Installation Guide Smart-UPS™ On-Line External Battery Pack SRT192BP/ SRT192BP2/SRT192BPJ/SRT192BP2J

Safety Messages

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation and maintenance of the Smart-UPS and batteries.

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol either to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Product Handling Guidelines



<18 kg
<40 lb



18-32 kg
40-70 lb



32-55 kg
70-120 lb



>55 kg
>120 lb





Safety and General Information

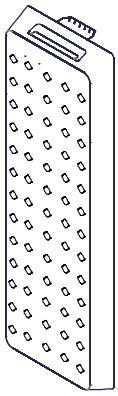
- Adhere to all national and local electrical codes.
- **Changes and modifications to this unit not expressly approved by APC by Schneider Electric could void the warranty.**
- This unit is intended only for indoor use in a controlled environment.
- Do not operate this unit in direct sunlight, in contact with fluids, or where there is excessive dust or humidity.
- Be sure the air vents on the unit are not blocked. Allow adequate space for proper ventilation.
- The UPS and external Battery Pack(s) must be properly grounded to each other and to the mains grounding system.
- Before installing or replacing the batteries, remove jewelry such as wristwatches and rings.
  High, short circuit current through conductive materials could cause severe burns.
- The battery typically lasts for two to five years. Environmental factors impact battery life. Elevated ambient temperatures, poor quality mains power, and frequent short duration discharges will shorten battery life.
- Replace the battery immediately when the UPS indicates battery replacement is necessary or when the batteries reach the end of their life. Failure to do so could result in equipment damage and/or injury.
- The UPS will recognize as many as 10 XLBPs connected to the UPS.
  Note: For each XLBP added, increased recharge time will be required.
- The equipment is heavy. Always practice safe lifting techniques adequate for the weight of the equipment.
- The batteries are heavy. Remove the batteries before installing the UPS and external battery packs (XLBPs) in a rack.
- Always install XLBPs at the bottom in rack-mount configurations. The UPS must be installed above the XLBPs.
- Do not dispose of batteries by burning them. The batteries may explode.
- Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes, and may be toxic.
- Always recycle used batteries.
- Recycle the package materials or save them for reuse.
- Additional safety information can be found in the Safety Guide supplied with this unit.

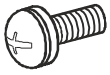
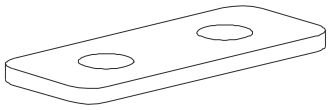
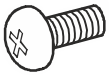
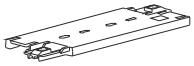
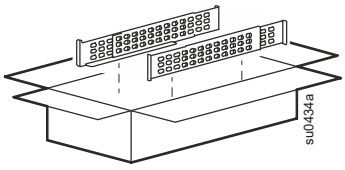
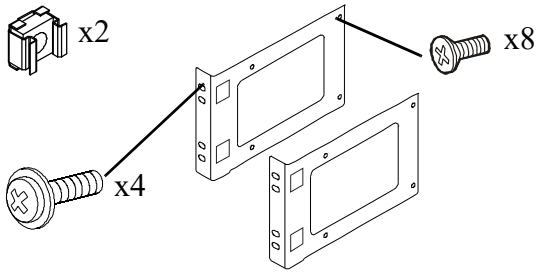
Overview

- To verify that installation of an external battery pack (XLBP) has been successful, go to the UPS display interface.
  Perform an **Alarm Test** to determine if the XLBP is recognized by the UPS.
  The LED on the XLBP will flash if successful communication has been established.
- When viewing the status of an XLBP on the UPS display interface screen, the LED on the corresponding XLBP will flash.
- When an RBC needs to be replaced, perform a **Runtime Calibration Test** to verify that battery replacement is required.

Package Contents

Inspect the contents upon receipt. Notify the carrier and dealer if there is damage.

<table>
<tr><th colspan="4">Included with all models</th></tr>
<tr>
<td>Front bezel
</td>
<td>Ground cable

2 pan head screws to secure the ground cable
</td>
<td>2 tie brackets

4 flat head screws to secure tie brackets
</td>
<td>1 pan head screw to secure the XLBP battery cable connector to an XLBP or to the UPS.
</td>
</tr>
<tr><th colspan="4">Included with SRT192BP/SRT192BP2/SRT192BPJ only</th></tr>
<tr><td colspan="4">User Documentation CD
</td></tr>
<tr><th colspan="4">Included with SRT8K/SRT10K models only</th></tr>
<tr><td colspan="4">Battery communication (BATT COMM) cable
</td></tr>
<tr><th colspan="4">Included with SRT5K/SRT6K Tower models only</th></tr>
<tr>
<td colspan="2">Stabilizer brackets are supplied with the SRT5K/SRT6K models
The XLBP includes 1 stabilizer bracket connector
</td>
<td colspan="2">4 flat head screws to secure tower stabilizer brackets to the UPS
</td>
</tr>
<tr><th colspan="4">Included with Rack-Mount models only</th></tr>
<tr>
<td colspan="2">Rail Kit with instructions and hardware for installing rails in a rack
</td>
<td colspan="2">• 1 pair rack-mount brackets
• 8 flat head screws to secure rack-mount brackets to the UPS
• 4 ornamental screws to secure rack-mount brackets to the rails
• 2 cage nuts
</td>
</tr>
</table>

Specifications

For additional specifications, refer to the APC by Schneider Electric Web site at **www.apc.com**.

Environmental

Temperature	**Operating**	0 °C to 40 °C (32 °F to 104 °F)
	Storage	-15 °C to 45 °C (5 °F to 113 °F)
Maximum Elevation	**Operating**	0 - 3,000 m (0 - 10,000 ft)
	Storage	0 - 15,000 m (50,000 ft)
Humidity	0% to 95% relative humidity, non-condensing	
Protection Class	IP 20 rating	
Note: Charge the battery modules every six months during storage. Environmental factors impact battery life. Elevated ambient temperatures, high humidity, poor quality mains power, and frequent short duration discharges will shorten battery life.		

