



by Schneider Electric

# Installation Guide Smart-UPS™ On-Line SRT1000/SRT1500 XLI Tower/Rack-Mount

## Important Safety Messages

Read the instructions carefully to become familiar with the equipment before attempting to install, operate, service or maintain the UPS. 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 product safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



The addition of this symbol to a Warning or Caution product safety label indicates that a hazard exists that can result in injury and product damage if the instructions are not followed.

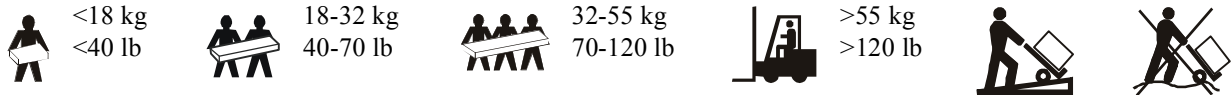
<b>⚠ DANGER</b>
<b>DANGER</b> indicates a hazardous situation which, if not avoided, will result in death or serious injury.

<b>⚠ WARNING</b>
<b>WARNING</b> indicates a hazardous situation which, if not avoided, could result in death or serious injury.

<b>⚠ CAUTION</b>
<b>CAUTION</b> indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

<b>NOTICE</b>
<b>NOTICE</b> is used to address practices not related to physical injury.

## Product Handling Guidelines



# 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:
  - Input 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.
- Have a proper grounding for input socket for the models with pluggable power cords.
- 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 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.
- Leakage current for a pluggable Type A UPS may exceed 3.5 mA when a separate ground terminal is used.

## Battery safety

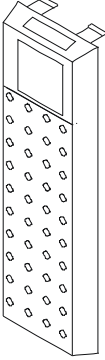
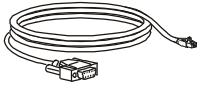
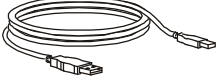
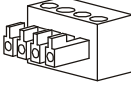


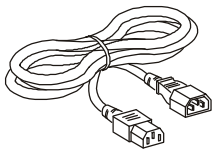
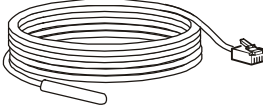
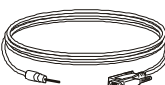

- When replacing batteries, replace with the same number and type of batteries as originally installed in the equipment.
- Batteries typically last for two to five years. Environmental factors impact battery life. Elevated ambient temperatures, poor quality utility power, and frequent short duration 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 conductive jewelry such as chains, wrist watches and rings. High energy 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 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.

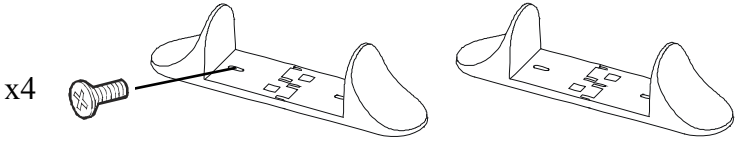
# Package Contents

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

Included with all models			NC models only
<p>Front bezel</p> 	<p>RJ45 to DB9 cable</p>  <p>USB cable</p>  <p>EPO Terminal block</p> 	<p>User Documentation CD.</p>  <p>PCBE Software CD</p>  <p>1 output IEC jumper cable</p> 	<p>Temperature sensor probe</p>  <p>Serial configuration cable</p>  <p>Network Management Utility CD</p> 

**Included with Tower models only**

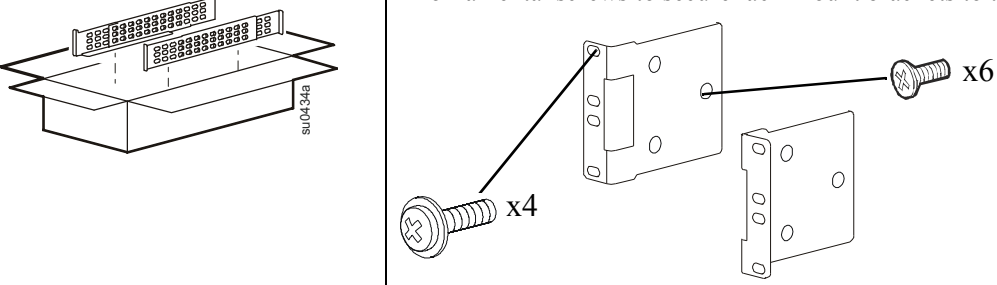
- 2 pairs stabilizer brackets
- 4 flat head screws to secure tower stabilizer brackets to the UPS



