

Installation Guide Smart-UPS™ On-Line SRT5K/6K Tower/Rack-Mount 3U/4U

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.
- All wiring must be performed by a qualified electrician.
- Changes and modifications to this unit not expressly approved by APC could void the warranty.
- This UPS is intended for indoor use only.
- Do not operate this UPS 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.
- Additional safety information can be found in the Safety Guide supplied with this unit.

Deenergizing 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 check that the:
 - Mains circuit breaker is in the **OFF** position
 - Internal UPS batteries are removed
 - XLBP battery modules are disconnected

Electrical safety

- 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 input power to 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 and with or without a yellow stripe.
- 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.

Battery safety

- Replace batteries with the same number and type of batteries as originally installed in the equipment.
- 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.
- 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 wristwatches and rings. 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.

Hardwire safety

- Verify 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.
- Wiring by a qualified electrician is required.
- Check national and local codes before wiring.
- 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.
- Select wire size and connectors according to national and local codes.

General information

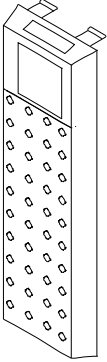
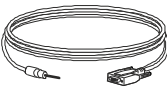
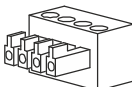
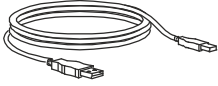
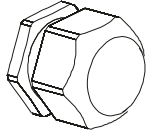
- The UPS will recognize as many as 10 external battery packs connected to the UPS.
Note: For each XLBP added, increased recharge time will be required.
- The model and serial numbers are located on a small, rear panel label. For some models, an additional label is located on the chassis under the front bezel.
- Always recycle used batteries.
- Recycle the package materials or save them for reuse.

FCC Class A Radio Frequency Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

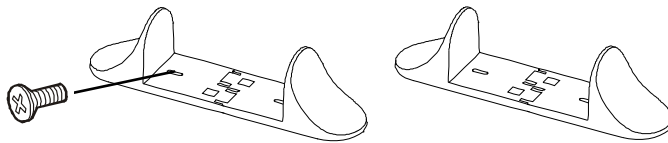
Package Contents

Inspect the contents upon receipt. Notify the carrier and dealer if the unit is damaged.

Included with all models			
Front bezel 	Console to DB9 cable 	EPO Terminal block 	User Documentation CD. 
	USB cable 	Temperature sensor probe 	Network Management Utility CD 
	Strain relief • Qty 1 for SRT5KXLI, SRT5RMKXLW-HW models • Qty 2 for SRT6K models 		

Included with Tower models only

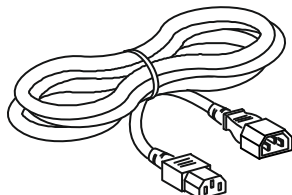
- 2 pairs stabilizer brackets
- 4 flat head screws to secure tower stabilizer brackets to the UPS



Included with XLI/XLT-IEC models only

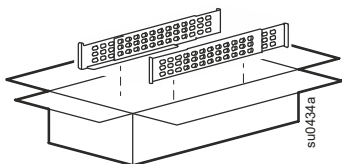
2 output power cords:

- 1.2 m in length
- 2 m in length

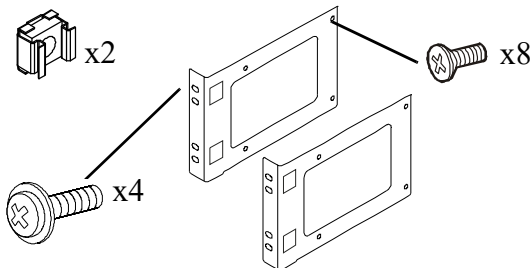


Included with Rack-Mount models only

Rail Kit with instructions and hardware for installing rails in a rack.



- 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



Specifications

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

Environmental

Temperature	Operating	0° to 40° C (32° to 104° F)
	Storage	-15° to 45° C (5° 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

SRT5K model

The UPS is heavy. Follow all lifting guidelines.

Unit weight batteries included, without packaging	56.6 kg (124.8 lb)
Unit weight batteries included, with packaging	Rack-Mount models: 67.3 kg (148.4 lb) Tower models: 64.36 kg (141.9 lb)
Unit dimensions without packaging Height x Width x Depth	130 mm x 432 mm x 711 mm 5 in x 17 in x 28 in
Unit dimensions with packaging Height x Width x Depth	330 mm x 610 mm x 960 mm 13 in x 24 in x 37.8 in
The model and serial numbers are on a small label located on the rear panel.	

SRT6K model

The UPS is heavy. Follow all lifting guidelines.

Unit weight batteries included, without packaging	60 kg (132 lb)
Unit weight batteries included, with packaging	67 kg (147.4 lb)
Unit dimensions without packaging Height x Width x Depth	174 mm x 432 mm x 719.4 mm 6.9 in x 17 in x 28.3 in
Unit dimensions with packaging Height x Width x Depth	370 mm x 610 mm x 960 mm 14.6 in x 24 in x 37.8 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 swappable 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.	APCRBC140
Number of battery modules	2 battery modules
Voltage for each battery module Total voltage for the UPS Ah rating	96 V 192 V 5 Ah per battery module
XLBP cable length	500 mm (19.7 in)

Battery module	UPS	XLBP
APCRBC140	SRT5KXLx/SRT5KRMXLx/SRT6KXLx/SRT6KRMXLx	SRT192BP/SRT192RMBP

Electrical

CAUTION: To reduce the risk of fire, connect the UPS only to a circuit provided with recommended maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70 and the Canadian Electrical Code, Part I, C22.1.

Models	Rating		Branch Circuit Overcurrent Rating / Building Circuit Breaker (CB) Current Rating
	Online	Green Mode	
SRT5KXLT	5.4 kVA/4.8 kW at 208 V 6.0 kVA/4.8 kW at 240 V	4.8 kVA at 208 V 5.5 kVA at 240 V	30 A
SRT5KRMXLT			
SRT5KXLT-IEC			
SRT5KRMXLT-IEC			
SRT5KXLI	5 kVA/4.5 kW	5.0 kVA	40 A
SRT5KRMXLI			
SRT5KRMXLW-HW			
SRT6KXLT	6 kVA/6 kW	6.0 kVA	50 A
SRT6KRMXLT			
SRT6KXLT-IEC			
SRT6KRMXLT-IEC			
SRT6KXLI			
SRT6KRMXLI			

Output	
Output Frequency	50 Hz/60 Hz $\pm$ 3 Hz
Nominal Output Voltage	SRT5KRMXLW-HW: 208 V, 220 V, 230 V, 240 V SRT5K/6KXLI, SRT5K/6KRMXLI: 220 V, 230 V, 240 V SRT5K/6KXLT/XLT-IEC, SRT5K/6KRMXLT/XLT-IEC: 208 V, 240 V
Input	
Input Frequency	40 HZ/70 Hz $\pm$ 3 Hz
Nominal Input Voltage	SRT5KRMXLW-HW: 208 V, 220 V, 230 V, 240 V SRT5K/6KXLI, SRT5K/6KRMXLI: 220 V, 230 V, 240 V SRT5K/6KXLT/XLT-IEC, SRT5K/6KRMXLT/XLT-IEC: 208 V, 240 V

Remove Battery Modules

⚠ CAUTION

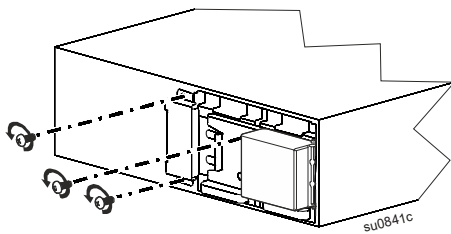
RISK OF FALLING EQUIPMENT

- 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.