Physical

The XLBP is heavy. Follow all lifting guidelines.

Unit weight batteries included, without packaging	91 kg (201 lb)
Unit weight batteries included, with packaging	102 kg (225 lb)
Unit dimensions without packaging **Height x Width x Depth**	130 mm x 432 mm x 682.7 mm 5.1 in x 17 in x 26.9 in
Unit dimensions with packaging **Height x Width x Depth**	420 mm x 600 mm x 1000 mm 16.5 in x 23.6 in x 39.4 in
The model and serial numbers are on a small label located on the rear panel.	

Battery

⚠ CAUTION

RISK OF HYDROGEN SULPHIDE GAS AND EXCESSIVE SMOKE

- Replace the battery at least every 5 years.
- Replace the battery immediately when the UPS indicates battery replacement is necessary.
- Replace battery at the end of its service life.
- Replace batteries with the same number and type of batteries as originally installed in the equipment.
- Replace the battery immediately when the UPS indicates a battery overtemperature condition, or when there is evidence of electrolyte leakage. Power off the UPS, unplug it from the AC input, and disconnect the batteries. Do not operate the UPS until the batteries have been replaced.
- *Replace all battery modules (including the modules in External Battery Packs) which are older than one year, when installing additional battery packs or replacing the battery module(s).

Failure to follow these instructions could result in equipment damage and minor or moderate injury.

*Contact APC by Schneider Electric Worldwide Customer Support to determine the age of the installed battery modules.

Battery type	Sealed, maintenance-free, Valve Regulated Lead-Acid battery
Replacement battery module This UPS has replaceable battery modules. Refer to the appropriate replacement battery user manual for installation instructions. Contact your dealer or go the APC by Schneider Electric Web site, **www.apc.com** for information on replacement batteries.	**SRT5KXLJ/SRT8KXLJ/SRT10KXLJ models:** APCRBC140J **All other models:** APCRBC140
Number of battery modules	4 battery modules
Voltage for each battery module **Total voltage for the UPS** **Ah rating**	96 VDC 192 VDC 5 Ah per battery module
XLBP cable length	500 mm (19.7 in)

Battery module	UPS	XLBP
APCRBC140	SRT5KXLx/SRT5KRMXLx/SRT6KXLx/SRT6KRMXLx (except for SRT5KXLJ)	SRT192BP/SRT192RMBP
	SRT8KXLx/SRT8KRMXLx/SRT10KXLx/SRT10KRMXLx (except for SRT8KXLJ/SRT10KXLJ)	SRT192BP2/SRT192RMBP2
APCRBC140J	SRT5KXLJ	SRT192BPJ
	SRT8KXLJ/SRT10KXLJ	SRT192BP2J

Remove Battery Modules

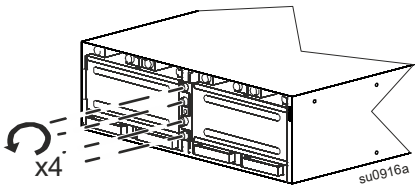
⚠ CAUTION

RISK OF FALLING EQUIPMENT

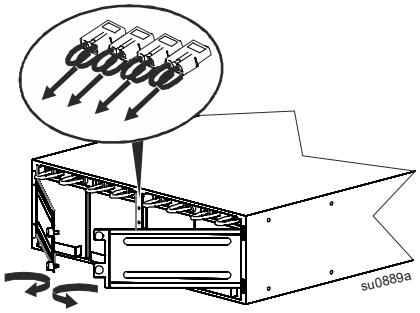
- The equipment is heavy. Each battery module weighs 17 kg (37 lb).
- Always practice safe lifting techniques adequate for the weight of the equipment.
- Remove the battery modules before installing the UPS.
- Use the battery module handle to slide the battery modules in or out of the UPS.
- Do not use the battery module handle to lift or carry the battery module.

Failure to follow these instructions can result in equipment damage and minor or moderate injury.

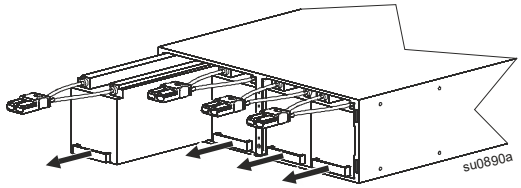
❶



❷



❸



Rack-Mount Installation

UPS model may differ in appearance from those depicted in these graphics. The XLBP installation process is identical for all models.

Refer to the rail kit Installation Guide for instructions on rail installation.

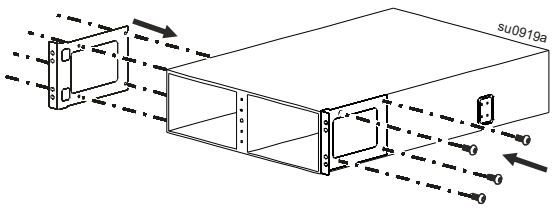
⚠ CAUTION

RISK OF FALLING EQUIPMENT

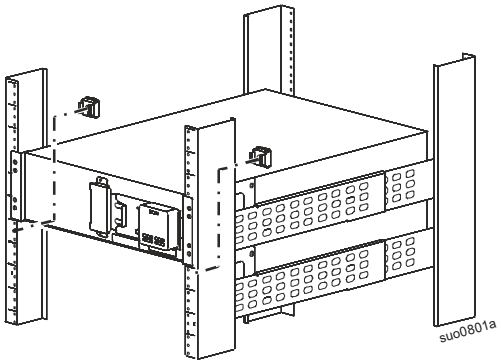
- The equipment is heavy. Always practice safe lifting techniques adequate for the weight of the equipment.
- Always use the recommended number of screws to secure brackets to the UPS.
- Always use the recommended number of screws and cage nuts to secure the UPS to the rack.
- Always install the UPS at the bottom of the rack.
- Always install the XLBP below the UPS in the rack.

