

Electrical Installation

Symmetra® LX Tower Rack-Mount

UPS Models

200 V, 4-8 kVA

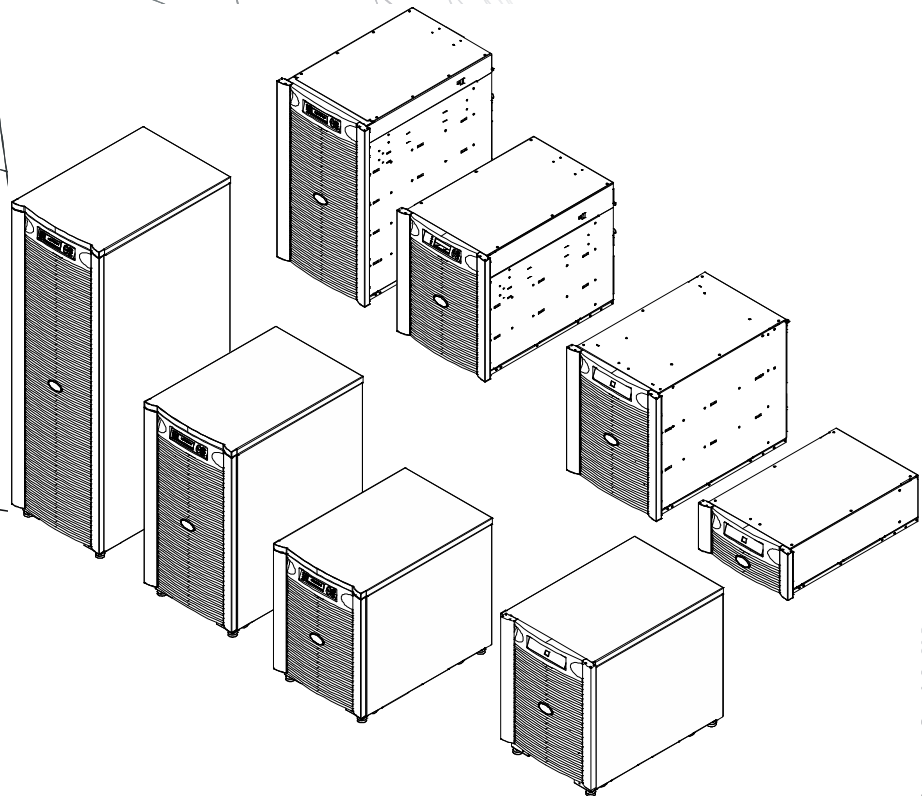
208/240 V, 4-8 kVA

220/230/240 V, 4-8 kVA

200 V, 4-16 kVA

208/240 V, 4-16 kVA

220/230/240 V, 4-16 kVA



Important Safety Messages

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation and maintenance of the APC™ by Schneider Electric equipment and batteries.

Read the instructions carefully. Become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this document 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 to a Danger or Warning product safety label indicates that an electrical hazard exists that 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

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

- This equipment is for use in a restricted access location.
- Adhere to all national and local electrical codes.
- All wiring must be performed by a qualified electrician.
- Do not work alone under hazardous conditions.
- **Changes and modifications to this unit not expressly approved by Schneider Electric IT Corporation could void the warranty.**
- This UPS is intended for indoor use only.
- 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 UPS are not blocked. Allow adequate space for proper ventilation.
- For a UPS with a factory installed power cord, connect the UPS power cable directly to a wall outlet. Do not use surge protectors or extension cords.
- 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.
- Always install peripheral equipment above the UPS in rack-mount configurations.

Electrical safety

- Do not handle any metallic connector before power has been disconnected.
- For models with a hardwired input, the connection to the branch circuit (mains) must be performed by a qualified electrician.
- 230 V models only: In order to maintain compliance with the EMC directive for products sold in Europe, output cords attached to the UPS must not exceed 10 meters in length.
- The protective earth conductor for the UPS carries the leakage current from the load devices (computer equipment). An insulated ground conductor is to be installed as part of the branch circuit that supplies the UPS. The conductor must have the same size and insulation material as the grounded and ungrounded branch circuit supply conductors. The conductor will typically be green, with or without a yellow stripe.
- Leakage current for a pluggable, Type A UPS may exceed 3.5 mA when a separate ground terminal is used.
- The UPS input ground conductor must be properly bonded to protective earth at the service panel.
- If the UPS input power is supplied by a separately derived system, the ground conductor must be properly bonded at the supply transformer or motor generator set.

