

# Server, Network and Telecom Power Solutions

# Symmetra® Power Array™

## Scalable, redundant power protection for centralized servers, data centers, and high-availability applications



## Symmetra Power Array technology gives you:

### Redundancy

- Modules run in parallel
- N+1 redundancy easily achieved
- Glass-house reliability for mid-sized systems

### Scalability

- Flexibility to grow as future needs change
- Load, run-time, and redundancy allow custom configuration
- Intelligent Extended Battery Frames provide unlimited run-time

### Serviceability

- Lower cost of ownership by simplifying maintenance
- Self-diagnosing
- Predictive failure analysis and pro-active notification
- Modular, hot-swappable components
- Manual and Automatic By-pass

### Manageability

- Customized Power Array management strategy with accessories
- Built-in Web/SNMP Management
- Environmental and Security management

### APC backs this up with:

- Two-year standard warranty, world-wide  
(Note: Battery Modules carry a 1-year warranty in India).
- Certifications: CSA; FCC A; UL1778; C-tick; CE; EN50091-2; VDE
- ISO 9001 and ISO 14001 certified facilities

### Global Service Programs

- Start-Up Service
- Power Plan Extended Warranty
- On-site Support Service
- Network Integration Service
- Remote Monitoring
- PowerAudit Consulting Service

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### SYMMETRA POWER ARRAY VS. LEGACY UPS

Event	Legacy UPS	Symmetra Power Array
<b>Battery fails or needs replacement</b>	System is unprotected - system will crash at next power outage and must be brought down to service UPS. Availability compromised.	System remains up and protected. User notified proactively, service within minutes while load remains up and protected.
<b>Electronics fail</b>	Computer system crashes or will crash at next power outage. System is unprotected and must be brought down for service. Availability compromised.	Load remains up and protected. Only one level of redundancy is lost. User notified proactively; service within minutes while load remains up and protected.
<b>Load capacity reached</b>	User must buy new UPS.	User adds an extra Power Module for 15-25% of the cost of new UPS.
<b>Overload</b>	UPS goes to bypass - system will crash at next power outage. Availability compromised.	Load remains up and protected, only redundancy is lost. (Up to 105% of max capacity).
<b>Humidity too high</b>	No alert. Computer equipment can be damaged. Availability compromised.	Alert sent via network, SNMP, or web-based command, action can be taken to reduce risk to protected systems. (with Environmental Monitoring Card.)
<b>Temperature too high</b>	No alert. Computer equipment can be damaged. Availability compromised.	Alert sent via network, SNMP, or web-based command, action can be taken to reduce risk to protected systems. (with Environmental Monitoring Card.)
<b>Server locked up</b>	Nothing. User must manually reboot system. Availability compromised.	With MasterSwitch™ accessory, user can remotely reboot individual loads.
<b>Follow-on Power Failures</b>	Nothing. Unit's batteries may not be charged enough to provide any runtime. Availability Compromised.	With the microprocessor-controlled battery charger, batteries recharge in less time, making your system available more quickly. Unit can also be configured to delay power-on until the batteries are adequately recharged.

# Power Array Overview

## Symmetra Power Array designed for the changing IT environment

Symmetra has achieved widespread acceptance by companies in the service provider, financial, retail, and government sectors. It is being used to provide higher power availability to entire small data centers, specific high availability applications in larger data centers, and mid-size application servers. Its redundancy and serviceability are perfect for branch locations for financial and retail companies. IT managers utilizing the total solution that Symmetra Power Array provides them, have the peace of mind that their power protection solution was designed with their mission critical needs in mind.

Symmetra Power Array was designed to fit all these customer expectations. It is the world's first redundant, scalable, user-serviceable, and manageable power protection solution. APC's vast array of software and accessories make Symmetra a total High Availability solution. Its time-tested, reliable, proven, power sharing technology makes it a must-have for any IT user utilizing other High Availability solutions. Symmetra Power Array's scalability and user-serviceability give it a total cost of ownership significantly less than legacy UPS solutions.



Rack-mount (2-6 kVA)

MasterFrame  
(8-16 kVA)

MiniFrame (4-8 kVA)

Implementing a Symmetra Power Array solution means an immediate decrease in the risk of systems downtime and tremendous cost-savings based on increased uptime.

For more information about all APC products, go to [www.apc.com](http://www.apc.com)

## Other Symmetra Power Array Features

### On-line Double Conversion Topology

#### Wide Input Voltage Window

For seamless integration with generators and less time on-battery, this conserves batteries for blackout periods.

#### High Overload Capability

Allows the unit to run in on-line mode even while the load draws high inrush currents (150% for 30 seconds; 125% for 10 minutes.) All loads receive continuous power protection in the event of a short in the branch circuit.

#### Frequency Conversion

220; 230; or 240 VAC (output) Tower models are capable of frequency conversion.

#### Manual and Automatic Bypass

Manual and Automatic bypass provide another power path for N-only systems.

#### Power factor correction

Eliminates power line harmonics and neutral overloads that can cause building wiring to overheat.

#### Remote Power-Off Device

Ties into your primary Emergency Power Off switch (EPO) to integrate your UPS into enterprise safety plans, and to shut down loads in an emergency.

#### Integrated, Failsafe Connectors

Built into the individual modules, these connectors use sensors to verify complete integration of modules within the intelligent frame.

#### Self-Diagnosing

In the event of an internal failure of any kind, Symmetra sends alerts to network managers and/or a service provider via network and network clients, SNMP, or out-of-band connection via modem.

# Redundancy

## N + 1 and higher Redundancy ensures maximum uptime and continuous availability.

Symmetra Power Array achieves N+1 redundancy and higher through proven power sharing technology. Power sharing means that all of the power modules in a Power Array run in parallel and share the load evenly. N+1 redundancy means running one extra module than will 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 4kVA 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. Symmetra allows IT managers using these products to apply the same N+1 redundancy strategy to their power protection. As critical applications and databases are moved to smaller machines, the Symmetra Power Array brings glass house reliability to the mid-sized power protection range. Symmetra tower units can achieve up to N+4 redundancy, while Symmetra RM can achieve up to N+3 redundancy.

### 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)*

Fig. 1

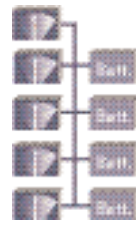
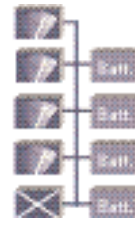
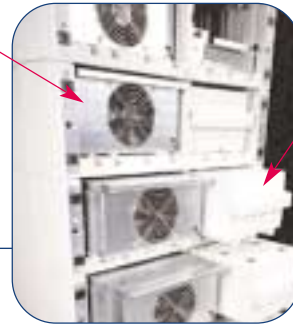


Fig. 2



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

*Individual Power Modules are easily installed or removed to manage redundancy.*



*Battery Modules can be quickly shifted to other Power Arrays or Battery Frames to manage runtime.*

# Scalability

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

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 comprised of load-sharing modules so you can easily build and reconfigure your array. If you add computing power to your data center, you can add Power Modules (in increments of 4kVA, or 2 or 4kVA for rack-mount models) 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 to tower models for unlimited runtime.

### Scalable Power

*The Symmetra Power Array integrates load-sharing modules for easy custom configuration. Additional 4kVA modules, or 2kVA for rack-mount models, expand power capacity.*

### Scalable Runtime

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

### Scalable Redundancy

*Additional power modules increase redundancy up to N+4, depending on configuration.*

### Intelligent Extended Battery Frames

*Additional Extended Battery Frames can be daisy-chained for extended runtime. Models include: the 4-Bay Battery Cabinet, which can hold up to four Battery Modules; the 12-Bay Battery Cabinet, which can hold up to twelve Battery Modules; and the 4-Bay Rack-mount Cabinet, which can hold up to 4 RM Battery Modules.*





## Symmetra Power Array "One Minute Maintenance"™ lowers your cost of ownership.

### Service Made Easy

Symmetra Power Array's "One-Minute Maintenance"™ lowers your cost of ownership. Service contracts can double the cost of ownership because few of these highly specialized technicians are available around the world.

Symmetra's serviceability makes maintenance easy. Its components are modular, hot swappable and user-replaceable. Service costs are decreased since the unit can be self-served. All this adds up to "One-Minute Maintenance"™, the ability to quickly swap out modules without disrupting up time. Service can be performed by your current computer room service provider, by an in-house technician, or by choosing any of APC's convenient service plans. You can choose as much or as little support as you feel is necessary to meet your needs.

Additionally, Symmetra is self-diagnosing and automatically gives early-warning problem notification. All batteries feature Intelligent Battery Management, providing predictive failure analysis through periodic self-testing and proactive notification. Symmetra Power Array Frames and Extended Battery Frames can pinpoint the location of failed modules, allowing the user to quickly hot-swap individual modules without bringing down the load.

