

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

Important Safety Information

Read the instructions carefully to become familiar with the equipment before trying to install, operate, service or maintain it. The following special messages may appear throughout this manual 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 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.

CAUTION

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

CAUTION

CAUTION addresses practices not related to physical injury including certain environmental hazards, potential damage or loss of data.



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.
- 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.
- Leakage current for a pluggable Type A UPS may exceed 3.5 mA when a separate ground terminal is used.
- 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 be green and with or without a yellow stripe.
- The ground conductor must be grounded to earth at the service equipment, or if supplied by a separately derived system, at the supply transformer or motor generator set.
- The battery typically lasts 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.
- 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 XLBP in a rack.
- Always install XLBPs at the bottom in rack-mount configuration. The UPS must be installed above the XLBPs.
- Always install peripheral equipment above the UPS in rack-mount configuration.
- The UPS will recognize as many as 10 external battery packs connected to the UPS. However there is no limit to the number of XLBPs that can be used with the UPS.
- 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.

Deenergizing safety

The UPS contains internal batteries and may present a shock hazard even when disconnected from the branch circuit (mains). Before installing or servicing the equipment, verify that the internal batteries are disconnected, that external extended run batteries are disconnected and the branch circuit (mains) is turned off.

Electrical safety

- Connection to the branch circuit (mains) must be performed by a qualified electrician.
- 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 and with or without a yellow stripe.
- The grounding conductor is to be grounded to earth at the service equipment, or if supplied by a separately derived system, at the supply transformer or motor generator set.
- 230 V models only: In order to maintain compliance with the EMC directive for products sold in Europe, output cords attached to the UPS should not exceed 10 meters in length.
- Leakage current for a pluggable Type A UPS may exceed 3.5 mA when a separate ground terminal is used.

Battery safety

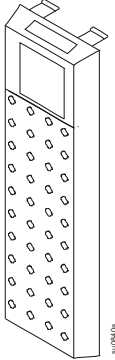
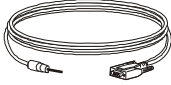
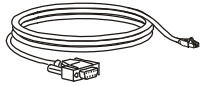
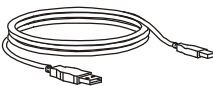
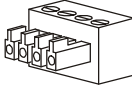
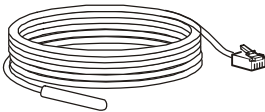


- Before installing or replacing the batteries, remove jewelry such as wristwatches and rings. High short circuit current through conductive materials could cause severe burns.
- Do not dispose of batteries by burning them. The batteries may explode.
- Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes, and may be toxic.

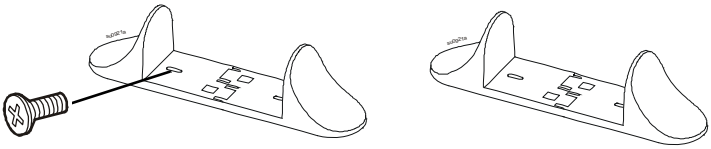
Hardwire safety

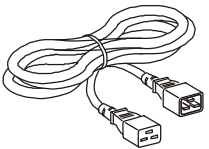
- Verify that all branch circuit (mains) and low voltage (control) circuits are deenergized, and locked out before installing cables or making connections, whether in the junction box or to the UPS.
- Wiring by a qualified electrician is required.
- Check national and local codes before wiring.
- Strain relief is required for all hardwiring.
- All openings allowing access to UPS hardwiring 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.

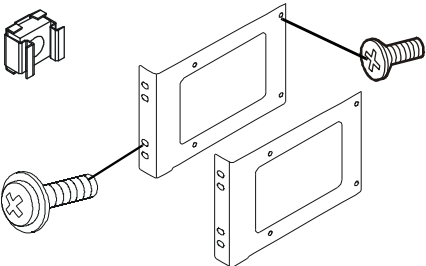
Package Contents

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

Included with all models			
<p>Front bezel</p> 	<p>Cable console to DB9</p>  <p>Cable RJ45 to DB9</p>  <p>USB cable</p> 	<p>EPO Terminal block</p>  <p>Temperature sensor probe</p> 	<p>User documentation CD For information on network interface functionality, go to the Operation Manual on this CD.</p>  <p>UPS Management Card Utilities CD</p> 

Included with Tower and SRT5KRMXLW-HW models only
<ul style="list-style-type: none"> • 1 pair tower stabilizer brackets • 4 flat head screws to secure tower stabilizer brackets to the UPS 

Included with XLI and XLT-IEC models only
<p>2 output power cords: 1.2 m in length 2 m in length</p> 

Included with Rack Mount models only	
<p>Rail Kit with instructions and hardware for installing rails in a rack.</p>	<ul style="list-style-type: none"> • 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 

Remove Battery

⚠ CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

- The equipment is heavy. Each battery module weighs 17 kg (37 lbs).
- Always practice safe lifting techniques adequate for the weight of the equipment.
- Remove the batteries before installing the UPS.

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

⚠ CAUTION

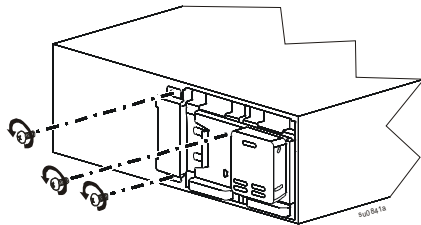
DAMAGE TO EQUIPMENT OR PERSONNEL

- Adhere to all local and national electrical codes.
- Wiring must be performed by a qualified electrician.
- Install a high magnetic utility circuit breaker with appropriate rating for the product.

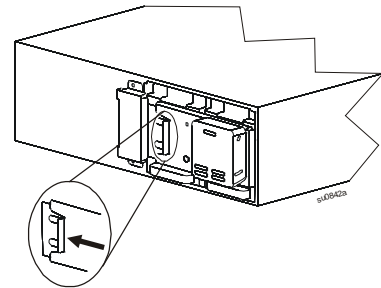
Failure to follow these instructions can result in equipment damage and minor or moderate injury.

