# APC SMT700X167 Interactive Tower Smart-UPS User Manual



Contents



**APC SMT700X167 Interactive Tower Smart-UPS**


## Important Safety Instructions

- SAVE THESE INSTRUCTIONS – This manual contains important instructions that should be followed during the installation and maintenance of the UPS 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 either a “Danger” or “Warning” 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.

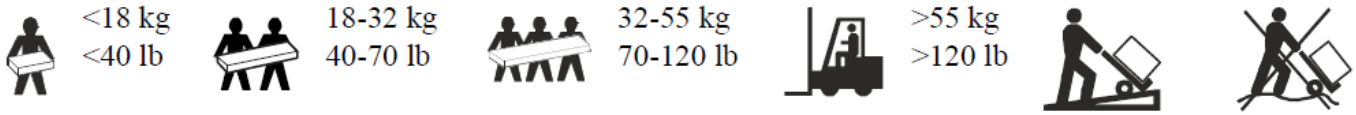
**DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.

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

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

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

## Product Handling Guidelines




## Safety and General Information

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

- 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 by Schneider Electric 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.

### Deenergizing safety

- The UPS contains internal batteries and may present a shock hazard even when disconnected from the branch circuit (mains).
- The AC output connectors may be energized by remote or automatic control at any time.
- Before installing or servicing the equipment check that the:
- The input wall circuit breaker is in the OFF position.
- Internal UPS batteries are removed.
- XLBP battery modules are disconnected

### Electrical safety

- Use tools with insulated handles.
- Do not handle any metallic connector before the 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 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, 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 the 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 de-energized, 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 sizes and connectors according to national and local codes.

## Battery Safety

**CAUTION**

- RISK OF HYDROGEN SULPHIDE GAS AND EXCESSIVE SMOKE
- Replace the battery at least every 5 years or at the end of its service life, whichever is earlier.
- Replace the battery immediately when the UPS indicates battery replacement is necessary.
- 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 over-temperature 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 packs which are older than one year, when installing additional battery packs.
- Failure to follow these instructions can result in minor or moderate injury and equipment damage.
- Contact APC by Schneider Electric Customer Support to determine the age of the installed battery modules.
- The batteries typically last for three years. Environmental factors impact battery life. Elevated ambient temperatures, poor-quality utility power, and frequent short-duration discharges will shorten battery life. The battery should be replaced before the end of its life.
- APC by Schneider Electric uses sealed lead acid batteries. Under normal use and handling, there is no contact with the internal components of the battery. Overcharging, overheating, or other misuse of batteries can result in a discharge of battery electrolytes.
- Released electrolyte is toxic and may be harmful to the skin and eyes.
- Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and required precautions.
- **CAUTION:** A battery can present a risk of electric shock and burns by high short-circuit current. Contact with any part of a grounded battery can result in electrical shock. The following precautions should be observed when working on batteries:
    - Wear rubber gloves and boots.
    - Do not lay tools or metal parts on top of batteries.
    - Disconnect the charging source and load prior to installing or maintaining the battery.

    - Remove battery grounds during installation and maintenance to reduce the likelihood of shock.
    - Remove the connection from the ground if any part of the battery is determined to be grounded.
- **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.
- **CAUTION:** Failed batteries can reach temperatures that exceed the burn thresholds for touchable surfaces.

## 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 packing materials or save them for reuse.

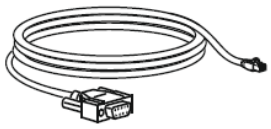
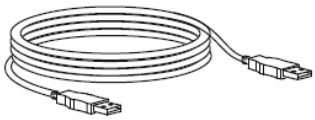
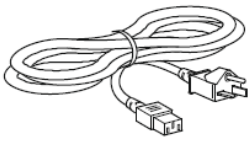
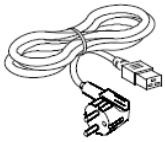
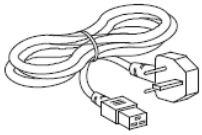
## FCC STATEMENT

### 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 intended 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.

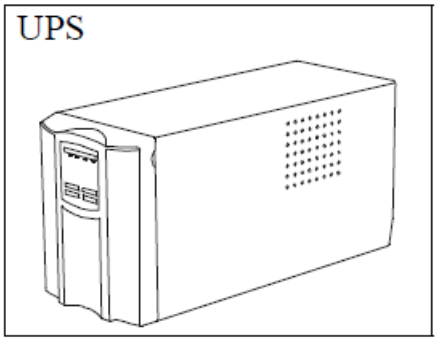
## Package Contents

### Common to all models

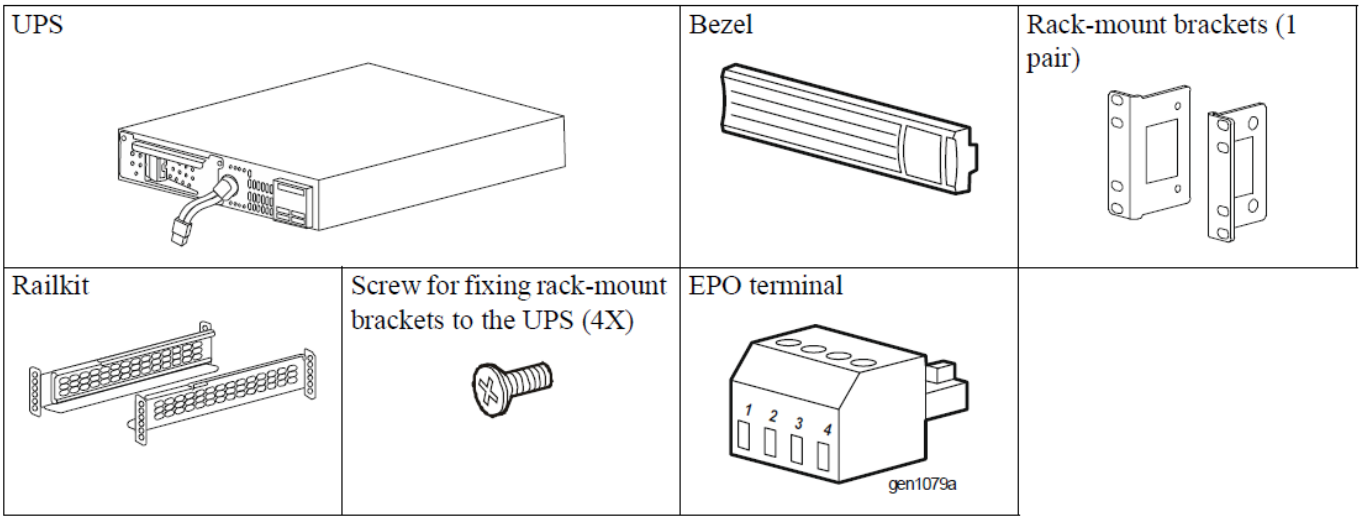
| | | | |
|---|---|---|---|
| Serial cable  | USB cable  | Installation guide  | PCBE insert  |
| Input power cord for US/Canada  | Input power cord for Europe  | Input power cord for UK  | Input power cord for Italy  |