Symmetra's redundancy keeps the system up, running and protected during the entire service process.



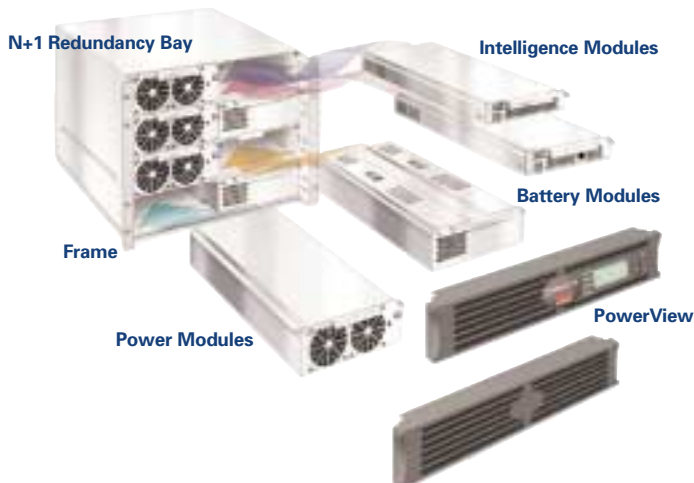
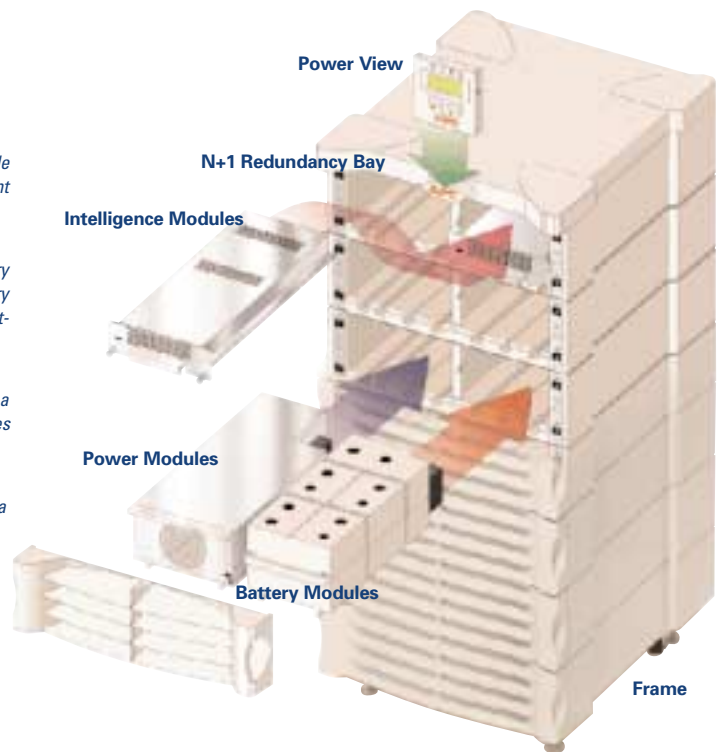
## Symmetra Tower

**Intelligence Modules** are 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.

**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.

**N+1 Redundancy Bay** provides space for additional Power Modules to create a truly N+1 unit. Also, empty Power Module bays may be populated with Power Modules to provide up to N+4 of redundancy.

**Power Modules** (PM's): 2 or 4kVA UPS "building blocks" contain the electronics of a 2 or 4kVA UPS, including the inverter, rectifier, and charger.



## Symmetra Rack-mount

The **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.

The **Power View** is a multi-lingual display console that puts monitoring and control at your fingertips. The PowerView attaches to the nose of Symmetra or can be extended up to 15 feet to a monitoring station or administrator's desk.

# Manageability

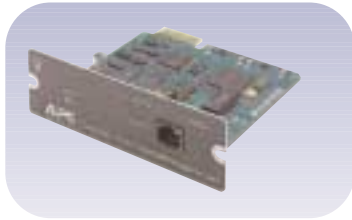
## Build a customized UPS management strategy with hot-swappable Symmetra accessories.

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, and can be hot-swapped, as needed.



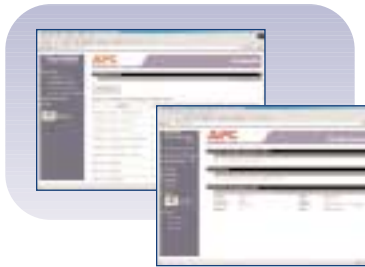
### PowerView (included)

Symmetra's remote display puts all power and UPS information at a system administrator's fingertips in a menu-based format available in several languages. With monitoring and control parameters such as input voltage, level of redundancy, temperature and humidity, the display helps manage Symmetra. Four LED indicators report the operational status of the Symmetra indicating whether the unit is operating on-line, on-battery, on-bypass or experiencing an internal fault condition. The Isolated Extension Cable (AP9825) can be used with Tower models to manage the Symmetra at a monitoring station up to 300 feet (100 meters) away.



### Built-in Web, SNMP, and Telnet manageability (included)

APC's Web/SNMP Management Card, which ships with Symmetra products, provides full remote monitoring, control, and configuration of the unit via open standards protocols including HTTP, SNMP, and Telnet. In the event of an extended power outage, it can command a virtually unlimited number of systems running PowerChute Network Shutdown to gracefully shut down, while all communications occur over the network.



### PowerChute® Network Shutdown (included)

PowerChute Network Shutdown provides reliable, graceful, unattended shutdown of multiple computer systems over a network, upon low battery warning. It communicates across the network via the included Web/SNMP Management Card and can be quickly and easily configured via a Web browser. The included CD contains support for Microsoft Windows NT, Windows 2000, Novell NetWare, IBM AIX, Sun Solaris, HP-UX, and Linux. Other operating systems are available for download at APC's website.

### MasterSwitch Power Management

APC MasterSwitch Series provides complete remote power management to connected devices. All MasterSwitch products have the following features: remote on/off/reboot of connected equipment, Web, SNMP, and Telnet management interfaces, outlet groupings, MD-5 security, and flash upgradeability. The MasterSwitch (part # AP9211, or AP9212, or AP9217) also has a WAP management interface, event configuration, and e-mail notification. The MasterSwitch plus (part # AP9225 or AP9225EXP) has the capability to gracefully shut down equipment and load shed in order to maximize UPS run-time. The final product line in the MasterSwitch Series is the MasterSwitch Vertical Mount (VM) (part # AP9221, or AP9221EXPB, or AP9222, or AP9222EXPB). This unit has all the standard features of this series as well as current monitoring and user-definable thresholds to help avoid over-loaded circuits.



## SmartSlot™ Accessories provide custom management.

Symmetra comes equipped with four SmartSlots, the unique accessory bays that allow you to slide various accessory cards into place without needing external communication or power supply connections. These four SmartSlots (two on Symmetra RM) give you the scalability to expand network power management capabilities and build a custom power management strategy to serve any computing environment.

### Out-of-Band Management Card (Part# AP9608)

The Out-of-band Management Card works with an external modem to provide out-of-band UPS management for Symmetra, allowing you to reboot a distant locked-up device through an out-of-band modem link. You can also determine UPS status, diagnose power problems and configure UPS settings even when LAN communications are not available. The Out-of-Band Management Card can even page you when UPS power alerts occur.

