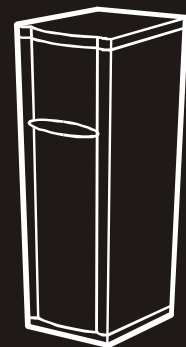


Symmetra PX

10-80 kW
208 V

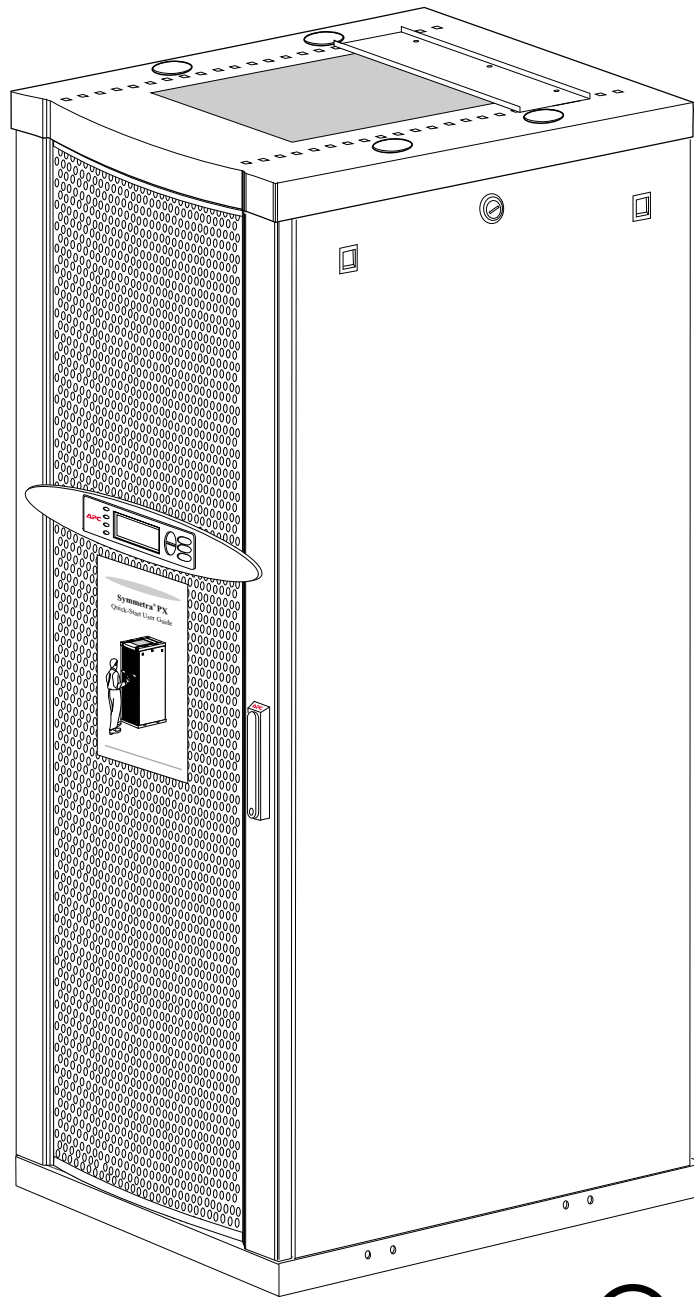
Site Preparation Guide



Symmetra[®] PX

10-80 kW 208V

Site Preparation Guide



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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This guide contains information on how to prepare the site for the installation of the UPS and optional equipment.

Symbols used in this guide



CAUTION!