**Included with Rack-Mount models only**

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

- 1 pair rack-mount brackets
- 6 flat head screws to secure rack-mount brackets to the UPS
- 4 ornamental screws to secure rack-mount brackets to the rails



# Specifications

For additional specifications refer to the APC by Schneider Electric web site, [www.apc.com](http://www.apc.com).

## Environmental

<b>Temperature</b>	<b>Operating</b>	0° to 40° C (32° to 104° F)
	<b>Storage</b>	-15° to 45° C (5° to 113° F)
<b>Elevation</b>	<b>Operating</b>	0 - 3,000 m (0 - 10,000 ft)
	<b>Storage</b>	0 - 15,000 m (50,000 ft)
<b>Humidity</b>	0% to 95% relative humidity, non-condensing	
<b>Protection Class</b>	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

**SRT1000XLI/SRT1000RMXLI/SRT1000RMXLI-NC  
SRT1500XLI/SRT1500RMXLI/SRT1500RMXLI-NC model**

The UPS is heavy. Follow all lifting guidelines.

<b>Unit weight batteries included, without packaging</b>	22 kg (48.5 lb)
<b>Unit weight batteries included, with packaging</b>	Rack-Mount models: 29.6 kg (65.26 lb) Tower models: 26.9 kg (59.3 lb)
<b>Unit dimensions without packaging Height x Width x Depth</b>	85 (2U) mm x 432 mm x 505 mm 3.35 (2U) in x 17 in x 20 in
<b>Unit dimensions with packaging Height x Width x Depth</b>	245 mm x 595 mm x 750 mm 9.7 in x 23.4 in x 29.5 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 UPS internal overtemperature, 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.

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

<b>Battery type</b>	Sealed, maintenance-free, Valve Regulated Lead-Acid battery
<b>Replacement battery module</b> 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, <a href="http://www.apc.com">www.apc.com</a> for information on replacement batteries.	APCRBC155
<b>Number of battery modules</b>	1 battery module
<b>Voltage for each battery module</b>	48 VDC
<b>Total battery voltage for the UPS</b>	48 VDC
<b>Ah rating</b>	9 Ah per battery module
<b>XLBP cable length</b>	500 mm (19.7 in)

## Electrical

**CAUTION:** To reduce the risk of fire, connect the UPS only to a circuit provided with recommended maximum branch circuit overcurrent protection.

Models	Rating		Branch Circuit Overcurrent Rating / Building Circuit Breaker (CB) Current Rating
	Online	Green Mode	
SRT1000XLI	1000 VA / 1000 W	1000 VA	16 A
SRT1000RMXLI/SRT1000RMXLI-NC			
SRT1500XLI	1500 VA / 1500 W	1500 VA	16 A
SRT1500RMXLI/SRT1500RMXLI-NC			

Output	
Output Frequency	50 Hz / 60 Hz (Selectable)
Nominal Output Voltage	220/230/240 V (Selectable)
Input	
Input Frequency	40 Hz - 70 Hz
Nominal Input Voltage	220/230/240 V
Nominal Input Current	SRT1500XLI/SRT1500RMXLI/SRT1500RMXLI-NC: 9 A SRT1000XLI/SRT1000RMXLI/SRT1000RMXLI-NC: 6.5 A