**NOTE:** Use the appropriate power cord based on the local electrical outlet.

### SMT700X167




**SMT2200R2X167**




## Specifications

***NOTICE***

**RISK OF EQUIPMENT DAMAGE**

- UPS must be used indoors only.
- The installation location should be sturdy to withstand the weight of the UPS.
- Do not operate UPS where there is excessive dust or where the temperature or humidity is outside specified limits.
- Failure to follow these instructions can result in equipment damage.

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

**Environmental specifications**

| | | |
|---|---|---|
| **Temperature** | **Operating** | 0 to 40 °C (32 to 104 °F) |
| | **Storage** | -15 to 45 °C (5 to 113 °F)<br>charge UPS battery every six months |
| **Maximum Elevation** | **Operating** | 2,000 m (6,600 ft) |
| | **Storage** | 15,000 m (50,000 ft) |
| **Humidity** | | 0% to 95% relative humidity, non-condensing |
| **International Protection Code** | | IP20 |

**Physical specifications**

| **Model** | **SMT700X167** | **SMT2200R2X167** |
|---|---|---|
| **Dimensions H x W x D** | 8.6 x 6.7 x 17.3 in (219 x 171 x 439 mm) | 3.4 x 17 x 26.9 in (86 x 432 x 683 mm) |
| **Weight** | 44.3 lb (20.1 kg) | 97.2 lb (44.1 kg) |

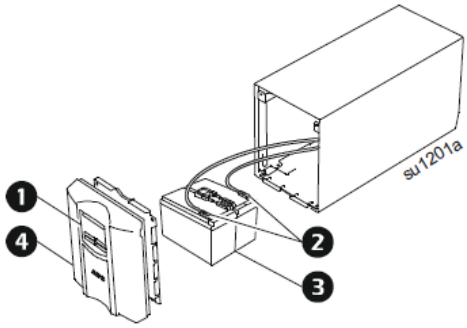
**Electrical specifications**

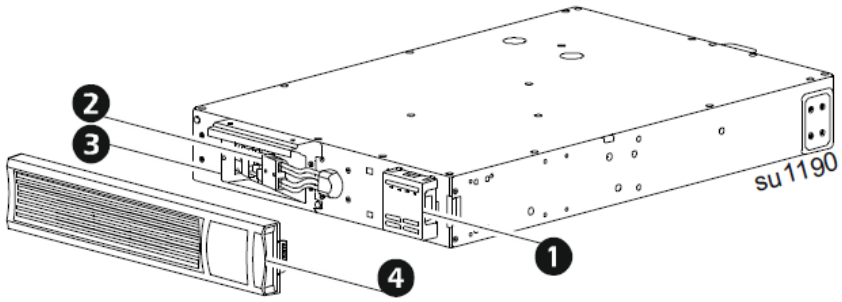
| Model | SMT700X167 | SMT2200R2X167 |
|---|---|---|
| **Input** | | |
| Voltage | 120 Vac for low voltage utility<br>230 Vac for high voltage utility | |
| Frequency | 60 Hz for low-voltage utility<br>50 Hz for high voltage utility | |
| **Output** | | |
| Capacity | | |
| Low voltage utility | 700 VA / 450 W | 1920 VA/1920 W |
| High voltage utility | 700 VA / 450 W | 2200 VA/1980 W |
| On-battery mode | 700 VA / 450W | 2200 VA/1980 W |
| Voltage (On Battery) | 120 Vac ± 5% | |
| Frequency (On Battery) | 47 – 53 Hz for 50 Hz nominal<br>57 – 63 Hz for 60 Hz nominal | |
| Transfer Time | 6 ms / 50 Hz max 10 ms<br>5 ms / 60 Hz max 8 ms | |
| **Protection** | | |
| AC Input Circuit Breaker | Single pole 10 A 250 VAC | Single pole 30 A 250 VAC |
| **Branch Circuit Overcurrent Rating / Building Circuit Breaker (CB) Current Rating** | | |
| Rating | Not Applicable | 20 A |

| Model | SMT700X167 | SMT2200R2X167 |
|---|---|---|
| **Battery** | | |
| Type | RBC6 | RBC43 |
| Rating | 24 V, 12 Ah<br>Total 2 nos. x (12 V, 12 Ah) in series | 48 V, 10 Ah<br>Total 8 batteries: 2 groups in parallel of 4 x (12 V, 5 Ah) in series |
| Typical Recharge Time | 3 hours to 90% capacity | 4 hours to 90% capacity |