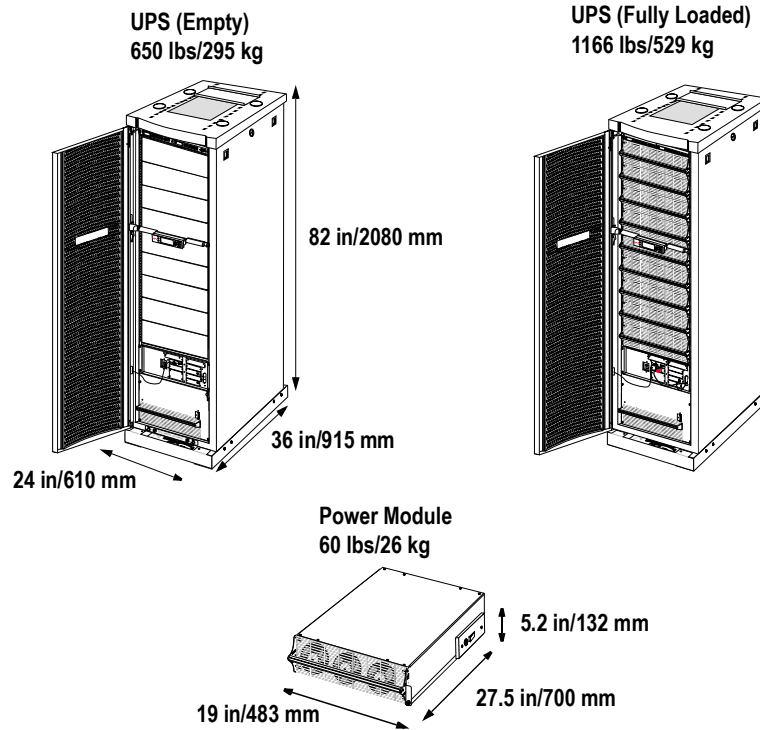
Read this important information to avoid equipment damage.



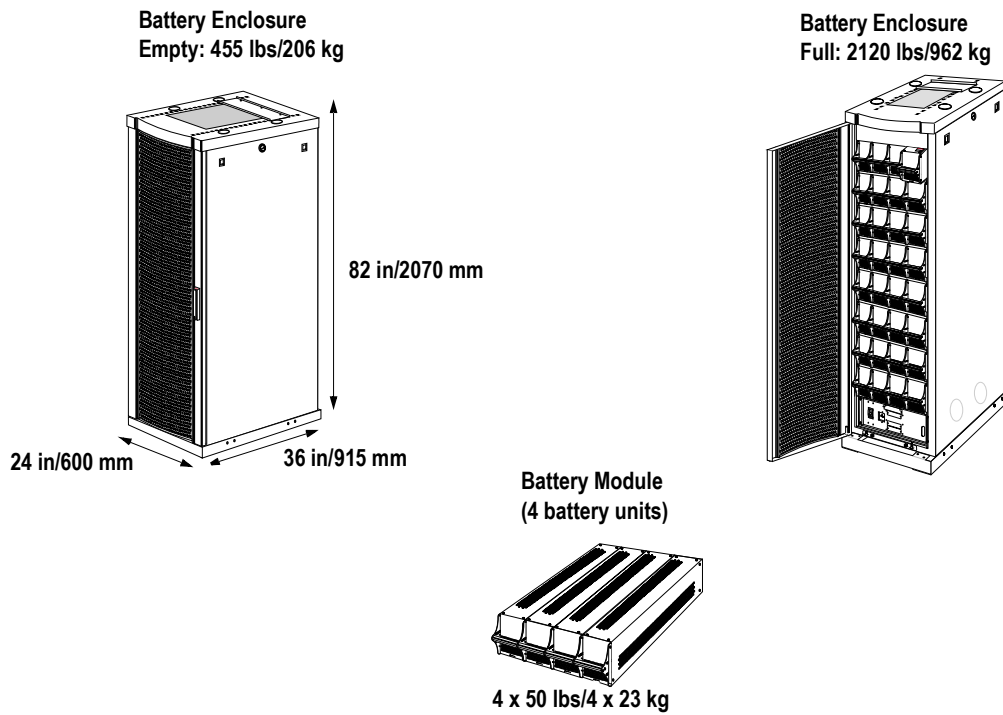
See also

Indicates that more information is available on the same subject in a different manual.