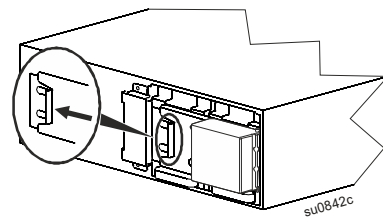
Failure to follow these instructions can result in equipment damage and minor or moderate injury.

Use the battery module handle to lift and slide the battery modules out of the UPS.

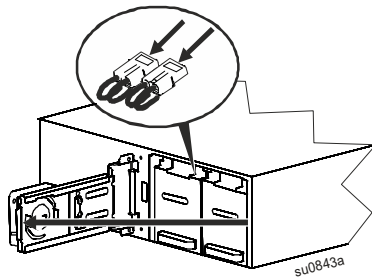
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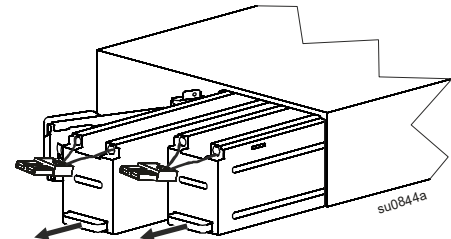
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Rack-Mount Installation

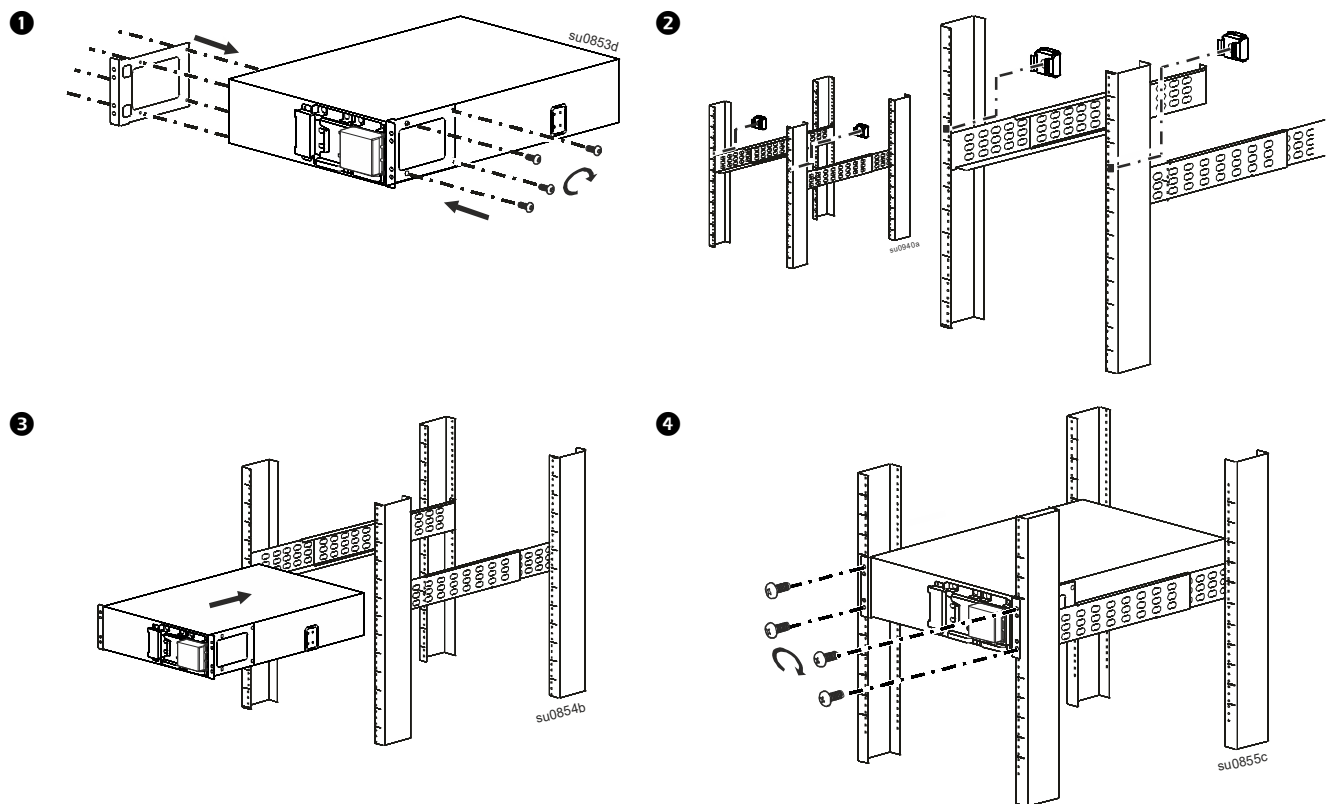
Refer to the Rail Kit Installation Guide for instructions on rail installation.

⚠ CAUTION

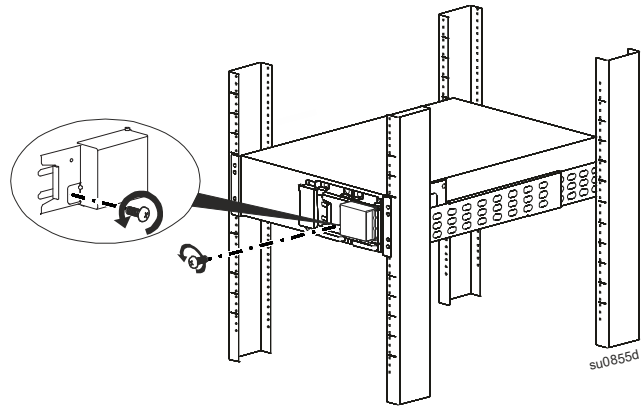
RISK OF FALLING EQUIPMENT

- 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.

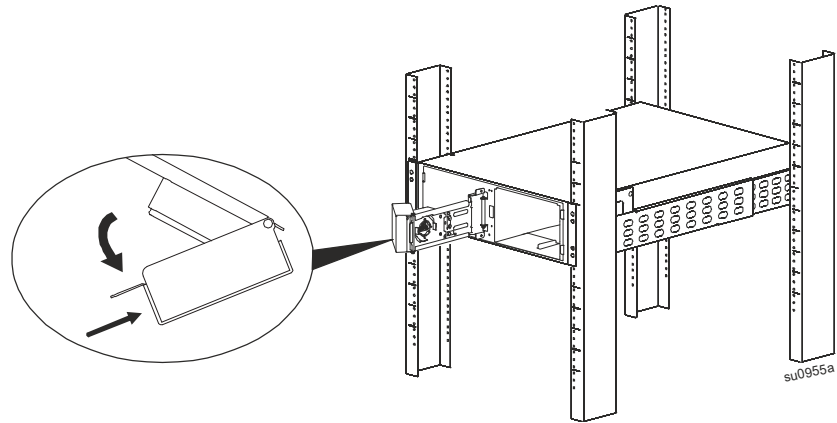
Failure to follow these instructions can result in equipment damage and minor or moderate injury



