



Symmetra^(tm) Power Array^(tm)

Scalable, redundant power protection for multiple servers and business-critical applications.

Introducing Symmetra, the World's First Power Array, and the foundation for Building Near-Continuous Availability Power Systems

Power Array™

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Symmetra™

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Redundancy

N+1 Redundancy ensures maximum uptime and continuous availability.



(left side) Individual 4 kVA Power Modules are easily installed or removed to manage redundancy and power capacity.

(right side) Battery Modules can be quickly shifted to other Power Arrays or Battery Frames to manage runtime.

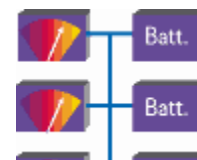
Symmetra achieves N+1 redundancy through a new power sharing technology. Power sharing means that all of the modules in a Power Array run in parallel and share the load evenly. N+1 redundancy means running one extra module than necessary to support your full load. In this way, all of the modules support one another.

For example, if your computer load is 15kVA, you achieve N+1 with five Power Modules. If a module fails or is removed, the other modules instantaneously begin supporting the full load. It does not matter which module fails because all of the modules are always running and supporting your load.

N+1 redundancy is used today in disk arrays, in processor power supplies, and in processors themselves. But, until now, redundancy has never been offered for server level power protection. As use of critical applications and databases increase, the Symmetra Power Array brings glass house reliability to the mid-sized power protection range.

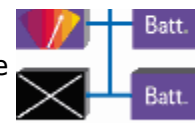
What is N+1 Redundancy ?

Just as a RAID distributes data across multiple drives, Symmetra's unique power sharing technology allows multiple Power Modules to share the Power Array's connected load. (Figure 1)



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If any module fails or is removed, the other modules take over the load. (Figure 2)



(Figure 2)

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Scalability

Protect your investment: scalable kVA and runtime ensure that Symmetra™ will meet your power needs now and in the future.



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IS Managers want to be able to "pay as they grow" to meet the computing demands of the future. Changes in datacenter power requirements can make cost-effective power protection planning difficult.

The Symmetra Power Array provides the flexibility to adapt and grow UPS power and runtime without complete reinvestment.

—The Symmetra Power Array is made up of load-sharing modules so you can easily build and reconfigure your array. If you add computing power to your datacenter, you can add 4kVA Power Modules to expand your power capacity. If you need more battery run time, you can add Battery Modules. And if you re-deploy systems to different locations, you can move modules from one Power Array to another. All changes can be made while your systems are running and protected. Additional Battery Frames can be added for unlimited runtime.

Scalable Power

The Symmetra Power Array integrates load-sharing modules for easy custom configuration. Additional 4kVA modules expand power capacity or increase redundancy. A Symmetra Power Array can scale from 4kVA up to 16kVA. Modules are hot swapped for easy scalability.

Scalable Runtime

Additional Battery Modules increase runtime. Modules are added or moved while systems are running and protected.

Extended Battery Frames

Additional Extended Battery Frames can be daisy-chained for extended runtime. Models include the Miniframe SYXR4-BM, which can hold up to four Battery Modules, and the Masterframe SYXR12, which can hold up to twelve Battery Modules.

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Serviceability

Hot-swappable modules allow for user serviceability.



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Service Made Easy

Because legacy UPSs are not modular, they require a special UPS technician for service. With only a handful of these proprietary technicians across the country and around the world, service contracts can add up to 50% to the cost of the UPS.

Power Array serviceability makes maintenance simple because its components are modular and hot-swappable. With a Power Array, you can reduce service costs by servicing the unit yourself, by using your current computer room service provider, or by choosing an on-site service contract from APC.

Because of its intelligence, Symmetra is self-diagnosing and automatically gives early-warning problem notification. Because of its redundancy, the system remains up, running and protected during the entire service process. In North America the Symmetra comes with a standard two-year warranty (U.S. only see policy for details). To increase your coverage, you can upgrade to a three-year PowerPlan Warranty or to a PowerPlan On-site Warranty (see details at www.apcc.com). With the PowerPlan program, you'll receive next day delivery of replacement modules, seven days a week.