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

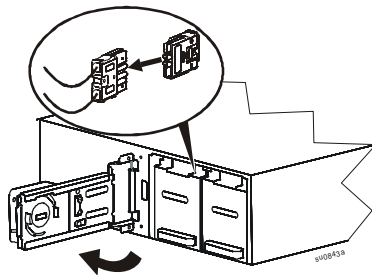
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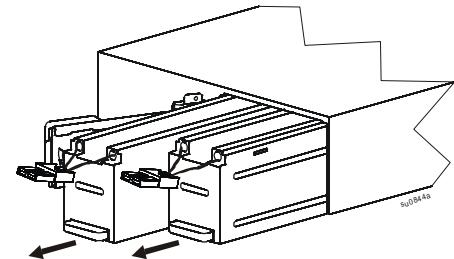
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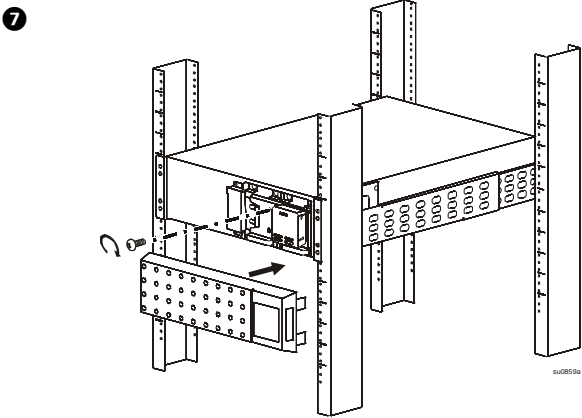
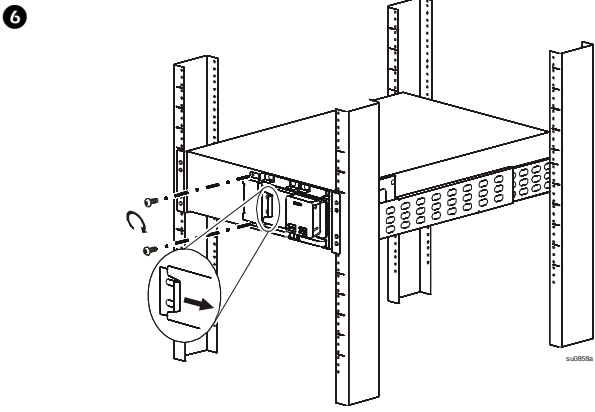
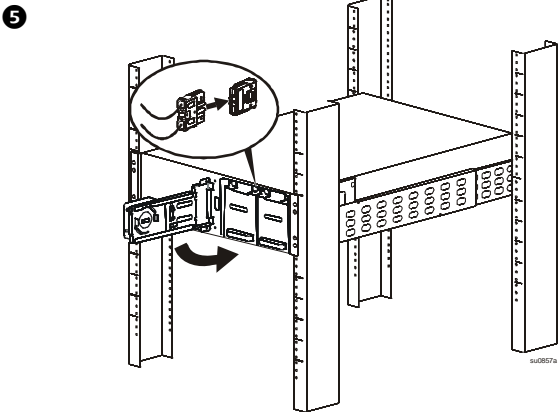
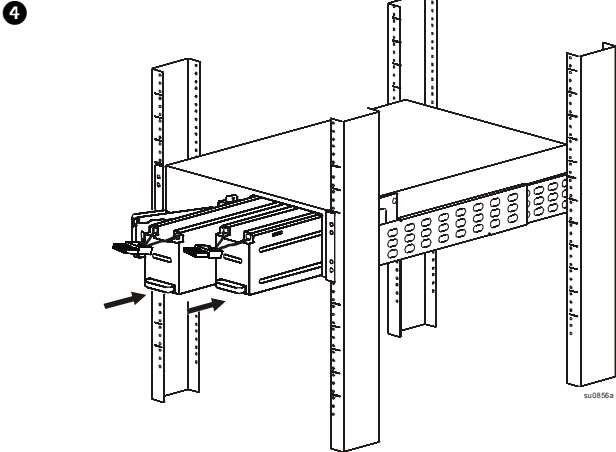
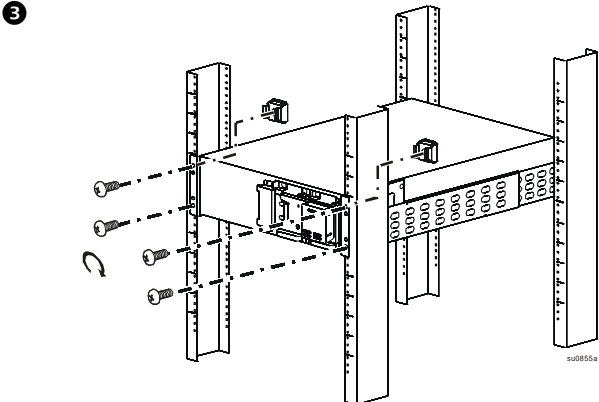
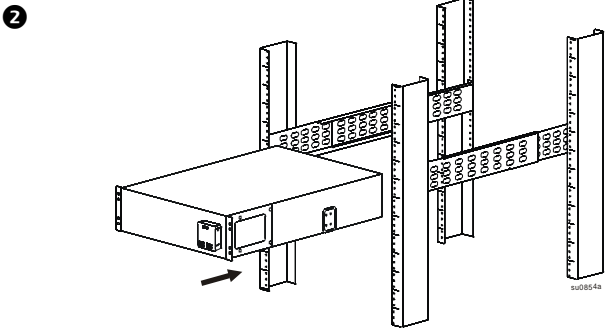
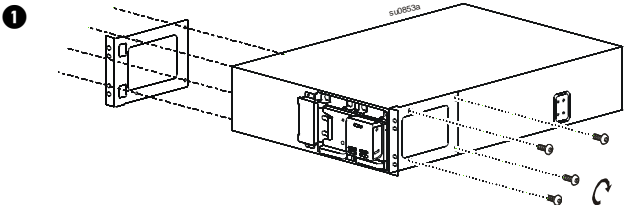


