

Powerware® 9320

10 – 60kVA Modular, Online UPS

Features

- ▶ **High Availability** - each module is a self-contained unit; there is no system level single-point-of-failure
- ▶ **High Reliability** - DPA, distributed parallel architecture, offers up to n+2 redundancy
- ▶ **High Performance** - modular, scaleable double conversion online design ensures continuous uptime
- ▶ **High Efficiency** - lowest operating costs while still maintaining the highest reliability
- ▶ **Low input THD and high power factor** - ensure the lowest installation costs, minimizing input breaker and wire size
- ▶ **Global Services** provides around-the-clock service, support and on-site maintenance programs with Powerware service professionals



Powerware 9320-C03

Power density, flexibility and reliability are the key components of the ideal power solution for critical IT applications, and the Powerware 9320 offers all three in a modular, scaleable UPS. The Powerware 9320 is designed to provide redundancy as well as the ability to increase system capacity as your needs change by using 10 or 20 kVA modules in a single cabinet.

The Powerware 9320 family includes two models, the Powerware 9320-C02 and the Powerware 9320-C03. The 9320-C03 offers the advantage of longer battery runtimes, growth of system capacity up to 60kVA and up to N+2 redundancy. The 9320-C02 has a space-saving design that features the batteries in the cabinet, for applications where space is at a premium.






Powerware 9320-C02

The Powerware 9320 Advantage – Power Density

- ▶ More power per square foot
- ▶ Frees up valuable data center space

In crowded data centers, saving space means saving money on costly expansion. New computing architecture, including rackable blade-style servers that enable multiple functions to be housed in a single high-density system, is paving the way for more efficient and logically organized data centers. The Powerware 9320 is ideally designed for the imminent change in data center infrastructure because it mirrors the same concept by providing a high kVA per square foot ratio.

Powerware Recommends

Software	Connectivity	Service
<ul style="list-style-type: none">> PowerVision®> Foreseer® 	<p>Optional communications cards, including:</p> <ul style="list-style-type: none">> WEB/SNMP X/hub> Serial> Multiport Serial 	<ul style="list-style-type: none">> UpTime Guarantee Service Plan> Two year ProActive Service Plan> ProActive Battery Coverage 

Powerware 9320

The Powerware 9320 Advantage – Redundancy

- ▶ No single-point-of-failure
- ▶ Automatic load-sharing eliminates transfer time should a UPS module need service
- ▶ Redundancy is built in throughout the system

The only reason a UPS exists is to ensure system availability. The UPS provides a level of protection against the damaging effects of power anomalies, and enough backup time to allow critical systems to ride through the anomaly, be transferred to alternate power or gracefully shut down in the event of an outage. If something should happen to prevent the UPS from functioning, your critical systems would be at risk. And in the technology-dependent world of IT, that is unacceptable.

As a part of its advanced design, the Powerware 9320 features its unique Distributed Parallel Architecture (DPA) for redundancy and increased capacity. In a DPA system, each module operates as a completely independent unit, and includes UPS logic and parallel intelligence, reducing points-of-failure. Each module has its own output disconnect so it can be isolated from the rest of the system for service, or the internal bypass can be used to isolate all modules at once. UPS power modules are hot-swappable so adding or replacing modules is done easily. The Powerware 9320-C03 can be paralleled with up to three modules, offering up to n+2* redundancy.

By providing up to n+2 redundancy, the Powerware 9320 is the state-of-the-art UPS for protecting your critical systems.

*N+2, failure of two modules will not change operational mode of UPS

The Powerware 9320 Advantage - Flexibility

Scaleability is an important part of any advanced power management solution. Additional power modules can easily be added to the Powerware 9320 without having to take the system offline, and without putting the protected load at risk. Up to three hot-swappable 10 or 20 kVA modules can be installed in one cabinet for up to 60kVA of UPS protection. If your current load requirement is only 20kVA, you could install the cabinet with one 20kVA power module, then plan for additional power modules as your critical load requirement increases. This gives the Powerware 9320 a great deal of flexibility, ideal for changing power needs.