On-site Service

With the PowerPlan On-Site Warranty, a service engineer will be dispatched to your site if required. 7x24 "Start-up" is also included with

this warranty (this does not include electrical installation). The bottom line: Symmetra modularity decreases the cost of systems ownership by simplifying maintenance.

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Manageability

Assemble a customized UPS management strategy with Symmetra™ accessories.

Symmetra will do more than protect your investment; it will protect your career. Optional accessories and power management software provide the ability to manage your network from anywhere in your datacenter or anywhere in the world.

PowerView (included)

Symmetra's remote display puts all power and UPS information at a system administrator's fingertips in a menu-based format. With monitoring and control parameters such as input voltage, level of redundancy, temperature and humidity, the display helps manage Symmetra from a monitoring station up to 15 feet away.



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SNMP Management

APC's PowerNet SNMP products give you enterprise power management, automatic power failure notification, UPS testing and status, and power alarms (traps) sent to your network management console.

[\(VIEW\)](#) 30K

PowerNet SNMP Manager

PowerNet SNMP Manager is a windowed, snap-in application for popular NMSs such as HP OpenView, Novell NMS and IBM NetView/6000 that collects UPS/power status information graphically for easy problem analysis. PowerNet Manager also provides the tools to manage and control the UPSs on your worldwide network.

PowerNet Agent

PowerNet SNMP Agent generates SNMP traps or alarms for your network management station through your server. PowerNet Agent plugs into the functionality of APC's popular PowerChute plus software.

PowerNet SNMP Adapter

The 10Base-T Ethernet SNMP Adapter is available as an internal plug-in card for the Symmetra . The adapter allows direct server connections for critical server shutdown and local management, while providing SNMP connectivity.

MasterSwitch Power Management

APC MasterSwitch provides complete Web and SNMP management and control of your network's power. The MasterSwitch E515 network

manageable power distribution unit (PDU) gives the network administrator complete control over the power to connected equipment. From anywhere on the network, administrators can use a network management station (NMS) or Web browser to power, shut off or reboot equipment. MasterSwitch cuts service costs and eases your power management burden. [\(VIEW\)](#) 32K

PowerChute® plus Software

Since many LANs are unattended and network administrator time is at a premium, APC offers PowerChute® plus management software. PowerChute® plus provides unattended shutdown of systems, UPS testing/status, remote UPS management and environmental/power monitoring. [\(VIEW\)](#) 40K

APC SmartSlot

[Environmental and Security Management Accessories](#)

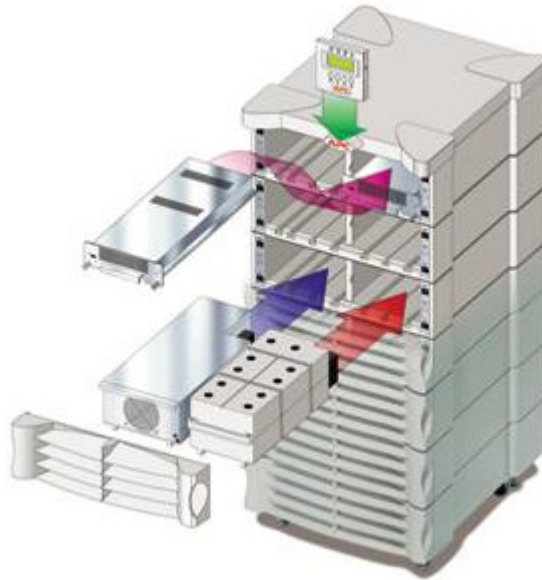
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Components

Power Array™ provides the flexibility to meet the needs of any mid-size datacenter.