## Product Overview

### Front panel features

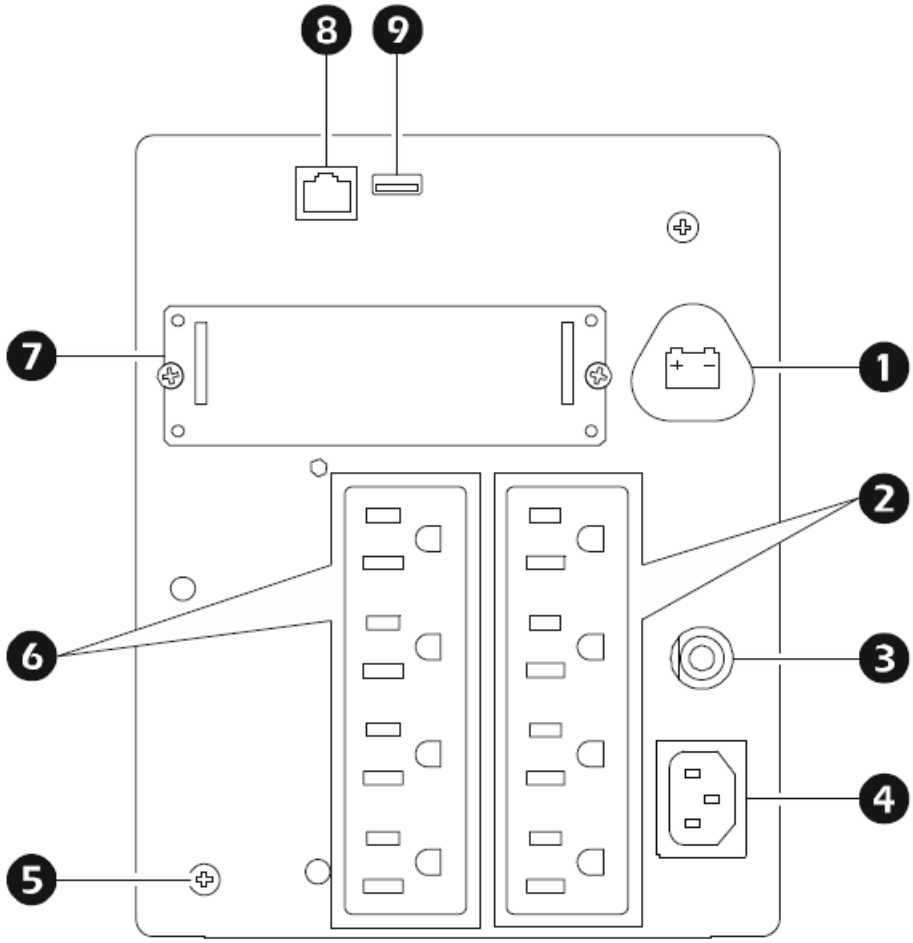



| | | | |
|---|---|---|---|
| **1** | Display (more information below) | **3** | Battery |
| **2** | Internal battery connector | **4** | Bezel |

**Rear panel features**

- SMT700X167

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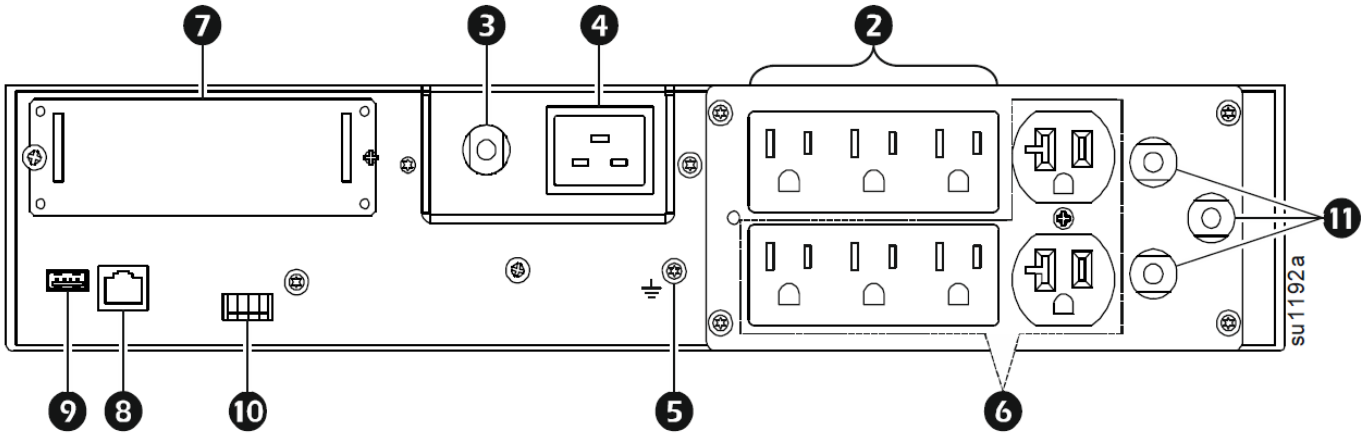



| | | | | | |
|---|---|---|---|---|---|
| **1** | Battery connector (located on t he front panel of rack-mount m odels) | **4** | UPS input | **8** | Serial port |
| | | **5** | Chassis ground connection scr ew | **9** | USB port |
| **2** | Controlled outlet group | **6** | Outlets | **1 0** | EPO connector |
| **3** | Input circuit breaker | **7** | Smart Slot | **1 1** | Output circuit breaker/overload protection |

## Installation

- For UPS installation information, refer to the Installation Guide included with the UPS.
- The Installation Guide is also available on the APC by Schneider Electric Web site, [www.apc.com](http://www.apc.com).

### Placement

- The UPS is intended for IT environments. Avoid placement where there is excessive dust, temperature, and humidity. Note that temperature in excess of 25 °C may have an adverse effect on battery and UPS life. All vents on the side or rear of the UPS should be free of obstructions.
- The UPS is heavy. For rack-mount units, it is suggested that the batteries be removed for easier installation. The
- UPS should be placed near the bottom of the rack.