Battery Runtimes (in minutes)

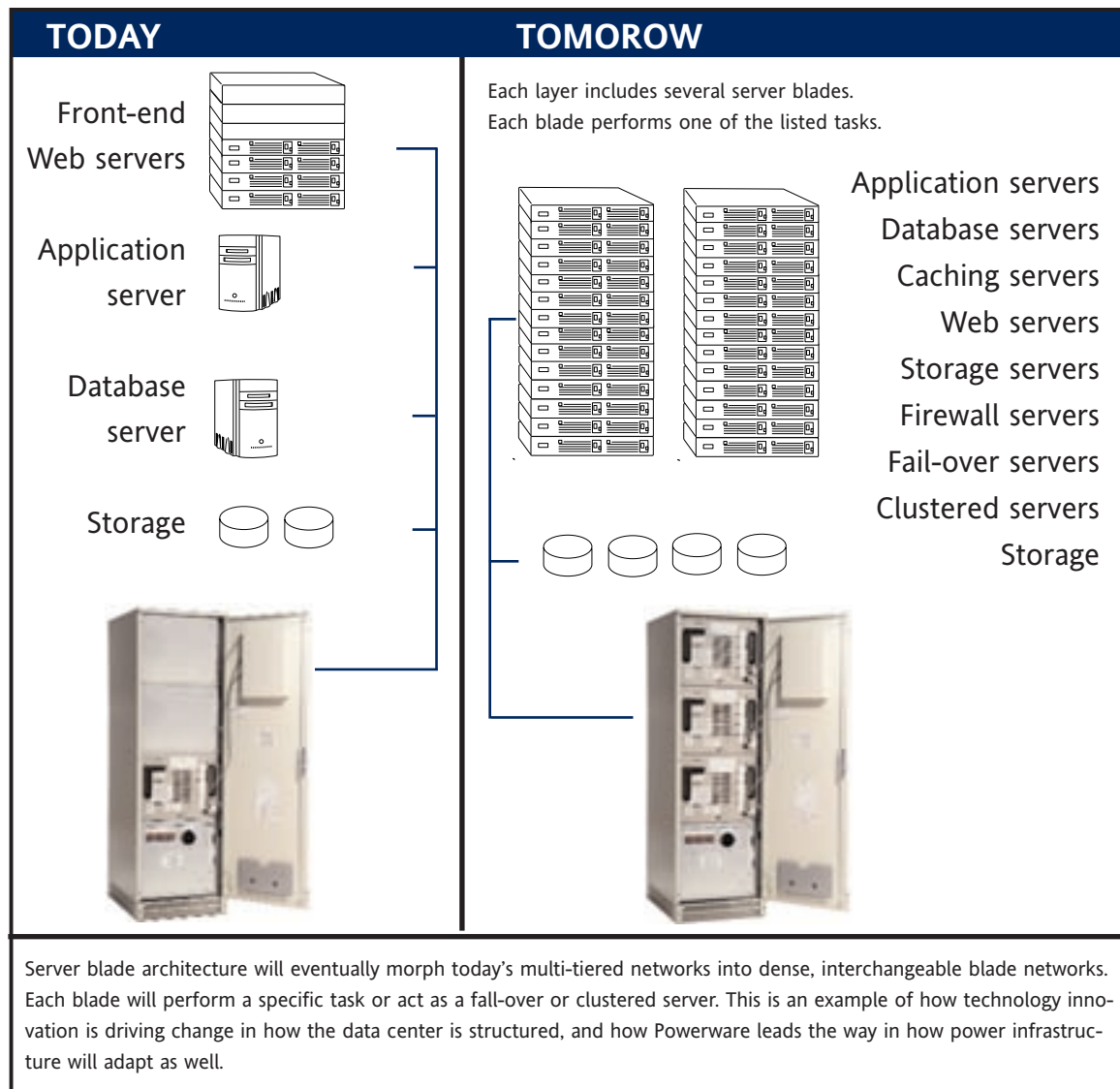
Internal battery strings	9320-C02/10	9320-C02/20	9320-C02/40
	10kVA	20kVA	40kVA
One string	8	N/A	N/A
Two strings	21	8	N/A
Three strings	35	15	N/A
Four strings	50	21	8

Runtimes at full resistive load .8PF

The changing shape of the data center

Data center architects and IT managers are constantly working to increase the functionality and scope of the data center. To that end, they are seeking ways to maintain scalability, improve performance and reduce total cost of ownership. The future to attaining these benefits lies in several new technology directions, including blade servers, grid computing, and ultimately, virtual servers.

As the function and design of the data center continues to change, the allocation of UPS-protected power will change as well. This is especially important during the next few years as IT managers migrate their critical applications to these new servers, providing a mix of old and new technology co-existing in the same data center. Because it mirrors computing trends with its scalable, modular design, the Powerware 9320 is the ideal solution for the evolving data center.