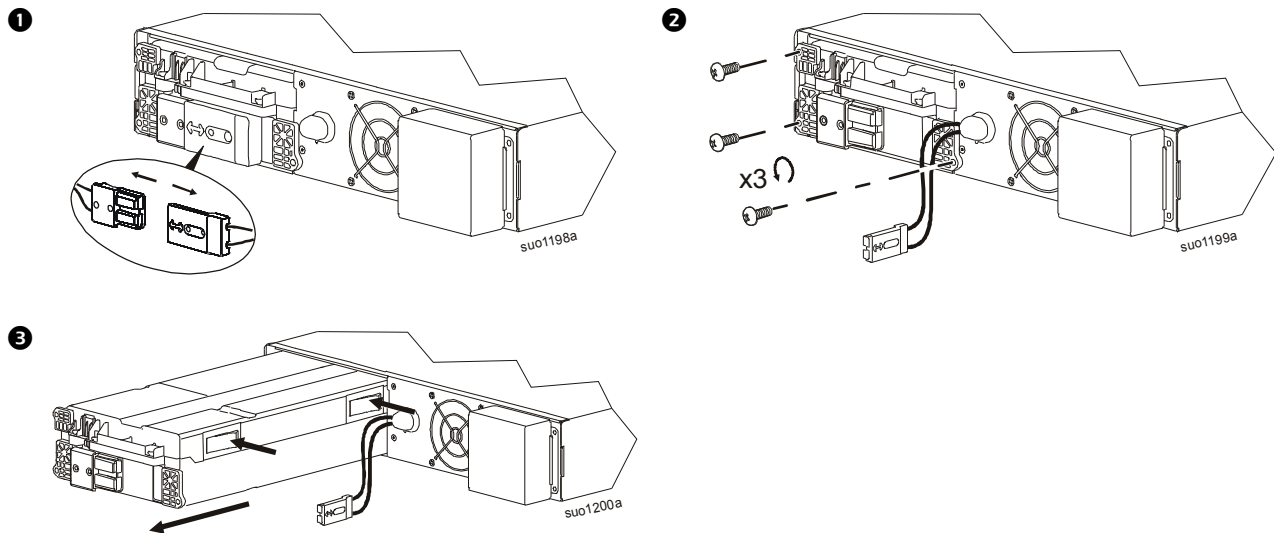
# Remove Battery Module

## CAUTION

### RISK OF FALLING EQUIPMENT

- The equipment is heavy. Each APCRBC155 battery module weighs 11 kg (24.25 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 minor or moderate injury.





# Rack-Mount Installation

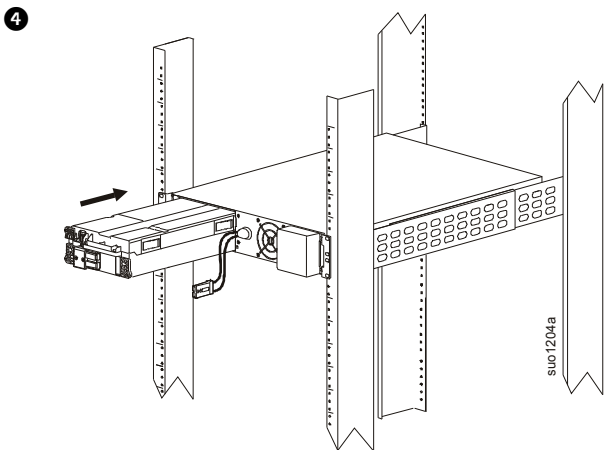
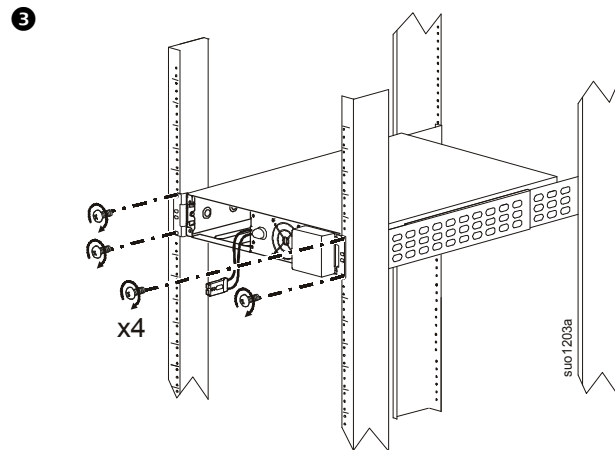
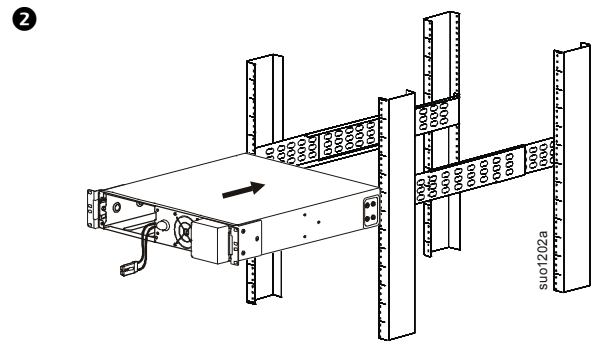
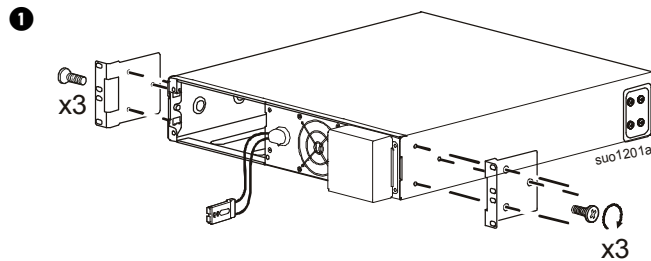
Refer to the Rail Kit Installation Guide for instructions on rail installation.