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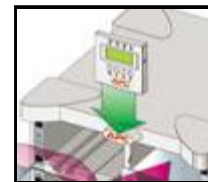
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All of Symmetra's modules are hot-swappable and user-replaceable.

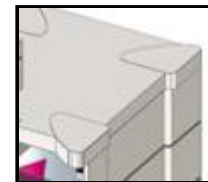
PowerView

Multi-lingual display console puts monitoring and control at your fingertips. The PowerView attaches to the nose of Symmetra or can be extended up to 15 feet to be more convenient to a monitoring station or administrator's desk.



Frame

Holds the Power Array modules. It has no active components and a minimum of mechanical components, most of which (fans, for example) are user-replaceable.



Intelligence Modules

The brain of the Symmetra. The Main Intelligence Module communicates with the outside world and synchronizes the modules. The Redundant Intelligence Module is the back-up brain and ensures fault-tolerance.



Power Modules (PM's): 4kVA UPS "building blocks"

Contain the electronics of a 4kVA UPS, including the inverter, rectifier, and charger.



Isolated Battery Modules



Provide the runtime you need. Like Power Modules, Battery Modules are hot-swappable and user-replaceable. By physically isolating the Battery Modules from the heat-producing Power Modules, the Power Array maximizes both battery runtime and life.



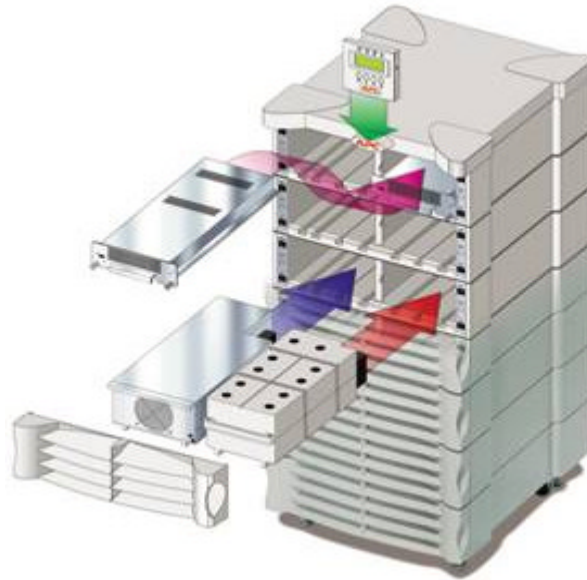
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How to Configure

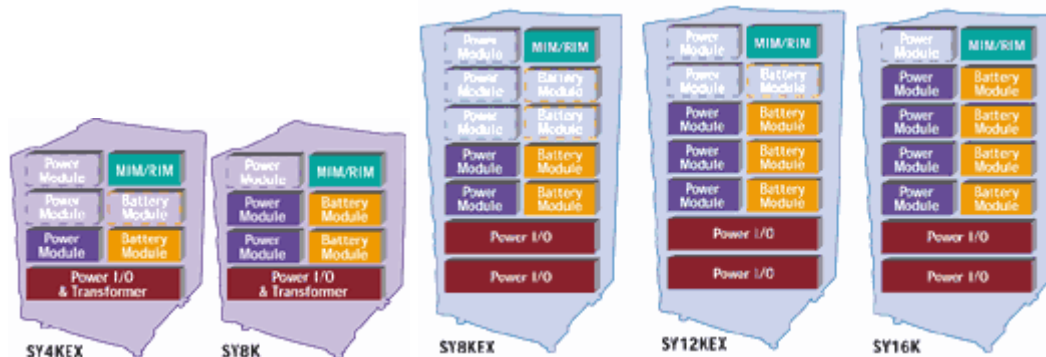
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STEP 1:

Choose the Symmetra system you need based on your current VA load and future need to expand power. Note: Symmetra systems with an EX in the part number indicate room for expansion.