Failure to follow these instructions can result in equipment damage and minor or moderate injury

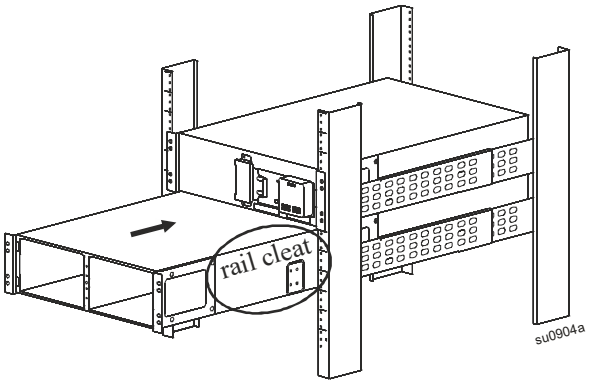
❶ Secure two brackets to the XLBP.
Use four screws in each bracket.



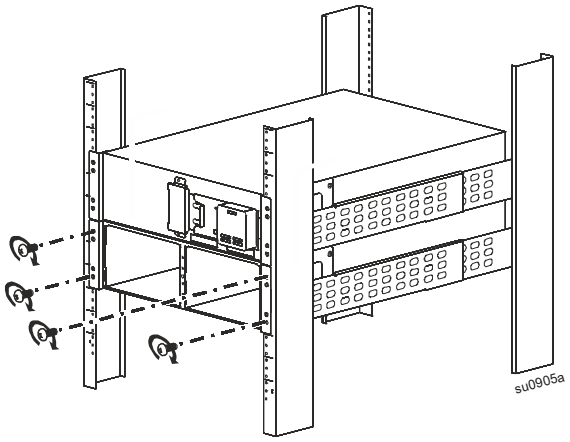
❷ Install two cage nuts.



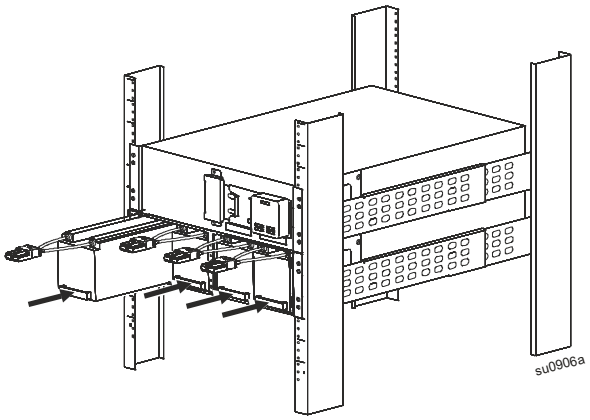
❸ Rest the XLBP on the rail shelves.
Slide the XLBP into the rack.



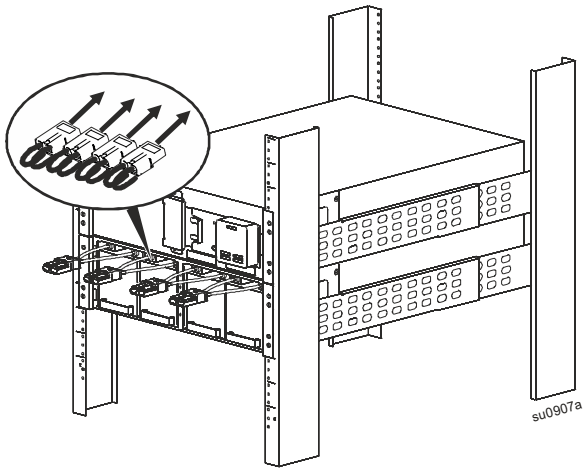
❹ Secure the XLBP to the rack.
Use two screws in each bracket.



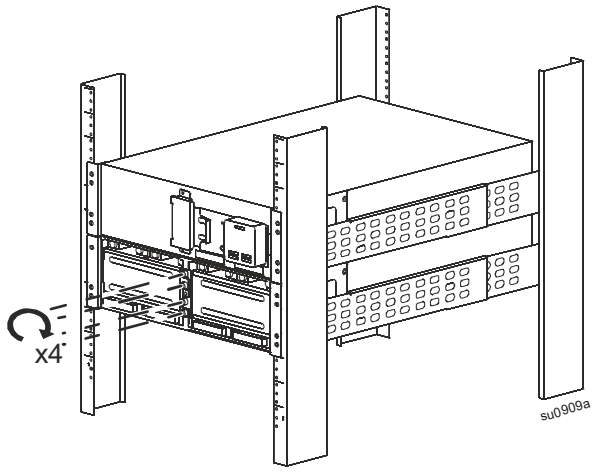
❺ Install four battery modules.



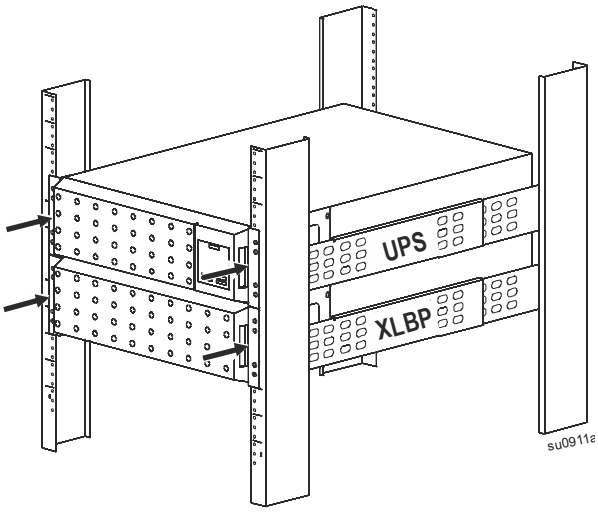
❻ Connect four battery modules.



