 kVA | 208-240 VAC | NOTE 4 | 31.5 x 17 x 25.4 | 107 |
| PW9170 9 SLOT | 0650C090HCXBRB1P | 3 TO 18 kVA | 208-240 VAC | NOTE 4 | 47 X 24 X28.4 | 162 |
| 6 SLOT BATTERY CABINET | ASY-0640 | | 208-240 VAC | | 31.5 x 17 x 25.4 | 93 |
| 9 SLOT BATTERY CABINET | ASY-0641 | | 208-240 VAC | | 47 x 24 x 28.4 | 148 |
| 12 SLOT BATTERY CABINET | ASY-0642 | | 208-240 VAC | | 60.7 x 24 x 28.4 | 186 |
| BATTERY MODULE | ASY-0529 | | 208-240 VAC | | 4.2 x 7 x 14.8 | 30 |
| SPLIT PHASE POWER MODULE | ASY-0567 | | | | 4.2 x 14.1 x 15.3 | 17 |
| UNIVERSAL POWER MODULE | ASY-0528 | | | | 4.2 x 14.1 x 15.3 | 17 |

1. Nominal input voltage range is 208 - 240 Vac with maximum input voltage range of 176 to 276 V. Split phase power module offer both high and low output voltages, while the universal power module offers only high output voltages.

3: Input Linecord L14-30P; OUTPUT (2) NEMA 5-20R2, (1) NEMA L14-30R, (1) NEMA L6-30R

4: Input Linecord NEMA 14-50P; OUTPUT (2) 3 x NEMA 5-20R2, (1) NEMA L14-30R, (1) NEMA L6-30, (1) NEMA L5-20 R (1) NEMA L5-30R

Runtime Chart (hot-swappable battery modules) in minutes (full load / half load)

Load (VA) Number of Strings (2 battery modules per string)

| Load (VA) | 1 String | 2 String | 3 String | 4 String | 5 String | 6 String | 7 String | 8 String | 9 String | 10 String | 11 String | 12 String |
|-----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|-----------|-----------|-----------|
| 3 kVA | 8/24 | 24/59 | 43/95 | 58/140 | 80/175 | 95/125 | 119/240 | 135/290 | 155/335 | 165/365 | 200/395 | 215/450 |
| 6 kVA | | 8/24 | 16/40 | 24/59 | 32/83 | 40/103 | 49/114 | 58/140 | 69/156 | 83/175 | 90/190 | 103/205 |
| 9 kVA | | | 8/24 | 13/35 | 18/46 | 24/59 | 29/63 | 35/86 | 40/103 | 46/115 | 54/125 | 58/140 |
| 12 kVA | | | | 8/24 | 13/33 | 16/40 | 19.5/43.5 | 24/59 | 29/70 | 33/80 | 36/90 | 41/100 |
| 15 kVA | | | | | 8/24 | 11.5/31 | 14.5/31.5 | 18/46 | 20.5/51 | 24/58 | 28/66 | 31/73 |
| 18 kVA | | | | | | 8/24 | 11/31.5 | 13/36 | 15.5/41 | 18/45 | 20.5/51 | 24/58 |

Additional battery runtimes available up to 8 hrs. Please contact your Powerware representative.

| | 13 String | 14 String | 15 String | 16 String | 17 String | 18 String | 19 String | 20 String | 21 String | 22 String | 23 String | 24 String |
|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 3 kVA | 225/500 | 245/540 | 270/600 | 290/620 | 315/650 | 335/690 | 350/720 | 365/780 | 375/850 | 395/890 | 425/920 | 450/950 |
| 6 kVA | 113/335 | 123/255 | 135/273 | 143/290 | 148/315 | 156/333 | 165/350 | 175/365 | 183/385 | 190/395 | 198/420 | 205/440 |
| 9 kVA | 63/150 | 73/165 | 80/178 | 86/190 | 93/200 | 100/210 | 107/225 | 115/240 | 121/255 | 125/270 | 135/280 | 143/290 |
| 12 kVA | 47/110 | 52/121 | 56/130 | 58/140 | 65/147 | 70/156 | 75/165 | 80/175 | 85/185 | 90/195 | 95/205 | 100/215 |
| 15 kVA | 34/83 | 38/94 | 41.5/103 | 44.5/113 | 46.5/117 | 51/127 | 56/130 | 58/140 | 61/149 | 66/158 | 71/165 | 73/170 |
| 18 kVA | 27/65 | 31.5/72 | 34.5/77 | 36/83 | 38/94 | 41/100 | 44/105 | 45/115 | 48/122 | 54/131 | 57/137 | 58/140 |

* Battery strings above and to the right of the dark line require additional (N+X) power modules or an auxillary charger

Powerware 9170 comes with a two-year limited warranty against factory or workmanship defects; plus our pro-rated limited warranty to factory repair UPS damage from lightning strikes, and covers up to \$25,000 USD for damage to connected equipment. (US and Canada only)

Due to continuing improvement programs specifications are subject to change without notice

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