Hardwire safety

- Check that all branch circuit (mains) and low voltage (control) circuits are deenergized, and locked out before installing cables or making connections, whether in the junction box or to the UPS.
- All wiring must be performed by a qualified electrician.
- Select wire size and connectors according to national and local codes.
- Wiring must be approved by a local wiring inspector.
- Strain relief is required for all hardwiring (supplied with select products). Snap in type strain reliefs are recommended.
- All openings that allow access to UPS hardwire terminals must be covered. Failure to do so may result in personal injury or equipment damage.

De-energizing safety

- The UPS contains internal batteries and may present a shock hazard even when disconnected from AC and DC power.
- The AC and DC output connectors may be energized by remote or automatic control at any time.
- Before installing or servicing the equipment perform the following tasks:
 - Set the System enable switch to the OFF position.
 - Set the input circuit breaker to the OFF position.
 - Disconnect the battery modules.
 - Disconnect external battery cabinet if provided.
 - Disconnect mains/branch circuit

Battery safety

- When replacing batteries, replace with the same number and type.
- Batteries typically last for two to five years. Environmental factors impact battery life. Elevated ambient temperatures, poor quality utility power, and frequent short duration discharges will shorten battery life. Batteries should be replaced before end of life.
- Replace batteries immediately when the unit indicates battery replacement is necessary.
- APC™ by Schneider Electric uses Maintenance-Free sealed Lead Acid batteries. Under normal use and handling, there is no contact with the internal components of the battery. Over charging, over heating or other misuse of batteries can result in a discharge of battery electrolyte. Released electrolyte is toxic and may be harmful to the skin and eyes.
- CAUTION: Before installing or replacing the batteries, remove jewelry such as chains, wristwatches and rings. Use tools with insulated handles. High short circuit current through conductive materials could cause severe burns.
- CAUTION: Do not dispose of batteries in a fire. The batteries may explode.
- CAUTION: Do not open or mutilate batteries. Released material is harmful to the skin and eyes and may be toxic.

General information

- The model and serial numbers are located on a small, rear panel label. For some models, an additional label is located on the chassis under the front bezel.
- Always recycle used batteries.
- Recycle the package materials or save them for reuse.

Electrical Installation

DANGER

RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- Wiring must be performed by a qualified electrician.
- Read and follow all safety and installation instructions in this manual.

Failure to follow these instructions could result in equipment damage, personal injury or death.

Hardwire the UPS

CAUTION

RISK OF ELECTRIC SHOCK

- Disconnect the electrical panel circuit breaker before installing or servicing the unit or connected equipment.
- Disconnect equipment from the unit before servicing any equipment.
- The AC and DC output connectors may be energized by remote or automatic control at any time.
- Do not use the UPS as a safety disconnect.

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

CAUTION

RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- Wiring must be performed by a qualified electrician.
- Wire gauge must comply with required amp capacity and national and local electrical codes.
- Use Snap-In strain reliefs provided with the unit.
- The UPS must be wired into a branch circuit equipped with a circuit breaker rated as specified in the tables below.
- Use the recommended input terminal screw torque. See wiring table.
- Once hardwiring is completed, all openings in the hardwire assembly must be covered.