### Environmental Monitoring Card (Part# AP9612TH)

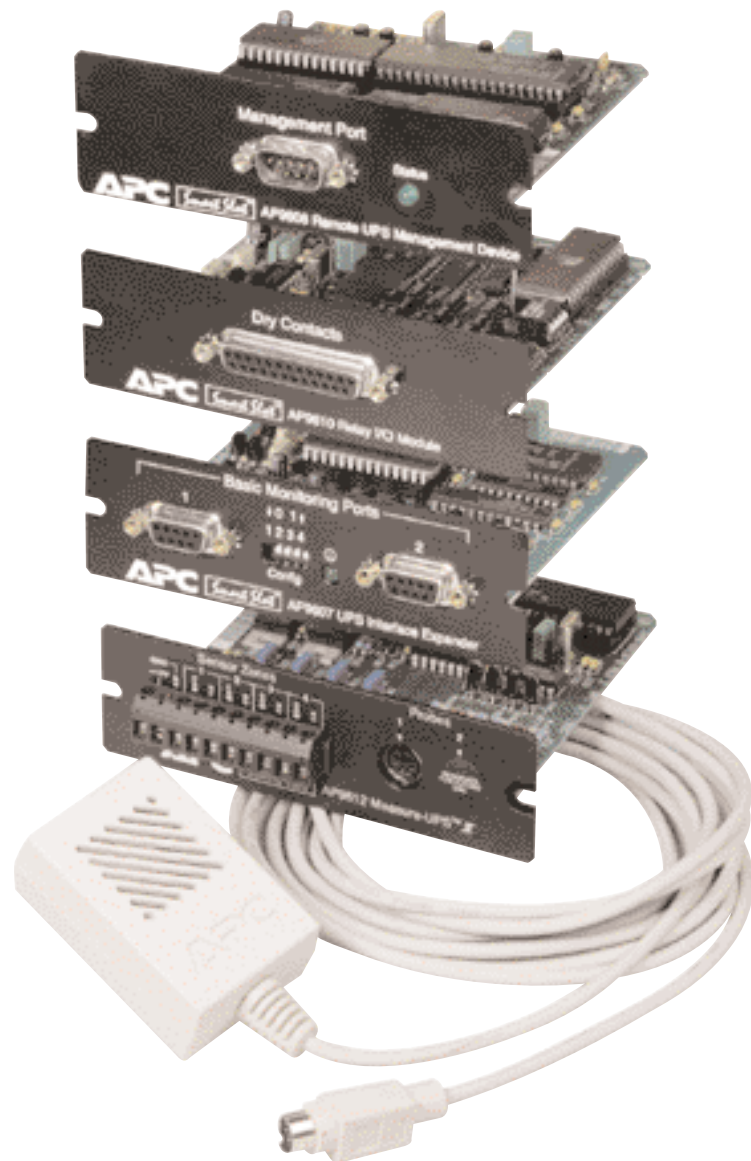
Symmetra supports the Environmental Monitoring Card, which works with the Web/SNMP Management Card to provide environmental information such as ambient temperature and humidity, and to provide four user-definable contact closures for external alerts. By adding the additional Temperature and Humidity Probe (part #AP9512TH), you can monitor the temperature and humidity in two different locations with one Environmental Monitoring card.

### Relay I/O Card (Part# AP9610)

Allows you to control and monitor power through a simple dry-contact interface, a communication format favored by manufacturers of PBXs, telecom devices and alarm management systems.



*APC's line of award-winning SmartSlot accessories slide right into the back of Symmetra, and integrate with PowerChute products or PowerNet SNMP management software to communicate necessary information and commands.*





# Symmetra™ Tower

## Modular, Scalable, Redundant 4–16 kVA N+1 Power Array.

Symmetra 4-16 kVA meets the challenges faced by today's Information Technology industry. The need for 7x24 availability is driving organizations to consolidate their servers into centralized datacenters and move to larger enterprise level servers. Their business and customers are demanding high availability solutions with high levels of productivity while maintaining lower overall costs of ownership. This centralization allows IT staff to spend less time managing the individual servers and more time responding to their users' needs. By providing a centralized power protection solution, Symmetra 4-16 kVA, meets the challenges of today's IT industry.

Like all Power Array solutions, Symmetra 4-16 kVA provides Redundancy, Scalability, Serviceability and Manageability. Since Symmetra is modular, it is easily configurable, and expandable so you can "pay-as-you-grow".

### Flexibility

Symmetra 4-16 kVA is available in two frame sizes. The MiniFrame can be ordered as a 4-kVA system expandable to 8 kVA, and as an 8-kVA system. The MasterFrame can be ordered as an 8-kVA system expandable to 16 kVA, a 12-kVA system expandable to a 16-kVA system or as a 16-kVA system.

### Redundancy

All Symmetra 4-16 kVA models can have additional redundancy added by ordering additional Power Modules (SYPM).

MasterFrame (8-16 kVA)



MiniFrame (4-8 kVA)



12-Bay Battery Cabinet



4-Bay Battery Cabinet



#### 12-Bay Cabinet Specifications:

Dimensions:  
47x24x27" (126x61x69cm)

Weights: (fully configured)  
Net: 944lb/429.5kg Shipping: 1055lb/479.5kg

### High Availability requires additional run time

High availability solutions require more runtime options than their traditional counterparts. Previously, it was enough to simply close out of applications and save critical data. Today's economy requires seamless transitions between power disturbances and the customer, and therefore, a high availability runtime solution. This high availability solution must also consist of modular, scalable, user-serviceable, and manageable components, which keep the overall cost of ownership down. Symmetra 4-16kVA systems have two separate options for higher runtimes: the 4-Slot Battery Cabinet and the 12-Slot Battery Cabinet. These Battery Cabinets can be partially or completely filled with hot swappable battery modules, based on the runtime requirements and the load. A 5 foot (1.5 m) pre-installed connector makes the Battery Cabinets a plug and play solution.

An optional Extender Cable (Part # SYOPT5 or SYOPT5I) allows customers to place the Battery Cabinets up to 15 feet (4.5 m) away from the Symmetra itself. The Battery Cabinets can be connected directly to the Symmetra 4-16 kVA or daisy chained to provide nearly unlimited runtime. Additionally, the Battery Cabinets are intelligent, providing crucial information back to the Symmetra, proactively, regarding: runtime; potential battery problems; and the exact location of failed battery modules.



# Symmetra 4-16 kVA Power Array Accessories and Option Kits



## Black Symmetra

New! Symmetra Power Array Master Frame and 12-Bay Battery Cabinet are now also available in black via special order, allowing the unit to easily blend in with the existing IT environment. All specifications remain the same.

Ordering information:	Voltage (in)	System Part No.
8kVA Scalable to 16 kVA, N+1	208 or 240 (with outlets on output) 220/230/240	SY8KEXBX120 SY8KEX-PDBX120 SY8KEXIBX120
12kVA Scalable to 16 kVA, N+1	208 or 240 (with outlets on output) 220/230/240	SY12KEXBX120 SY12KEX-PDBX120 SY12KEXIBX120
16 kVA Scalable to 16 kVA, N+1	208 or 240 (with outlets on output) 220/230/240	SY16KEXBX120 SY16K-PDBX120 SY16KIBX120
12-Bay Battery Cabinet*	208 or 240 220/230/240	SYXR12-BMBX120 SYXR12I-BMBX120

*Note: Black units are only available via the APC Website in limited quantities. Please go to [www.symmetra.com](http://www.symmetra.com).*

*\*Battery modules not included, order standard item SYBATT.*

## Symmetra 4-16 kVA Earthquake Kits

Available in Japan only.

Ordering information:	Part No.
Earthquake protection kit for Mini Frame (4-8 kVA)	SYJ-EQPMINIF
Earthquake protection kit for Master Frame (8-16 kVA)	SYJ-EQPMSTRF
Earthquake protection kit for 4-Bay Battery Cabinet	SYJ-EQPMXR4

## Symmetra 3:1 Bypass Load Balancing Transformer

For use with the 3-phase in/single phase out units. (220/230/240V Output) Order Part No.: SY-BPXFMR.

## Cord-connected power distribution units (CCPDUs)

APC or third-party cord-connected power distribution units (CCPDUs) can be used for additional output receptacle connections to 208/240Vac (input) “-PD” units. Visit [www.apc.com/products/accessories/wiring-ccpdu.cfm](http://www.apc.com/products/accessories/wiring-ccpdu.cfm) for further details on APC CCPUs.

## Symmetra Extended Life Batteries

This accessory provides an extended life battery (10 years design life, maintenance free) that can be used in place of the Standard Battery Modules (SYBATT). The extended life batteries should be used only in applications where the customer needs greater than 30 minutes of run-time. Order Part No.: SYBATT-EL.

## Extended Run Options

Voltage (in)	Product Information	Part No:
208 or 240	Extended Run Mini-FrameCabinet, holds up to 4 SYBATT Battery Modules	SYXR4-BM
	Extended Run Mini-FrameCabinet, pre-populated with 2 SYBATT Battery Modules	SYXR2B4
	Extended Run Mini-FrameCabinet, pre-populated with 4 SYBATT Battery Modules	SYXR4B4
	Extended Run Master FrameCabinet, holds up to 12 SYBATT Battery Modules	SYXR12-BM
	Extended Run Master FrameCabinet, pre-populated with 4 SYBATT Battery Modules	SYXR4B12
	Extended Run Master FrameCabinet, pre-populated with 8 SYBATT Battery Modules	SYXR8B12
	Extended Run Master FrameCabinet, pre-populated with 12 SYBATT Battery Modules	SYXR12B12
	15ft Extender Cable from tower models to SYXR4-BM or SYXR12-BM	SYOPT5
	Battery Module for Tower Models	SYBATT
220/230/240	Extended Run Mini-FrameCabinet, holds up to 4 SYBATT Battery Modules	SYXR4-BMI
	Extended Run Mini-FrameCabinet, pre-populated with 2 SYBATT Battery Modules	SYXR2B4I
	Extended Run Mini-FrameCabinet, pre-populated with 4 SYBATT Battery Modules	SYXR4B4I
	Extended Run Master FrameCabinet, holds up to 12 SYBATT Battery Modules	SYXR12-BMI
	Extended Run Master FrameCabinet, pre-populated with 4 SYBATT Battery Modules	SYXR4B12I
	Extended Run Master FrameCabinet, pre-populated with 8 SYBATT Battery Modules	SYXR8B12I
	Extended Run Master FrameCabinet, pre-populated with 12 SYBATT Battery Modules	SYXR12B12I
	15ft Extender Cable from tower models to SYXR4-BM or SYXR12-BM	SYOPT5I
	Battery Module for Tower Models	SYBATT
200	Extended Run Mini-FrameCabinet, holds up to 4 SYBATT Battery Modules	SYXR4-BMJ
	Extended Run Mini-FrameCabinet, pre-populated with 2 SYBATT Battery Modules	SYXR2B4J
	Extended Run Mini-FrameCabinet, pre-populated with 4 SYBATT Battery Modules	SYXR4B4J
	Battery Module for Tower Models	SYBATTJ