## CAUTION

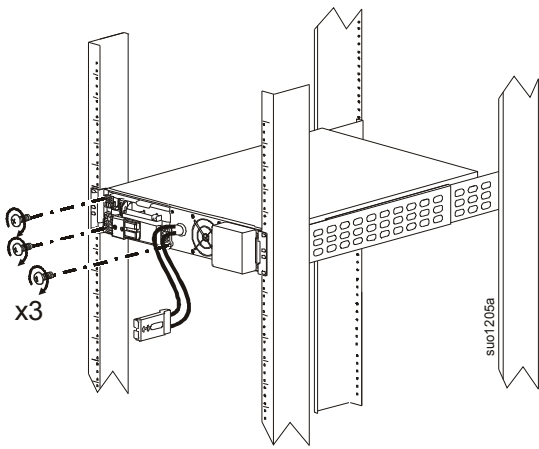
### RISK OF DAMAGE TO EQUIPMENT OR PERSONNEL

- 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 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.

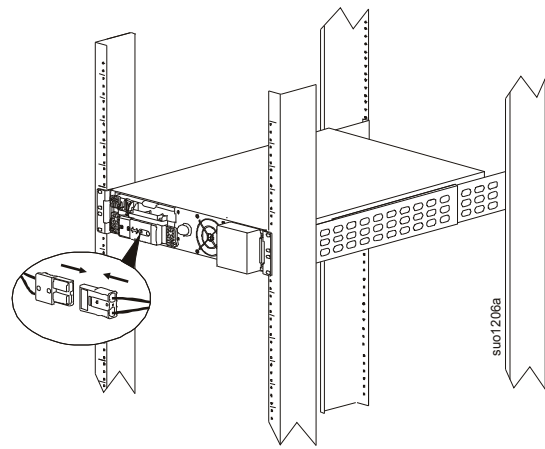
Failure to follow these instructions can result in equipment damage and minor or moderate injury