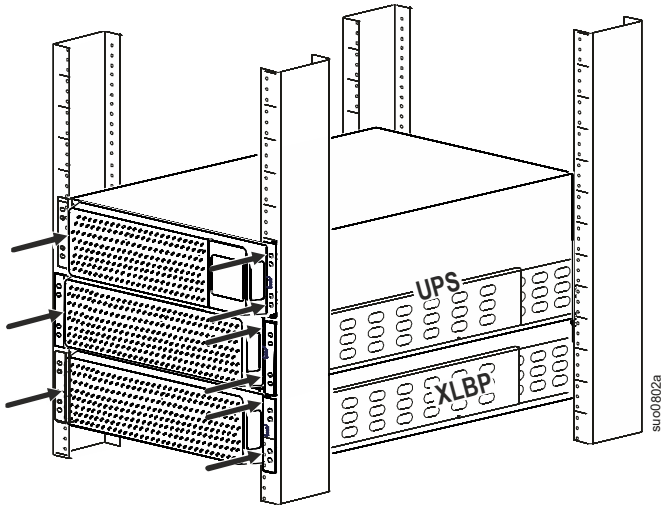
❼ Reinstall the battery compartment doors.
Tighten the thumbscrews to secure the doors.



❽ **UPS models SRT5K or SRT6K with one XLBP**
Install one XLBP bezel and one UPS bezel.



UPS models SRT8K or SRT10K with one XLBP
Install one XLBP bezel and two UPS bezels.



Tower Installation

⚠ CAUTION

RISK OF FALLING EQUIPMENT

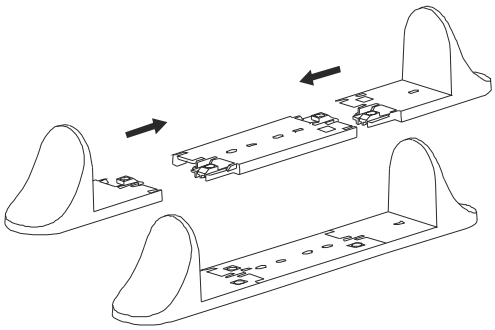
- The equipment is heavy. Each battery module weighs 17 kg (37 lb).
- Always practice safe lifting techniques adequate for the weight of the equipment.
- Remove the battery modules before installing the UPS.
- Use the battery module handle to slide the battery modules in or out of the UPS.
- Do not use the battery module handle to lift or carry the battery module.

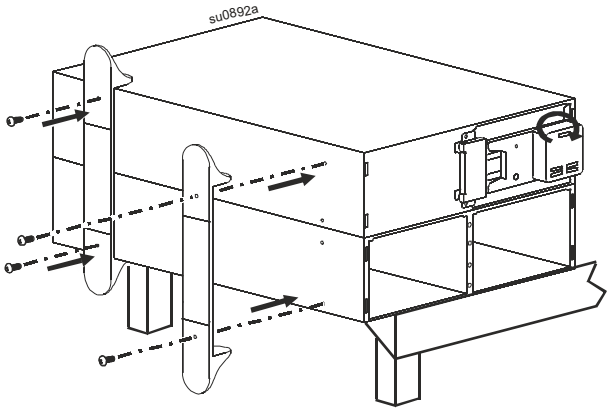
Failure to follow these instructions can result in equipment damage and minor or moderate injury

UPS model may differ in appearance from those depicted in these graphics. The XLBP installation process is identical for all models.

Stabilizer bracket installation UPS models SRT5K/SRT6K only

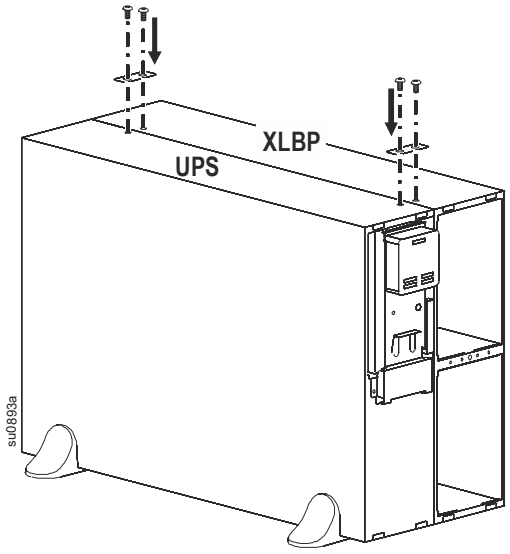
Stabilizer brackets are supplied with the SRT5K/SRT6K UPS models.