# Symmetra™ Tower Product Specifications

Regional availability: North America; South America

Symmetra Mini-Frame 120; 208 or 240 VAC (Output)			Symmetra Master Frame 120; 208 or 240 VAC (Output)		
System Part No. (Hardware) (Installed PDU & Hardware)	SY4KEX SY4KEX-PD	SY8K SY8K-PD	SY8KEX SY8KEX-PD	SY12KEX SY12KEX-PD	SY16K SY16K-PD
Output					
Capacity	4kVA/2.8kW	8kVA/5.6kW	8kVA/5.6kW	12kVA/8.4kW	16kVA/11.2kW
Output Voltage	120; 208; 240				
Max Configurable Power with additional Power Modules	8kVA/5.6kW		16kVA/11.2kW		
Output Connections (Hardware)	(1) hardwire				
(-PD units only)	(1) hardwire plus (2) 5-15R (1) L6-30R (1) L14-30R		(1) hardwire plus (4) 5-15R (3) L6-30R (3) L14-30R		
Efficiency at full load	87%				
By pass	Internal Bypass (Automatic&Manual)				
Output voltage Distortion	typically <5% at full load (linear or non-linear)				
Output frequency (synched to mains)	57-63 Hz				
Output frequency (not synched)	60 Hz				
Crest Factor	up to 5:1				
Input					
Nominal input Voltage	208; 240 (user configurable)				
Input Frequency	50/60 Hz +/- 5 Hz (auto-sensing)				
Input Connection	Hardwire (3-wire)				
Input Voltage range	155-276 V at 100% load				
Input Power Factor at full load	0.98				
Battery Type	Maintenance-free, sealed lead-acid battery with suspended electrolyte; leakproof.				
Typical recharge time	<3 hours				
Replacement Battery Module	(1) SYBATT	(2) SYBATT	(2) SYBATT	(3) SYBATT	(4) SYBATT
Interface port	DB-9; RS-232; Smart-Slot Card (4)				
Management Software included	PowerChute Network Shutdown; Web/SNMP Management Card built into unit				
Control panel	Multi-function LCD status & control console in multiple languages				
Audible Alarm	Alarm when on battery; distinctive low battery alarm; configurable delays				
Emergency Power Off (EPO)	Yes				
Power Module Bays (total/filled)	3/1	3/2	5/2	5/3	5/4
Battery Module Bays (total/filled)	2/1	2/2	4/2	4/3	4/4
Dimensions HxWxD (in/cm)(all)	31x24x27in /78.7x61x68.6cm		52x24x27in/132.1x61x68.6cm		
Weight net (lbs/kg) (hardware)	407lb/184.8kg	502lb/227.9kg	731lbs/331.9kg	826lbs/375kg	921lb/418.1kg
Weight shipping (hardware)	491lb/222.9kg	600/272.4kg	833lbs/378.2kg	942lbs/427.7kg	1051lb/477.2kg
Weight net (lbs/kg) (-PD)	425lb/193kg	520lb/236kg	759lb/345kg	864lb/388kg	949lb/431kg
Weight shipping (-PD)	512lb/233kg	621lb/282kg	858lb/390kg	967lb/440kg	1076lb/489kg
Operating Temperature	0-40 C/ 32-104 F				
Operating Relative humidity	0-95%				
Operating Elevation	0-10000 feet/ 0-3000m				
Storage Temperature	-15 to 45C/ 5 to 113F				
Storage Relative Humidity	0-95%				
Storage Elevation	0-50,000 feet/0-15,000m				
Audible noise at 3 feet (1 m)	62dBA				
On-line thermal dissipation (BTU/hr)	1427	2855	2855	4282	5710
Approvals	CSA; FCC A; UL 1778				
Warranty	2 years, repair or replace				
"T" level for Service Option pricing	T6	T6	T7	T7	T7

## Symmetra™ Tower Product Specifications

Regional availability: Europe; Middle East; Africa; Asia; Australia; South America

Symmetra Mini-Frame 220; 230; 240 VAC (Output)			Symmetra Master Frame 220; 230; 240 VAC (Output)		
System Part No. Single phase in/out (1:1)	SY4KEXI	SY8KI	SY8KEXI	SY12KEXI	SY16KI
3-phase in/single phase out (3:1)	n/a	n/a	SY8KEX3I	SY12KEX3I	SY16K3I
Output					
Capacity	4kVA/2.8kW	8kVA/5.6kW	8kVA/5.6kW	12kVA/8.4kW	16kVA/11.2kW
Output Voltage	220; 230; 240				
Max Configurable Power with additional Power Modules	8kVA/5.6kW		16kVA/11.2kW		
Output Connections	(1) hardwire				
Efficiency at full load	91%				
By pass	Internal Bypass (Automatic&Manual)				
Output voltage Distortion	typically <5% at full load (linear or non-linear)				
Output frequency (synched to mains)	47-63 Hz				
Output frequency (not synched)	60; 50 Hz				
Crest Factor	up to 5:1				
Input					
Nominal input Voltage (1:1)	220; 230; 240				
Nominal input Voltage (3:1)	n/a	n/a	380; 400; 415V (3-phase)		
Input Frequency	50/60Hz +/-5 Hz (auto-sensing)				
Input Connection	Hardwire (3-wire)		Hardwire (3-wire) (5-wire for 3:1 unit)		
Input Voltage range (1:1)	155-276 V at 100% load				
Input Voltage range (3:1)	n/a	n/a	290-480V		
Input Power Factor at full load	0.98		0.98 (.95 for the 3:1)		
Battery Type	Maintenance-free, sealed lead-acidbattery with suspended electrolyte; leakproof.				
Typical recharge time	<3 hours				
Replacement Battery Module	(1) SYBATT	(2) SYBATT	(2) SYBATT	(3) SYBATT	(4) SYBATT
Interface port	DB-9; RS-232; Smart-Slot Card (4)				
Management Software included	PowerChute Network Shutdown;Web/SNMP Management Card built into unit				
Control panel	Multi-function LCD status & control console in multiple languages				
Audible Alarm	Alarm when on battery; distinctive low battery alarm; configurable delays				
Emergency Power Off (EPO)	Yes				
Power Module Bays (total/filled)	3/1	3/2	5/2	5/3	5/4
Battery Module Bays (total/filled)	2/1	2/2	4/2	4/3	4/4
Dimensions HxWxD (in/cm) 1:1	33x24x27in /84x61x69cm		47.2x24x27in/120x61x69cm		
Weight net (lbs/kg) 1:1	273lb/124kg	367lb/167kg	431lbs/196kg	526lbs/239kg	620lb/282kg
Weight shipping 1:1	363lb/166.5kg	477/217kg	543lbs/247kg	654.5lbs/297.5kg	765.6lb/348kg
Dimensions HxWxD (in/cm) 3:1	n/a	n/a	47.2x24x30.3in/120x61x77cm		
Weight net (lbs/kg) 3:1	n/a	n/a	439lbs/199.5kg	533.5lbs/242.5kg	628lb/285.5kg
Weight shipping 3:1	n/a	n/a	557lbs/253kg	667.7lbs/303.5kg	779lb/354kg
Operating Temperature	0-40 C/ 32-104 F				
Operating Relative humidity	0-95%				
Operating Elevation	0-10000 feet/ 0-3000m				
Storage Temperature	-15 to 45C/ 5 to 113F				
Storage Relative Humidity	0-95%				
Storage Elevation	0-50,000 feet/0-15,000m				
Audible noise at 3 feet (1 m)	62dBA				
On-line thermal dissipation (BTU/hr)	945	1890	1890	2834	3779
Approvals	C-tick; CE: EN 50091-2; VDE				
Warranty	2 year; repair or replace (1 year for Battery Modules in India)				
"T" level for Service Option pricing	T8	T8	T9	T9	T9