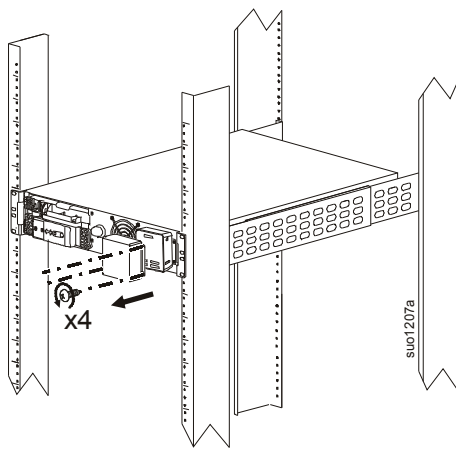
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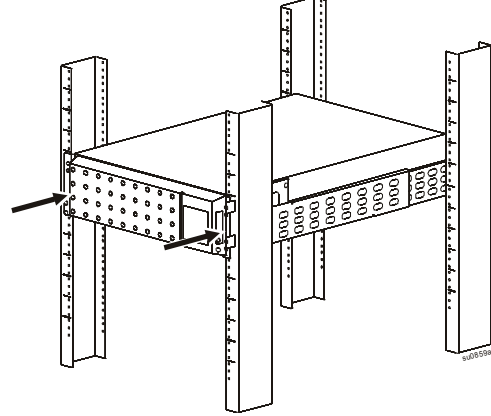
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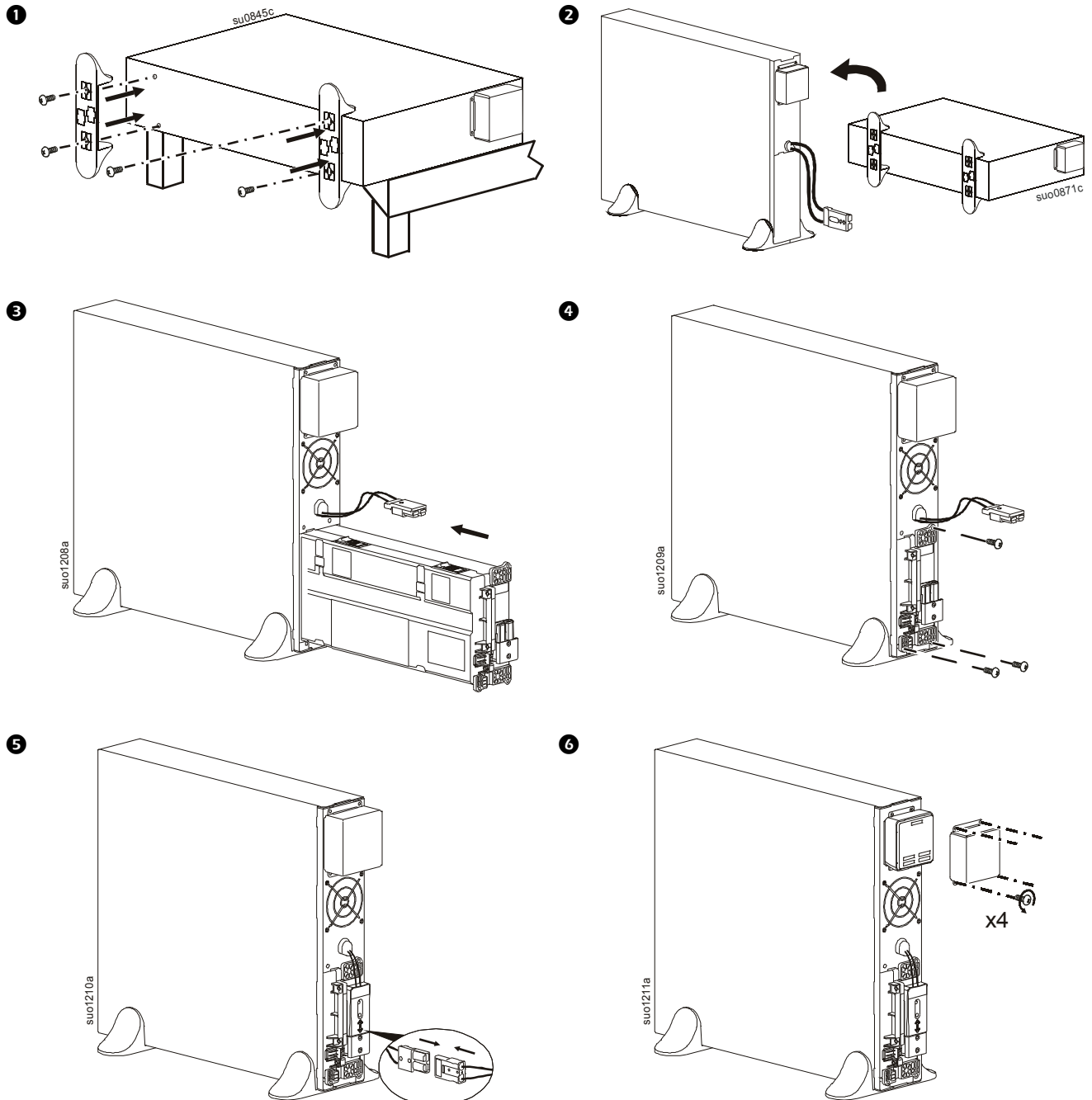
# Tower Installation