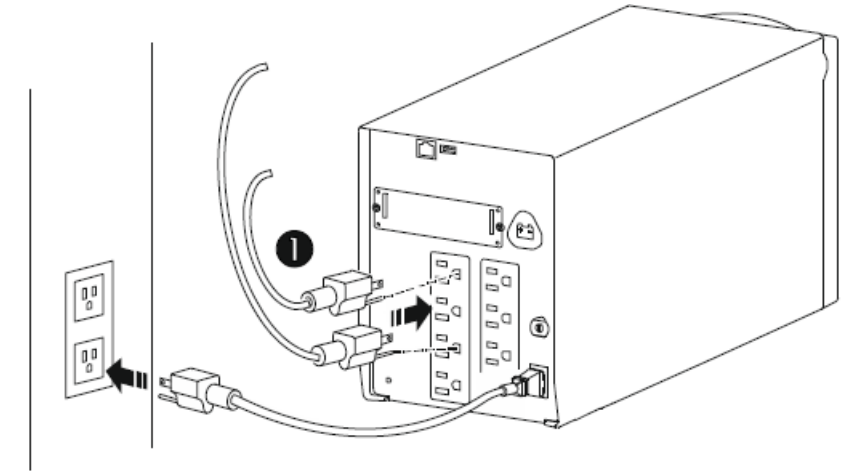
### Connect to equipment and utilities

**Note:** The UPS will charge to 90% capacity in the first three hours of normal operation.
Do not expect full battery runtime capability during this initial charge period.

### CAUTION

- RISK OF ELECTRIC SHOCK
- Adhere to all local and national electrical codes.
- Wiring should be performed by a qualified electrician.
- Always connect the UPS to a grounded outlet.
- Failure to follow these instructions can result in injury.

1. Connect the equipment to the outlets in the rear of the UPS. Some models are equipped with controlled outlet groups. Refer to the Configuration section of this manual for further instructions on the use of controlled outlet groups.
2. Install the appropriate power cord (supplied) on the UPS, based on the local electrical outlets.
3. Connect the UPS input to AC power.

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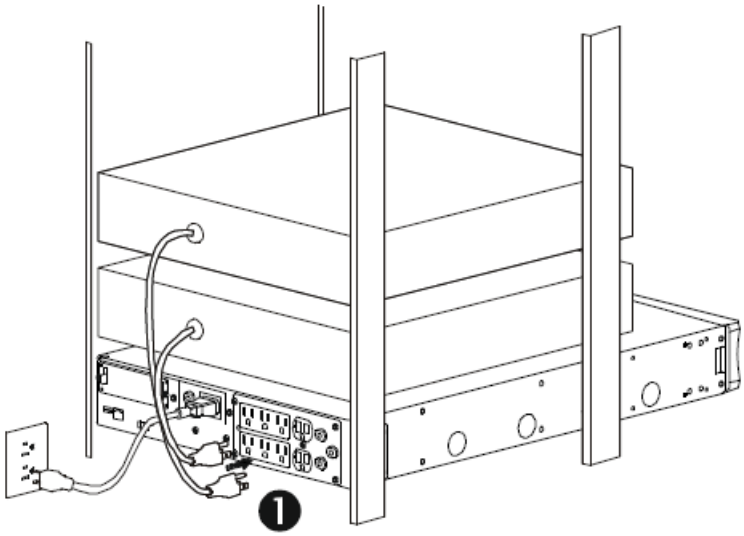



**NOTE:** Once power is connected, the display will be active.

4. Press the UPS ON/OFF button on the UPS display to turn on the UPS output.
   **NOTE:** The Online LED will illuminate green when the output is on.
5. When the UPS is powered on for the first time the LCD screen displays the Setup Wizard and asks a number of basic set-up questions. They can be answered simply by using the UP/DOWN and ENTER keys on the display

**Start up Settings**

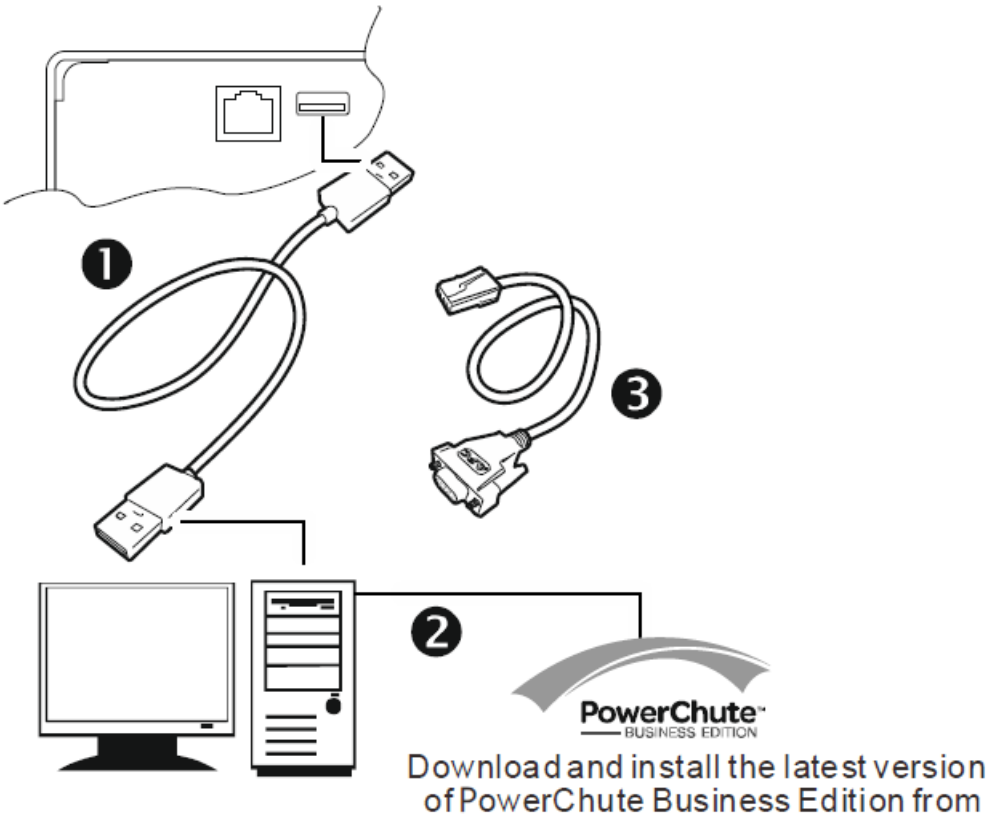
When the UPS is powered on for the first time the display interface displays the Setup Wizard to configure the start-up settings. Configuration can also be performed using PowerChute™ software.
**Note:** If the start-up settings asked by the Setup Wizard are not selected completely, turning on the UPS output is inhibited. If the UPS output is turned on, the Setup Wizard will be displayed again to complete the configuration of the start-up settings.