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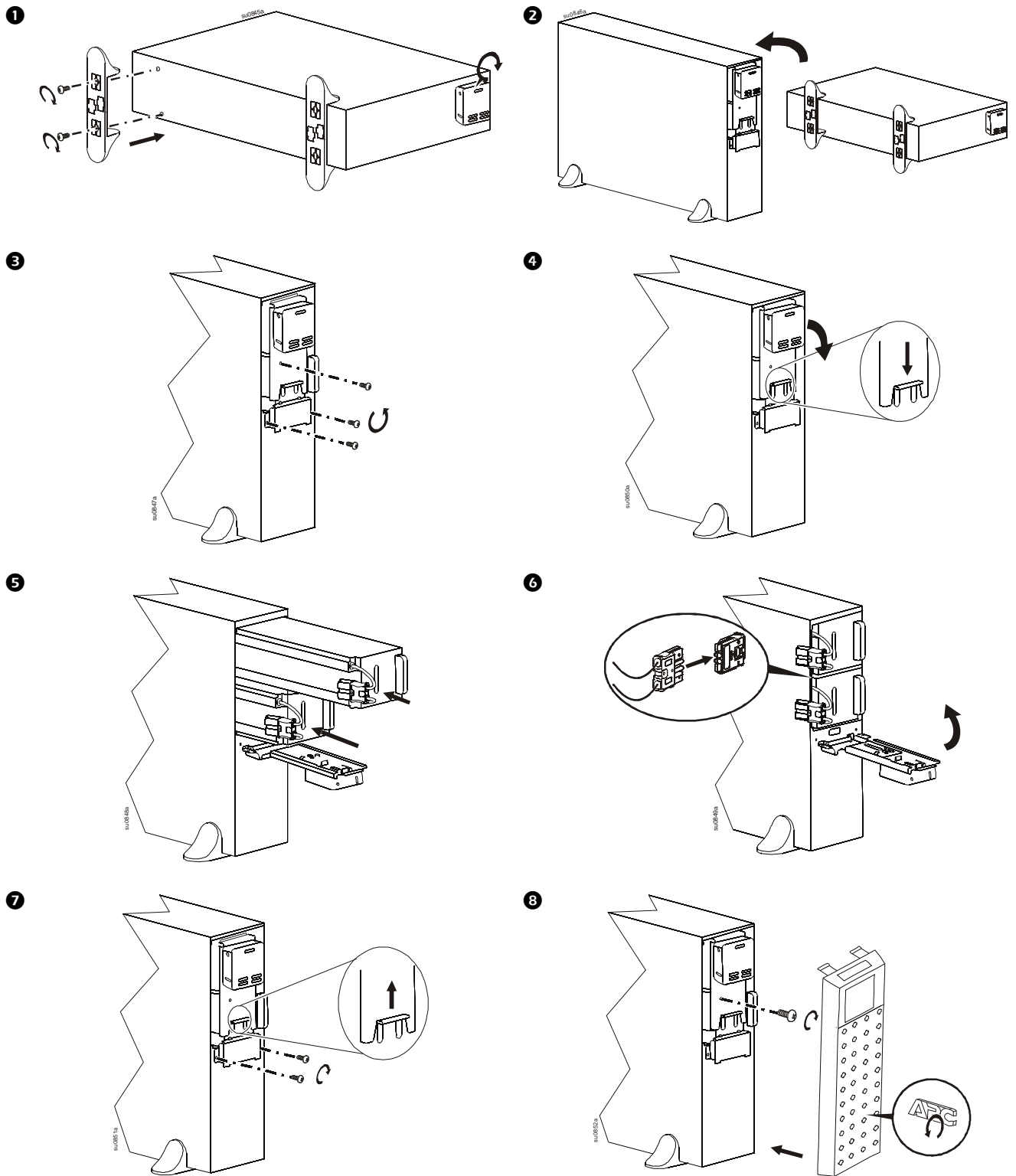


Rack-Mount Configuration

Refer to the rail kit manual for instructions on the rail installation.



Tower Configuration



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).

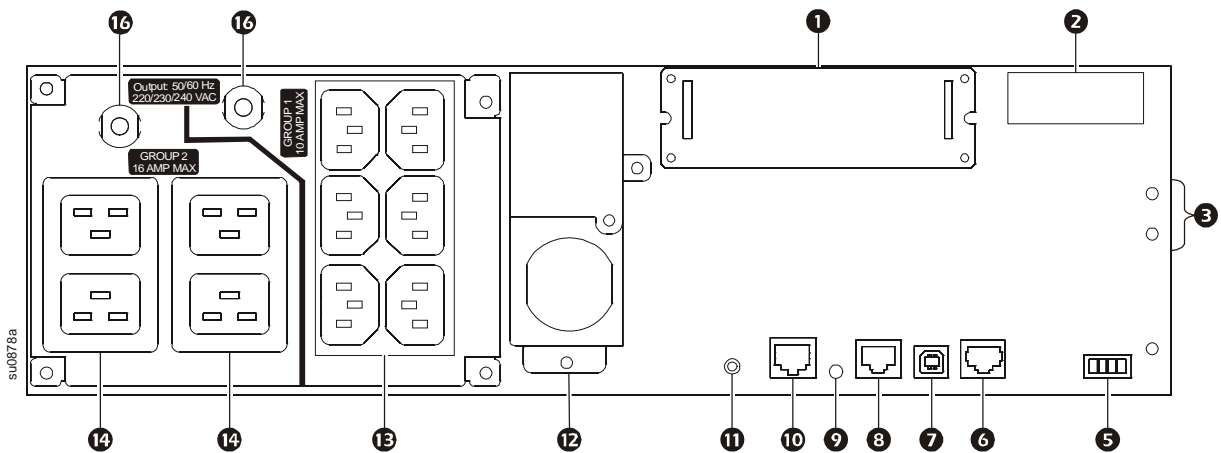
Configure controllable outlet groups

The outlets on the UPS are configured into groups. To utilize the controlled outlet features, use the **Advanced** menus on the display interface and navigate to: **Main Menu > Control > Outlet1 Control**.

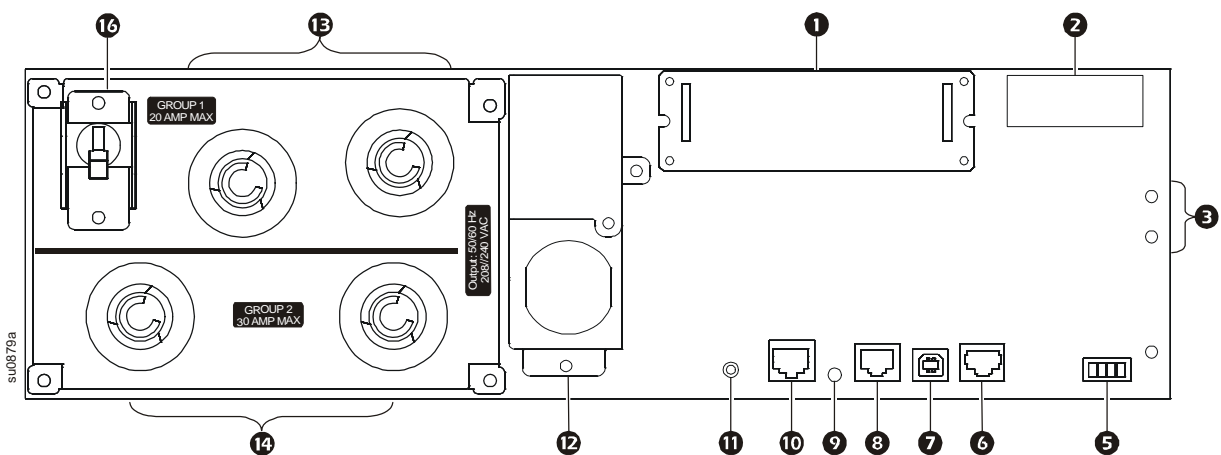
Rear panel features

Note: There is a table on pages 11 and 12 in this manual that provides a key to the callout numbers for the seven rear panel graphics depicted in this manual.