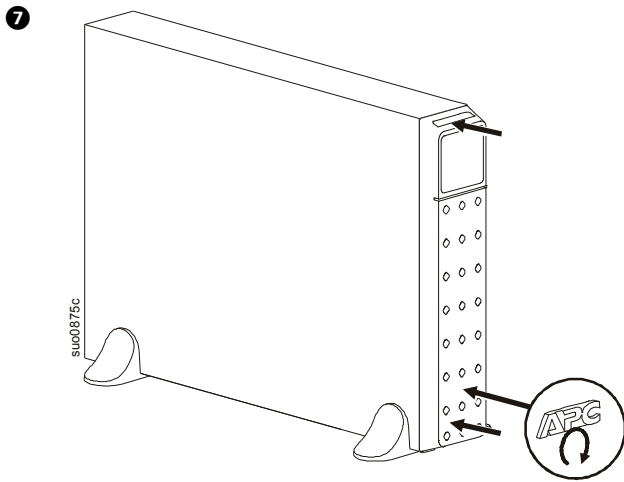
## CAUTION

### RISK OF FALLING EQUIPMENT

- The equipment is heavy. Each APCRBC155 battery module weighs 11 kg (24.25 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 minor or moderate injury

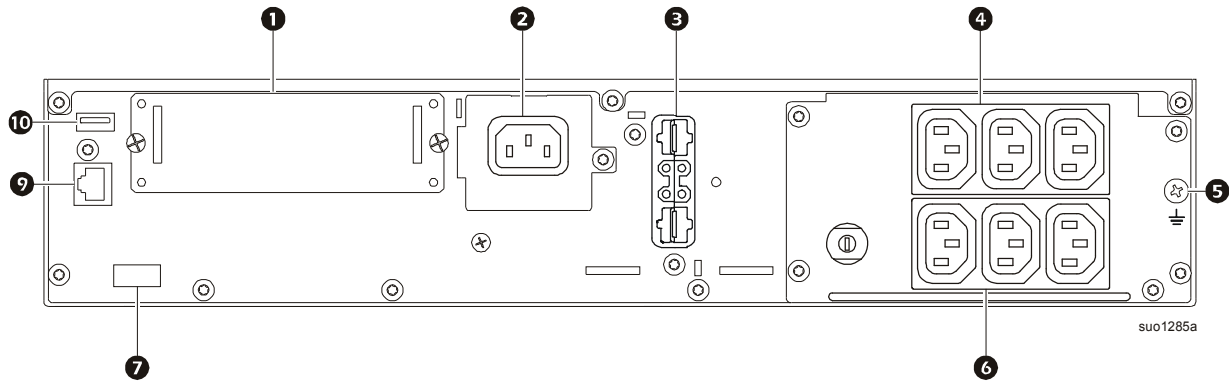




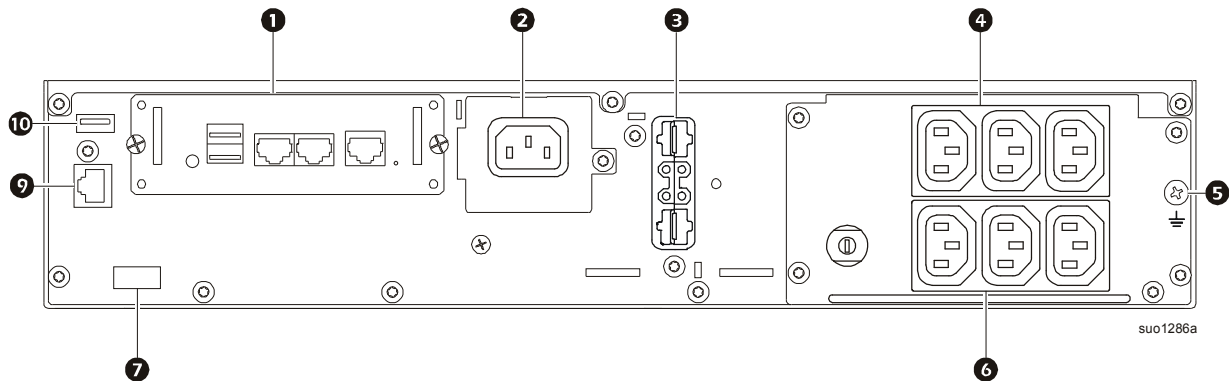
## Rear Panel Features

**Note:** Refer to the table “Key to identify rear panel features” on page 13, that provides a key to the callout numbers for the rear panel graphics depicted in this manual.

### SRT1000XLI/SRT1000RMXLI SRT1500XLI/SRT1500RMXLI



### SRT1000RMXLI-NC/SRT1500RMXLI-NC



## Key to identify rear panel features

❶	SmartSlot	The SmartSlot can be used to connect optional management accessories.
❷	AC C14 input plug	Inlet for AC input power cord.
❸	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.
❹	Controllable outlet group 1	Connect electronic devices to these outlets.
❺	Chassis ground screw	The UPS and XLBPs have ground screws for connecting the ground leads. Prior to connecting a ground lead, disconnect the UPS from mains power.
❻	Controllable outlet group 2	Connect electronic devices to these outlets.
❼	EPO terminal	The Emergency Power Off (EPO) terminal allows the user to connect the UPS to a central EPO system.
❽	Serial Com	The Serial Com port is used to communicate with the UPS. <b>Use only interface kits supplied or approved by APC by Schneider Electric. Any other serial interface cable will be incompatible with the UPS connector.</b>
❿	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.