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

Hardwire the UPS continued

220/230/240 V Models

Input Connections				
Maximum Load	Method	Voltage (Vac)	Circuit Breaker Rating*	Connection
8 kVA	Hardwired (Standard on Tower and Rack-Mount units)	1-phase 220, 230, 240 3-phase 380, 400, 415	50 A	<ul style="list-style-type: none"> External circuit breaker #6 AWG (16 mm²) Torque 40 in-lb (4.5 N-m) 1-phase: 3 wire, L1-N-G 3-phase: 5 wire, L1-L2-L3-N-G
16 kVA	Hardwired (Standard on Tower and Rack-Mount units)	1-phase 220, 230, 240 3-phase 380, 400, 415	100 A	<ul style="list-style-type: none"> External circuit breaker #3 AWG (25 mm²) Torque 40 in-lb (4.5 N-m) 1-phase: 3 wire, L1-N-G 3-phase: 5 wire, L1-L2-L3-N-G
Output Connections				
Maximum Load	Method	Voltage (Vac)	Circuit Breaker Rating*	Connection
8 kVA	Hardwired (Standard on Tower and Rack-Mount units)	220 230 240	50 A	<ul style="list-style-type: none"> External circuit breaker #6 AWG (16 mm²) Torque 40 in-lb (4.5 N-m) 1-phase: 3 wire, L1-N-G
	Output Sockets (Standard on Rack-Mount units)	220 230 240		<ul style="list-style-type: none"> 6 (IEC 320 C19) sockets with 6 (15 A, 250 V) circuit breakers 8 (IEC 320 C13) sockets with 2 (10 A 250 V) circuit breakers
16 kVA	Hardwired (Standard on Tower and Rack-Mount units)	220 230 240	100 A	<ul style="list-style-type: none"> External circuit breaker #3 AWG (25 mm²) Torque 40 in-lb (4.5 N-m) 1-phase: 3 wire, L1-N-G
	Output Sockets (Standard on Rack-Mount units)	220 230 240		<ul style="list-style-type: none"> 10 (IEC 320 C19) sockets with 10 (15 A, 250 V) circuit breakers 8 (IEC 320 C13) sockets with 2 (10 A 250 V) circuit breakers

* Recommended

Hardwire the UPS continued

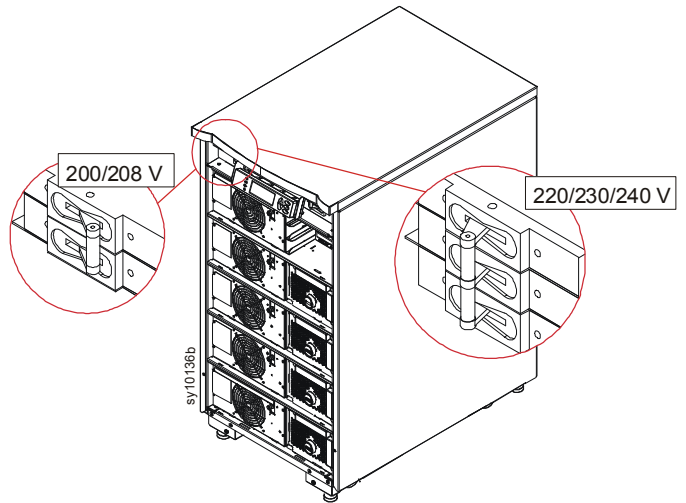
200/208/240 V Models

Input Connections				
Maximum Load	Method	Voltage (Vac)	Circuit Breaker Rating*	Connection
8 kVA	Hardwired (Standard on Tower and Rack-Mount units)	200, 208 or 240	50 A	<ul style="list-style-type: none"> External circuit breaker #6 AWG (14 mm² Japan) Torque 40 in-lb (4.5 N-m) 4 wire (L1-L2-N-G)
16 kVA	Hardwired (Standard on Tower and Rack-Mount units)	200, 208 or 240	100 A	<ul style="list-style-type: none"> External circuit breaker #3 AWG (22 mm² Japan) Torque 40 in-lb (4.5 N-m) 4 wire (L1-L2-N-G)
Output Connections				
Maximum Load	Method	Voltage (Vac)	Circuit Breaker Rating*	Connection
8 kVA	Hardwired (Standard on Tower and Rack-Mount units)	100/200, 120/208, or 120/240	50 A	<ul style="list-style-type: none"> External circuit breaker #6 AWG (14 mm² Japan) Torque 40 in-lb (4.5 N-m) 4 wire (L1-L2-N-G)
	Output receptacles (Standard on Rack-Mount units)	100/200, 120/208, or 120/240		<ul style="list-style-type: none"> 2 (L14-30R) 4 (L5-20R)
16 kVA	Hardwired (Standard on Tower and Rack-Mount units)	100/200, 120/208, or 120/240	90 A	<ul style="list-style-type: none"> External circuit breaker #3 AWG (22 mm² Japan) Torque 40 in-lb (4.5 N-m) 4 wire (L1-L2-N-G)
	Output receptacles (Standard on Rack-Mount units)	100/200, 120/208, or 120/240		<ul style="list-style-type: none"> 4 (L14-30R) 8 (L5-20R)