# Symmetra™ Tower Product Specifications

Regional availability: Japan

Symmetra Mini-Frame 100; 200 VAC (Output)			Symmetra Master Frame 100; 200 VAC (Output)		
System Part No.	SY4KEXJ	SY8KJ	SY8KEXJ	SY12KEXJ	SY16KJ
Output					
Capacity	4kVA/2.8kW	8kVA/5.6kW	8kVA/5.6kW	12kVA/8.4kW	16kVA/11.2kW
Output Voltage	100; 200				
Max Configurable Power with additional Power Modules	8kVA/5.6kW		16kVA/11.2kW		
Output Connections	(1) hardwire				
Efficiency at full load	87%				
By pass	Internal Bypass (Automatic&Manual)				
Output voltage Distortion	typically <5% at full load (linear or non-linear)				
Output frequency (synched to mains)	57-63, 47-53 Hz				
Output frequency (not synched)	60; 50 Hz				
Crest Factor	up to 5:1				
Input					
Nominal input Voltage	200				
Input Frequency	50/60Hz +/- 5 Hz (auto-sensing)				
Input Connection	Hardwire (3-wire)				
Input Voltage range	155-276 V at 100% load				
Input Power Factor at full load	0.98				
Batteries					
Battery Type	Maintenance-free, sealed lead-acidbattery with suspended electrolyte; leakproof.				
Typical recharge time	<3 hours				
Replacement Battery Module	(1) SYBATTJ	(2) SYBATTJ	(2) SYBATTJ	(3) SYBATTJ	(4) SYBATTJ
Interface port	DB-9; RS-232; Smart-Slot Card (4)				
Management Software included	PowerChute Network Shutdown; Web/SNMP Management Card built into unit				
Control panel	Multi-function LCD status & control console in multiple languages				
Audible Alarm	Alarm when on battery; distinctive low battery alarm; configurable delays				
Emergency Power Off (EPO)	Yes				
Power Module Bays (total/filled)	3/1	3/2	5/2	5/3	5/4
Battery Module Bays (total/filled)	2/1	2/2	4/2	4/3	4/4
Dimensions HxWxD (in/cm)	31x24x27in /78.7x61x68.6cm		52x24x27in/132.1x61x68.6cm		
Weight net (lbs/kg)	407lb/184.8kg	502lb/227.9kg	731lbs/331.9kg	826lbs/375kg	921lb/418.1kg
Weight shipping	491lb/222.9kg	600/272.4kg	833lbs/378.2kg	942lbs/427.7kg	1051lb/477.2kg
Operating Temperature	0-40 C/ 32-104 F				
Operating Relative humidity	0-95%				
Operating Elevation	0-10000 feet/ 0-3000m				
Storage Temperature	-15 to 45C/ 5 to 113F				
Storage Relative Humidity	0-95%				
Storage Elevation	0-50,000 feet/0-15,000m				
Audible noise at 3 feet (1 m)	62dBA				
On-line thermal dissipation (BTU/hr)	1427	2855	2855	4282	5710
Approvals	VCCI; CSA; FCC A: UL 1778				
Warranty	2 years; repair or replace				
"T" level for Service Option pricing	T8	T8	T9	T9	T9

# Symmetra 4-16kVA Configuration Guide

## Step 1

Use your input and output requirements to determine the correct Symmetra product family.

Input/Output considerations					
Input voltage	208/240VAC		230VAC	400VAC (3-phase)	200VAC
Output voltage	120/208/240VAC		230VAC	230VAC	100/200VAC
Input/Output frequency	60 Hz		50/60 Hz	50/60 Hz	50/60 Hz
Output connections	Hardwire and outlets	Hardwire only	Hardwire only	Hardwire only	Hardwire only

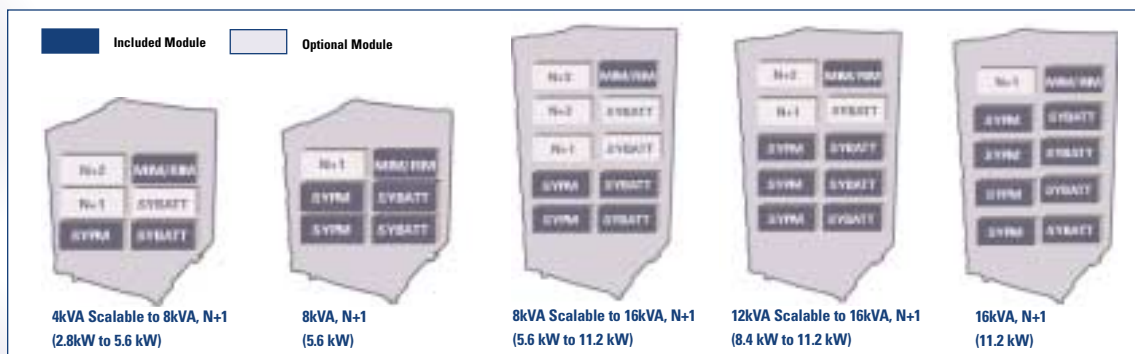
## Step 2

Determine the part number based on your current and future load requirements.

Current kVA	Future kVA					
4	8	SY4KEX-PD	SY4KEX	SY4KEXI	n/a	SY4KEXJ
8	8	SY8K-PD	SY8K	SY8KI	n/a	SY8KJ
8	16	SY8KEX-PD	SY8KEX	SY8KEXI	SY8KEX3I	SY8KEXJ
12	16	SY12KEX-PD	SY12KEX	SY12KEXI	SY12KEX3I	SY12KEXJ
16	16	SY16K-PD	SY16K	SY16KI	SY16K3I	SY16KJ
For more info see page		10	10	11	11	12

## Step 3

Add redundancy (N+1): Purchase an additional Power Module (SYPM).



## Step 4 Select the appropriate runtime for your application.

	Unit → scalable to	Load kVA/kW	Standard configuration	Std + (1) SYXR4B4 or (1) SYXR4B12*	Std + (1) SYXR8B12*	Std + (1) SYXR12B12*	Std + (2) SYXR12B12*	Std + (3) SYXR12B12*	Std + (4) SYXR12B12*
MiniFrame	4 → 8kVA (2.8 → 5.6kW)	2/1.4	15m	2.1h	4.3h	6.6h	14.2h	22.5h	31.3h
		4/2.8	5m	56m	1.9h	3h	6.6h	10.5h	14.6h
	8kVA (5.6kW)	4/2.8	15m	1.1h	2.1h	3.2h	6.7h	10.5h	14.5h
		6/4.2	8m	42m	1.3h	2h	4.3h	6.7h	9.3h
MasterFrame		8/5.6	5m	29m	56m	1.4h	3.1h	4.8h	6.7h
	8 → 16kVA (5.6 → 11.2kW)	4/2.8	15m	1.1h	2.1h	3.1h	6.6h	10.3h	14.3h
		6/4.2	8m	41m	1.3h	2h	4.2h	6.6h	9.2h
		8/5.6	5m	29m	56m	1.4h	3h	4.8h	6.6h
	12 → 16kVA (8.4 → 11.2kW)	6/4.2	15m	49m	1.5h	2.1h	4.3h	6.7h	9.2h
		8/5.6	10m	34m	1h	1.5h	3.1h	4.9h	6.7h
		10/7	6m	26m	47m	1.1h	2.4h	3.8h	5.2h
		12/8.4	5m	20m	38m	56m	1.9h	3.1h	4.2h
	16kVA (11.2kW)	8/5.6	15m	40m	1.1h	1.6m	3.2h	4.9h	6.7h
		10/7	11m	30m	52m	1.3h	2.5h	3.8h	5.2h
		12/8.4	8m	24m	42m	1h	2h	3.1h	4.3h
		16/11.2	5m	16m	29m	42m	1.5h	2.2h	3.1h

\*See page 9 for correct extended run model number based on input voltage.

## Step 5

Determine Manageability and Accessory requirements (see page 9)

\_\_\_\_\_ SmartSlot Accessories (up to 3 additional)  
\_\_\_\_\_ Other Options \_\_\_\_\_ PDUs

## Step 6

Determine Serviceability requirements (see page 19)

\_\_\_\_\_ Extended Warranty \_\_\_\_\_ On-Site Service  
\_\_\_\_\_ System Start-up \_\_\_\_\_ Network Integration

# Symmetra Rack-mount 2-12 kVA

## Bringing Symmetra's proven reliability, availability and ease of use to the rack.

APC is bringing all of the time-tested advantages of Symmetra to the rack. With more servers, storage products, networking and telecom equipment becoming rack-based, the need is increasing for innovative rack-mounted power solutions. Symmetra RM meets this need with innovative rack-optimized solutions that range from 2 kVA to 12 kVA, with N+1 redundancy in just 8U or 15U of rack space. A 16kVA N solution is also available in just 15U of rack space.