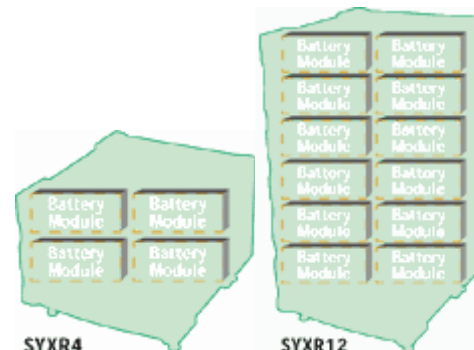
STEP 2:

Add an additional Power Module for N+1 Redundancy.



STEP 3:

Choose an [extended runtime option](#) for longer runtimes if needed.



Symmetra™ Site Preparation Guide



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Before the Symmetra Power Array arrives, the following site preparations must be made. First, because the system is shipped on pallets, provisions must be made for the pallets to be moved to the installation site with a pallet jack. Second, the room where the Symmetra Power Array will be installed must meet specific environmental and structural requirements. Finally, provisions for wiring the system must be made. Wiring for the system includes input wiring from the building service to the system, output wiring from the system to the load equipment, the installation of an optional grounding electrode, and the installation of an emergency power off switch. Information for all of these is provided in the [Site Preparation Guide](#).

The Site Prep Guide is available for download now in PDF(Portable Document format) which requires Adobe Acrobat Reader. If you do not have Adobe Acrobat, please visit [Adobe's Web Site](#) and download it free.

Site Preparation Guide for Symmetra in PDF(Portable Document Format).	Download it now!	siteprep128.pdf
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Symmetra™ Technical Specifications

Operation

	North America	Worldwide
Power capacity	4kVA, 8kVA, 12kVA, 16kVA	
Battery type	hot-swappable, sealed maintenance-free lead-acid batteries with 3-5 year typical lifetime	
Recharge time with supplied packs	<3 hours	
Extended battery option	Yes	
Topology	On-Line	

Input specifications

	North America	Worldwide
Nominal single phase input voltage, frequency	208/240Vac, 60Hz	220/230/240Vac, 50/60Hz
Input voltage range	155Vac to 276Vac	
Input frequency range	57-63 Hz or synch	47-63 Hz or synch
Standard connections	Hardwire	
Power factor correction supported	>0.98	

Output specifications

	North America	Worldwide
Nominal output voltage	120/208/240Vac	220-240Vac
Output voltage regulation	±3%	
Output voltage distortion	>5%	
Power factor tolerance efficiency at full load	Loads of .5 to 1.0	
Load crest ratio	>87%	>90%
Power factor correction	5:1	5:1
	hardware optional	8IEEE 330 C

Features

	North America	Worldwide
N+1 redundancy capability	Yes	Yes
Power (kVA) expandability	Yes	Yes
Runtime (battery) expandability	Yes	Yes
Self-diagnostics	Yes	Yes
User-servicable	Yes	Yes
Automatic bypass	Yes	Yes
Manual bypass	Yes	Yes

Indicators, interfaces & controls

	North America	Worldwide
LCD display	Programmable 4x24 character backlit LCD, multiple languages	
Intelligent serial interface	Yes	
SNMP capability	Yes	
Multiple server / operating system shutdown	via Share-UPS	
Modem (out of band) control	via Call-UPS II	
Emergency Power Off (EPO) capability	input for external EPO closure	
Environmental monitoring / dry contact closures	via Measure-UPS	
Battery test	Yes	

Physical

	North America	Worldwide
Ambient operation	0° C - 40° C; 0 - 95% non-condensing; up to 10,000ft	
8kVA frame (HxWxD)	31x24x27	
16kVA frame (HxWxD)	52x24x27	45x24x27

Warranty and service options

	North America	Worldwide
Standard	2 years, including battery	1 year, including battery
24-hour on-site service		Optional*
Extended		Optional*

* Availability is limited in some locations

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