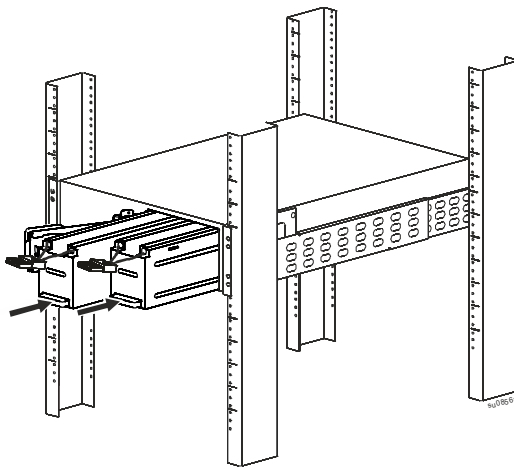
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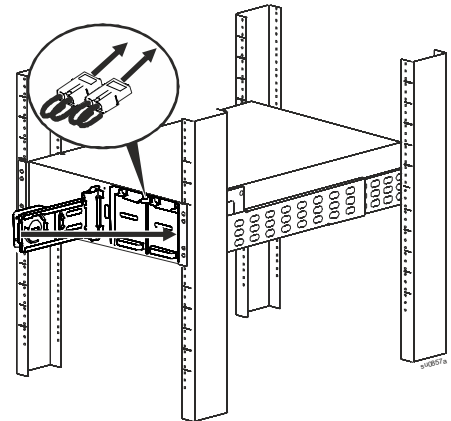
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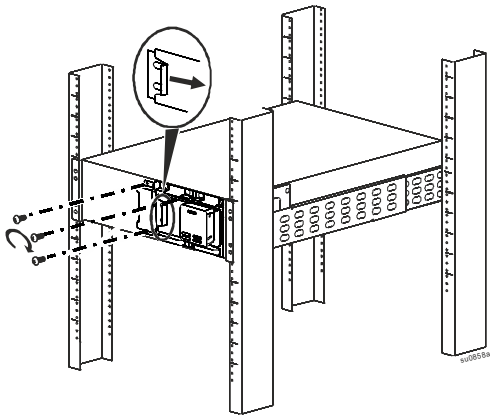
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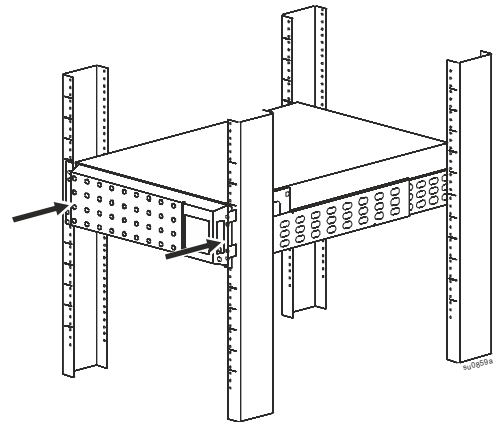
8 After the UPS is hardwired to branch circuit mains complete steps 8-10.



9



10



Tower Installation

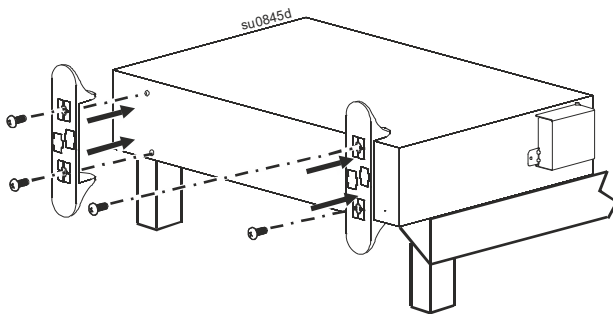
⚠ CAUTION

RISK OF FALLING EQUIPMENT

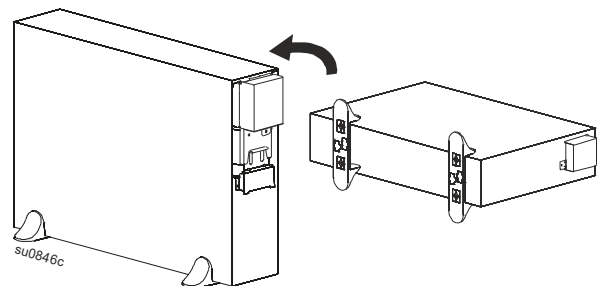
- The equipment is heavy. Each battery module weighs 17 kg (37 lb).
- Always practice safe lifting techniques adequate for the weight of the equipment.
- Remove the battery modules before installing the UPS.
- Use the battery module handle to slide the battery modules in or out of the UPS.
- Do not use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

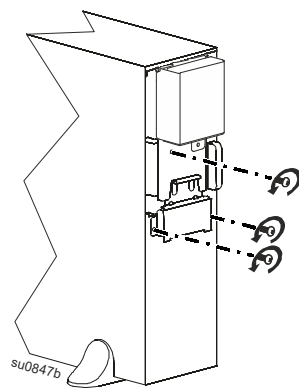
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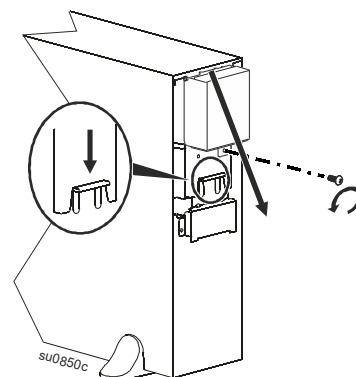
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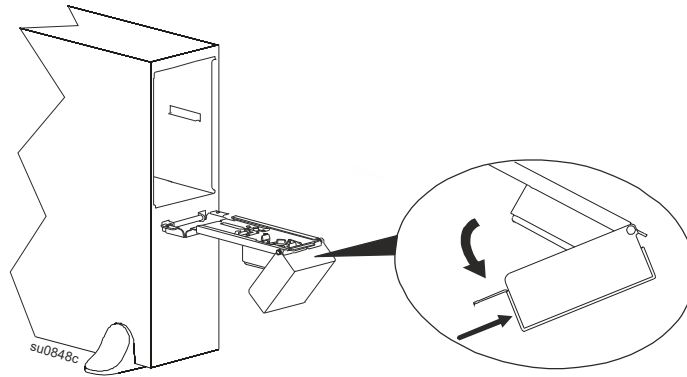
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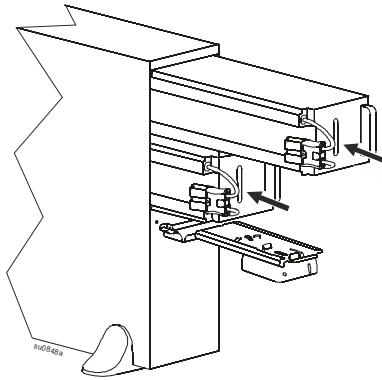
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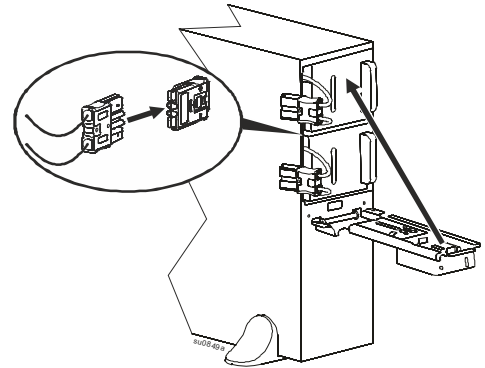


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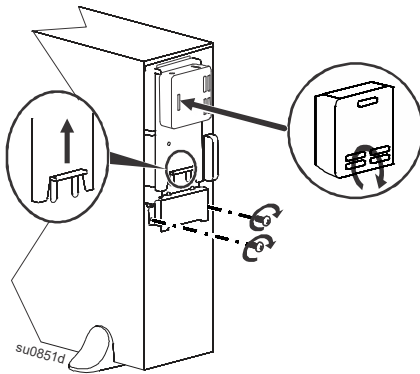
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After the UPS is hardwired to branch circuit mains complete steps 7-9.

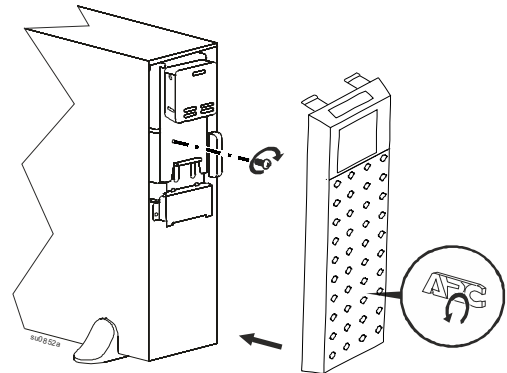


8

Rotate the display panel clockwise, one quarter turn.