Symmetra RM is an ideal solution for small to medium size datacenters, branch office locations, mission-critical networking equipment or any other customer requiring a rack based product within this power range. The 2-6 kVA N+1 units provide a 8U rack optimized solution for a typical single rack scenario. On the other hand, the 8-12 kVA N+1 (or 16kVA N only) units provide a 15U rack optimized solution for either multiple racks of equipment or single racks with high density enterprise level equipment. In addition to the advantages of hot-swappability and redundancy, rack users can also benefit from Symmetra's self diagnosing, scalable components and integrated Web/SNMP management features.

With APC Symmetra RM, you'll get all the benefits of Symmetra plus:

### **Rackmountability :**

Saves premium datacenter floor and U space, while providing a secure environment.

### **Flexible built-in runtime options :**

The Symmetra RM 2-6 kVA N+1 units allow Battery Modules to be placed in vacant Power Module bays to increase runtime without using more rack space.

### **Flexible Extended Runtime options:**

All Symmetra RM units (2-12 kVA, N+1) are compatible with both rackmount and tower extended run options. The Symmetra RM Extended Run solution allows customers to grow runtime in increments of 4 Battery Modules in 4U of rack space. This solution affords the same level of intelligence that all Symmetra extended runtime solutions provide. Various extender cables are available to customize the solution. See page 15.

### **Plug and Play Capability :**

All Symmetra RM units come standard with field replaceable PDU's. A variety of backplate PDU (listed on Page 19 ) and external PDU options (both from APC or third party vendors) allow direct plug-in of a wide variety of loads.

### **Form Factor Flexibility :**

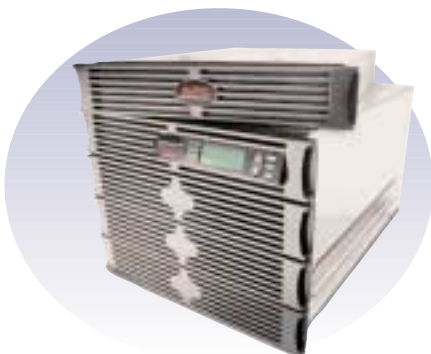
The Symmetra RM 2-6 kVA units and Symmetra RM Extended Run solutions are designed to blend with your IT environment. By using the Optional Floormount Kit (part # SYOPT1) with included castors, the unit can be converted to a freestanding, movable unit, allowing flexibility as your needs change.



*Symmetra RM 8-12kVA  
N+1 (or 16kVA N only)*



*Symmetra RM  
2-6kVA N+1*



### **Symmetra RM 5kVA Step-down Transformer (Part #SYTF2)**

The Step-down Transformer converts 208 VAC output into 120 VAC output for powering computer loads in North and South America. It also acts as a Rackmount PDU solution by providing 12 NEMA 5-15/5-20 receptacles. One SYTF2 can be placed in each rack with 120V equipment, being protected by Symmetra RM units. The Step-down Transformer (SYTF2) is color-matched to the new Symmetra Rack-mount. The Step-down Transformer can be purchased as a bundle with the Symmetra RM by ordering -P1 or -P2 part numbers. It can also be purchased separately by ordering SYTF2. A 15-foot line cord is also available for the SYTF2 by ordering SYOPT9.

*Symmetra RM 2-6kVA, with optional Step-Down Transformer on top*



# Symmetra Rack-mount Accessories and Option Kits

## Extended Run Options

Voltage (in)	Product Information	Part No:
208 or 240	RM Extended Run cabinet, holds up to (4) SYBT2 Battery Modules	SYRMXR4
	RM Extended Run cabinet, pre-populated with (2) SYBT2 Battery Modules	SYRMXR2B4
	RM Extended Run cabinet, pre-populated with (4) SYBT2 Battery Modules	SYRMXR4B4
	Battery Module for 2-6kVA RM models	SYBT2
	Battery Module for 8-12kVA RM models	SYBT3
	15ft Extender Cable from RM models to SYXR4-BM or SYXR12-BM	SYOPT3
	4ft Extender Cable from RM Models to SYRMXR4	SYOPT4
220/230/240	RM Extended Run cabinet, holds up to (4) SYBT2 Battery Modules	SYRMXR4I
	RM Extended Run cabinet, pre-populated with (2) SYBT2 Battery Modules	SYRMXR2B4I
	RM Extended Run cabinet, pre-populated with (4) SYBT2 Battery Modules	SYRMXR4B4I
	Battery Module for 2-6kVA RM models	SYBT2
	Battery Module for 8-12kVA RM models	SYBT3
	15ft Extender Cable from RM models to SYXR4I-BM or SYXR12I-BM	SYOPT3I
	4ft Extender Cable from RM Models to SYRMXR4I	SYOPT4I
200	RM Extended Run cabinet, holds up to (4) SYBT2 Battery Modules	SYRMXR4J
	RM Extended Run cabinet, pre-populated with (2) SYBT2 Battery Modules	SYRMXR2B4J
	RM Extended Run cabinet, pre-populated with (4) SYBT2 Battery Modules	SYRMXR4B4J
	Battery Module for 2-6kVA RM models (Japan only)	SYBT2FR



*Symmetra RM 4U  
Rackmount Battery  
Cabinet*

### 4-Bay Cabinet Specifications:

Dimensions:  
19.3x24x27" (49x61x69cm)  
Weights: (fully configured)  
Net: 324lb/147.3kg Shipping: 384lb/174.5kg

## Mounting Options

Product Information	Part No:
Floor Mount Kit for 8U rack-mount models (includes caster kit - SYOPT11)	SYOPT1
4U Extension for SYOPT1 for RM Extended Run Frame	SYOPT2
2U Extension of SYOPT1 for SYTF2	SYOPT10
Caster Kit for 2-6kVA models	SYOPT11
2-Post rack-mounting Kit for Symmetra RM 2-6kVA or 4U RM XR frame (see SYOPT8 for "-P1" models)	SYOPT6
2-Post rack-mounting Kit for Symmetra RM Step-down Transformer (SYTF2 or SYTF2J)	SYOPT7
2-Post rack-mounting Kit for Symmetra RM 2-6kVA (208V/120V output models only. Bundle of SYOPT6 and SYOPT7)	SYOPT8



*Symmetra RM 2-6kVA shown with Floor-mount  
Kit (SYOPT1).*

## Backplate and Power Distribution Unit (PDU) Options

Voltage (in)	Product Information	Part No:
208 or 240 V	Backplate with (8) IEC 320 C13 & (2) IEC 320 C19 receptacles and jumper cables (use 1 for 2-6kVA models and up to 3 with 8-12kVA models)	SYPD5
	Output Hardwiring Kit for 2-6kVA models	SYPD6
	Backplate with (3) L6-20R (use 1 for 2-6kVA models and up to 3 with 8-12kVA models)	SYPD7
220/230/240V	Output Hardwiring Kit for 2-6kVA models	SYPD9

## Other Accessories

Voltage (in)	Product Information	Part No:
208 or 240 V	Step-down transformer	SYTF2
	15 ft Input line cord for SYTF2	SYOPT9
200 V	Step-down transformer	SYTF2J