* Recommended

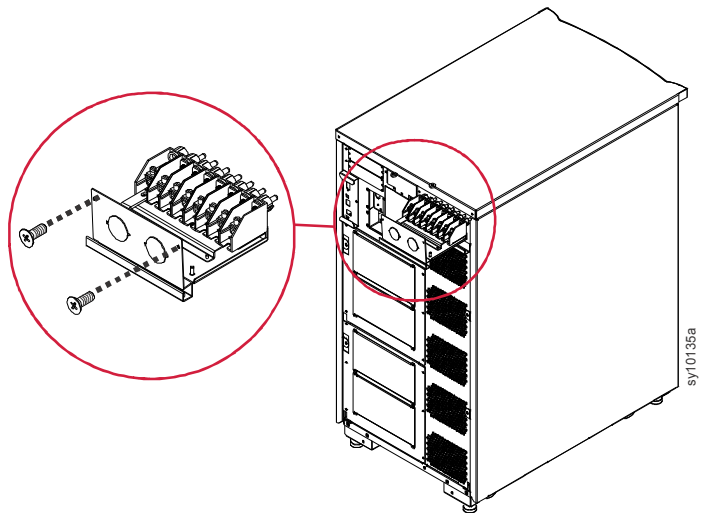
Hardwire the UPS continued

Switch the circuit breaker to the OFF position.



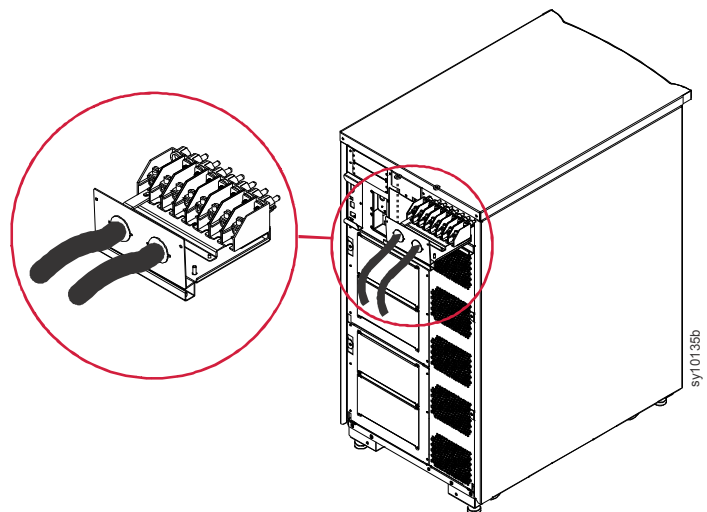
Remove the two screws that secure the AC tray to the UPS chassis.

Slide the AC tray out of the UPS.



Insert the appropriate size conduit through the strain relief holes in the AC tray.

Secure the conduit to the AC tray with appropriate size conduit clamps.



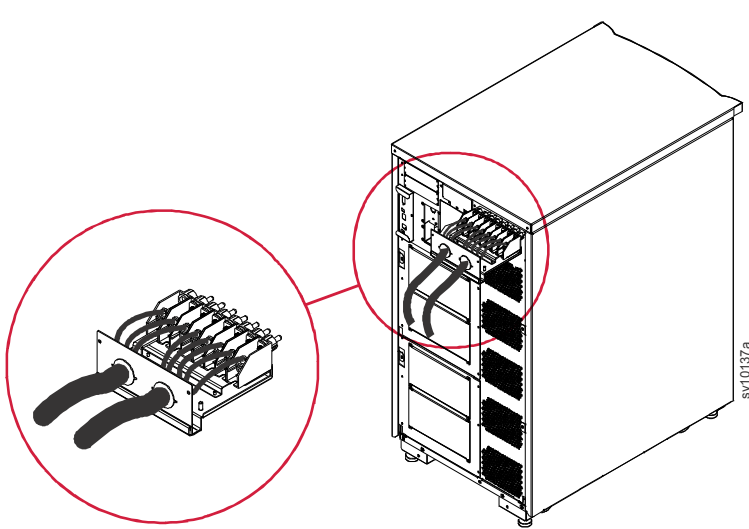
Hardwire the UPS continued

Use appropriate gauge wire referenced in the table at the beginning of this chapter.