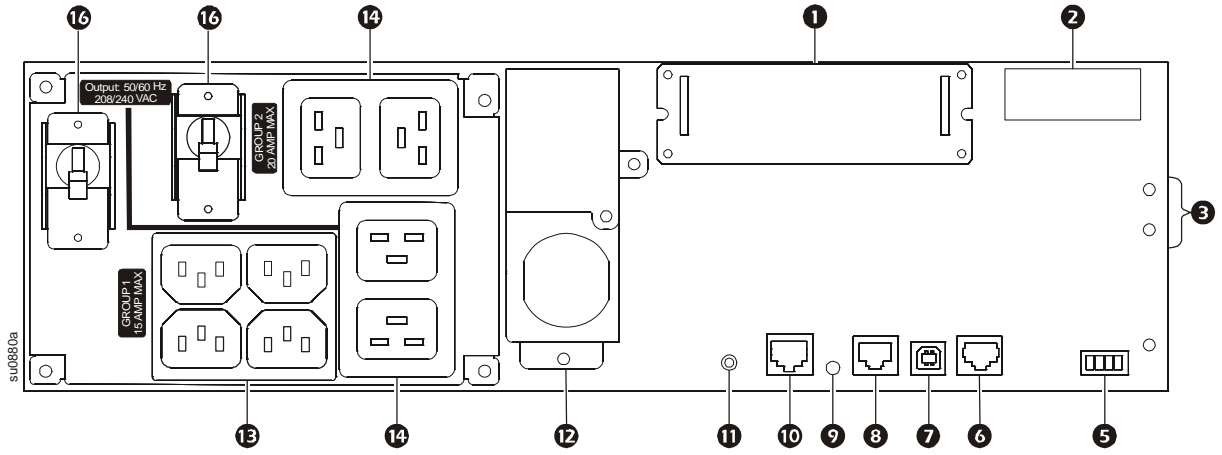
SRT5KXLI / SRT5KRMXLI



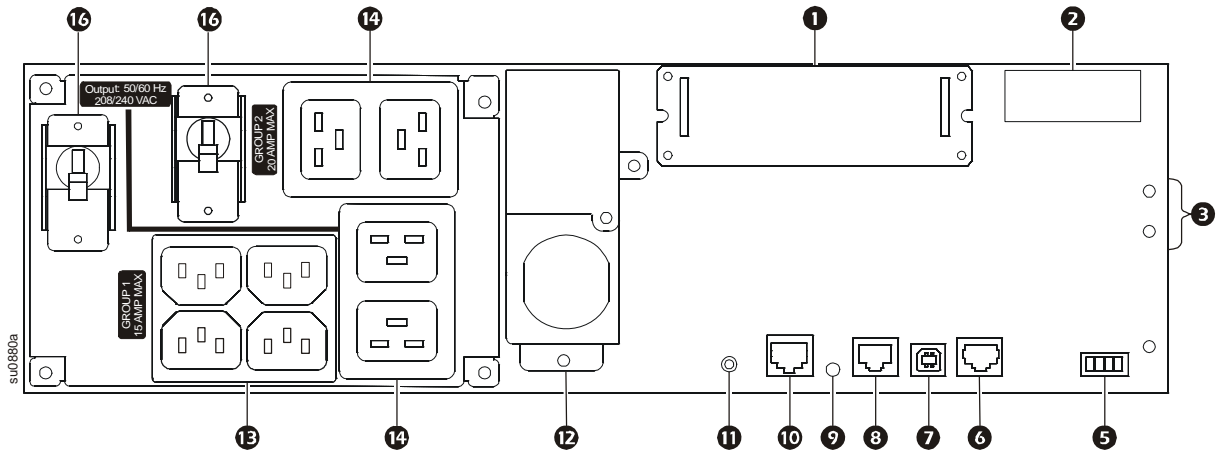
SRT5KXLT / SRT5KRMXLT



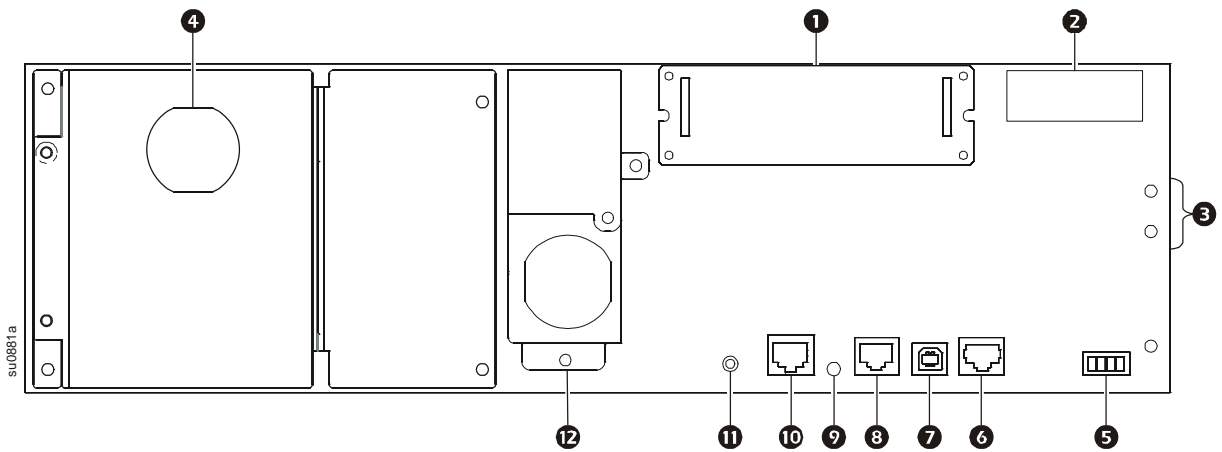
SRT5KXLT-IEC / SRT5KRMXLT-IEC



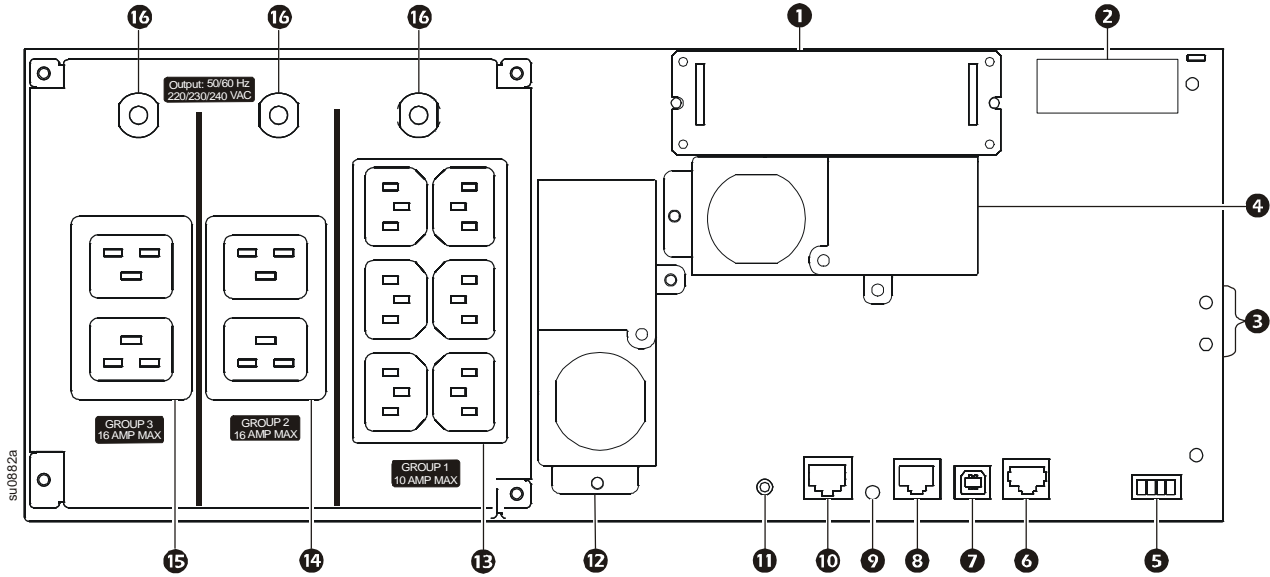
SRT5KXLT-IEC / SRT5KRMXLT-IEC



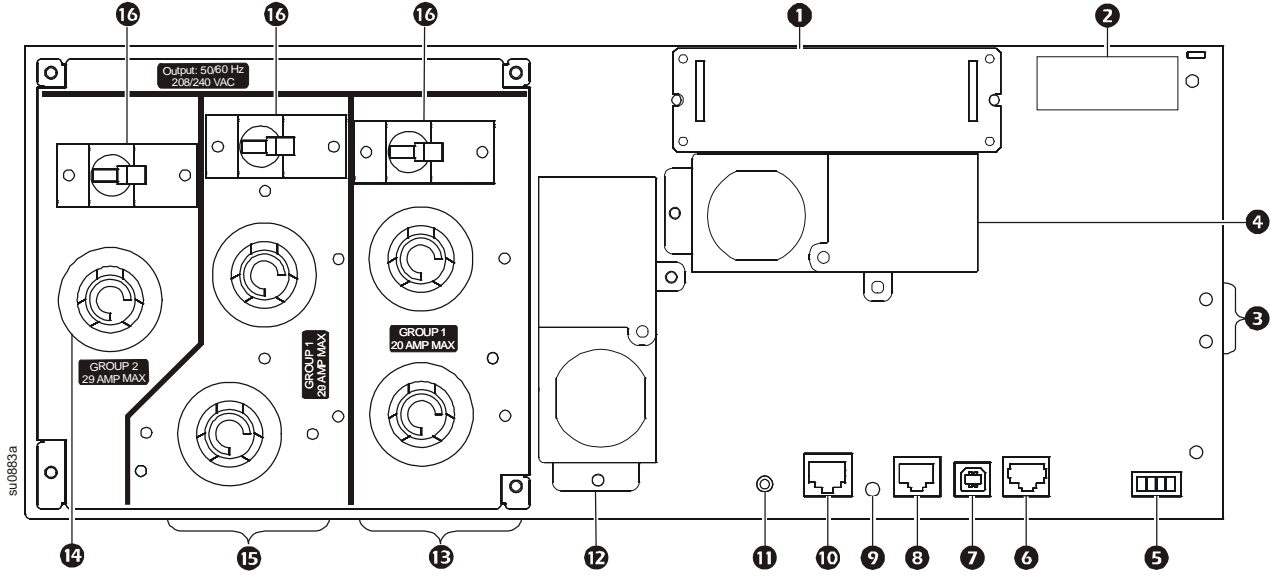
SRT5KRMXLW-HW



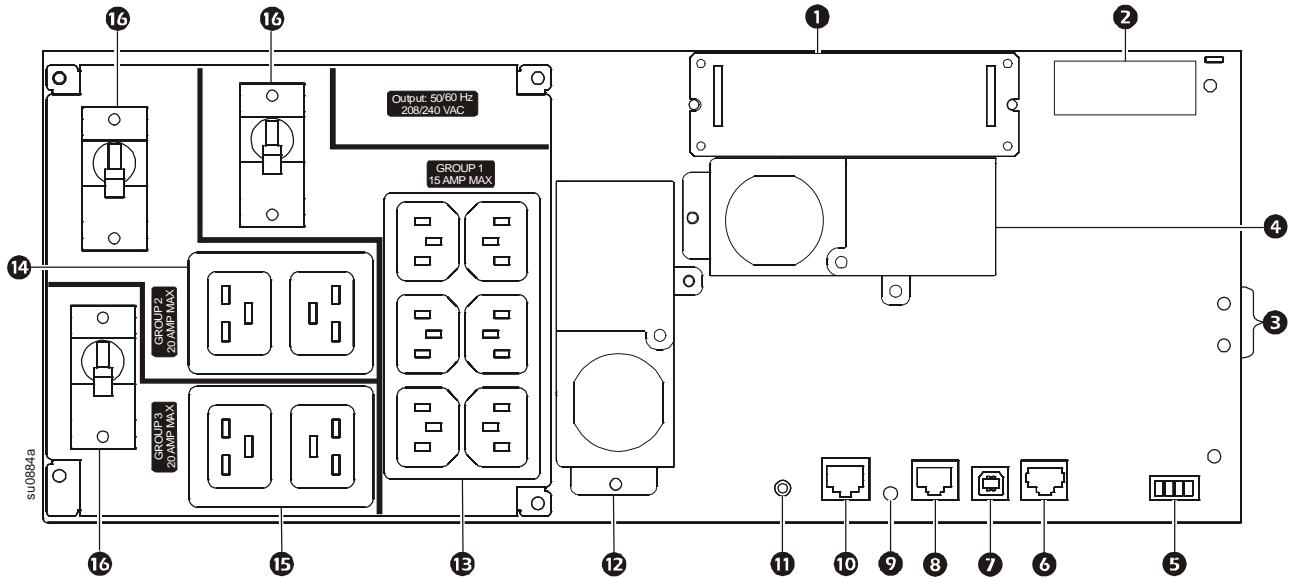
SRT6KXLI / SRT6KRMXLI



SRT6KXLT / SRT6KRMXLT



SRT6KXLT-IEC / SRT6KRMXLT-IEC



①	SmartSlot	The SmartSlot can be used to connect optional management accessories.
②	External battery 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.
③	Chassis ground screws	The UPS has ground screws for connecting the ground leads on transient voltage devices. Prior to connecting a ground lead, disconnect the UPS from utility power.
④	Hardwire output connection	SRT5KRMXLW-HW, SRT6KXLI, SRT6KRMXLI, SRT6KXLT, SRT6KRMXLT, SRT6KXLT-IEC, SRT6KRMXLT-IEC models are equipped with a hardwire connection. Refer to “Wiring Specifications” on page 12 for hardwire specifications.
⑤	EPO terminal	The Emergency Power Off (EPO) terminal allows the user to connect the UPS to a central EPO system.