| Function | Factory Default | Options | Description |
|---|---|---|---|
| **Language** | English | English French* German* Spanish* Italian*<br>Portuguese* | The language for the display interface.<br>*Language options will vary by model. |
| **Menu Type** | Standard | Standard<br>Advanced | The standard menu displays the most commonly required menus for most users. The advanced menus include all parameters. |
| **Today's Date** | Manufacture date | | Use the UP/DOWN arrows to enter today's day, and the ENTER to complete the settings. |

**Connect and Install Management Software**

Smart-UPS is provided with PowerChute management software for unattended operating system shutdown, UPS monitoring, UPS control, and energy reporting. The following diagram is a representation of a typical server installation.

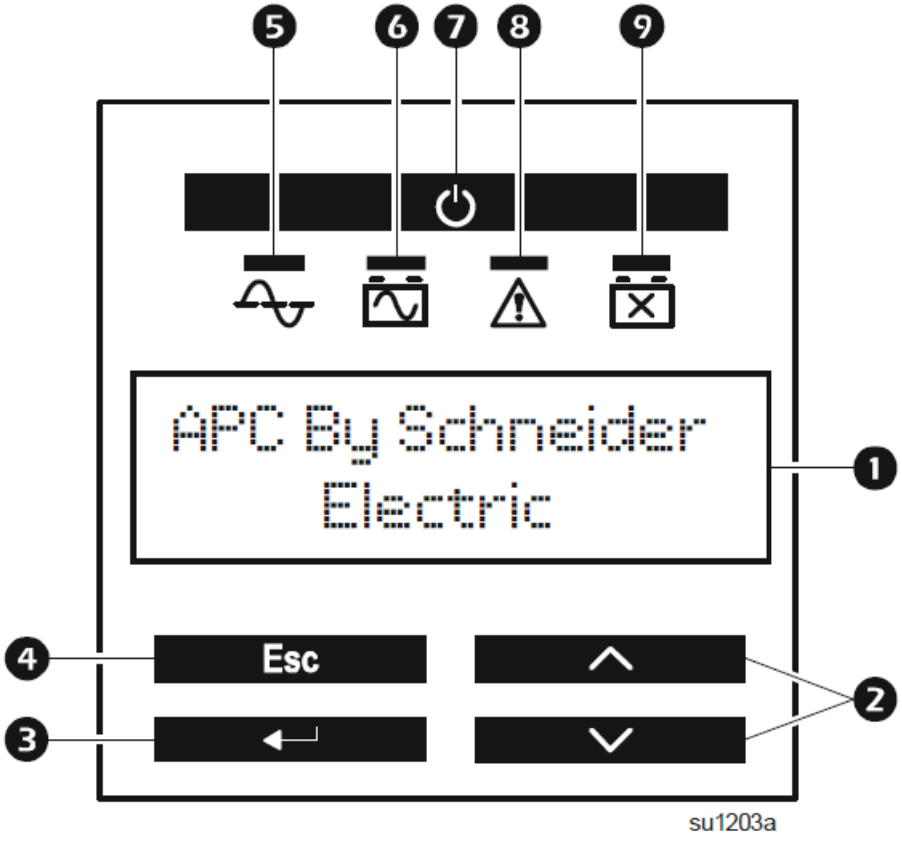
1. Connect the USB cable from the USB port on the rear panel of the UPS to the protected device such as a server.
2. For a server or other device with an operating system, download the PowerChute software from **https://www.apc.com/pcbe**, and follow the on-screen instructions for installing and setting up the software. PowerChute provides for graceful shutdown in the event of an extended power outage and is a powerful management interface on the local network.
3. A built-in serial port is also available as an additional communication option using a serial cable. For more detailed information on supported protocols and options refer to application note #181 at **www.apc.com**.
4. More communication options are available via the built-in Smartslot. Refer to **www.apc.com** for more information.




https://www.apc.com/pcbe.

## Operation

### Front panel display features



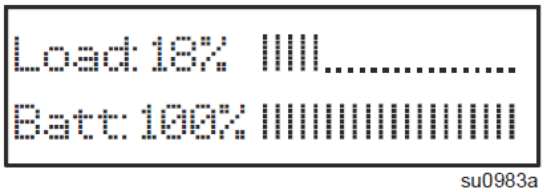

1. Multi-lingual display screen

2. UP/DOWN buttons
3. ENTER button
4. ESCAPE button
5. Online LED
6. On Battery LED
7. UPS ON/OFF button
8. Alert LED
9. Replace Battery LED

**Using the display**
These Smart-UPS models are equipped with an intuitive and configurable LCD display. This display complements the software interface as they convey similar information and may be used to configure the UPS settings. The display consists of the following keys and indicators:

| | |
|---|---|
| UPS ON/OFF **button** | Press the UPS ON/OFF button to turn the UPS output power on and off. |
| ESCAPE **button** | Press the ESCAPE key to return to the previous display screen or to exit the various display menus. |
| ENTER **button** | Press the ENTER key to confirm a selection and/or to enter a menu. |
| UP/DOWN **buttons** | Press the UP/DOWN buttons to navigate through each menu selection. |
| **Quick status LEDs** | |
| **Online LED** | This LED illuminates **green** when the UPS output is turned on and the UPS is operating on AC power. |
| **On Battery LED** | This LED illuminates **orange** and the unit will continue to emit a series of short beeps indicating that the UPS is operating on battery power. |
| **Alert LED** | This LED will illuminate **red** if any internal error is detected. The display screen may also display the message or the code of the detected internal error. |
| **Replace Battery LED** | • This LED illuminates **red** when the UPS battery does not pass the self-test and requires replacement.<br>• This LED flashes **red** when the UPS battery is not connected. |

The display has two main display/menu options – standard and advanced.