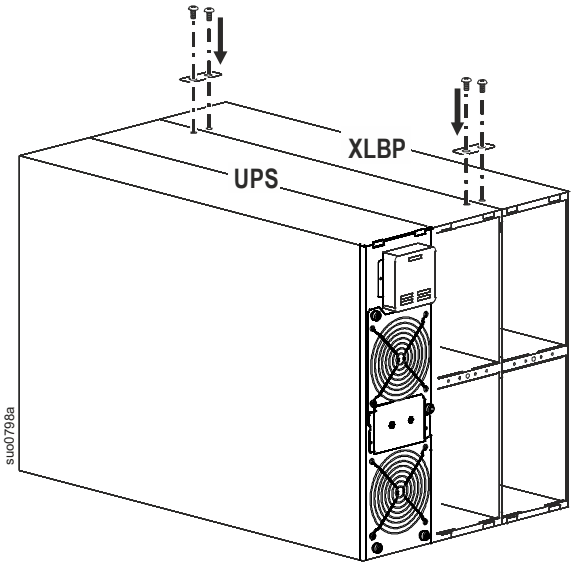


Tie bracket installation all UPS models

❶ UPS models SRT5K/SRT6K with one XLBP



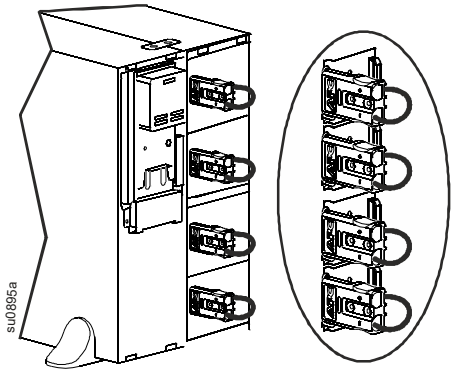
❷ UPS models SRT8K/SRT10K with one XLBP



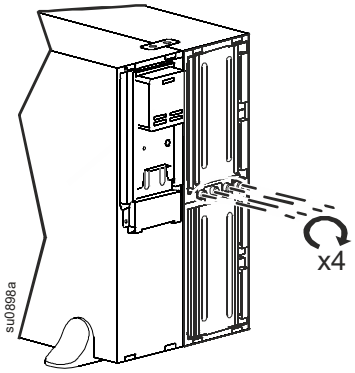
Install battery modules and bezels

SRT5K/SRT6K UPS models

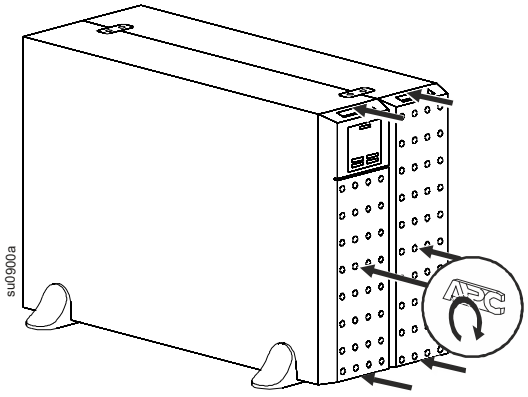
❶ Slide four battery modules into the XLBP. Connect four battery modules.



❷ Reinstall the battery compartment doors. Tighten the thumbscrews to secure two doors.

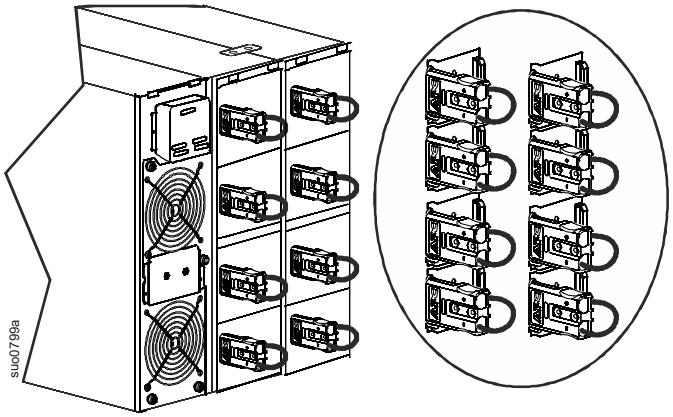


❸ Install two bezels.

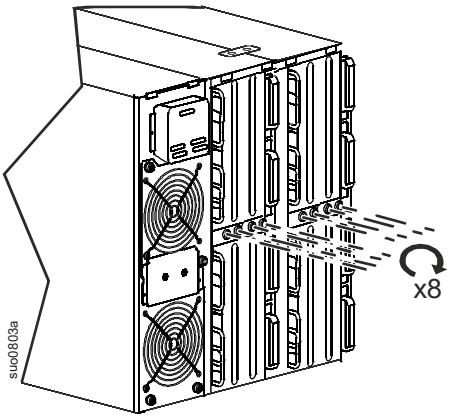


SRT8K/SRT10K UPS models

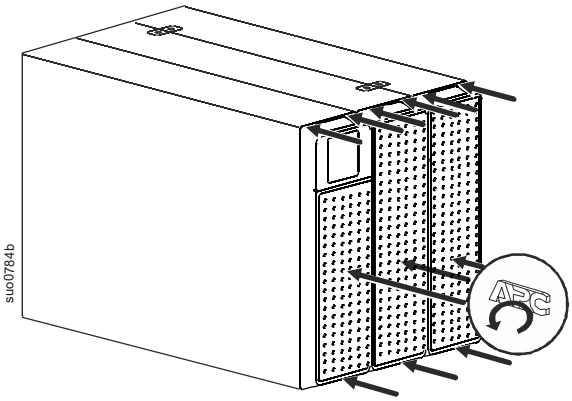
❶ Slide four battery modules into the UPS and four battery modules into the XLBP.
Connect eight battery modules.



❷ Reinstall the battery compartment doors.
Tighten the thumbscrews to secure four doors.



❸ Install three bezels.



