Symmetra PX 96/160

Scalable from 16 kW to 160 kW

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

The right-sized UPS for demanding business-critical applications

The Schneider Electric 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 the right-sizing of your data center.

The Symmetra PX 96/160 kW UPS is a true modular system, made up of 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.

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Symmetra PX 96/160

Features and benefits

Designed exclusively for the Symmetra PX 96/160, the optional integrated 160 kW modular power distribution unit (PDU) combines a PDU, battery cabinet, and maintenance bypass panel into a single enclosure, enabling rapid expansion of the power distribution system without expanding the UPS footprint. The Symmetra PX 96/160 is built into standard Schneider Electric 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

- Swappable power, battery, and intelligence modules
- N+0 or N+1 module-level redundancy
- Toolless module replacement
- Self-diagnosing, field-replaceable modules
- Redundant intelligence module
- Swappable static bypass switch

Total cost of ownership

- TÜV-verified high efficiency (95% at 35% load)
- Unity power factor corrected
- Integrated monitoring of modular batteries
- One-year warranty and start-up service included

Scalability

- Scalable 16 kW power modules
- Adaptable 32 kW to 160 kW power capacity
- Extended battery runtime available

Manageability

- Dual-mains input, top or bottom feed
- Embedded network management
- Remote access over HTTP, HTTPS, Telnet, SSH, SNMPv1&3
- Local access at PowerView™ display interface
- Configurable alarm notifications
- StruxureWare™ Data Center Expert compatible

Typical applications

- Small/medium data centers
- High-density zones of large data centers
Symmetra PX 96/160

Symmetra PX 96/160 features

1. **Dual-mains input/output**
   Dual-mains input/output allows top or bottom feed connection to two separate power inputs for increased availability.

2. **Swappable battery module**
   Connected in parallel for increased availability, these swappable battery modules feature advanced battery monitoring and temperature-compensated battery charging that extends battery life. Swappability lowers the cost of replacement and MTTR. Additional battery frames can be added for longer runtimes.

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 and 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**
   Display 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; backup for the main intelligence module guarantees the maximum possible availability for your system.
7. **Network management card**
   Provides UPS status and event notification — SmartSlot™ positions supporting dry contact, environmental monitor, building management system (modbus/Jbus), and additional network management cards.

8. **Built-in static bypass switch**
   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 with easy-to-install power distribution modules. Monitor breaker positions and simplify power management with output metering and branch current/circuit monitoring.

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**Symmetra PX 96/160 features (continued)**

Factory-assembled and -tested power distribution modules feed power to IT racks.

16 kW/kW power modules provide high efficiency even at low load levels.

Modular batteries provide reduced MTTR scalable runtime, and battery monitoring at the individual module level.

3-in-1 modular power distribution, maintenance bypass, and battery cabinet.
Symmetra PX 96/160
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.

Modular batteries
Modular batteries can be added or replaced quickly and easily.
- Simply slide the battery module into place. All DC connections are preconfigured and insulated — no cable installation or contact with DC terminals required.
- Patented rear connectors enable toolless connection and disconnection.

Battery module
Parallel strings increase availability.
- One row of modules makes one string. All battery modules support the load, so no individual battery is a single point of failure.

Now, even batteries look great in the data center.
- No messy-looking cables — battery connections are made inside the battery unit case.
- Fully integrated system housed in a standard IT rack form factor.

Batteries are monitored at the individual module level.
- Each individual module monitors current, voltage, and temperature and reports the information to the UPS.
- No time wasted — the online battery chart helps you quickly identify and replace faulty modules.
- See the battery data that interests you — alarm notifications are user configurable

Scalability and modularity
Modular components simplify future expansion from 16 – 160 kW.
Sample configurations:

- Symmetra PX 96 with 6 minutes of runtime (PF=1)
  - 1 power cabinet
  - 1 battery cabinet
  - 6 power modules
  - 9 battery modules

- Symmetra PX 160 with 6 minutes of runtime (PF=1)
  - 1 power cabinet
  - 2 battery cabinets
  - 10 power modules
  - 15 battery modules

- Symmetra PX 96 with power distribution and 6 minutes of runtime (PF=1)
  - 1 power cabinet
  - 1 integrated power distribution, battery, and MBP cabinet
  - 6 power modules
  - 9 battery modules

- Symmetra PX 160 with power distribution and 6 minutes of runtime (PF=1)
  - 1 power cabinet
  - 1 battery cabinet
  - 1 integrated power distribution, battery, and MBP cabinet
  - 10 power modules
  - 15 battery modules

Extend the runtime of any Symmetra PX 96/160 UPS by installing up to four battery cabinets.
Symmetra PX 96/160

The high-density, efficient, scalable, modular UPS

High-density and flexible configuration

- **Symmetra PX**: highest power density in its class due to modular, energy-efficient design
- Frees up valuable data center space:
  - Up to 96 kW in 1.28 m² (battery footprint included)
  - Up to 160 kW in 1.92 m² (battery footprint included)
- Integrated 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

Accessories

**Extended runtime 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 for increased runtime.

**Modular power distribution**
Modular power distribution mitigates the need to predict the future requirements and configurations of your data center. Factory-assembled power distribution modules plug into a 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 Schneider Electric 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)**
  Enables a building management system to monitor the UPS.

**Maintenance bypass panels**
Wall-mount and floor-mount maintenance bypass panels isolate the UPS from the critical load during service procedures.

**Classic battery cabinet**
Classic battery systems provide optimized, standardized battery configurations in a compact footprint for the electrical room.