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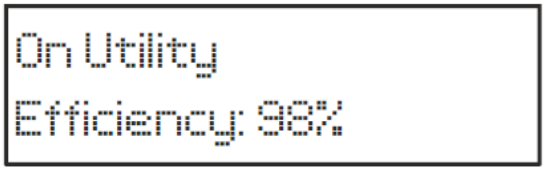
**Standard Menu Display**



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**Advanced Menu Display**

**Note:** The standard menu is the default setting and does not contain all of the menus and attributes of the advanced menu. The advanced menu automatically scrolls through multiple screens.

**Standard menus**
The Standard menus are the most commonly used menus. The following is a list of some items displayed in this menu mode. Visit **apc.com** for additional details.

| Menu | General Functions |
|---|---|
| **Status** | View UPS information:<br>• Operating Mode<br>• Efficiency<br>• Load Power<br>• Load VA<br>• Battery Charge state<br>• Estimated Runtime<br>• Battery Temp<br>• Input<br>• Output<br>• Probe 1, Probe 2, when NMC and sensor probes are installed |
| **Configuration** | Configures UPS settings:<br>• Language<br>• Green Mode<br>• Local Power Quality: Good, Fair, Poor<br>• Menu Type: Standard or Advanced<br>• Audible Alarm<br>• Display (Auto Dim, Auto Off, Always On)<br>• Reset to Factory Default<br>• Install FW? |
| **Test & Diags** | Performs UPS tests and diagnostic functions:<br>• UPS Self Test<br>• UPS Alarms Test<br>• Calibration Test |
| **About** | View UPS information:<br>• UPS Model<br>• UPS Part No.<br>• UPS Serial No.<br>• UPS Manufacture Date<br>• Battery Part No.<br>• Battery Install Date<br>• Replace the Battery by<br>• Running UPS FW<br>• Available UPS FW<br>• SmartSlot Card (if installed) |

**Advanced menus**
The Advanced menus provide additional options for the UPS and are available only if the display interface is configured to use the Advanced menus.

| Menu | General Functions |
|---|---|
| **Status** | View detailed UPS information:<br>• Operating Mode<br>• Efficiency<br>• Load Power<br>• Load VA<br>• Load Amps<br>• Load Energy<br>• Battery Charge State<br>• Estimated Runtime<br>• Battery Voltage<br>• Battery Temp<br>• Input<br>• Output<br>• Outlet Groups<br>• Probe 1, Probe 2, when NMC and sensor probes are installed |
| **Control** | Controls the Main and Controlled Outlet Group to turn on, turn off, shutdown, or reboot:<br>• UPS Control<br>• Outlet Group Control |
| **Configuration** | Configure advanced UPS settings:<br>• Language<br>• Green Mode<br>• Local Power Quality<br>• Menu Type<br>• Audible Alarm<br>• Display<br>• Sensitivity<br>• Low Transfer<br>• High Transfer<br>• Low Battery Setting<br>• Auto Self Test<br>• Reset Energy Meter<br>• Enter Setup Wizard<br>• Reset to Factory Defaults<br>• Site Wiring Fault<br>• Configuration – Main Group Outlets<br>• Configuration – Group Outlets (if Controlled Outlet is available)<br>• Modbus Settings<br>• NMC IP Address Settings (if NMC is available)<br>• Install FW? (only available if a firmware update is available) |

| Menu | General Functions |
|---|---|
| **Test & Diag** | Perform UPS tests and diagnostics functions:<br>• UPS Self Test<br>• UPS Alarms Test<br>• Calibration Test |
| **Logs** | View the logs of the internal errors detected for information about the internal errors detected. |
| **About** | View UPS information:<br>• UPS Model<br>• UPS Part No.<br>• UPS Serial No.<br>• UPS Manufacture Date<br>• Battery Part No.<br>• Battery Install Date<br>• Replace the Battery by<br>• Running UPS FW<br>• Available UPS FW<br>• SmartSlot Card (if installed) |

## Configuration

**General configuration settings**
Configuration settings may be changed at any time using the LCD interface or PowerChute software. This table provides a brief description of the general settings, for more detailed information on each of these parameters consult application note 80 at **www.apc.com**.

| Setting | Factory Default | Options | Description |
|---|---|---|---|
| **High Transfer** | 120 V: 127 Vac<br>230 V: 254 Vac | 120 V: 127 Vac – 136 Vac<br>230 V: 254 Vac – 272 Vac | To avoid unnecessary battery usage, set the transfer point higher if the AC voltage is chronically high and the connected equipment is known to work under this condition. The Power Quality setting will automatically change this setting.<br>**Note**: Use the Advanced Menus to configure this setting. |
| **Low Transfer** | 120 V: 106 Vac<br>230 V: 212 Vac | 120 V: 97 Vac – 106 Vac<br>230 V: 194 Vac – 212 Vac | Sets the transfer point lower if the AC voltage is chronically low and the connected equipment can tolerate this condition. This setting may also be adjusted using the power quality setting.<br>**Note**: Use the Advanced Menus to configure this setting. |

