

Symmetra PX 96/160

Scalable from 16 kW to 160 kW

Modular, scalable, high-efficiency power protection for data centers



High-performance, right-sized, three-phase power protection with industry-leading efficiency, availability, and performance for small and medium data centers or high-density zones

- Modular and scalable without forced shutdowns
- High-efficiency double conversion technology (95%)
- Redundant power, runtime, and optional power distribution in a single unit
- High-density design
- Low total cost of ownership
- Unity power factor corrected
- Optional ultra-efficient, ultra-safe modular power distribution
- Rack-based for agility and aesthetics

Features and benefits

The right-sized UPS for demanding business-critical applications

The APC™ Symmetra™ PX 96/160 is a world-class, high-efficiency power protection system designed to cost-effectively provide redundancy and high levels of availability while simplifying right-sizing of your data center.

The Symmetra PX 96/160 kW UPS is a true modular system, made up of hot-swappable power, battery, intelligence, and bypass modules that facilitate easy installation and efficient service. This architecture can scale in increments of 16 kW up to 160 kW as demand grows or higher levels of availability are required in your data center.

Designed exclusively for the Symmetra PX 96/160, the optional Integrated 160 kW Modular Power Distribution Unit combines a modular power distribution unit, battery cabinet, and maintenance bypass panel into a single enclosure, ensuring safe expansion of the power distribution system without hot work, without scheduling downtime, and without expanding the UPS footprint. The Symmetra PX 96/160 is built into standard APC NetShelter™ SX racks, aesthetically promoting quick installation and agility in a changing environment while minimizing the solution footprint to a mere 1.28 square meters for the Symmetra PX 96 kW or 1.92 square meters for the Symmetra PX 160 kW.

The highly manageable Symmetra PX 96/160 features self-diagnostic capabilities, increasing overall data center reliability. Standardized, factory-assembled modules mitigate the risk of human error during installation or routine maintenance procedures. Suitable in small and medium data centers or high density zones of larger data centers, the Symmetra PX 96/160 delivers the efficient, modular, high-availability power protection that your business-critical applications require.

Symmetra PX 96/160

Availability

Hot-scalable 16 kW power modules

Redundant intelligence module

Hot-swappable power, battery, and intelligence modules

Hot-swappable static bypass switch

Self-diagnosing, field-replaceable modules

Toolless module replacement

Total cost of ownership

TÜV-verified high efficiency (95% at 35% load)

Unity power factor corrected

Powerful, high-performance batteries

Scalability

Adaptable 16 kW to 160 kW power capacity

N+0 or N+1 module-level redundancy

Extended battery runtime available

Manageability

Dual mains input, top or bottom feed

Embedded network management

Remote access over HTTP, Telnet, SNMP

Local access at PowerView display interface

Configurable alarm notifications

StruxureWare™ Central compatible

Options

Integrated modular power distribution (36 poles)

Additional modular power distribution (up to 72 poles)

Line-up/remote extended runtime battery frames

Secondary network management card (HTTP/Telnet/SNMP)

Typical applications

Small/medium data centers

High-density zones of large data centers

Support and service

Included:

Start-up service

Factory warranty

Optional:

Assembly

Preventive maintenance

On-site warranty extension

Advantage plans

Symmetra PX 96/160 features



1 Dual mains input/output

Allows for top or bottom feed connection to two separate power inputs for increased availability

2 Hot-swappable battery module

Connected in parallel for increased availability, these hot-swappable battery modules feature advanced battery monitoring and temperature-compensated battery charging that extends battery life, and hot swappability lowers the cost of replacement and mean time to repair (MTTR). Additional battery frames can be added for longer run times

3 Premium line-up/remote external battery enclosure

A total of four enclosures can be connected to the UPS, allowing the UPS to be configured to your data center requirements while offering extended runtimes & availability

4 High efficiency (95%) power module - down to 35% loading

Independently verified by TÜV, these high-efficiency double conversion power modules reduce power and cooling costs, saving you money while delivering the optimal power protection your data center deserves

5 LCD display interface

Offers a clear text-based overview of alarms, status data, and system configuration options

6 Main intelligence module and redundant intelligence module

Automated predictive diagnostics expand your ability to monitor and control energy costs; back-up for the main intelligence module guarantees the maximum possible availability for your system

Symmetra PX 96/160 features, continued



7 Network management card

Provides UPS status and event notification. SmartSlot positions support dry contact, environmental monitor, building management system (Modbus™/Jbus), and additional network management cards

8 Built-in static bypass switch

The hot-swappable static bypass switch transfers the load to utility power without interruption in case of heavy overload or faulty conditions, and ensures that even in 125% overload conditions, the data center remains operational