⑥	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.
⑦	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. NOTE: Serial and USB communication can not be used simultaneously. Use either the Serial Com or the USB port.
⑧	Universal I/O port	Use to connect: <ul style="list-style-type: none"> • 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
⑨	Console port	Use the Console port to configure the network management features.
⑩	Network port	Use the Network port to connect the UPS to the network.

⑪	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.
⑫	UPS input power cable	<ul style="list-style-type: none"> • SRT5KXLT, SRT5KRMXLT, SRT5KXLT-IEC, SRT5KRMXLT-IEC models have factory installed input power cables. • All other models have removable input wiring boxes. Refer to “Wiring Specifications” on page 12.
⑬	Controllable outlet group 1	Connect critical electronic devices such as a computer, monitor, modem or other data sensitive devices to these outlets.
⑭	Controllable outlet group 2	Connect peripheral electronic devices to these outlets.
⑮	Controllable outlet group 3	Connect peripheral electronic devices to these outlets.
⑯	UPS Circuit breaker reset button or switch	Use the button or switch to reset the UPS circuit breaker after an overload condition has occurred.

Wiring Specifications

Input and output circuit breaker

SRT5KRMXLW-HW, SRT5K/6KXLT AND SRT5K/6KXLT-IEC models	
Input connection	Wire to L1, L2, $\underline{\underline{\perp}}$
Output connection	Wire to L1, L2, $\underline{\underline{\perp}}$

System	Wiring	Voltage	Current full load, nominal	External circuit breaker, typical	Wire size, typical*
SRT5KRMXLW-HW	Input	208/220/230/ 240 V	26 A	40 A / 2-pole	#8 AWG
	Hardwired output			Include appropriate breaker protection	
SRT5KXLT SRT5KRMXLT SRT5KXLT-IEC SRT5KRMXLT-IEC	Input	208/240 V	24 A	30 A / 2-pole	Not applicable
SRT6KXLT SRT6KRMXLT SRT6KXLT-IEC SRT6KRMXLT-IEC	Input	208/240 V	33 A	50 A / 2-pole	#6 AWG
	Hardwired output			Include appropriate breaker protection	

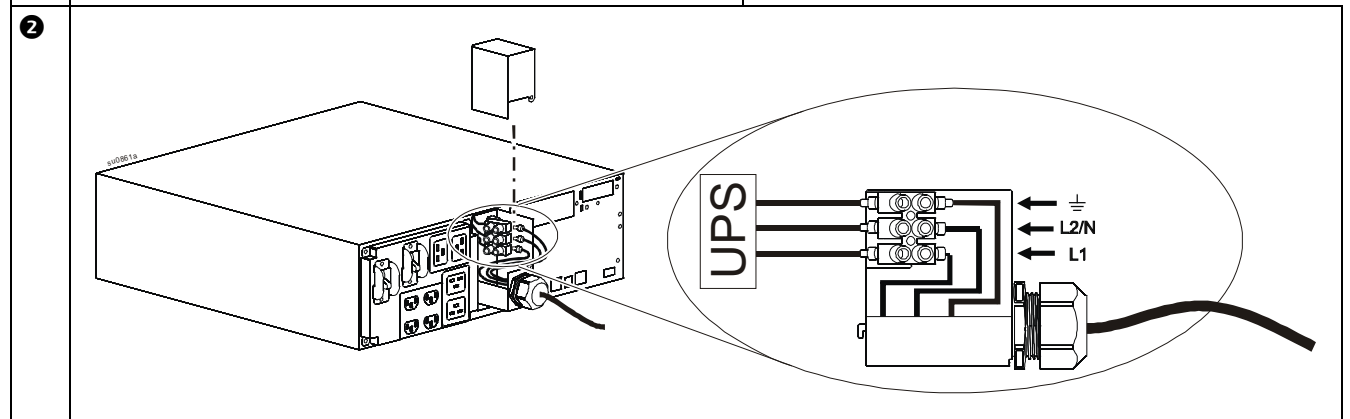
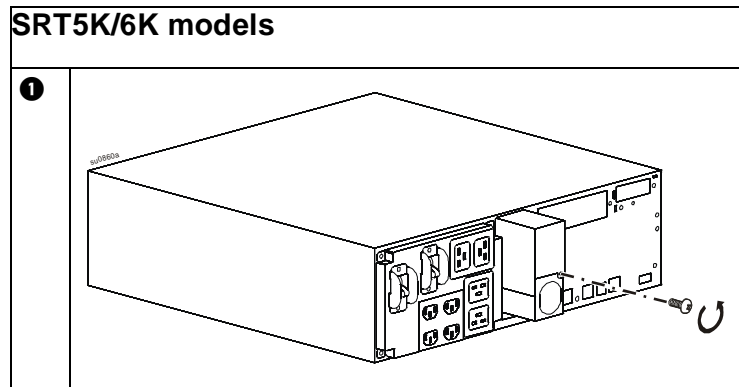
* Recommended wire sizes are typical. Actual wire size must comply with required amp capacity and local and national electrical codes.