Overview of System Components



Option: Symmetra PX 10-80 kW Battery Enclosure



Operating Environment

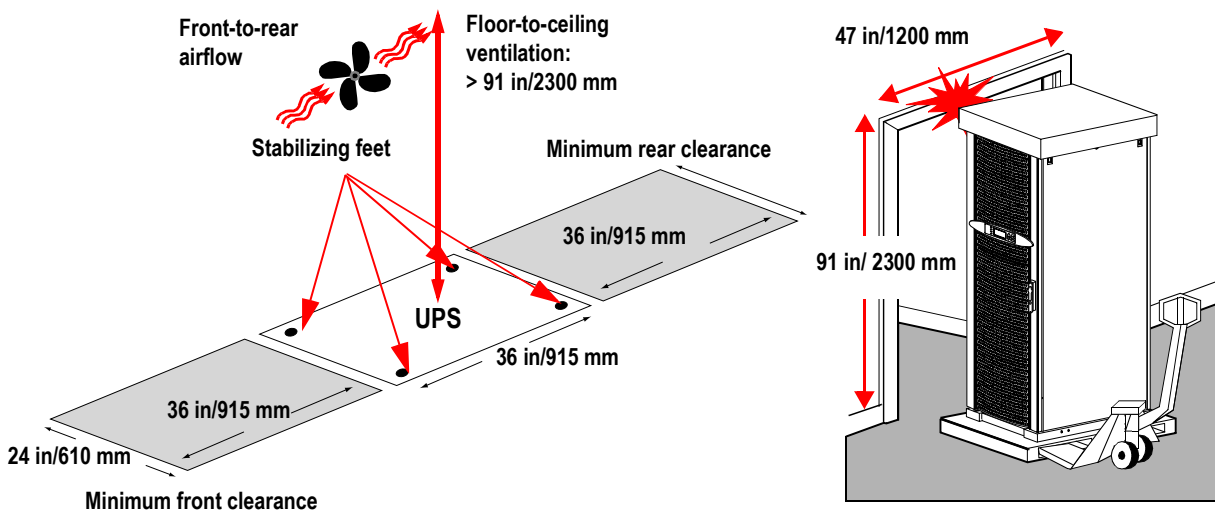
Install the UPS in an Indoor, Controlled Environment				
Temperature Range: 32°-104°F	Keep Ventilated Front-to-Rear Airflow	Relative Humidity: <95% Non-condensing	No Conductive Dust or Corrosive Fumes	Max. Elevation: 10,000 ft.
Full Load Heat Loss at Nominal Mains: 23,743 BTU/hr (6,957 Watts)				

Space Considerations



CAUTION!

If the UPS exceeds doorway height, remove from pallet and wheel through door (see Overview of System Components section for UPS height excluding pallet).



CAUTION!

The UPS and the XR Battery Enclosure are heavy. Ensure that the floor and sub-floor can support the total weight of the configuration when concentrated on the stabilizing feet.

System Electrical Information

CAUTION!



All electrical power and power control wiring must be installed by a qualified electrician, and must comply with local and national regulations for maximum power rating.



Note

All current values are based on 80 kW maximum configuration of the UPS.

Input

Input voltage	3-phase 208V (166-240V)
Input current (nominal, per phase)	244 A
Maximum input current (continuous, at minimum mains voltage)	321 A
Input current protection for mains source or single mains supply (external to UPS, not supplied)	350 A *note 3
Input current protection for bypass source in dual mains configuration (external to UPS, not supplied)	300 A *note 4
Input frequency (programmable)	50/60 Hz

Output

Output voltage (on line) 380 V	3-phase 208V
Output current (nominal)	222 A
Maximum output current (in bypass at 125% overload)	277 A
Neutral output current (with 100% switch mode load)	384 A *note 8
Output current protection (external to UPS, not supplied)	300 A *note 6
Output frequency (programmable)	50/60 Hz, Synchronized to bypass input (if present)

Overcurrent device and disconnect switch for external safety

DC bus voltage (nominal)	± 192 V
DC voltage rating of the battery supply	250 V
Maximum available battery supply fault current	10 KA

Notes

Recommended source connection.

1. Input electricity to be provided from a dedicated, grounded 4-wire Wye utility power source with a grounded neutral.
2. Ensure clockwise voltage phase rotation (L₁,L₂,L₃).

Recommended input protection (dual mains configuration).

3. Mains input: 350 Amp 3-Pole AC circuit breaker with 30 kAIC.
4. Bypass input: 300 Amp 3-pole AC circuit breaker with 30 kAIC.
Note: If your installation does not include an Isolation Transformer (optional equipment), use a 300 Amp Class “J” current limiting fuse on each input phase.

Recommended input protection (single mains configuration).

5. Mains input: 350 Amp 3-Pole AC circuit breaker with 30 kAIC.
Note: If your installation does not include an Isolation Transformer (optional equipment), use a 350 Amp Class “J” current limiting fuse on each input phase.