9 High-density footprint

Protect power and provide runtime in a mere 1.28 square meters for the Symmetra PX 96 kW or 1.92 square meters for the Symmetra PX 160 kW. Integrate modular power distribution and maintenance bypass without changing the footprint, freeing valuable data center space for IT equipment

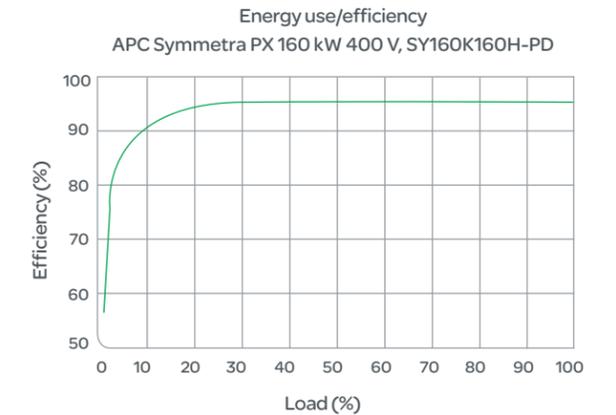
10 Modular power distribution (optional)

Adapt the modular power distribution solution to meet changing demand—without a forced shutdown. Monitor breaker positions and simplify power management with output metering and branch current/circuit monitoring

The high-density, efficient, scalable, modular UPS

Energy efficiency

Independently verified by TÜV, the Symmetra PX 96/160 is 95% efficient to 35% loading, saving power and cooling costs and significantly reducing your overall total cost of ownership



Curve fit to measured efficiency data. All measurements taken in normal operating mode, at typical environmental conditions, with nominal electrical input and balanced resistive load (PF = 1.0) output

Scalability and modularity

Scalable from 16 kW to 160 kW

- Modular components simplify future expansion as your load grows
- N+1 redundant up to 144 kW
- Optional modular power distribution
- Hot swappable power and battery modules
- Hot-swappable breaker modules for UPS units with power distribution
- All components conform to NetShelter SX form-factor (H x W x D: 78.7 x 23.6 x 42.1 in, 1991 x 600 x 1070 mm)
- One-time installation service
Note: To expand the system from 96 kW to 160 kW, the input power cabling must be sized for a Symmetra PX 160 kW at initial installation

Sample configurations



Symmetra PX 96

1 power frame
1 battery frame
Up to 6 power modules
Up to 9 battery modules



Symmetra PX 160

1 power frame
2 battery frames
Up to 10 power modules
Up to 15 battery modules



Symmetra PX 96 with power distribution

1 power frame
1 integrated power distribution, battery, and MBP frame
Up to 6 power modules
Up to 9 battery modules



Symmetra PX 160 with power distribution

1 power frame
1 battery frame
1 integrated power distribution, battery, and MBP frame
Up to 10 power modules
Up to 15 battery modules

The high-density, efficient, scalable, modular UPS

High-density and flexible configuration

- Modular, energy-efficient design gives the Symmetra PX the highest power density in its class
- Frees up valuable data center space
 - Up to 96 kW in 1.28 square meters (battery footprint included)
 - Up to 160 kW in 1.92 sq. meters (battery footprint included)
- Integrated hot-scalable power, runtime, and distribution maximize solution density footprint
- Modular architecture simplifies installation by offering the flexibility that today's data centers require
 - Top feed, bottom feed
 - Single feed, dual feed



160 kW of protection in three NetShelter enclosures (1.92 m²)

Accessories

Extended runtime (XR) frames

To increase the number of minutes your load can remain on battery, add optional battery extended runtime frames. A maximum of four battery frames can be connected to the Symmetra PX 96/160 to extend runtime



Modular power distribution

APC modular power distribution units eliminate the need to schedule downtime to add a breaker. Power distribution modules plug into a touch-safe backplane that shields users from dangerous amperage. The power distribution system simplifies power management by including output metering, branch current/circuit monitoring, and auto-detection by the StruxureWare suite of management options. Multiple power ratings and power cord lengths for low to high power guarantee compatibility and convenient installation



Management cards

SmartSlot positions can be used to expand the monitoring capabilities of the UPS with these APC management cards:

- Network management card: One management card is included with the UPS; it enables you to monitor and control the UPS over the network. Optionally, install a second management card for redundancy
- Dry contact/environmental cards: Monitor the conditions of the UPS and its environment using external devices such as sensors
- Building management system (Modbus/Jbus) card: Enable a building management system to monitor the UPS