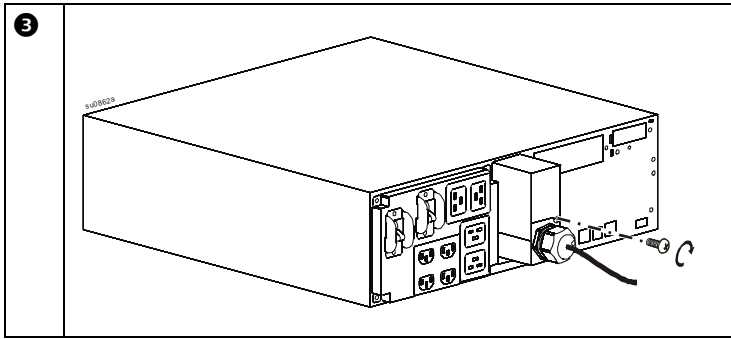
SRT5KRMXLW-HW and SRT5K/6KXLI models	
Input connection	Single phase: Wire to L1, N, \perp
Output connection	Wire to L1, N, \perp

System	Wiring	Number of phases	Voltage	Current full load, nominal	External circuit breaker, typical	Wire size, typical*
SRT5KRMXLW-HW	Input	1	208/220/230/240 V	26 A	40 A / 2-pole	10 mm ²
	Hardwired output				Include appropriate breaker protection	
SRT5KXLI SRT5KRMXLI	Input	1	220/230/240 V	24 A	40 A / 2-pole	10 mm ²
SRT6KXLI SRT6KRMXLI	Input	1	220/230/240 V	32 A	50 A / 2-pole	16 mm ²
	Hardwired output			28 A	Include appropriate breaker protection	16 mm ²

* Recommended wire sizes are typical. Actual wire size must comply with required amp capacity and local and national electrical codes.

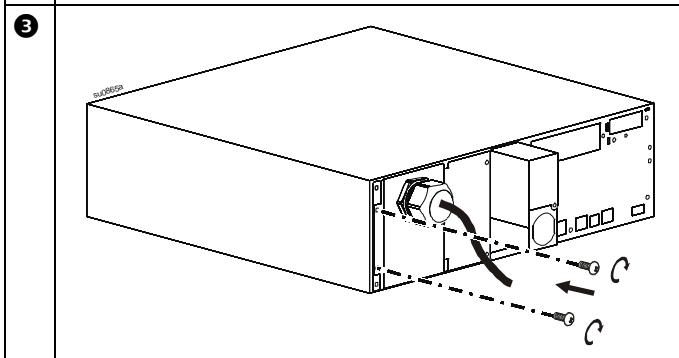
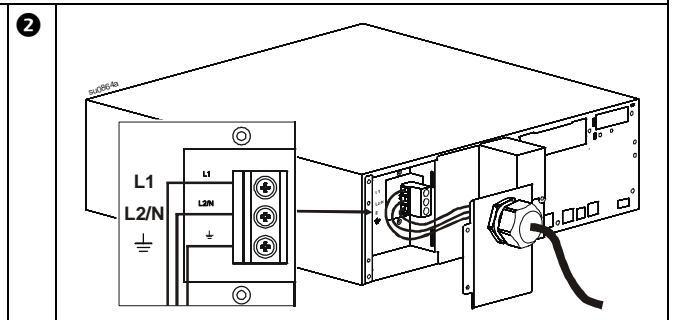
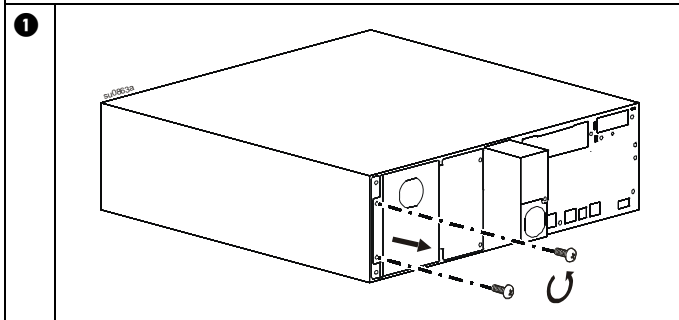
Input Hardwiring