# Symmetra™ Rack-mount Product Specifications

Regional availability: North America; South America; Japan\*

Regional availability: Middle East;  
Asia; Africa; Australia; South America

Symmetra Rack-mount		208 VAC (Output)			120; 208 VAC (Output)		220; 230; 240 VAC (Output)		
System Part No.	SYH2K6RMT	SYH4K6RMT	SYH6K6RMT	SYH2K6RMT-P1	SYH4K6RMT-P1	SYH6K6RMT-P1	SYH2K6RMI	SYH4K6RMI	SYH6K6RMI
200/100V System Part No.*	SYH2K6RMJ	SYH4K6RMJ	SYH6K6RMJ	SYH2K6RMJ-P1	SYH4K6RMJ-P1	SYH6K6RMJ-P1			
Output									
Capacity	2kVA/1.4kW	4kVA/2.8kW	6kVA/4.2kW	2kVA/1.4kW	4kVA/2.8kW	6kVA/4.2kW	2kVA/1.4kW	4kVA/2.8kW	6kVA/4.2kW
Output Voltage	208 (240 configurable)			120; 208			220; 230; 240		
Max Configurable Power with additional Power Modules*	6kVA/4.2kW			6kVA/4.2kW (max 5kVA of 120VAC)*			6kVA/4.2kW		
Output Connections	(2) NEMA L6-20R, (1) NEMA L6-30R			(2) NEMA L6-20R, (12) NEMA 5-20R**			(8) IEC 320 C13; (2) IEC 320 C19		
Efficiency at full load	89%			85%			89%		
By pass	Internal Bypass (Automatic & Manual)								
Output voltage Distortion	typically <5% at full load (linear or non-linear)								
Output frequency (synched to mains)				57-63 Hz*			47-53 Hz		
Output frequency (not synched)				60 Hz*			50 Hz		
Crest Factor	up to 5:1								
Input									
Nominal input Voltage	208 or 240 (200 for “J” models)			208			220; 230 ; 240		
Input Frequency	50/60 Hz +/- 5 Hz (auto-sensing)								
Input Connection	NEMA L6-30P						Hardwire (3-wire)		
Input Voltage range	155-276 V at 100% load								
Input Power Factor at full load	0.98								
Battery Type	Maintenance-free, sealed lead-acid battery with suspended electrolyte; leakproof.								
Typical recharge time	4 hours								
Replacement Battery Module*	(1) SYBT2	(2) SYBT2	(3) SYBT2	(1) SYBT2	(2) SYBT2	(3) SYBT2	(1) SYBT2	(2) SYBT2	(3) SYBT2
Interface port	DB-9; RS-232; Smart-Slot Card (2)								
Management Software included	PowerChute Network Shutdown; Web/SNMP Management Card ships standard with each unit								
Control panel	Multi-function LCD status & control console in multiple languages								
Audible Alarm	Alarm when on-battery; distinctive low battery alarm; configurable delays								
Emergency Power Off (EPO)	Yes								
Power Module Bays (total/filled)	4/1	4/2	4/3	4/1	4/2	4/3	4/1	4/2	4/3
Battery Module Bays (total/filled)	3/1	3/2	3/3	3/1	3/2	3/3	3/1	3/2	3/3
Dimensions HxWxD*** (in/cm)	8U/14x19x27.25in /35.6x48.3x69.2cm			10U/17.5x19x27.25in/44.5x48.3x69.2cm			8U/14x19x27.25in/35.6x48.3x69.2cm		
Weight net (lbs/kg)	164lb/74.5kg	229lb/104.1kg	294lbs/133.6kg	259lb/118kg	324lb/155kg	389lb/177kg	164lb/74.5kg	229lb/104.1kg	294lbs/133.6kg
Weight shipping	185lb/84.1kg	256lb/116.4kg	327lb/148kg	295lb/134kg	366lb/166kg	437lb/199kg	185lb/84.1kg	256lb/116.4kg	327lb/148kg
Operating Temperature	0-40 C/ 32-104 F								
Operating Relative humidity	0-95%								
Operating Elevation	0-10000 feet/ 0-3000m								
Storage Temperature	-15 to 45C/ 5 to 113F								
Storage Relative Humidity	0-95%								
Storage Elevation	0-50,000 feet/0-15,000m								
Audible noise at 3 feet (1 m)	60dBA								
On-line thermal dissipation (BTU/hr)	590	1181	1771	843	1686	2529	590	1181	2529
Approvals	CSA; FCC A; UL 1778						C-tick; EN 50091-2; VDE		
Warranty	2 years, repair or replace (1 year for battery modules in India)								
*T" level for Service Option pricing	T6	T6	T6	T6	T6	T6	T8	T8	T8

\* These units are for our Japanese customers whose input voltage is 200Volts. The following specifications supercede the above, unless otherwise noted all other specifications remain the same.  
Max Configurable Power: 3.5kVA of 100VAC for -P1 units; Output frequency (synch'd to mains): 57-63Hz or 47-53Hz; Output frequency (not synch'd to mains): 60 or 50Hz; Replacement Battery Module: SYBT2FR.

\*\*Also referred to as 5-20RA (Canada) or T-Slot, and can be used as both 5-15R or 5-20R.

\*\*\*Depth is measured from the front rail to the rear of the unit.

# Symmetra™ Rack-mount Product Specifications

Regional availability: North America; South America

Regional availability: Middle East; Asia; Africa; Australia; South America

Symmetra Rack-mount	208 VAC (Output)			120; 208 VAC (Output)		220; 230; 240 VAC (Output)	
System Part No.	SYP8K12RMT	SYP12K12RMT	SYP8K12RMT-P1	SYP12K12RMT-P1	SYP12K12RMT-P2	SYP8K12RMI	SYP12K12RMI
Output							
Capacity	8kVA/5.6kW	12kVA/8.4kW	8kVA/5.6kW	12kVA/8.4kW	12kVA/8.4kW	8kVA/5.6kW	12kVA/8.4kW
Family	Symmetra RM						
Output Voltage	208 (240 configurable)		120/208V			220,230,240V	
Max Configurable Power with additional Power Modules	12kVA/8.4kW (N+1), 16kVA/11.2 kW (N only)						
Output Connections	(6) NEMA L6-20R, (3) NEMA L6-30R, Hardwiring		(6) NEMA L6-20R, (2) NEMA L6-30R, 12 NEMA 5-20R*, Hardwiring		(6) NEMA L6-20R, (1) NEMA L6-30R, 24 NEMA 5-20R*, Hardwiring	(24) IEC 320 C13; (6) IEC 320 C19	
Efficiency at full load	91%		87%			91%	
By pass	Internal Bypass (Automatic & Manual)						
Output voltage Distortion	typically <5% at full load (linear or non-linear)						
Output frequency (synched to mains)	57-63Hz					47-53%	
Output frequency (not synched)	60Hz					50 Hz	
Crest Factor	up to 5:1						
Input							
Nominal input Voltage	208 or 240		208			220,230,240V	
Input Frequency	50/60 Hz +/- 5Hz. (auto sensing)						
Input Connection	Hardwire (3-wire)						
Input Voltage range	155-276V						
Input Power Factor at full load	0.98						
Battery Type	Maintenance - free, sealed lead acid battery with suspended electrolyte, leakproof						
Typical recharge time	3 hrs.						
Replacement Battery Cartridge	(2) SYBT3	(3) SYBT3	(2) SYBT3	(3) SYBT3	(3) SYBT3	(2) SYBT3	(3) SYBT3
Interface port	DB-9; RS-232; Smart-Slot Card (2)						
Management Software included	PowerChute Network Shutdown, Web/SNMP Management Card ships standard						
Control panel	Multi-function LCD status & control console in Multiple Languages						
Audible Alarm	Alarm when on-battery; distinctive low battery alarm; configurable delays						
Emergency Power Off (EPO)	Yes						
Power Module Bays (total/filled)	4/2	4/3	4/2	4/3	4/3	4/2	4/3
Battery Module Bays (total/filled)	4/2	4/3	4/2	4/3	4/3	4/2	4/3
Dimensions HxWxD** (in/cm)	15U/26.25x19x27.2” 66.7x48.3x69.1cm		17U/29.75x19x27.2” 75.75x48.3x69.1cm		19U/ 33.25x19x27.2” 84.46x48.3x69.1cm	15U/26.25x19x27.2” 66.7x48.3x69.1cm	
Weight net (lbs)	358	452	453	547	642	358	452
Weight shipping	398	492	503	597	692	398	492
Operating Temperature	0-40 C/32 - 104 F						
Operating Relative humidity	0-95%						
Operating Elevation	0-10000 feet/0-3000m						
Storage Temperature	-15 to 45C/5 to 113F						
Storage Relative Humidity	0-95%						
Storage Elevation	0-50,000 ft/0-15,000m						
Audible noise at 3 feet (1 m)	62dBA						
On-line thermal dissipation (BTU/hr)	1889	2834	2855	4282	4282	1889	2834
Approvals	CSA; FCC A; UL 1778					C-tick; EN 50091-2;VDE	
Warranty	2 years, repair or replace(1 year for battery modules in India)						
“T” level for Service Option pricing	T7	T7	T7	T7	T7	T9	T9

\*Also referred to as 5-20RA (Canada) or T-Slot, and can be used as both 5-15R or 5-20R.

\*\*Depth is measured from the front rail to the rear of the unit.



# Symmetra Rack-mount 2-12kVA Configuration Guide

## Step 1

Use your input and output requirements to determine the correct Symmetra product family.

Input/Output considerations					
Input voltage	208/240VAC	208/240VAC	230VAC	100/200VAC	100/200VAC
Output voltage	208/240VAC	120/208/240VAC	230VAC	200VAC	200VAC
Input/Output frequency	60 Hz	60 Hz	50/60 Hz	60 Hz	60 Hz
Output connections	Outlets only	Outlets only	Outlets only	Outlets only	Outlets only

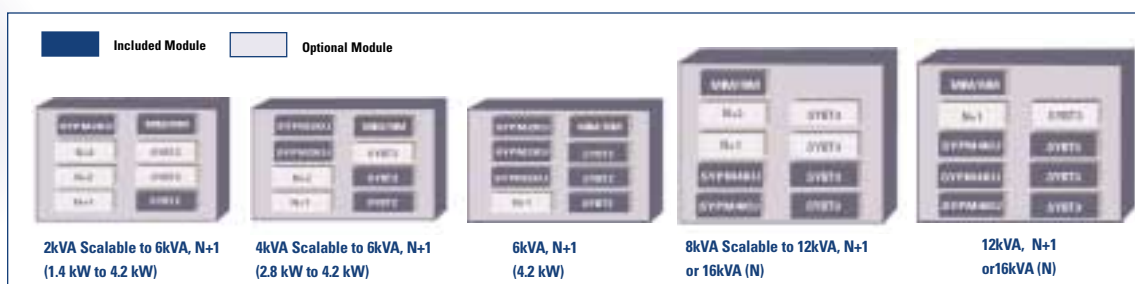
## Step 2

Determine the part number based on your current and future load requirements.