Connect Ground and Battery Cables

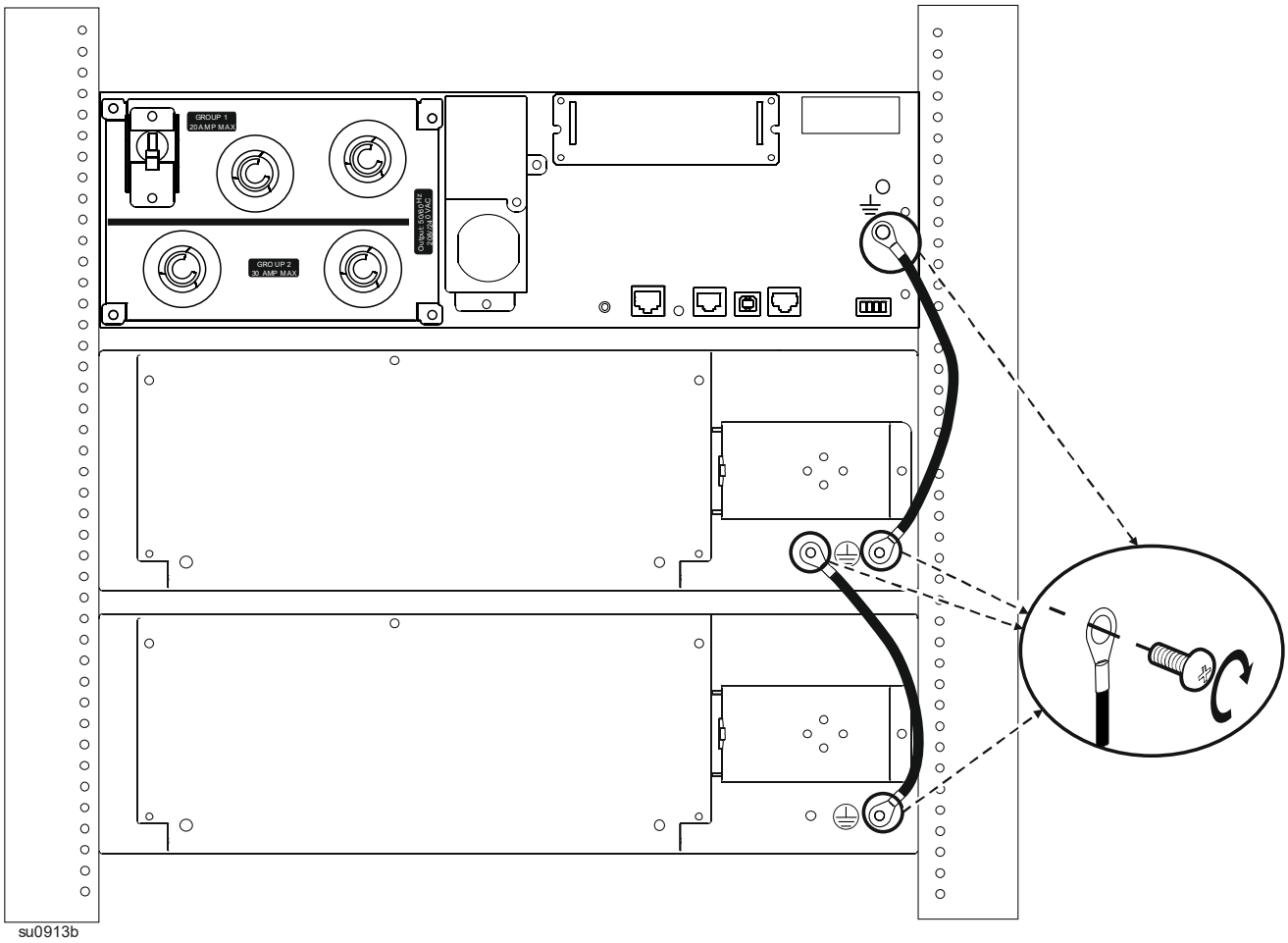
UPS model may differ in appearance from those depicted in these graphics. The process is identical for all models.

SRT5K/SRT6K models

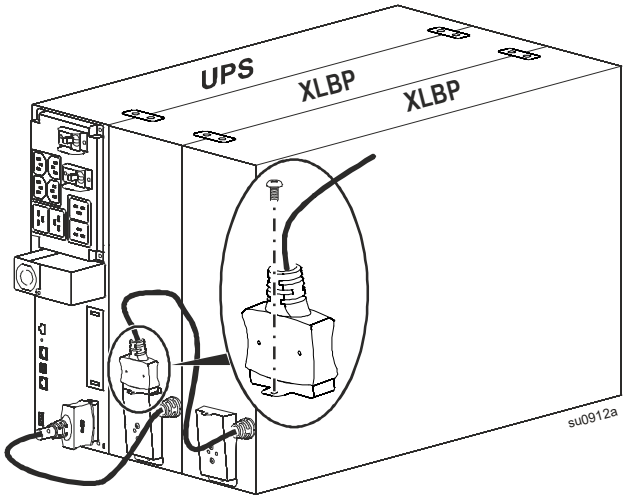
Connect ground cables

Recommended screw torque, 2.72 Nm (24 lbf-in)