| | | | |
|---|---|---|---|
| **Sensitivity** | Normal | • Normal<br>• Reduced<br>• Low | Selects the level of sensitivity to power events th at the UPS will tolerate.<br>• Normal: The UPS will go on battery power mor e often to provide the cleanest power supply to th e connected equipment.<br>• Low: The UPS will tolerate more fluctuations in power and will go on battery power less often.<br>If the connected load is sensitive to power<br>disturbances set the sensitivity to Normal. |
| **Date of Last**<br>**Battery Repla cement** | Date set at the f actory | | Reset this date when the battery module is replaced. |
| **Audible Alarm** | On | • On<br>• Off | The UPS will mute all audible alarms if this is set to<br>**Off** or when the display buttons are pressed. |
| **Auto Self Test** | On start-up and every 14 days si nce the last test | • Never<br>• Start-up only<br>• Frequency of test (ev ery 7 to 14 days) | The interval at which the UPS will execute a self-test. |
| **Reset to**<br>**Factory Defau lt** | No | Yes/No | Restores the UPS factory default settings. |
| **Site Wiring Fa ult** | Enable | Enable/Disable/ Can A ck | Sets the Site Wiring Fault detection to Enable, Di sable, or User Can Acknowledge |
| **Green Mode** | Enable | • Enable<br>• Disable | This will enable or disable the Green mode functi on. Green Mode conserves energy while the UP S is<br>operating online. |
| **Low Battery**<br>**Setting** | 150 sec | Set the value in second s | The UPS will emit an audible alarm when the re maining runtime has reached this level. |

| Setting | Factory Default | Options | Description |
|---|---|---|---|
| **Install FW?** | Don’t Install | • Next off (Updates the UPS Firmware next time that the UPS is turned off)<br>• Now (Updates the UPS firmware immediately without interrupting operations)<br>• Don’t Install | Firmware update: this only appears when new firmware is available in the flash memory of the UPS and is ready to be installed. |

**Outlet group configuration settings**
The Main Outlet Group and the Controlled Outlet Group can be configured to independently turn off, turn on, shut down, and reboot connected equipment. The Main and Controlled Outlet Groups can be configured to do the following:

- Turn off: Disconnect from power immediately and restart only with a manual command.
- Turn on: Connect to power immediately.
- Shutdown: Disconnect power in sequence, and automatically reapply power in sequence when AC power becomes available.
- Reboot: Shut down and restart.
- In addition, the Main Outlet Group and the Controlled Outlet Group can be configured to do the following:
- Turn on or off in a specified sequence
- Automatically turn off or shut down when various conditions occur
- **Note:** If the Main and Controlled Outlet Groups are not configured, all of the outlets on the unit will still provide battery backup power.
- **Note:** The Main Outlet Group functions as a master switch. It will turn on first when power is applied and shut off last when there is a power outage and battery run-time has been exhausted.
- The Main Outlet Group must be turned on for the Controlled Outlet Group to turn on.

| Setting | Factory Default | Options | Description |
|---|---|---|---|
| **Name String**<br>**Outlet Group** | Outlet Group 1 | Edit these names using an external interface, such as the Network Management Card Web interface. | |
| **UPS Name String** | UPS Outlets | | |
| **Turn On Delay** | 0 sec | Set the value in seconds | The amount of time the UPS or the Controlled Outlet Group will wait between receiving the command to<br>turn on and the actual startup. |
| **Turn Off Delay** | • 0 sec (UPS Outlets)<br>• 90 sec (Controlled Outlet Groups) | Set the value in seconds | The amount of time the UPS or the Controlled Outlet Group will wait between receiving the command to<br>turn off and the actual shut down. |
| **Reboot**<br>**Duration** | 8 sec | Set the value in seconds | The amount of time that the UPS or the Controlled Outlet Group must remain off before it will restart. |
| **Minimum Return Time** | 0 sec | Set the value in seconds | The amount of battery runtime that must be available before the UPS or the Controlled Outlet Group will turn on. |

| Setting | Factory Default | Options | Description |
|---|---|---|---|
| **Load Shed On Battery** | Disabled | • Shutdown with Delay<br>• Shutdown immediately<br>• Turn off immediately<br>• Turn off with delay<br>• Disabled | When the unit switches to battery power, the UPS can disconnect power to the Controlled Outlet Group to save runtime. |
| **Load Shed Time when On Battery** | Disabled | Set the value in seconds | The amount of time the outlets will function on battery power before they will turn off. |
| **Load Shed On Runtime** | Disabled | • Shutdown with delay<br>• Shutdown immediately<br>• Turn off immediately<br>• Turn off with delay<br>• Disabled | When the battery runtime falls below the specified value, the Controlled Outlet Group will turn off. |
| **Load Shed On Runtime Remaining** | Disabled | Set the value in seconds | When the remaining runtime reaches this level, the Controlled Outlet Group will turn off. |
| **Load Shed on Overload** | Disabled | • Disabled<br>• Enabled | In the event of an overload (greater than 100% output power), the Controlled Outlet Group will immediately turn off to conserve power for essential loads. The Controlled Outlet Group will only turn on<br>again with a manual command. |

**Modbus settings**

| Setting | Factory Default | Options | Description |
|---|---|---|---|
| **Slave ID** | 1 | 1- 223 | Sets the Modbus slave address of the UPS |
| **Ser+USB** | Disable | • Enable<br>• Disable | Enables or disables UPS Modbus protocol over serial and<br>USB ports |

## Emergency Power Off

**Note:** The emergency Power Off feature is available only in SMT2200R2X167

### Overview

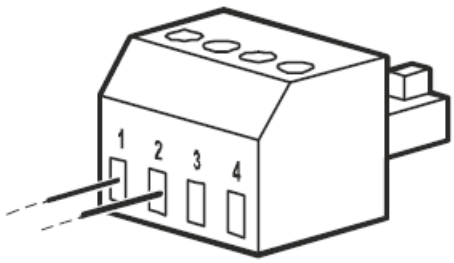
- The Emergency Power Off (EPO) option is a feature that will immediately shut off power to all connected equipment. When the EPO button is pushed, all connected equipment will immediately turn off and will not switch to battery power.
- Connect each up to the EPO switch. In configurations where multiple units are connected in parallel, each UPS must be connected to the EPO switch.
- The UPS must be restarted for power to return to connected equipment. Press the ON/OFF button on the front panel of the UPS.