# 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).

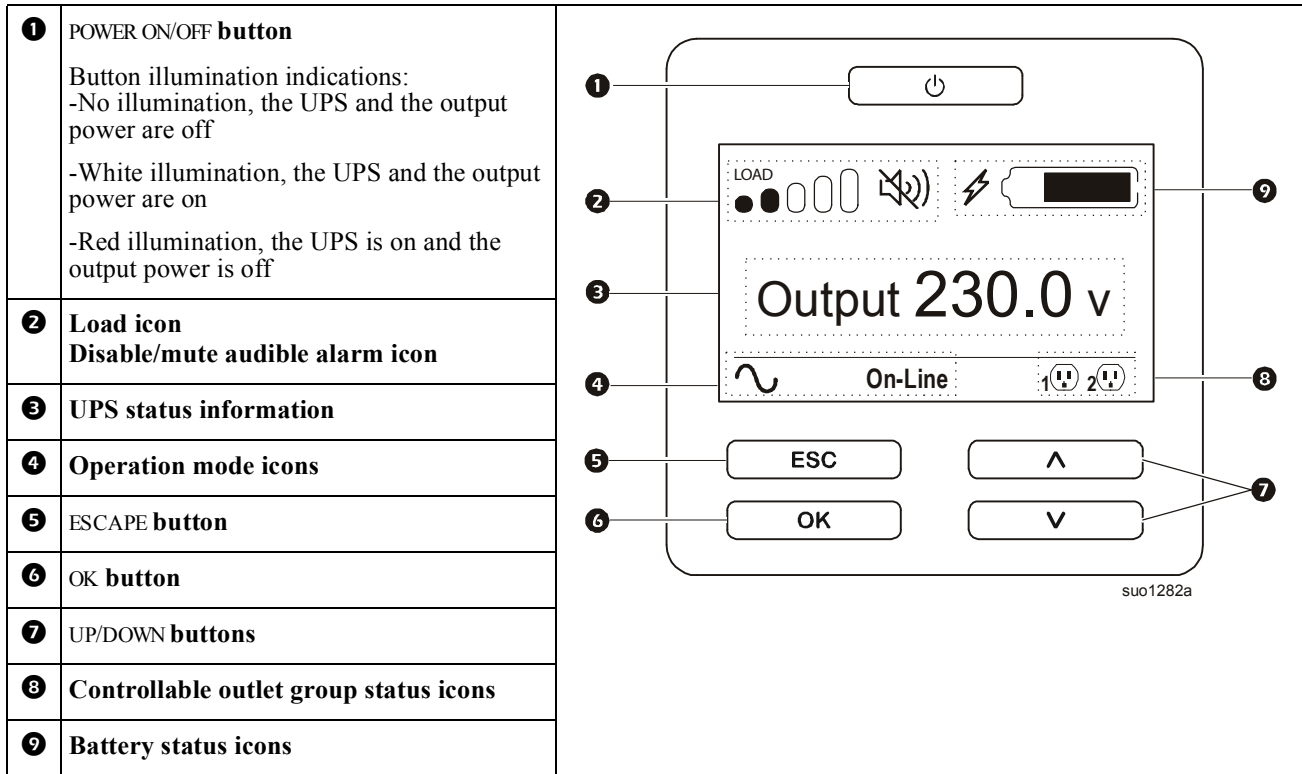
## Verify input connection

UPS displays **Site Wiring Fault** if the line and neutral connections are interchanged or if ground connection is missing. Correct the input connections and press OK button to clear the **Site Wiring Alert**. See the **Config Menu UPS** section in the UPS operation manual for details.

## 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



## 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.

<p>The icons on the LCD display interface screen may vary depending on the installed firmware version.</p>	
	<p><b>Load icon:</b> The approximate load capacity percentage is indicated by the number of load bar sections illuminated. Each bar represents 16% of the load capacity.</p>
	<p><b>Mute icon:</b> Indicates the audible alarm is disabled/mute.</p>

## 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.

<b>Operation Mode Icons</b>	
	<b>On-Line mode:</b> The UPS is supplying conditioned mains power to connected equipment.
	<b>Bypass mode:</b> The UPS is in <b>Bypass</b> mode and the connected equipment will receive mains power as long as the input voltage and frequency are within the configured limits.