Connect external battery pack cables



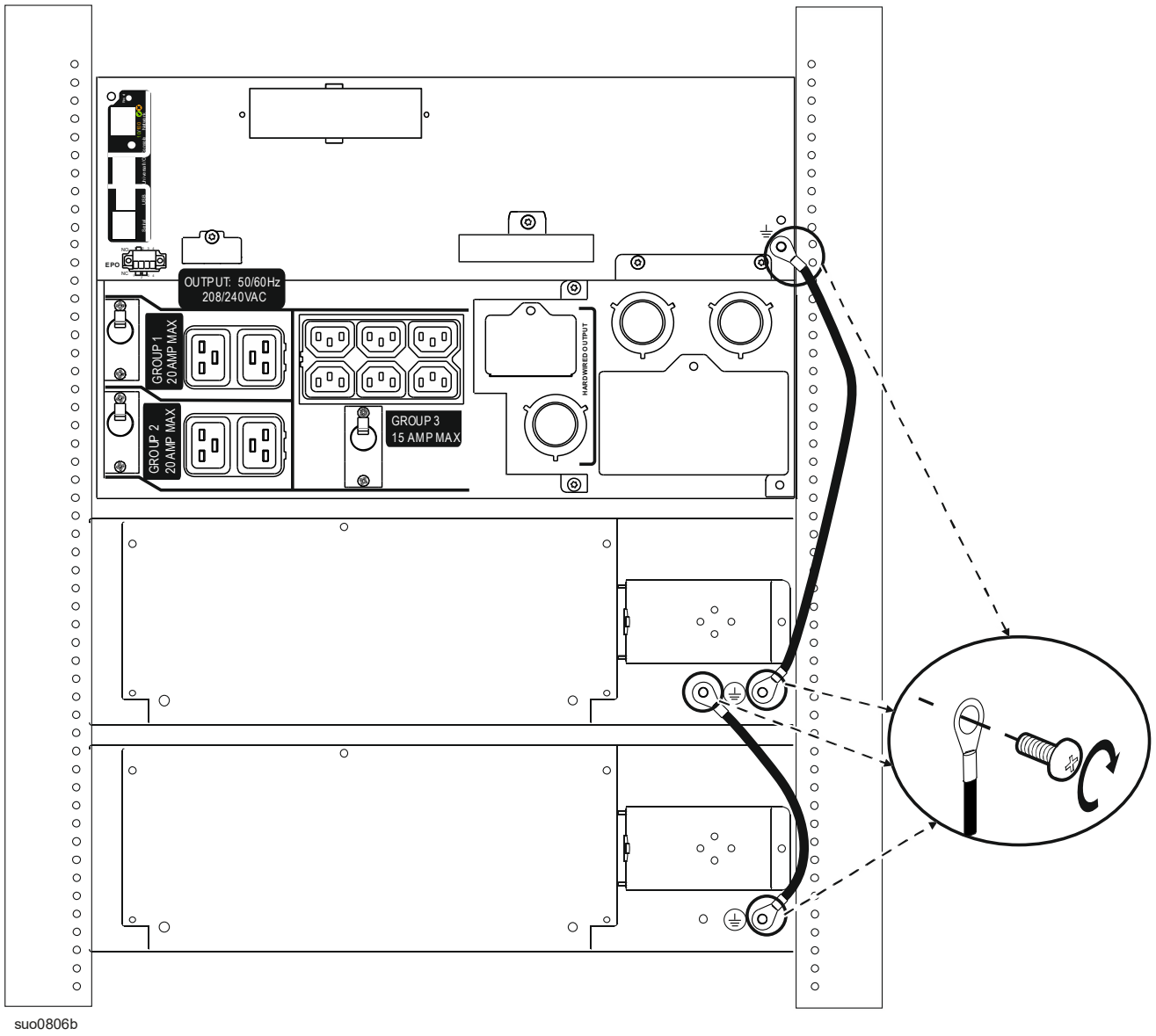
The UPS external battery pack connector has a cover, secured with a screw.
Remove the screw and the cover.
Connect the external battery pack.



SRT8K/SRT10K models

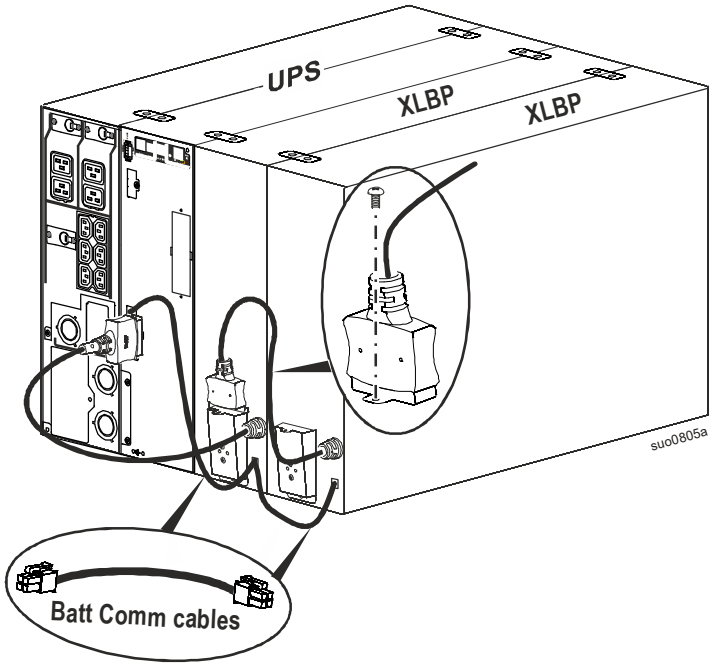
Connect ground cables

Recommended screw torque, 2.72 Nm (24 lbf-in)



Connect UPS battery pack, external battery packs and communication cables

The UPS external battery pack connector has a cover secured with a screw.
Remove the screw and the cover.
Connect the external battery pack.



Smart Battery Management

Definitions

- Battery Module: A string of battery cells arranged to produce a battery assembly with a connector.
- Replaceable Battery Cartridge (RBC): An APC battery cartridge consisting of two battery modules. Replacement RBCs can be ordered from the APC by Schneider Electric Web site, **www.apc.com**.
- Smart External Battery Pack (XLBP): An enclosure that contains RBC(s) and battery management electronics.
- User Interface (UI): Any interface by which a user can interact with the system. This may include a UPS display interface, a network management interface or PowerChute™ Network Shutdown software.

Note: Do not use a battery that is not approved by APC by Schneider Electric.
The system will not detect the presence of a non APC by Schneider Electric approved battery and may adversely affect the operation of the system.
Use of a non APC by Schneider Electric approved battery will void the manufacturer warranty.

Maintenance

- **RBC maintenance:** The APC by Schneider Electric RBC uses sealed lead acid battery cells and does not require maintenance.
- **Runtime Test (Calibration):** This should be performed anytime the steady state load is changed significantly, for example a new server is added to or removed from the UPS load.
- **Battery health monitoring:** The battery energy output and voltage are monitored to assess the health of the installed batteries when the UPS is operating on battery.
  Battery health monitoring is done during a UPS **Self Test**, a **Runtime Calibration Test**, and when the UPS is operating on battery power.
  The UPS can be configured to perform periodic, automatic **Self Tests**.

