Symmetra® PX
10 - 40 kW, 200 V
Extended Run (XR) Battery Enclosure
Electrical Installation Guide

1 IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS
This guide contains important instructions for the UPS that should be followed during the handling of the UPS and batteries. Please follow local fire code ordinances in registering your Symmetra PX and (if applicable) the Extended Run (XR) Battery Enclosure.

WARNING!
Risk of Electric Shock

CAUTION!
Read this important information
Indicates that a switch or current protection device is in the “ON” position.
Indicates that a switch is in the “OFF” position.

• All electrical power and power control wiring must be installed by a qualified electrician and comply with local and national regulations.
• The UPS contains an internal energy source. Hazardous voltage can be present even when disconnected from the power source. Follow Total Power Off Procedure to completely de-energize system (see Section 2).
• Remove all conductive jewelry such as chains, watches, and rings before handling the Battery Units.
• Battery Units do not contain serviceable parts. Only authorized personnel may open Battery Units. For general handling of batteries, see Appendix A.
• Do not dispose Battery Units in a fire as they may explode. Do not mutilate Battery Units. Released electrolyte may be toxic and harmful to the skin and eyes.
• For configurations including customer-supplied external batteries, refer to manufacturer’s battery installation and maintenance instructions.

2 Total Power OFF Procedure

WARNING!
Before electrical installations begins, verify that all systems are in the Total Power Off mode by following this procedure:

UPS

1 Set System Enable Switch to STAND-BY.
2 Set DC Disconnect to OFF
3 Remove Front Cover. Remove Battery-Securing Bracket. Remove ALL Battery Units OR pull out ONLY to Red Disconnect Line.
4 Set Utility / Mains to the OFF or "Locked Out" position.
5 Remove Front Cover. Remove Battery-Securing Bracket. Remove ALL Battery Units OR pull out ONLY to Red Disconnect Line.
6 Set Utility / Mains to the OFF or "Locked Out" position.

INSTALL THE XR BATTERY ENCLOSURE IN AN INDOOR, CONTROLLED ENVIRONMENT

Temperature Range: 0°-40°C
Keep Ventilated Front-to-Rear Airflow
Relative Humidity: <95% Non-condensing
No Conductive Dust or Corrosive Fumes
Max. Elevation: 0-3,000 m

Figure 1

Do not lift heavy loads without assistance.

<18 kg 18 - 32 kg 32 - 54 kg >54 kg
### System Electrical Requirements

**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.

<table>
<thead>
<tr>
<th>Extended Run (XR) Battery Enclosure</th>
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<tbody>
<tr>
<td>Battery Voltage (nominal)</td>
<td>+/- 192V</td>
</tr>
<tr>
<td>Battery Current (at full load)</td>
<td>115 A at +/- 192V</td>
</tr>
<tr>
<td>Max. Current (at end of discharge)</td>
<td>+/- 160V</td>
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If external batteries are customer-supplied, refer to product-specific data.

Power and ground wires provided are for internal side-panel wiring only. NOT for use in external conduits.

**Recommended Wiring:**

1. DC power Input/Output: 1/0 AWG 60 mm² (75°C) rated copper wire.
2. Recommended cable lugs: 8 mm.

**Cable Size (AWG)** | **Terminal bolt diameter: 8 mm** | **Crimping Tool** | **Die** |
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<tbody>
<tr>
<td>1</td>
<td>YA1CL2TC38</td>
<td>MD7-34R</td>
<td>W1CVT</td>
</tr>
<tr>
<td>10</td>
<td>YA25L2TC38</td>
<td>MD7-34R</td>
<td>W25VT</td>
</tr>
<tr>
<td>20</td>
<td>YA26L2TC38</td>
<td>MD7-34R</td>
<td>W26VT</td>
</tr>
</tbody>
</table>

### Side-Panel Wiring

1. Rearrange side panels so all inner panels have adjacent wiring holes, and outer panels are solid.
2. Remove rear hole covers before mounting inner panels.
3. Reconnect all panel ground wires. Arrange ground wire hardware as shown in step 5.
4. Torque value: 9 Nm.
5. Lock all panels.

**Recommended Cables:**

- Use key to unlock panel.
- Remove panel screws.
- Pull out panel to Battery Enclosure.
- Loosen hardware & remove ground wire as shown, using a 13-mm wrench.