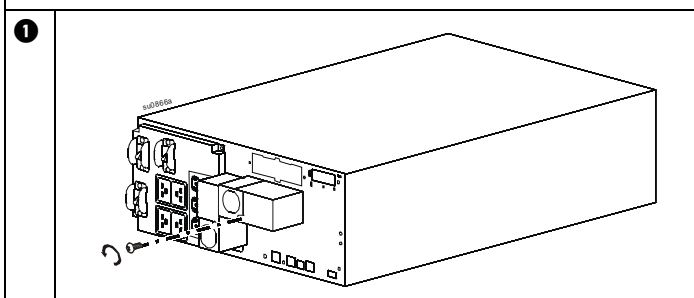


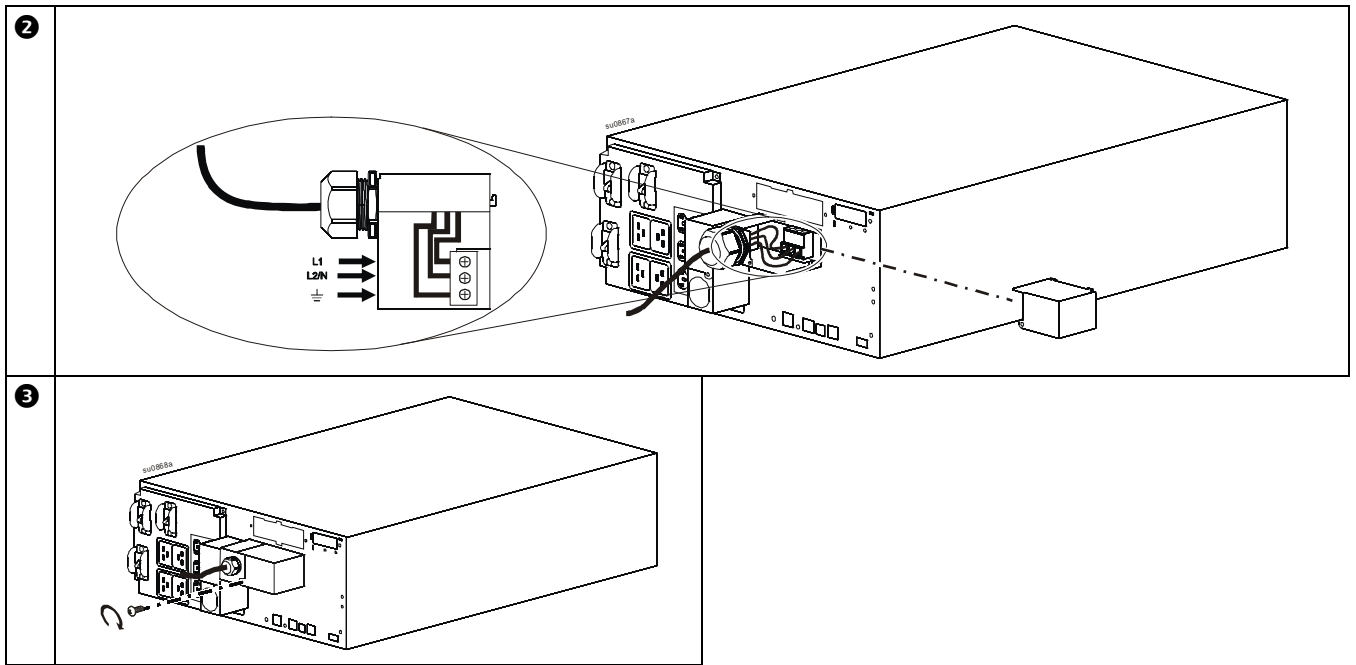
Output Hardwiring

SRT5KRMXLW-HW / SRT5KXLW-HW models

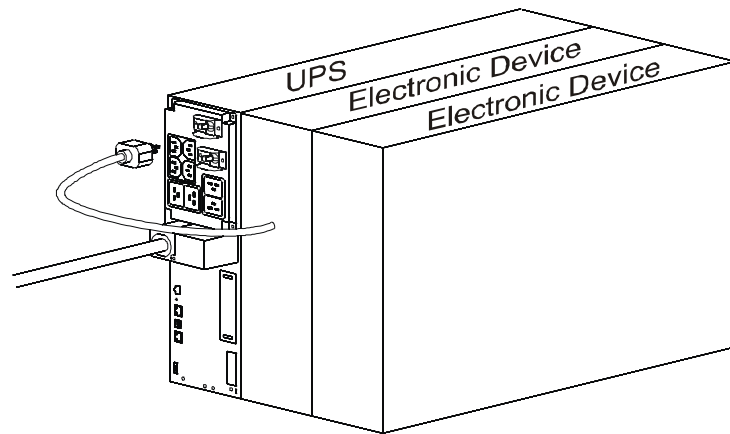


SRT6K models

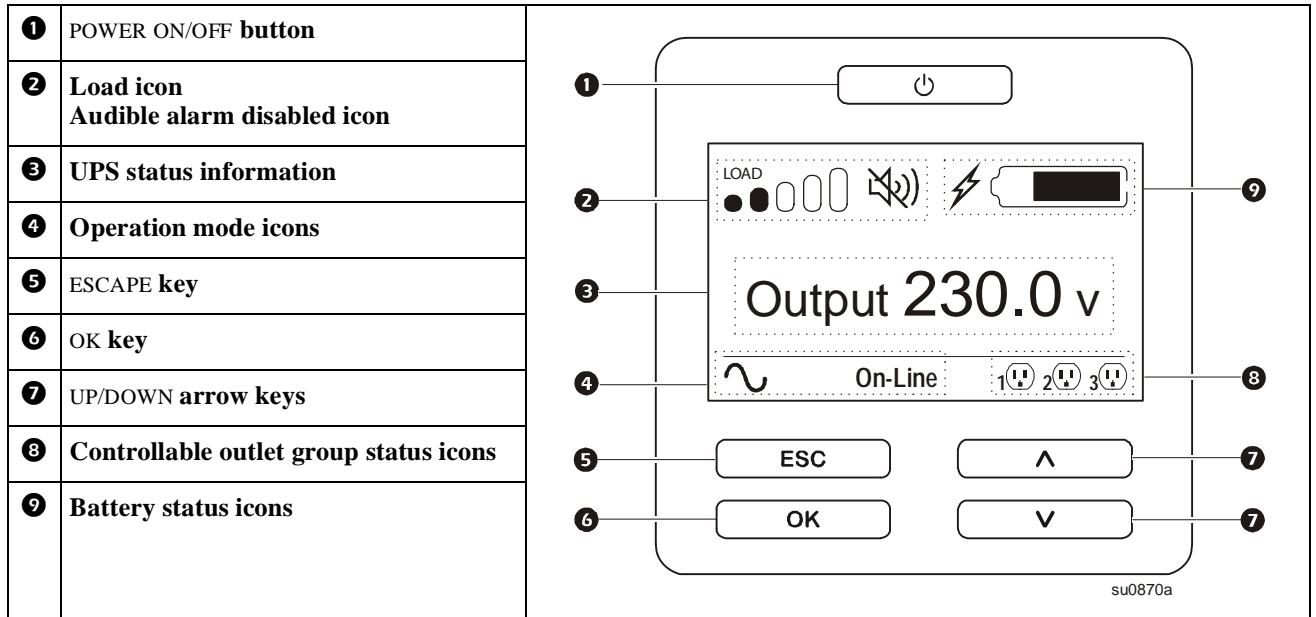




Electrical Connections



Display Interface



LCD display screen

The icons on the display interface 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 20% of the load capacity.
	Mute: Icon indicates the audible alarm is disabled.

UPS Status Information

The status information field provides key information on the status of the UPS. There are five scrolling messages.

Input Voltage

Output Voltage

Output Frequency

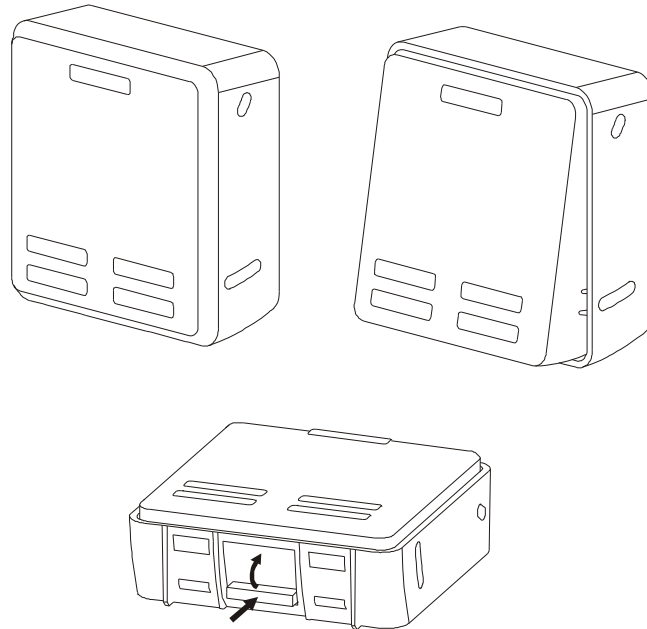
Load

Runtime

In the case of a UPS event, status updates will be displayed defining the of event or condition that has occurred. The display screen illuminates yellow to indicate a Warning and red to indicate an Alert depending on the severity of the event or condition.

Display interface panel position

The position of the display interface panel can be adjusted to allow ease in reading the displayed information. Press the button on the bottom of the display interface panel. Gently slide the bottom of the panel out.



FCC Class A products

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.

Customer support and warranty information is available at the APC by Schneider Electric Web site,
www.apc.com.

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