End of useful life

- **Near end of life notification:** An alert message will appear on the UPS display interface screen when each RBC is approaching the end of its useful life. For configuration details refer to **Replacement Notification Time** and **Replacement Battery Alarm Time** in the UPS Operation Manual.
  The estimated replacement date for each RBC is available through the UI.
- **Needs replacement notification:** The UPS display interface screen shows when RBC replacement is required. The RBC must be replaced as soon as possible.
  When an RBC requires replacement, the UPS display interface may recommend that additional RBCs be replaced if they will soon reach the end of their useful life.

Note: Continued operation after end of useful life notification may cause damage to the batteries.

- **Recycling:** Remove the RBC from the XLBP. Recycle the RBC. Do not disassemble an RBC.

Recommended actions after installing new RBCs or XLBPs

Refer to the UPS Operation Manual for details on **Test and Diagnostics Menu** options for the following tests:

- Self Test
- Runtime Test
- Alarm Test

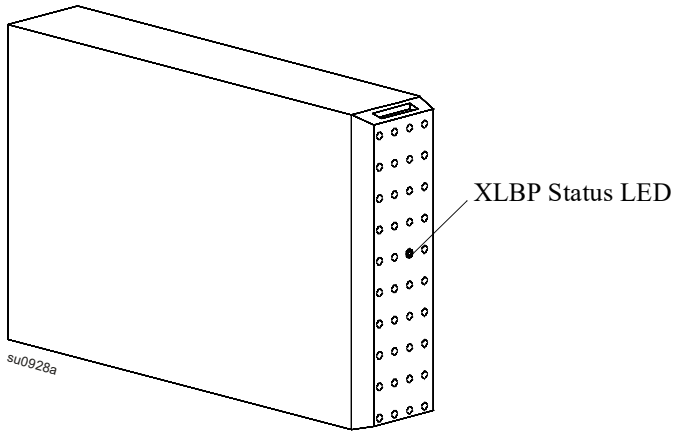
The following actions should be performed after installing a new RBC or XLBP:

- Verify that the UPS is connected to input power and output power is turned on. Refer to the *Operation* section in this manual for instructions.
- When a new XLBP is installed, verify that the XLBP is detected by the system.
  - Perform a UPS **Alarm Test**.
  - Check that the LED on all installed XLBPs continuously flashes.
- To verify that installation of a replacement battery cartridge (RBC), has been successful, go to the UPS display interface. Use the Status menus to verify that the UPS recognizes the RBCs.
- Verify that the UPS load is greater than 400 watts. This will appear on the UPS display interface.
- Perform a UPS **Self Test**.
- If at the time of XLBP installation UPS input power is not available, turn on the UPS output from battery power for 30 seconds. This will allow the UPS to detect all installed RBCs.
  Refer to the UPS Operation Manual for instructions on how to turn the UPS on and off.
- Verify on the UPS display interface that the installation dates for the replaced RBCs are set to the current date. The installation dates can be changed manually on the UPS display interface.
  If all RBCs have been replaced at the same time, all installation dates can be changed simultaneously.
  For configuration details refer to **Battery Install Date** in the Operation Manual.
- Allow the system to charge for 24 hours to ensure full runtime capability.
- Initiate a **Runtime Calibration Test** through the UI.

User interface

View Status/Error notifications: The status of connected XLBPs can be viewed using the UPS display interface menu options.

- **XLBP Status LED:** The XLBP LED illuminates red to indicate three possible states.
  - **Off:** No message. This is the default state.
  - **Solid red:** XLBP cannot communicate with the UPS. The XLBP controller is not functional.
  - **Flashing red:**
    - For identification purposes each XLBP is automatically assigned a number.
      To verify the number of a specific XLBP, use the UPS display interface menu options.
      Select an XLBP number. The LED will flash on the XLBP assigned to that number.
- **XLBP LED test:** From the UPS display interface, LED functionality can be tested by issuing an **Alarm Test**. This command causes the LED on each connected XLBP to flash.
- **System interfaces:** Battery status, alerts, and measurements are shown on the UPS display interface screen. Refer to the UPS Operation Manual.



Troubleshooting

Issues	Possible Cause	Solution
XLBP LED flashes.	• The UPS display interface is requesting XLBP status • **Alarm Test** has been requested by the UPS • Indicates that an RBC needs to be replaced	• No action is necessary. • No action is necessary. • Refer to the UPS display interface screen for information.
XLBP LED remains illuminated	Potential hardware error exists	• Contact APC by Schneider Electric Customer Support. Refer to the **Service** section in the Operation Manual for contact information.
UPS display interface shows an RBC disconnected message.	• RBC is not connected • RBC hardware error exists	Connect the RBCs. Verify that the UPS recognizes the RBCs. Perform a UPS **Self Test**. If the message remains on the display interface screen replace the RBC.
XLBP is not recognized.	• Communication issue exists • Potential hardware error exists	• Be sure the battery connections to the XLBPs are secure. • Be sure the connection between the XLBPs and the UPS are secure. • Perform an **Alarm Test** to verify that the LED flashes. • If issue persists, contact APC by Schneider Electric Customer Support. Refer to the **Service** section in the Operation Manual for contact information.
UPS display interface shows XLBP disconnected message.	• Power cable is not securely connected to an XLBP or to the UPS • XLBP hardware error	• Be sure the battery connections to the XLBPs are secure. • Perform an **Alarm Test** to verify that the LED flashes. • If issue persists, contact APC by Schneider Electric Customer Support. Refer to the **Service** section in the Operation Manual for contact information.

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