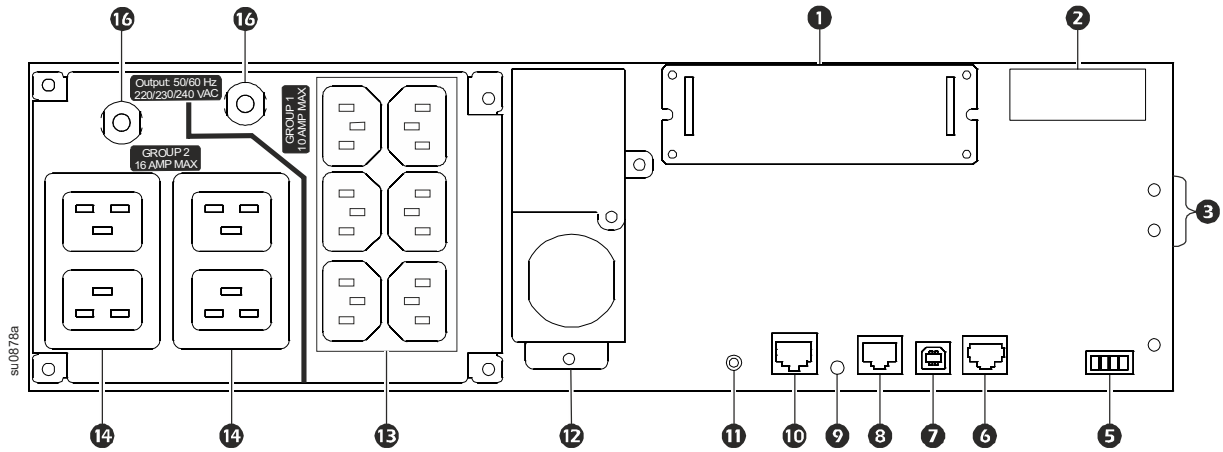
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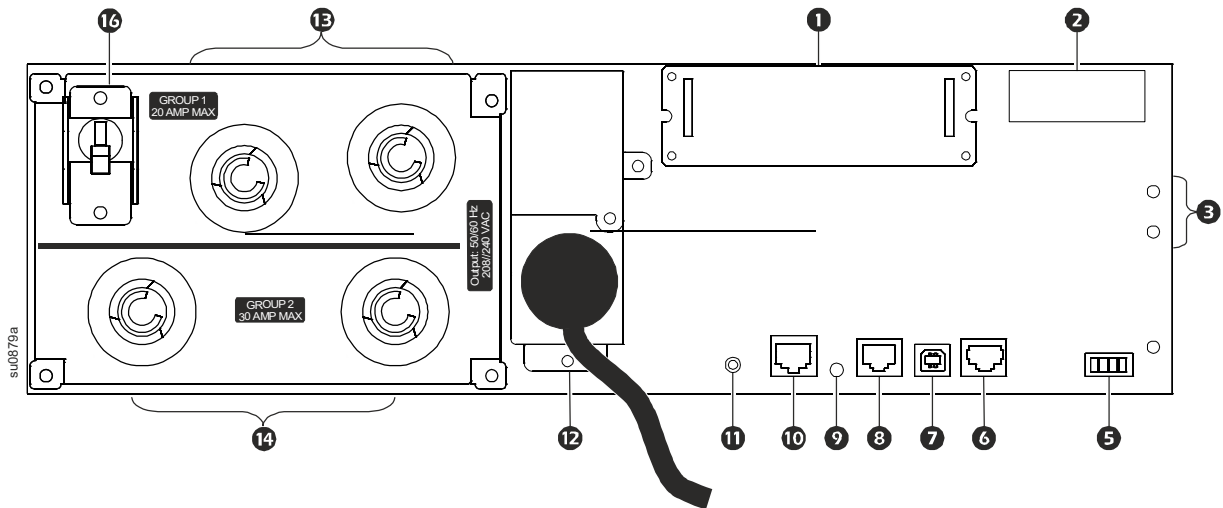
Rear Panel Features

Note: Refer to the table “Key to identify rear panel features” on page 16, that provides a key to the callout numbers for the rear panel graphics depicted in this manual.