**Seismic Baying Kit contents:**

- 2 baying brackets
- 10 bolts
- 40 washers
- 20 lock washers
- 20 nuts

**Install baying brackets between units as shown (1 in front, 1 at rear).** Line up the 5 holes on each upright post of the UPS/XR rack with the 5 corresponding holes in the baying bracket. Position the top of the bracket at the level of the lower lip of the roof cover. Pass bolts through the post of one rack through the baying bracket and through the post of the other rack to create a “sandwich”. Position a washer under each bolt head and under each locking washer.

**Route DC power and ground wires from/to each XR Battery Enclosure to form a daisy chain to the UPS.**

**Route XR comm cable from rear of the UPS to first adjacent XR Battery Enclosure.**

**Save XR terminator for step 12.**

**Route all other XR comm cables to form a daisy chain of XR Battery Enclosures (as required).**

### Rear or Bottom Wiring

For side-panel wiring option, see Section 5.

Make sure unit is in its location of use before wiring begins.

Use standard CAT 5 data cable. Maximum length: 50 m.

**REAR WIRING**

1. Loosen screws to remove plate.
2. Punch holes as required and reinstall panel before mounting wiring hardware.
3. Loosen screws to remove plate.
4. Punch holes.

**BOTTOM WIRING**

1. Punch holes in inner panel for side-panel wiring.
2. Reconnect all panel ground wires.
3. Reinstall ground wire hardware.
4. Use key to unlock panel.
5. Remove panel screws.
6. Pull out panel to Battery Enclosure.
7. Use key to unlock panel.
8. Punch holes in inner panel for side-panel wiring.
9. Reconnect all panel ground wires.
10. Reinstall ground wire hardware.

Electrical Installation / XR Battery Enclosure, 10-40 kW, 200 V
6 DC Power Input/Output Wiring

Power Terminal Lug Diameter is 8 mm – Torque Value: 6 Nm.

WIRING STEPS

1. Connect XR Battery Enclosure DC Output to UPS DC Input. Connect XR Battery Enclosures to UPS ground stud.

2. If applicable: Connect 2nd XR Battery Enclosure DC Output to 1st XR Enclosure DC Input. Connect ground wire as shown. Continue this string up to 4 XR Battery Enclosures.

   ! Power and ground wires provided are for internal side-panel wiring only. NOT for use in external conduit.

7 Interconnect Schematic

8 Power Wiring Verification

! Do not install modules in XR Battery Enclosure.

Use following procedure to verify that the XR Battery Enclosures have been wired properly.

☐ 1. Ensure all power wiring is torqued to a minimum of 6 Nm.
☐ 2. Check polarity between connections.
☐ 3. Reinstall all wiring access panel

If a problem occurs, call Technical Support at 03-5434-2021.

Successful Wiring completed by:

Name: ____________________ Date: ____________________
XR Communication Cables (for Rear or Bottom Wiring only)

Open right side panel to gain access to the communication cables.

Warning!
Ensure Total Power Off (Section 2).

1. If side-panel access is obstructed, access from the rear.
2. Route cables through front holes of Battery Enclosures.
3. Exit Battery Enclosures from bottom or top as required.
4. Route all XR Comm cables to the front of each XR Battery Enclosure through the wire access hole in the Input/Output Chassis.

If cable length is inadequate, a longer "CAT 5" cable, or couplers, can be used (not supplied).

Connect XR comm cables to all XR comm card ports.
Position of connections is not important.

Locate XR Terminator (located on XR comm cable from UPS) in the open port of the last XR Battery Enclosure in the string.

Installation Site Information

This Section should be completed by the electrician after the wiring installation:

Installed at (Company): ___________________________________________________
Customer Contact Name: _________________________________________________
Telephone: _____________________________________________________________
Wire size and type: _______________________________________________________
(If external)

Electrical Installation Completed by:

Name: ___________________________ Date: ___________________________

Leave this Guide with the system in the Documentation Storage Tray located at the bottom of the UPS.

Appendix A

WARNING!
A battery can present a risk of electric shock and high short-circuit current. The following precautions should be observed when working on batteries:

- Remove watches, rings or other metal objects
- Use tools with insulated handles
- Wear rubber gloves and boots
- Do not lay tools or metal parts on top of batteries

When replacing batteries, replace with same number and type as installed. For customer-supplied external batteries, see manufacturer's installation and safety instructions.