Insert the appropriate size input and output wires through the conduits and into the AC tray.

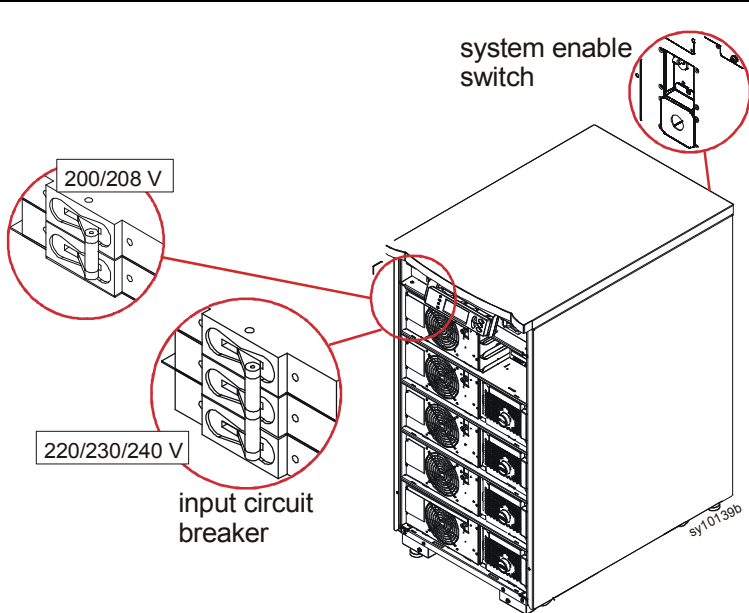
Once the wires are through the conduits, connect the input and output wires to the appropriate terminals.
Refer to the label on the UPS or to table at the beginning of this chapter.

Secure the wires using torque referenced in table at the beginning of this chapter.

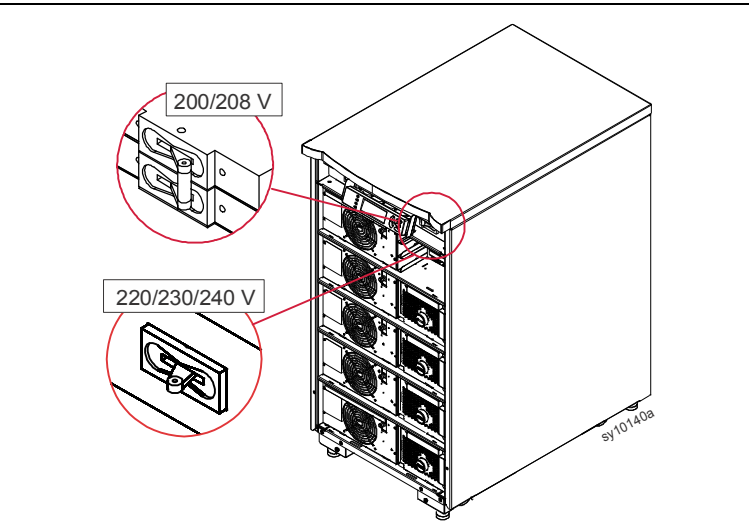


To test hardwire connections:
Turn ON the utility power.
Turn ON the input circuit breaker, and the system enable switch.

If the Vin value on the UPS display does not coincide with the branch voltage, check the input wiring.



To test the output wiring, turn ON the maintenance bypass switch.



After verifying the hardwired connections, turn OFF the input circuit breaker and maintenance bypass switch.