Recommended output (single and dual mains).

6. Output: 300 Amp 3-pole AC circuit breaker with 30 kAIC.

Recommended wiring for a 86°F/30°C temperature environment.

7. Mains input wires: 2×4/0 AWG 167°F/75°C rated copper wire (for single and dual mains installation).
Bypass input wires: 2×3/0 AWG 167°F/75°C rated copper wire (for dual mains installation).
Output wires: 2×3/0 AWG 167°F/75°C rated copper wire.
Refer to NEC Articles 310-15, 310-16 and 315 for further information.



The installation must comply with local and national codes.

Note

8. Neutral output wires: rate for 173% of output phase current if feeding all Switch Mode Power Supply loads without power factor correction.
9. Ground wires: sized in accordance with NEC Article 250-122 and Table 250-122.
10. Use Molex lug type (see table) or equivalent and crimp to manufacturer’s specifications.

Cable Size (AWG)	Terminal Bolt Diameter	Cable Lug Type	Crimping Tool	Die
1/0	M10	LCA1/0-38-X	CT-2001	CD-2001-1/0
2/0	M10	LCA2/0-38-X	CT-2001	CD-2001-2/0
3/0	M10	LCA3/0-38-X	CT-2001	CD-2001-3/0
4/0	M10	LCA4/0-38-X	CT-2001	CD-2001-4/0

This UPS system has no built-in disconnection devices for AC output and DC input. An AC output over-current protection and AC output disconnect must be provided by the customer. For customer-supplied external batteries, over-current protection and a disconnecting device for the battery circuits must also be provided by the customer.

EPO switch wiring (required)

The UPS is to be connected to either a dry contact or a 24Vdc Emergency Power Off (EPO) switch.

The EPO circuit is considered Class 2 and SELV (Safety Extra Low Voltage). A SELV circuit is isolated from primary circuitry through an isolating transformer and designed so that under normal conditions, the voltage is limited to 42.4Vac peak or 60Vdc. SELV and Class 2 circuits must be isolated from all primary circuitry. Do not connect any circuit to the EPO terminal block unless it can be confirmed that the circuit is SELV or Class 2.

Use one of following cables to connect the UPS to the EPO switch:

For installations in US

- CL2Class 2 cable for general purpose use.
- CL2PPlenum cable for use in a vertical shaft or from floor to floor.
- CL2R Racer cable for use in dwellings and raceways.
- CL2XLimited use cable for dwellings and raceways.

For installations in Canada

- CL2RCertified, type ELC (Extra-Low-Voltage Control Cable).
- CL2XCertified, type ELC (Extra-Low-Voltage Control Cable).