	<b>Green mode:</b> When in <b>Green</b> 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 <b>On-Line</b> or <b>Battery</b> mode. When enabling <b>Green</b> mode consideration should be given to devices that may be sensitive to power fluctuations.
<b>UPS Status Icon</b>	
	<b>Battery mode:</b> 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.
<b>Controllable Outlet Group Icons</b>	
	<b>Controllable Outlet Group Power Available:</b> 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.
	<b>Controllable Outlet Group Power Not Available:</b> 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.
<b>Battery Status Icons</b>	
	<b>Battery Charge Status:</b> Indicates the battery charge status.
	<b>Battery Charge In Progress:</b> 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.

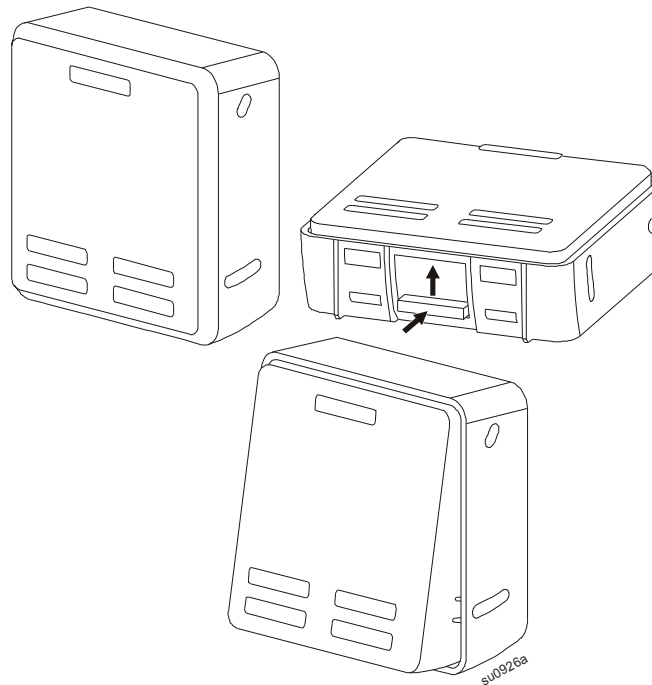
**Note:** Actual menu screens may differ by model and firmware version.

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.



Customer support and warranty information are available on the APC by Schneider Electric web site, [www.apc.com](http://www.apc.com).