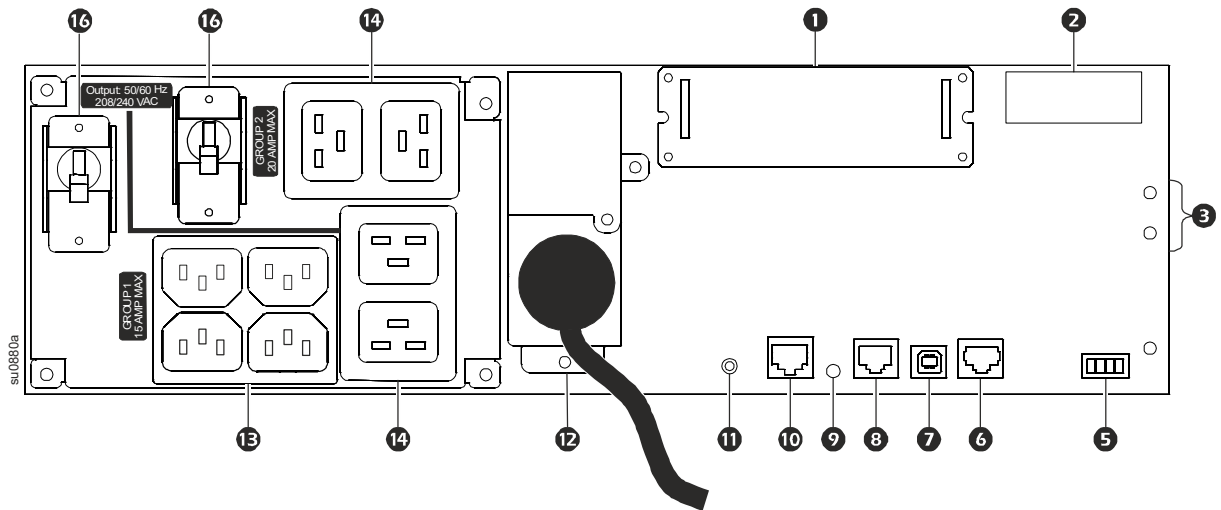
SRT5KXLI/SRT5KRMXLI



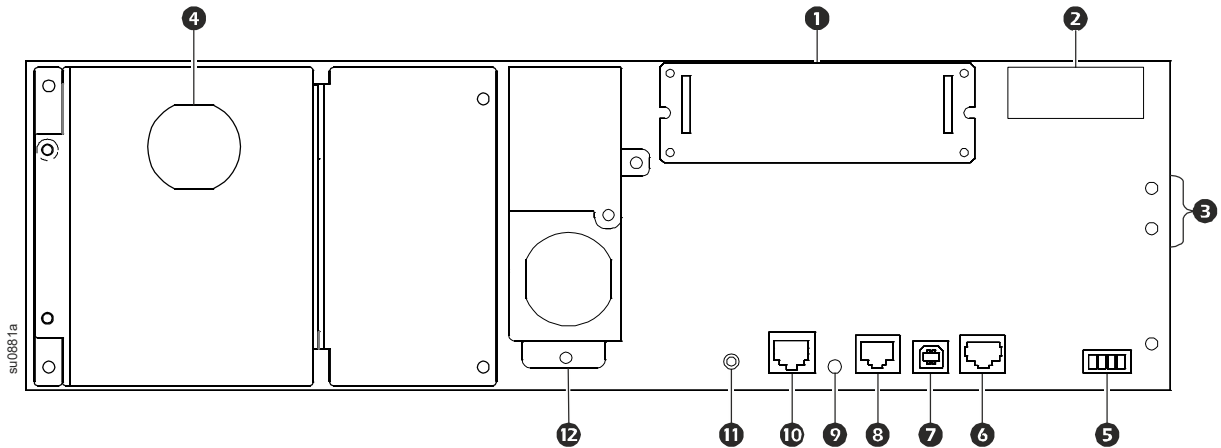
SRT5KXLT/SRT5KRMXLT



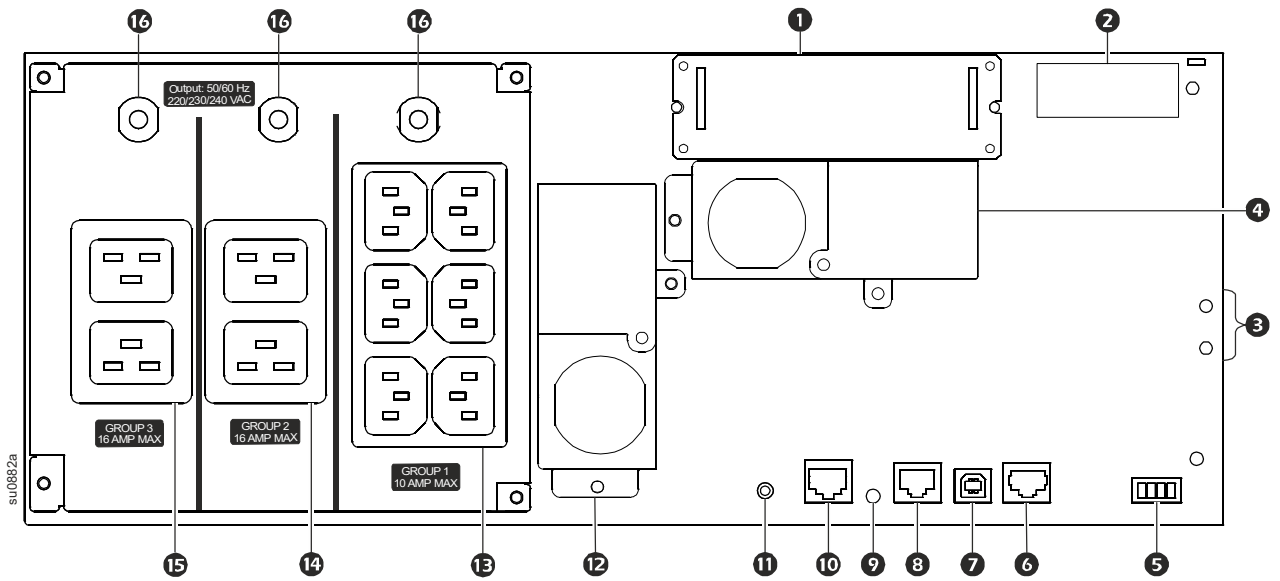
SRT5KXLT-IEC/SRT5KRMXLT-IEC



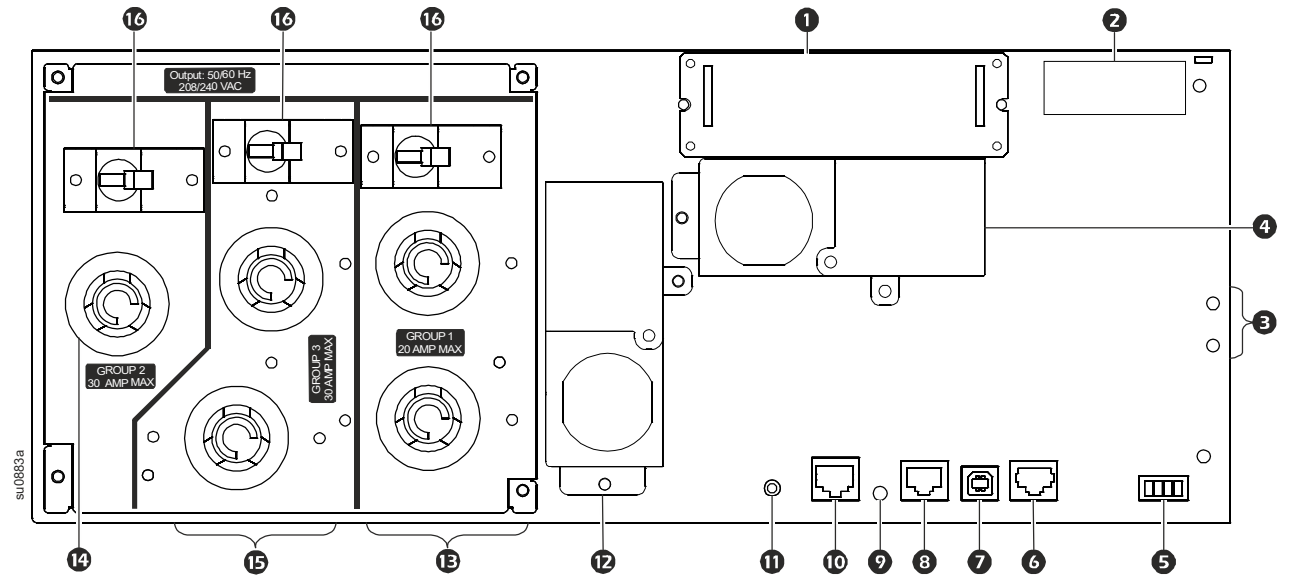
SRT5KRMXLW-HW



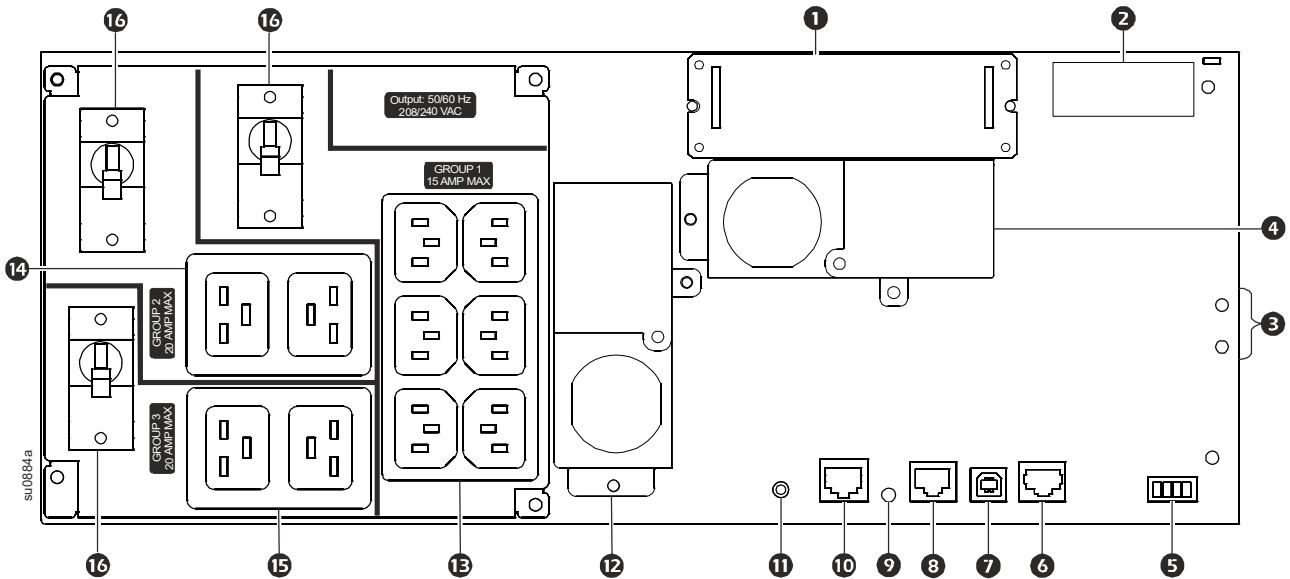
SRT6KXLI/SRT6KRMXLI



SRT6KXLT/SRT6KRMXLT



SRT6KXLT-IEC/SRT6KRMXLT-IEC



Key to identify rear panel features

❶	SmartSlot	The SmartSlot can be used to connect optional management accessories.
❷	External battery power and communication connector	Use the external battery cable on the XLBP to connect the UPS and XLBP. XLBPs provide extended runtime during power outages. The UPS will automatically recognize up to 10 external battery packs.
❸	Chassis ground screws	The UPS and XLBPs have ground screws for connecting the ground leads. Prior to connecting a ground lead, disconnect the UPS from mains power.
❹	Hardwire output box	SRT5KRMXLW-HW, SRT6KXLI, SRT6KRMXLI, SRT6KXLT, SRT6KRMXLT, SRT6KXLT-IEC, SRT6KRMXLT-IEC models are equipped with a hardwire output box. Refer to “Wiring Specifications” on page 17 for hardwire specifications. Remove the knockouts. Use Snap-In strain reliefs (supplied).
❺	EPO terminal	The Emergency Power Off (EPO) terminal allows the user to connect the UPS to a central EPO system.
❻	Serial Com	The Serial Com port is used to communicate with the UPS. Use only interface kits supplied or approved by APC by Schneider Electric. Any other serial interface cable will be incompatible with the UPS connector.
❼	USB port	The USB port is used to connect either a server for native operating system communications, or for software to communicate with the UPS.
❽	Universal I/O port	Use to connect: • Temperature sensor AP9335T (supplied) • Temperature/humidity sensor AP9335TH (not supplied) • Relay input/output connector AP9810 (not supplied), supports two input contacts and one output relay
❾	Console port	Use the Console port to configure the network management features.
❿	Network port	Use the Network port to connect the UPS to the network.
⓫	Reset button	Use the Reset button to restart the Network Management Interface. Note: A restart of the Network Management Interface does not affect UPS operation.
⓬	AC input power cable or hardwire input box	• SRT5KXLT, SRT5KRMXLT, SRT5KXLT-IEC, SRT5KRMXLT-IEC models have factory installed input power cables. • All other models are equipped with a hardwire input box. Refer to “Wiring Specifications” on page 17. Remove the knockouts. Use Snap-In strain reliefs (supplied).
⓭	Controllable outlet group 1	Connect electronic devices to these outlets.