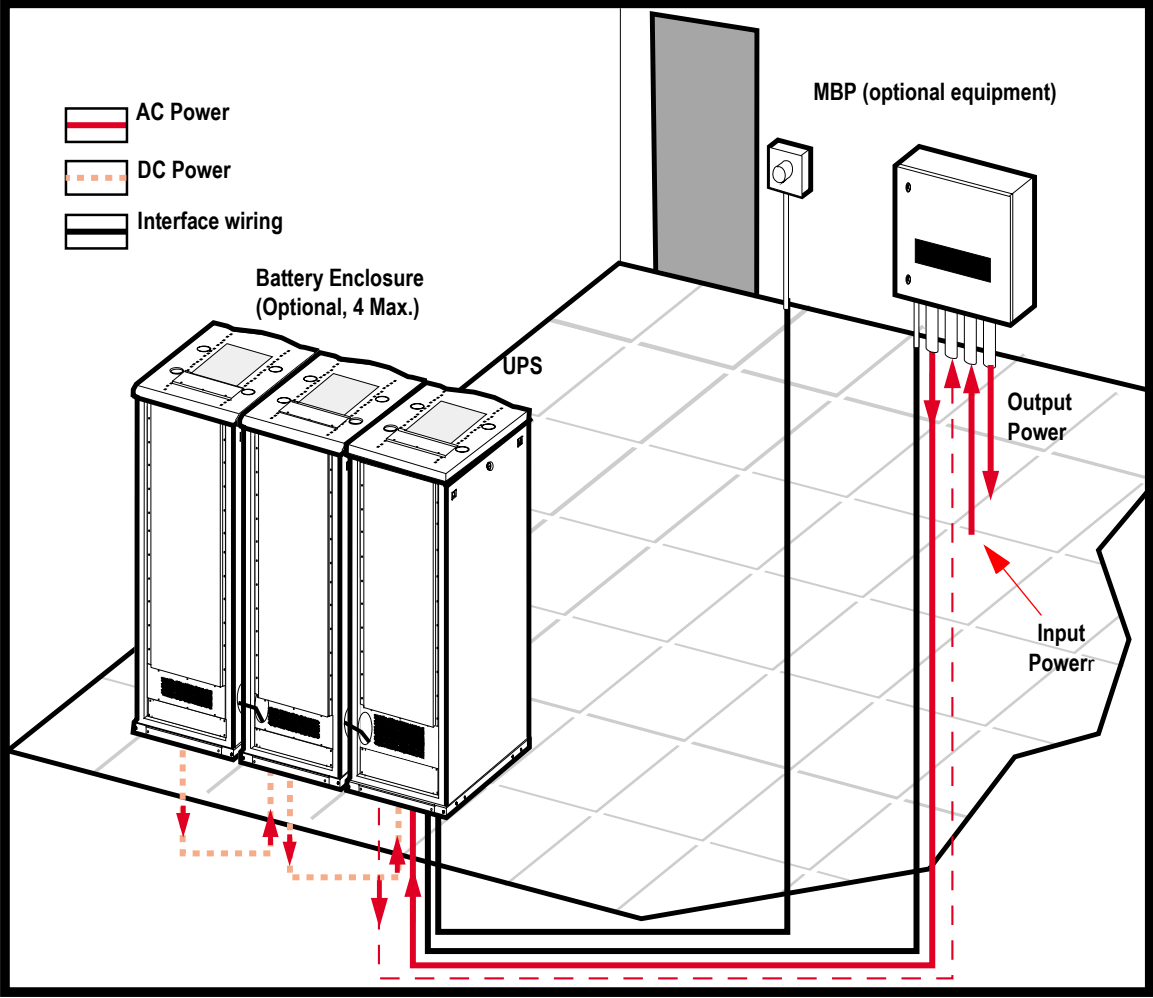
Option: 10-80 kW Battery Enclosure

Option: 10-80 kW Battery Enclosure

Battery voltage (nominal)	+/- 192 V
Battery current (at full load)	223 A at ± 192 V
Max. current (at end of discharge)	266 A at ± 160 V

If battery enclosure is customer-supplied, refer to product-specific data.

Basic Wiring Overview



Site Preparation Checklist

System Components. Have you –

- verified that UPS output power meets current and future load (kW) requirements?
- added N+1 redundancy with an additional Power Module (Part # SYPM10KF).

The UPS houses up to 9 power modules (up to 80 kW, N+1). Have you -

- determined minimum battery run time requirement based on load (kW) and selected the proper number of Battery Enclosures (SYCF8BF) and Battery Modules (SYBT4)?
- added N+1 redundancy with an additional Power Module (Part # SYPM10KF).

Each Battery Enclosure houses up to 8 Battery Modules (32 battery units). Have you –

- considered Management Card accessories to meet monitoring requirements?
- considered Service Program or Extended Warranty plan?

Site Preparation. Have you –

- verified that rated input voltage and current are available? (see System Electrical Information).
- considered correct operating space, floor strength (Section on System Components), cooling, and environment (Section on Operating Environment).
- reviewed all electrical requirements to determine wiring requirements?

Arrival Preparation. Have you –

- verified that space and handling equipment are available to receive the UPS? (including unloading the UPS from the delivery truck).
- scheduled an electrician to install the UPS?

APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC Web sites for specific countries, each of which provides customer support information.
 - **www.apc.com/support/**
Global support searching APC Knowledge Base and using e-support.
- Contact an APC Customer Support center by telephone or e-mail.
 - Regional centers:

Direct InfraStruXure Customer Support Line	(1)(877)537-0607 (toll free)
APC headquarters U.S., Canada	(1)(800)800-4272 (toll free)
Latin America	(1)(401)789-5735 (USA)
Europe, Middle East, Africa	(353)(91)702000 (Ireland)
Japan	(0) 3 5434-2021
Australia, New Zealand, South Pacific area	(61) (2) 9955 9366 (Australia)

- Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

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