Specifications

System Information		Powerware 9320-C02 and 9320-C03					
Technology	Online, Double conversion						
Design	Modular, expandable for redundancy or capacity						
Parallel Topology	Distributed parallel with de-centralized logic control						
Bypass Topology	Distributed parallel with de-centralized bypass system						
		Using 10kVA modules			Using 20kVA modules		
		Model 10	Model 20	Model 30 ¹	Model 20	Model 40	Model 60 ¹
		10kVA/8kW	20kVA/16kW	30kVA/24kW	20kVA/16kW	40kVA/32kW	60kVA/48kW
Input							
Input voltage	VAC	208Y/120					
Input voltage range 100% load	V (%)	208 (+15/-20)					
Input voltage range 75% load	V (%)	208 (+15/-30)					
Maximum UPS input battery discharged	kW (A)	11 (30)	21 (60)	32 (90)	21 (60)	43 (121)	64 (183)
Input current distortion	%	<10					
Input power factor		> 0.98 @ 100% load / > 0.95% @ 50% load					
Input frequency	Hz	40-80					
Output							
Output voltage	VAC	208Y/120					
AC output	A	28	56	83	56	111	167
Frequency	Hz	60					
Output power factor		0.8					
Output waveform		Sine-wave					
Output voltage tolerance							
- Static	%	< 1.5					
- Load step (0-100%, 100-0%)	%	< 4					
- Distortion with linear load	%	< 2					
- Distortion with non-linear load (EN50091)	%	< 4					
Load step recovery (0-100%, 100-0%)	msec	< 20					
Permissible unbalanced load	%	100					
AC output (@ 10 min. overload)	A	31	62	91	62	124	186
AC output (@ 30 sec overload)	A	42	84	125	84	167	250
AC output Overload on bypass (150% continuous)	A	42	84	125	84	167	250
AC output overload on bypass (200% for 1 min)	A	56	112	166	112	222	334
AC output overload on bypass (1000% for 10ms)	A	280	560	830	560	1110	1670
Battery							
Nominal voltage	VDC	336 (+/- 168)					
Max charger ripple (20kHz)	mV	<100					
Discharge current (nominal)	A	27	54	80	54	107	161
Internal runtime, minimum battery configuration 50/100%	Min	20/8	20/8	N/A	20/8	20/8	N/A
Number of cells		168					
Environmental							
System efficiency @ rated load and voltage							
100%/75%/50%/25% linear load (cos Ø= 0.8 ind.)	%	92/92/91/88					
100%/75%/50%/25% linear load (resistive cos Ø=1)	%	91/91/90/88					
Maximum heat dissipation	kBTU/Hr	2.7	5.4	8.1	5.4	10.8	16.2
	kcal/Hr	680	1360	2040	1360	2720	4080
Audible noise on line with 100% load@1 m. all sides	dBA	57	57	57	60	60	60
Audible noise on line with 75% load@1 m. all sides	dBA	50	50	50	52	52	52
Cooling		Forced Air					
Ambient temperature for UPS (0-1000 meters @100% load)	°C	0 – 40					
Relative air-humidity (non condensing)	%	5 - 95					
Physical Dimensions							
Width	In (mm)	21.7 (550)					
Height -	In (mm)	71 (1800)					
Depth -	In (mm)	29.6 (750)					
Weight installed w/minimum runtimes 9320-C02 ²	lbs (kg)	507 (230)	703 (319)	N/A	805 (365)	1197 (543)	N/A
Weight installed 9320-C03	lbs (kg)	329 (149)	342 (155)	558(253)	341 (155)	470 (213)	598 (271)
Communications Interface ³							
Intelligent communication interface	Unit accepts one optional Powerware "X-slot" form communications card						
Available communication options	Building management through Modbus RTU						
	Alarm management & computer shutdown						
	Remote notification through N/O-N/C Form C dry contacts						
Basic communication Interface	Voltage free contacts/DB25M Connector						
	N/O "On Generator" connection						
	N/C Remote EPO connection						
Standards							
Safety	UL1778 Listed						
EMI suppression	Meets FCC Regulation 47, Part 15, for Class A Devices						
Performance	Meets IEC 62040-3						
Maintenance requirements							
Accessibility for maintenance	Front only						
Individual UPS module size (W x H x D)	In (mm)	10 and 20 kVA 19(483) x 15.75(400) x 26.6(675)					
Individual UPS module weight	lbs (kg)	10kVA = 115 (52), 20 kVA = 126 (57)					
1. Models 30 and 60 only available with 9320-C03 cabinet 2. Add additional 183lbs. (83 kg) for each additional battery string 3. Expanded communications options available							
These specifications subject to change without notice; please reference www.powerware.com for latest information.							

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