⓮	Controllable outlet group 2	Connect electronic devices to these outlets.
⓯	Controllable outlet group 3	Connect electronic devices to these outlets.
⓰	Circuit breaker	In the event an overload condition occurs, disconnect nonessential equipment. Then reset the circuit breaker.

Wiring Specifications

⚠ CAUTION

RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- Wiring should be performed by a qualified electrician.
- Use Snap-In strain relief(s) 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.
- Actual wire size must comply with required amp capacity and national and local electrical codes.
- Recommended input terminal screw torque: 16 lbf-in (2 Nm).

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

SRT5K/6KXLT/SRT5K/6KXLT-IEC models	
Input connections	Wire to L1, L2, 
Output connections	Wire to L1, L2, 

System	Wiring	Voltage	Current full load, nominal	External input circuit breaker, (typical)	Wire size, typical
SRT5KXLT SRT5KRMXLT SRT5KXLT-IEC SRT5KRMXLT-IEC	Input Output	208/240 Vac	24 A	30 A/2-pole	L6-30 (provided with the UPS)
SRT6KXLT SRT6KRMXLT SRT6KXLT-IEC SRT6KRMXLT-IEC	Input Output	208/240 Vac	33 A 29 A	50 A/2-pole	6 AWG

SRT5KXLI/SRT6KXLI models	
Input connections	Single phase: Wire to L, N, 
Output connections	Wire to L, N 

System	Wiring	Voltage	Current full load, nominal	External input circuit breaker, (typical)	Wire size, typical
SRT5KXLI SRT5KRMXLI	Input Output	220/230/240 Vac	24 A	40 A/2-pole	6 mm ²
SRT6KXLI SRT6KRMXLI	Input Output	220/230/240 Vac	30 A 28 A	50 A/2-pole	10 mm ²

SRT5KRMXLW-HW	
Input connections	Single phase: Wire to L, L2/N, 
Output connections	Wire to L1, L2/N 

System	Wiring	Voltage	Current full load, nominal	External input circuit breaker, (typical)	Wire size, typical
SRT5KRMXLW-HW	Input Output	208/220/ 230/240 Vac	26 A 24 A	40 A/2-pole	6 mm ² (8 AWG)

Hardwire the UPS

CAUTION

RISK OF ELECTRIC SHOCK

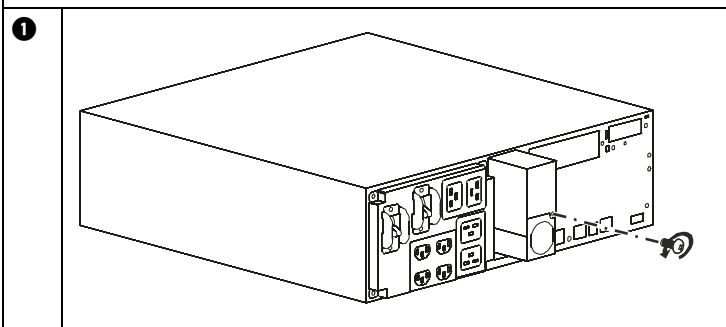
- Disconnect the mains input circuit breaker before installing or servicing the UPS or connected equipment.
- Disconnect internal and external batteries before installing or servicing the UPS or connected equipment.
- The UPS contains internal and external batteries that may present a shock hazard even when disconnected from the mains.
- UPS AC hardwired and pluggable outlets may be energized by remote or automatic control at any time.
- Disconnect equipment from the UPS before servicing any equipment.
- Do not use the UPS as a safety disconnect.
- Use Snap-In strain reliefs provided with the unit.

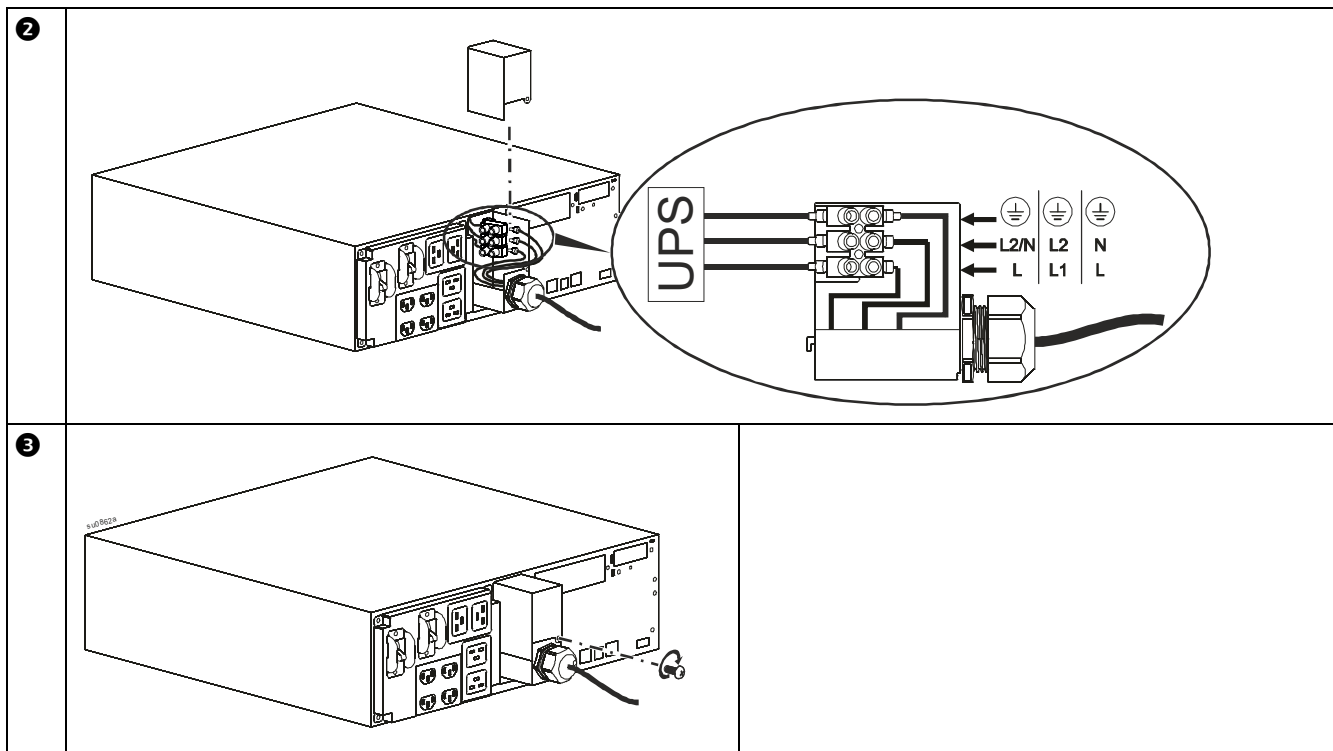
Failure to follow these instructions can result in equipment damage and minor or moderate injury