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* Available in select regions; contact your Schneider Electric representative for details.
Symmetra PX 96/160

StruxureWare for Data Centers software suite
In the data center environment, our Symmetra PX 96/160kW UPS is fully managed through StruxureWare for Data Centers, an integrated suite of data center infrastructure management applications. It enables businesses to prosper by managing their data centers across multiple domains, providing actionable intelligence for an ideal balance of high availability and peak efficiency throughout the entire data center life cycle. StruxureWare is a key element of Schneider Electric EcoStruxure™—an integrated hardware and software system architecture for intelligent energy management. EcoStruxure provides efficient, modular, high-availability power protection that your business-critical applications require.

A comprehensive portfolio of services
Schneider Electric™ Critical Power & Cooling Services provides the expertise, services, and support you need for your building, industry, power, or data center infrastructure. Our world-class life cycle services offer a smart way to install and maintain your critical applications, ensuring your systems are always running at peak performance.

Technical specifications: 160 kW modular PDU

<table>
<thead>
<tr>
<th>Modular Power Distribution Unit (PDUM160H-B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
</tr>
<tr>
<td>Output voltage</td>
</tr>
<tr>
<td>Power distribution modules</td>
</tr>
<tr>
<td><strong>Input</strong></td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>Load capacity</td>
</tr>
<tr>
<td>Input mains</td>
</tr>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Maximum input current</td>
</tr>
<tr>
<td><strong>Physical</strong></td>
</tr>
<tr>
<td>Weight</td>
</tr>
<tr>
<td>Shipping weight</td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
</tr>
<tr>
<td>Shipping dimensions (H x W x D)</td>
</tr>
</tbody>
</table>

Preliminary — Subject to change without notice.
## Technical specifications: Symmetra PX 96/160

### UPS rating kVA/kW (PF = 1)

<table>
<thead>
<tr>
<th>UPS rating</th>
<th>96 kW</th>
<th>160 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid system</td>
<td>3 phases + neutral + ground</td>
<td>3 phases + neutral + ground</td>
</tr>
<tr>
<td>Voltage (full load)</td>
<td>340 – 477 V</td>
<td>340 – 477 V</td>
</tr>
<tr>
<td>Frequency range</td>
<td>40 – 70 Hz with 10 Hz/sec. slew rate</td>
<td>40 – 70 Hz with 10 Hz/sec. slew rate</td>
</tr>
<tr>
<td>Power factor (PF)</td>
<td>&gt; 0.98 at load &gt; 50%</td>
<td>&gt; 0.98 at load &gt; 50%</td>
</tr>
<tr>
<td>I thd (full load)</td>
<td>&lt; 5%</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Nominal input current</td>
<td>154 A @ 380 V, 141 A @ 400 V, or 141 A @ 415 V</td>
<td>256 A @ 380 V, 243 A @ 400 V, or 234 A @ 415 V</td>
</tr>
<tr>
<td>Maximum input current</td>
<td>169 A @ 380 V, 160 A @ 400 V, or 155 A @ 415 V</td>
<td>281 A @ 380 V, 267 A @ 400 V, or 258 A @ 415 V</td>
</tr>
<tr>
<td>Maximum input short-circuit level</td>
<td>30 kA</td>
<td>30 kA</td>
</tr>
</tbody>
</table>

### 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 A @ 415 V | 304 A @ 380 V, 289 A @ 400 V, 279 A @ 415 V |

### Output

<table>
<thead>
<tr>
<th>Power rating</th>
<th>96 kW</th>
<th>160 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid system</td>
<td>3 phases + neutral + ground</td>
<td>3 phases + neutral + ground</td>
</tr>
<tr>
<td>Voltage (nominal)</td>
<td>380 V/400 V/415 V L-L</td>
<td>380 V/400 V/415 V L-L</td>
</tr>
<tr>
<td>Output current (nominal)</td>
<td>147 A @ 380 V, 139 A @ 400 V, 134 A @ 415 V</td>
<td>147 A @ 380 V, 139 A @ 400 V, 134 A @ 415 V</td>
</tr>
<tr>
<td>Maximum battery operation time</td>
<td>Unlimited</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Frequency regulation</td>
<td>50/60 Hz bypass synchronized, 50/60 Hz +/-0.1% free running</td>
<td>50/60 Hz bypass synchronized, 50/60 Hz +/-0.1% free running</td>
</tr>
<tr>
<td>Synchronized slew rate</td>
<td>Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/sec.</td>
<td>Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/sec.</td>
</tr>
<tr>
<td>Overload (normal operation)</td>
<td>150% for 30 seconds, 125% for 10 min. 100% continuous</td>
<td>150% for 30 seconds, 125% for 10 min. 100% continuous</td>
</tr>
<tr>
<td>Overload (battery operation)</td>
<td>150% for 30 seconds</td>
<td>150% for 30 seconds</td>
</tr>
<tr>
<td>V thd</td>
<td>&lt; 2% from 0 to 100% linear load, &lt; 5% full nonlinear load according to IEC/EN 62040-3</td>
<td>&lt; 2% from 0 to 100% linear load, &lt; 5% full nonlinear load according to IEC/EN 62040-3</td>
</tr>
<tr>
<td>Load PF</td>
<td>from 0.5 leading to 0.5 lagging without any derating</td>
<td>from 0.5 leading to 0.5 lagging without any derating</td>
</tr>
</tbody>
</table>

### 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 |

### Mechanical

| Maximum dimensions (HxWxD) | 1,991 x 1,200 x 1,070 mm | 1,991 x 1,800 x 1,070 mm |
| Net Weight | 1748 kg | 2812 kg |
| Shipping weight | 1898 kg | 3051 kg |

### Module capacity

| 16 kW power modules | 6 | 10 |
| Battery modules (6-minute runtime) | 9 | 15 |

### Regulatory compliance


Preliminary — subject to change without notice.