Current kVA	Future kVA					
2	6	SYH2K6RMT	SYH2K6RMT-P1	SYH2K6RMI	SYH2K6RMJ	SYH2K6RMJ-P1
4	6	SYH4K6RMT	SYH4K6RMT-P1	SYH4K6RMI	SYH4K6RMJ	SYH4K6RMJ-P1
6	6	SYH6K6RMT	SYH6K6RMT-P1	SYH6K6RMI	SYH6K6RMJ	SYH6K6RMJ-P1
More info on page		16	16	16	16	16
8	12	SYP8K12RMT	SYP8K12RMT-P1	SYP8K12RMI		
12	12	SYP12K12RMT	SYP12K12RMT-P2	SYP12K12RMI		
More info on page		17	17	17		

## Step 3

Add redundancy (N+1): Purchase an additional Power Module (SYPM2KU or SYPM4KU).



## Step 4 Select appropriate runtime for your application.

Unit → scalable to	Load kVA/kW	Standard configuration	Std + (1) SYBT2*	Std + (2) SYBT2*	Std + (1) SYRMXR4B4*	Std + (2) SYRMXR4B4*	Std + (3) SYRMXR4B4*	Std + (4) SYRMXR4B4*
2 (1.4) → 6 (4.2) kVA (kW)	2/1.4	12m	31m	51m	1.5h	3h	4.5h	6h
4 → 6 kVA (2.8 → 4.2 kW)	2/1.4	29m	48m	1.1h	1.8h	3.2h	4.6h	6.1h
	4/2.8	12m	22m	31m	52m	1.5h	2.3h	3h
6kVA (4.2kW)	2/1.4	46m	1.1h**	n/a	2h	3.4h	4.7h	6.2h
	4/2.8	21m	30m**	n/a	1h	1.7h	2.4h	3.1h
	6/4.2	12m	19m**	n/a	38m	1.1h	1.6h	2.1h
Unit → scalable to	Load kVA/kW	Standard configuration	Std + (1) SYBT3*	Std + (2) SYBT3*	Std + (1) SYRMXR4B4*	Std + (2) SYRMXR4B4*	Std + (3) SYRMXR4B4*	Std + (4) SYRMXR4B4*
8 → 16kVA (5.6 → 11.2kW)	4/2.8	15m	27m	40m	51m	1.5h	2.2h	3h
	6/4.2	8m	15m	26m	31m	58m	1.4h	1.9h
	8/5.6	5m	10m	16m	21m	40m	1h	1.3h
12 → 16kVA (8.4 → 11.2kW)	4/2.8	26m	38m	n/a	1h	1.7h	2.4h	3.1h
	8/5.6	10m	15m	n/a	27m	46m	1.1h	1.4h
	12/8.4	5m	8m	n/a	15m	27m	40m	54m

\* Note: See page 15 for correct extended run model number based on input voltage.

\*\* Not applicable for N+1 configuration.

## Step 5

Determine Manageability and Accessory requirements (see page 9)

☐ SmartSlot Accessory (only 1 additional)  
☐ Other Options

☐ PDUs

## Step 6

Determine Serviceability requirements (see page 19)

☐ Extended Warranty

☐ On-Site Service

☐ System Start-up

☐ Network Integration

# APC Global Services Programs

## Symmetra Service Recommendations

APC Symmetra Power Array's are easy to install and maintain. For customers who desire hands off service, APC can provide a wide spectrum of services including start-up and on-site services, as well as, extended warranties for those customers who prefer to keep their UPS for extended periods of time. Additionally, APC offers Power Audit consulting and Network Integration services providing on-site electrical infrastructure evaluation and APC software installation respectively.

## Warranty Services

### PowerPlan Extended Warranties

Next business day replacement of unit/modules

24x7 Telephone Technical Support

Part # WXTDX1-T\_ \* for 1 year extension or part # WXTDX3-T\_ \* for 3 year extension of hardware factory warranty to provide for a total of 3 or 5 years of coverage, respectively, from the date of UPS purchase. PowerPlan extended warranties can be purchased any time while the Power Array is still within its original factory warranty.

### On-Site Support Service

Next business day on-site replacement of unit/modules

24x7 Telephone Technical Support

Part # WSVNDX1-T\_ \* for 1 year on-site extension or part # WSVNDX3-T\_ \* for 3 year on-site extension of hardware factory warranty to provide for a total of 3 or 5 years of on-site coverage, respectively, from the date of UPS purchase. On-Site Support Services can be purchased any time while the Power Array is still within its original factory warranty.

## Installation and Consulting Services

### Start-Up service

APC Authorized Service Personnel verifies the proper wiring and operation of APC hardware.

Provides basic operational training at the time of the start-up to support your staff on the proper operation of the UPS. In all cases, the system must be electrically installed prior to the start-up. Start-up can be performed outside normal business hours by also ordering Off-hours Scheduling part # WUPA \*

Part # WISTL-T\_ \* for the on-site start-up of Symmetra Power Array

### Network Integration Service

Provides an APC Certified Network Integration Engineer for one day of on-site installation and integration of APC software and software accessories

Part # WITG \*\*



### PowerAudit Consulting Service

Provides an APC Certified Engineer to analyze the electrical infrastructure and existing network configuration, and then provide recommendations for the implementation of a power protection solution

Part # WPAEP-S1 \*\*

### Remote Monitoring Service

APC's Remote Monitoring Service allows systems managers to rest easy under the watchful eye of APC. APC offers an outsourced remote monitoring solution to deliver valuable UPS and site information either in-band or out-of-band to network and facility managers. Each installation combines the Legendary Reliability of APC power protection systems with the expertise of APC power professionals.

Part # WRMS, WRMSE or WRMSI (contact APC for full details and availability)

*\* Extended Warranty, On-Site Support and Start-up Service offering part numbers and pricing are determined by the "T" level found on each product's technical specification table listed on pages 10 through 12, 16 and 17. Not all Service Offerings are available in all locations.*

*\*\* Pricing for Off-hours upgrade, PowerAudit consulting service and Network Integration Service is available through your local APC representative.*

# APC Symmetra® RM Reaches the Summit

Cisco Systems Professional Services (PS) is the installation and consulting services arm of the Cisco Customer Advocacy department.

An integral part of any robust, redundant network design is a well-planned power strategy, utilizing a UPS to ensure power continuity. Not only do many of our customers use APC power protection solutions, at Cisco PS we have experienced APC reliability firsthand.

This spring in Quebec City, Cisco PS provided the internetworking technology for the Summit of the Americas; a meeting of 34 democratically elected heads of government from North, Central and South America and the Caribbean. Finding the right power protection solution for our Summit networking equipment was easy. The APC Symmetra® RM has all of the features our mission-critical installation required.

Rack-mountable and scalable, the APC Symmetra® RM takes up only 8U of rack space for 8-12 kVA and 15U of rack space for 6-12 kVA. The APC Symmetra® RM also offers N+1 redundancy, which was crucial for the Summit's high availability needs. The APC Symmetra® RM operated smoothly and reliably and supported a significant load for the duration of the Summit.

Thanks to APC, our UPS needs were provided for in a timely and cost effective manner. We enjoyed partnering with APC at the Summit not only because of their excellent products, but also because of their professionalism.



*"The APC Symmetra RM backing up our Cisco network installation at the Summit of the Americas helped keep the lines of communication open."*

**Trevor Rodriguez, Program Manager, Cisco Systems**

## APC Symmetra Awards



**Internet Telephony**

**Communications Solutions**

**Secure Computing Magazine (Europe)**

**Comdex (Japan)**

**01 Reseaux (France)**

**Information Management (UK)**

**Secure Computing Magazine (UK)**

**Information Week**

**Byte Magazine**

**VAR Business**

**Product of the Year (2000)**

**Product of the Year (2000)**

**Best Buy (1999)**

**Best of Comdex (1999)**

**Editor's Choice (1999)**

**Best New Information Security Product (1999)**

**Best Buy-Editor's Choice (1998)**

**What's Hot (1997)**

**5-Star Rating (Outstanding) 1997**

**Editor's Choice (1997)**



APC's manufacturing system is certified to ISO9001 & ISO14001 standards.

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