Input hardwiring

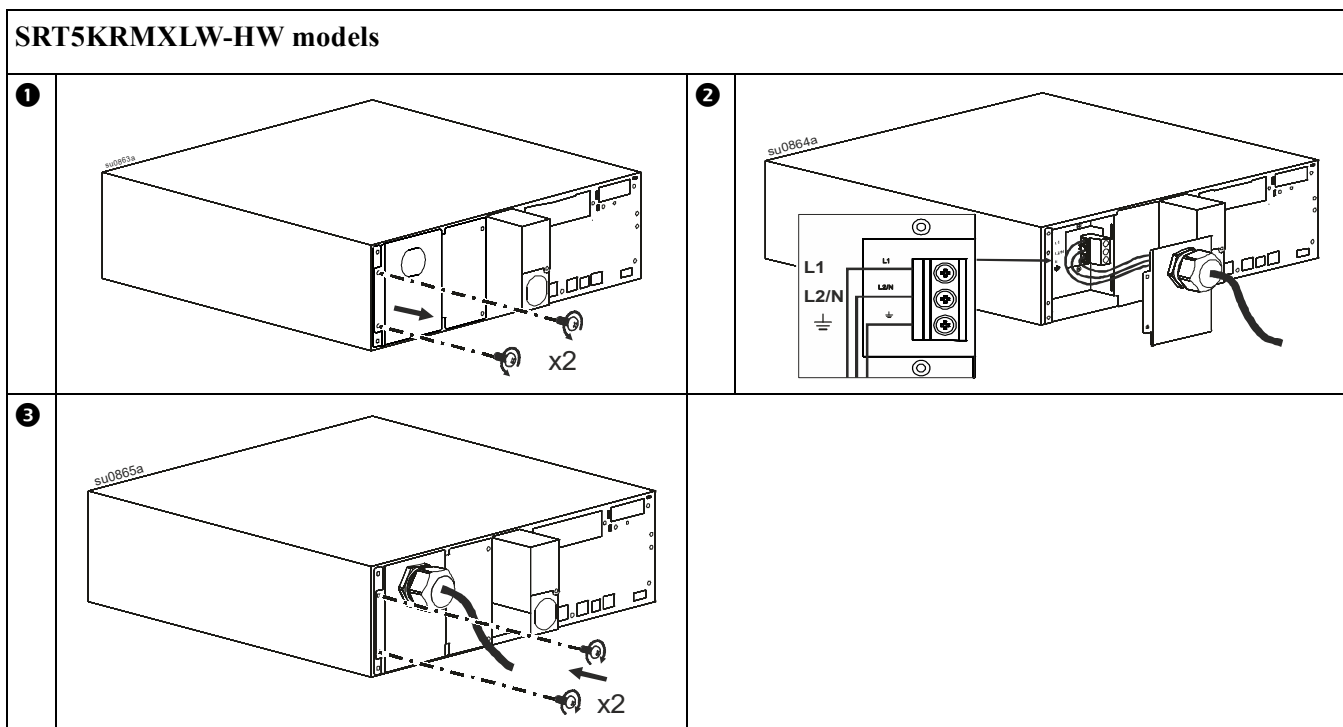
SRT5K/6K models

Remove the 35 mm (1.38 in) knockout panels.





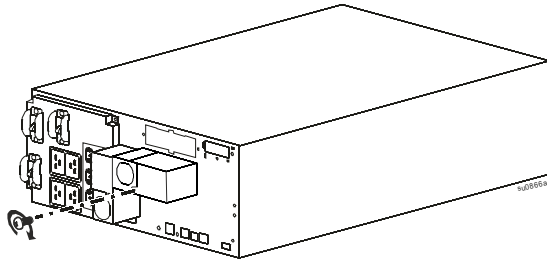
Output hardwiring



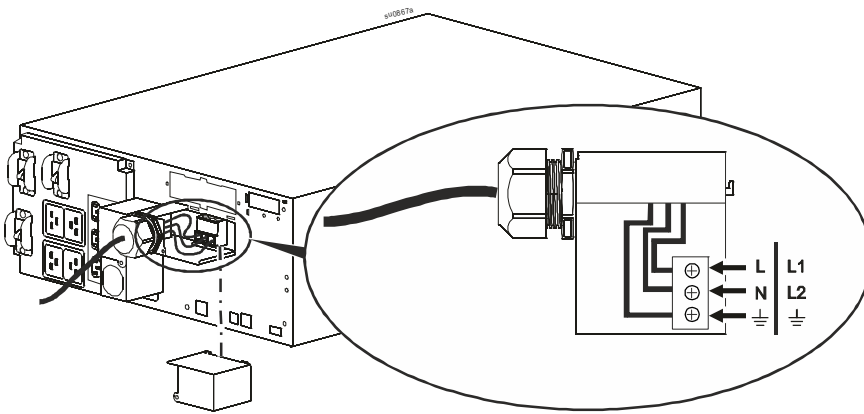
SRT6K models

Remove the 38.1 mm (1.5 in) knockout panels.