Technical specifications: Symmetra PX 96/160

UPS rating kVA/kW (PF = 1)	96 kW	160 kW
Mains input (Normal operation)		
Grid system	3 phases + neutral + ground	3 phases + neutral + ground
Voltage range (full load)	340-477 V	340-477 V
Frequency range	40-70 Hz with 10 Hz/sec slew rate	40-70 Hz with 10 Hz/sec slew rate
Power factor (PF)	>0.99 @ load > 25%	>0.99 @ load > 25%
I thd (full load)	< 5%	< 5%
Nominal input current	155 A @ 380 V, 146 A @ 400 V, or 142 A @ 415 V	256 A @ 380 V, 243 A @ 400 V, or 234 A @ 415 V
Maximum input current	(Continuous, at 340 V mains voltage) 175 A @ 380 V, 400 V, or 415 V	(Continuous, at 340 V mains voltage) 290 A @ 380 V, 400 V, or 415 V
Maximum input short-circuit level	30 kA	30 kA
Protection	Backfeed contactor	Backfeed contactor
Bypass input (Bypass operation)		
Grid system	3 phases + neutral + ground	3 phases + neutral + ground
Voltage (nominal)	380 V / 400 V / 415 V	380 V / 400 V / 415 V
Voltage (range)	+/-10% (from selected voltage)	+/-10% (from selected voltage)
Frequency (nominal)	50/60 Hz	50/60 Hz
Frequency (range)	+/-0.1 Hz, +/-3 Hz, +/-10 Hz (user selectable)	+/-0.1 Hz, +/-3 Hz, +/-10 Hz (user selectable)
Nominal input current	147 A @ 380 V; 139 A @ 400 V; 134 A @ 415 V	243 A @ 380 V; 231 A @ 400 V; 223 A @ 415 V
Maximum overload input current	184 A @ 380 V, 174 A @ 400 V, 167 @ 415 V	304 A @ 380 V; 289 A @ 400 V; 279 A @ 415 V
Output		
Power rating	96 kW	160 kW
Grid system	3 phases + neutral + ground	3 phases + neutral + ground
Voltage (nominal)	380 V / 400 V / 415 V L-L	380 V / 400 V / 415 V L-L
Output current (nominal)	147 A @ 380 V; 139 A @ 400 V; 134 A @ 415 V	243 A @ 380 V; 231 A @ 400 V; 223 A @ 415 V
Maximum battery operation time	Unlimited	Unlimited
Frequency regulation	50/60 Hz bypass synchronized, 50/60 Hz +/-0.1% free running	50/60 Hz bypass synchronized, 50/60 Hz +/-0.1% free running
Synchronized slew rate	Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/sec	Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/sec
Overload (normal operation)	150% for 60 seconds, 125% for 10 min, 100% continuous	150% for 60 seconds, 125% for 10 min, 100% continuous
Overload (battery operation)	150% for 60 seconds	150% for 60 seconds
V thd	< 2% from 0 to 100% linear load, < 6% full non-linear load according to IEC/EN62040-3	< 2% from 0 to 100% linear load, < 6% full non-linear load according to IEC/EN62040-3
Load PF	from 0.5 leading to 0.5 lagging without any derating	from 0.5 leading to 0.5 lagging without any derating
Efficiency		
Normal operation	≥ 95% at 35% - 100% load; ≥90% @ 15% - 34% load	≥ 95% at 35% - 100% load; ≥90% @ 15% - 34% load
Battery operation	≥ 94% at 25% - 100% load; ≥90% @ 15% - 34% load	≥ 94% at 25% - 100% load; ≥90% @ 15% - 34% load

Preliminary – Subject to change without notice

Technical specifications: Symmetra PX 96/160, continued

UPS rating kVA/kW (PF = 1)	96 kW	160 kW
Mechanical		
Maximum dimensions (HxWxD)	1,991 x 1,200 x 1,070 mm	1,991 x 1,800 x 1,070 mm
Net weight	1,814 kg (3,991 lbs)	2,806 kg (6,173 lbs)
Shipping weight	1,963 kg (4,319 lbs)	3,037 kg (6,681 lbs)
Maximum module capacity		
16 kW power modules	6	10
Battery modules	9	15
Power distribution modules	6	12
Regulatory compliance		
CE, UL®1778, EN/IEC62040-1-1, E/IEC/UL60950-1, EN50091-2 / IEC62040-2 (class A), FCC15A, EN/IEC62040-3		

Preliminary – Subject to change without notice

Technical specifications: 160 kW Modular PDU

Modular Power Distribution Unit (PDUM160H-B)	
Output	
Output voltage	230 V
Input	
Voltage	400 V
Load capacity	160 kVA
Input mains	Dual
Frequency	40-70 Hz
Maximum input current	295 A
Physical	
Weight	411 kg (906 lb)
Shipping weight	444 kg (978 lb)
Dimensions (H x W x D)	1991 x 600 x 1070 mm
Shipping dimensions (H x W x D)	2150 x 848 x 1210 mm

Preliminary – Subject to change without notice