Connect Emergency Power Off

⚠ DANGER

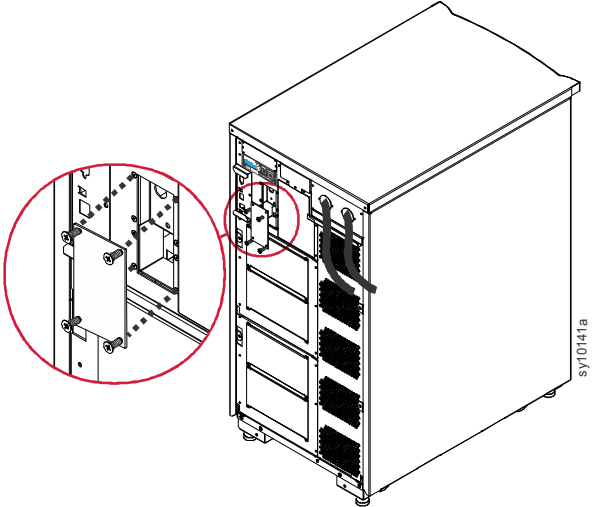
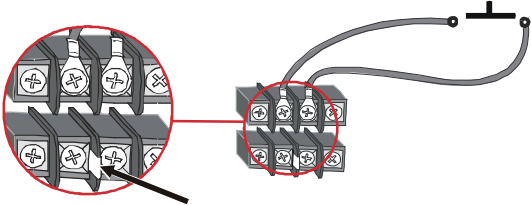
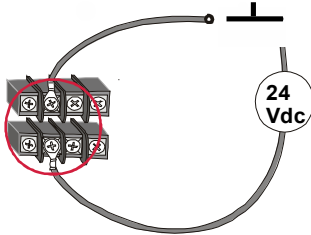
RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- Wiring must be performed by a qualified electrician.
- Read and follow all safety and installation instructions in this manual.
- Connect a Remote Emergency Power Off circuit.

Failure to follow these instructions could result in equipment damage, personal injury or death.

A Remote Emergency Power Off (REPO) switch should be installed.

Refer to the Symmetra LX Safety and General Information Guide for REPO requirements and detailed safety instructions.

<p>Remove the circuit breaker access panel.</p>	
<p>For an installation that will use an external switch contact, connect the REPO switch with the pre-installed jumper.</p>	
<p>For an installation that will use a switch contact and a 24 V external power supply, remove the jumper and connect the REPO switch with a cable and ring lug to the external power supply.</p>	

Optional Accessories

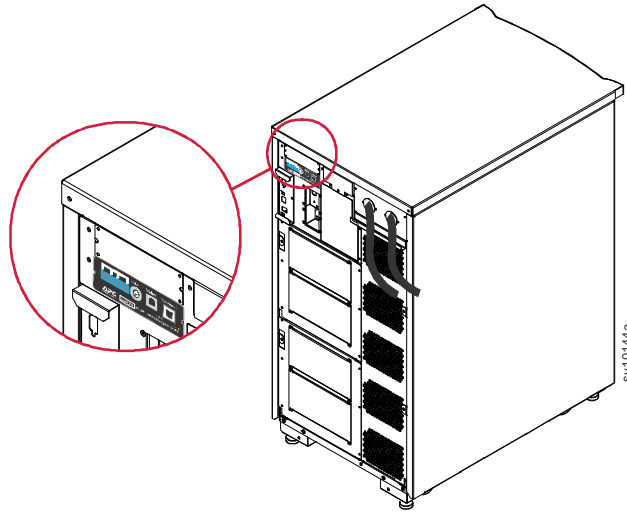
NMC Accessory Card

An optional accessory card is available with some configurations.

Some configurations include an additional management accessory card.

Install the management accessory card in the empty slot on the rear side of the UPS.

An installation guide is included with the management accessory card.



PDU Panels and Load Connection

An optional PDU panel is available with some configurations.

An installation guide is included with the optional PDU panel.

A loads can be connected directly to the UPS using the output sockets on the PDU panel.

Be sure the total load connected to a PDU panel does not exceed the branch circuit breaker rating for the PDU panel.

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- Visit the APC by Schneider Electric web site, www.apc.com to access documents in the APC Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC by Schneider Electric web site 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 the APC by Schneider Electric Customer Support Center by telephone or e-mail.
 - Local, country specific centers: go to **www.apc.com/support/contact** for contact information.
 - For information on how to obtain local customer support, contact the APC by Schneider Electric representative or other distributor from whom you purchased your APC by Schneider Electric product.

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