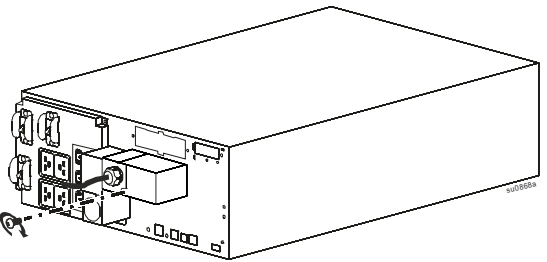
1



2



3



UPS Configuration

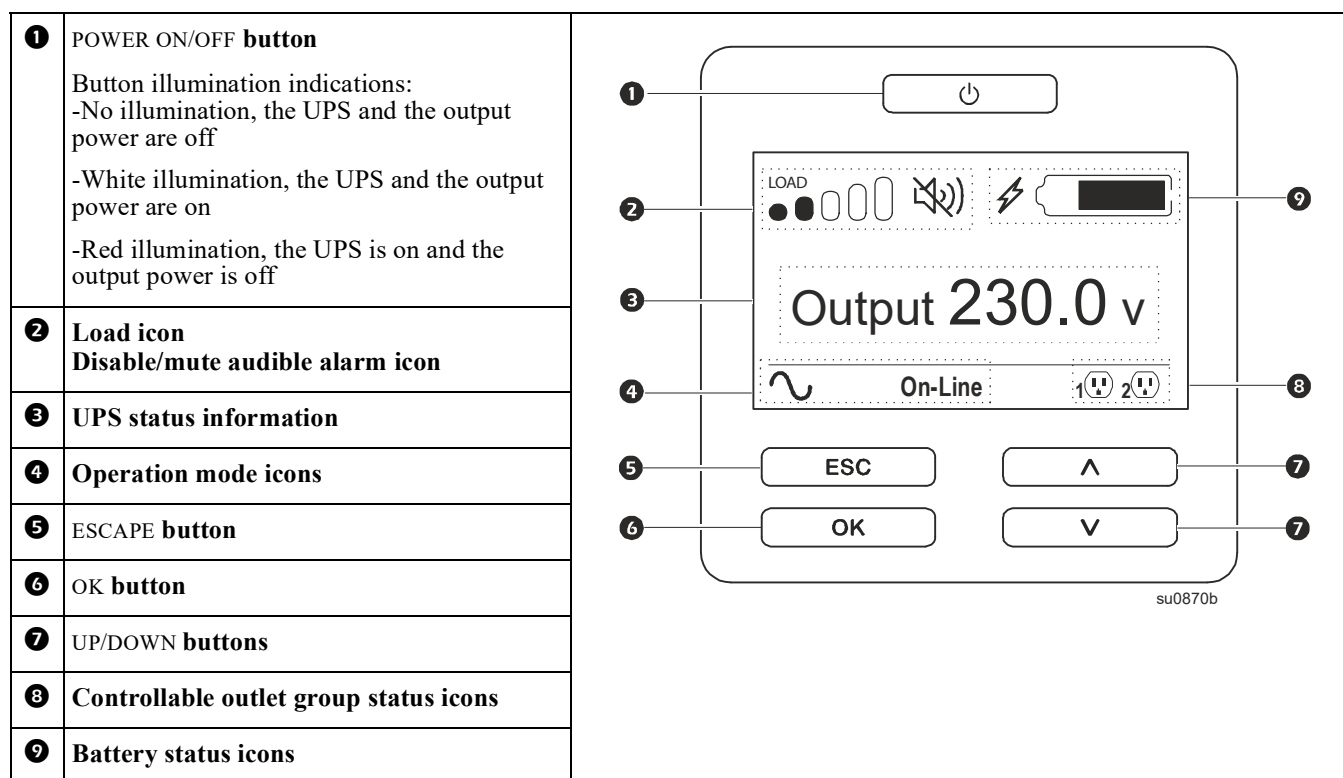
Connect Emergency Power Off feature

For instructions on how to connect the Emergency Power Off (EPO) switch, refer to the Operation and Maintenance manual on the User Documentation CD (supplied).

Configure controllable outlet groups

The outlets on the UPS are grouped. To configure the controlled outlet features, use the **Advanced** menus on the display interface and navigate to: **Main Menu > Configuration > Outlets > Outlet Group**.

UPS Display Interface



UPS Display Interface operation

Use the UP/DOWN buttons to scroll through the options. Press the OK button to accept the selected option. Press the ESC button to return to the previous menu.

The icons on the LCD display interface screen may vary depending on the installed firmware version.

	Load icon: The approximate load capacity percentage is indicated by the number of load bar sections illuminated. Each bar represents 16% of the load capacity.
	Mute icon: Indicates the audible alarm is disabled/mute.

UPS Status Information

The status information field provides key information on the status of the UPS.

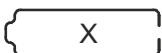
The **Standard** menu will allow the user to select one of the five screens listed below. Use the UP/DOWN buttons to scroll through the screens.

The **Advanced** menu will scroll through the five screens automatically.

- Input Voltage
- Output Voltage
- Output Frequency
- Load
- Runtime

In the case of a UPS event, status updates will be displayed defining the event or condition that has occurred.

The display screen illuminates amber to indicate a Message and red to indicate an Alert depending on the severity of the event or condition.

Operation Mode Icons	
	On-Line mode: The UPS is supplying conditioned mains power to connected equipment.
	Bypass mode: The UPS is in Bypass mode and the connected equipment will receive mains power as long as the input voltage and frequency are within the configured limits.
	Green mode: When in Green mode mains power is sent directly to the load. In the event of a mains power outage, there will be an interruption in power to the load of up to 10 ms while the UPS switches to On-Line mode. When enabling Green mode consideration should be given to devices that may be sensitive to power fluctuations.
UPS Status Icon	
	Battery mode: The UPS is supplying battery power to connected equipment.
	The UPS has detected an internal fault with the battery. Follow the instructions on the screen.
	The UPS has detected a critical fault with the battery. The battery is at the end of its life and has to be replaced.
	Indicates a UPS alert that requires attention.
Controllable Outlet Group Icons	
	Controllable Outlet Group Power Available: The number next to the icon identifies the specific outlet groups that have available power. Flashing icon indicates the outlet group is turning from OFF to ON with delay.
	Controllable Outlet Group Power Not Available: The number next to the icon identifies specific outlet groups that do not have available power. Flashing icon indicates the outlet group is turning from ON to OFF with delay.
Battery Status Icons	
	Battery Charge Status: Indicates the battery charge status.
	Battery Charge In Progress: Indicates the battery is charging.

Menu overview

The display interface has **Standard** and **Advanced** menu screens. The preference for **Standard** or **Advanced** menu selections is made during initial installation and can be changed at any time through the **Configuration** menu.

The **Standard** menus include the most commonly used options.

The **Advanced** menus provide additional options.

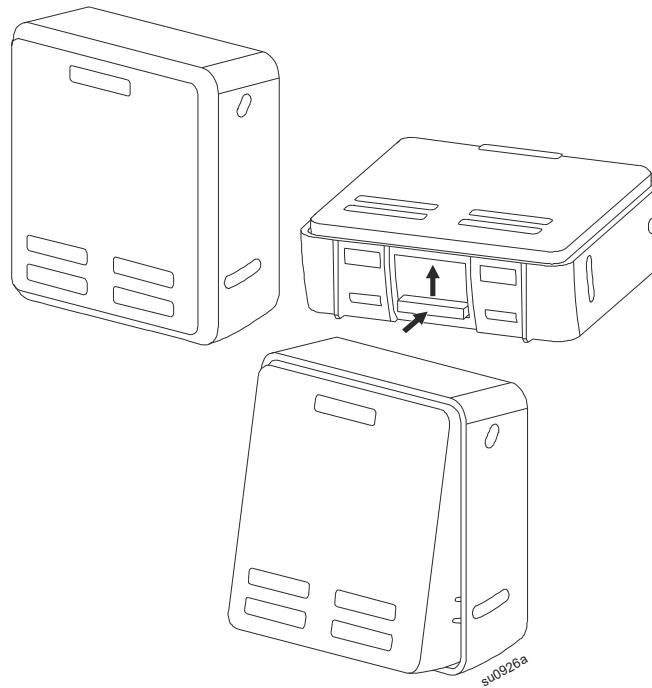
Note: Actual menu screens may differ by model and firmware version.

Refer to the UPS Operation Manual for menu configuration details.

LCD display interface angle adjustment

The angle of the LCD display interface can be adjusted for ease in viewing the displayed messages.

1. Remove the front bezel.
2. Locate the button on the bottom of the display interface panel.
3. Press the button and slide the bottom of the LCD display interface screen out. An audible click will be heard when the screen reaches the maximum angle.



Select models are ENERGY STAR® qualified.
For more information go to www.apc.com

Customer support and warranty information are available on the APC web site, www.apc.com.

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