### CAUTION

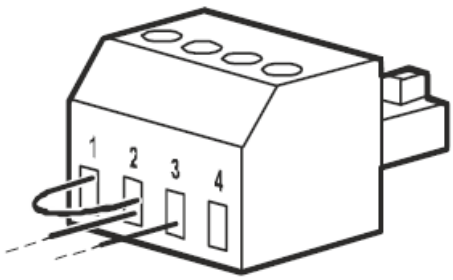
- RISK OF ELECTRIC SHOCK
- Adhere to all local and national electrical codes.
- Wiring should be performed by a qualified electrician.
- Always connect the UPS to a grounded outlet.
- Failure to follow these instructions can result in minor or moderate injury.

### Normally open contacts

1. If the EPO switch or relay contacts are normally open, insert the wires from the switch or contacts at pins 1 and 2 of the EPO terminal block. Use 16-28 AWG wire.
2. Secure the wires by tightening the screws.
   If the contacts are closed, the UPS will turn OFF and power will be removed from the load.




### Normally closed contacts

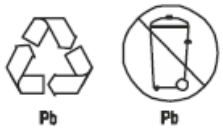


1. If the EPO switch or relay contacts are normally closed, insert the wires from the switch or contacts at pins 2 and 3 of the EPO terminal block. Use 16-28 AWG wire.
2. Insert a wire jumper between pins 1 and 2. Secure the wires by tightening the three screws at positions 1, 2, and 3.

- If the contacts are opened, the UPS will turn OFF and power will be removed from the load.
- **Note:** Pin 1 is the power source for the EPO circuit, it provides a few milliAmps of 24 V power.
- If the normally closed (NC) EPO configuration is used, the EPO switch or relay should be rated for dry circuit applications, the rating should be for low voltage and low current applications. This normally implies the contacts are gold plated.
- The EPO interface is a Safety Extra Low Voltage (SELV) circuit. Connect the EPO interface only to other SELV circuits. The EPO interface monitors circuits that have no determined voltage potential. SELV circuits are controlled by a switch or relay properly isolated from utility power. To avoid damage to the UPS, do not connect the EPO interface to any circuit other than a SELV circuit.
- Use one of the following cable types to connect the UPS to the EPO switch.
- CL2: Class 2 cable for general use.
- CL2P: Plenum cable for use in ducts, plenums, and other spaces used for environmental air.
- CL2R: Riser cable for use in a vertical run in a floor-to-floor shaft.
- CLEX: Limited use cable for use in dwellings and for use in raceways.
- Installation in Canada: Use only CSA certified, type ELC, (extra low voltage control cable).
- Installation in countries other than Canada and the USA: Use standard low-voltage cable in accordance with national and local regulations.

### Battery Replacement

- Always recycle used batteries.
- For information on recycling a used battery, refer to the Battery Disposal Information sheet
- included with the replacement battery.




Battery life is highly dependent on temperature and use. To identify when to replace batteries, Smart-UPS have a predictive battery replacement date indicator in the “About” menu and automatic (and configurable) self-tests. Proactively replace batteries to maintain the highest availability. To ensure protection and high performance, use only genuine APC replacement battery cartridges (RBC™). The APCRBC contains instructions for battery replacement and disposal. To order a replacement battery go to the APC by Schneider Electric Web site, www.apc.com.

| **UPS Model** | **Replacement Battery** |
|---|---|
| SMT700X167 | RBC6 |
| SMT2200R2X167 | RBC43 |

## Troubleshooting

| Problem and Possible Cause | Solution |
|---|---|
| **The UPS will not turn on or there is no output.** | |
| The unit has not been turned on . | Press the UPS ON/OFF key once to turn on the UPS. |
| The UPS is not connected to AC power. | Be sure the power cable is securely connected to the unit and to the AC pow er supply. |
| The input circuit breaker has tripped. | Reduce the load on the UPS. Disconnect nonessential equipment and reset t he circuit breaker. |
| The unit shows very low or no input AC voltage. | Check the AC power supply to the UPS by plugging in a table lamp. If the lig ht is very dim, check the AC voltage. |
| The battery connector plug is no t securely connected. | Be sure that all battery connections are secure. |
| There is an internal UPS error d etected. | Do not attempt to use the UPS. Unplug the UPS and have it serviced immedi ately. |
| **The UPS is operating on battery, while connected to input AC power.** | |
| The input circuit breaker has tripped. | Reduce the load on the UPS. Disconnect nonessential equipment and reset t he circuit breaker. |
| There is very high, very low, or distorted input line voltage. | Move the UPS to a different outlet on a different circuit. Test the input voltage with the AC voltage display. If acceptable to the connected equipment, reduc e the UPS sensitivity. |
| **UPS is emitting intermittent beeps.** | |
| The UPS is operating normally. | None. The UPS is helping to protect the connected equipment. |
| **UPS does not provide expected backup time.** | |
| The UPS battery is weak due to a recent power outage or is nea r the end of its service life. | Charge the battery. Batteries require recharging after extended outages and wear out faster when put into service often or when operated at elevated tem peratures. If the battery is near the end of its service life, consider replacing t he battery even if the replaced battery indicator has not been illuminated. |
| The UPS is experiencing an ove rload condition. | Check the UPS load display. Unplug unnecessary equipment, such as printer s. |

| | |
|---|---|
| **Display interface LEDs flash sequentially.** | |
| The UPS has been shut down remotely through software or an optional accessory card. | None. The UPS will restart automatically when AC power is restored. |
| **The Alert LED is illuminated. The UPS displays a detected error message and emits a constant beeping sound.** | |
| Internal UPS error detected. | Do not attempt to use the UPS. Turn the UPS off and have it serviced immedi ately. |
| **The Replace Battery icon is illuminated and the UPS beeps for one minute every five hours.** | |
| The battery has a weak charge. | Allow the battery to recharge for at least four hours. Then, perform a self-test . If<br>If the detected problem persists after recharging, replace the battery. |
| **The Replace Battery icon is flashing and the UPS beeps once every 2 seconds.** | |
| The replacement battery is not properly connected. | Be sure that the battery connector is securely connected. |
| **The UPS displays a site wiring error message.** | |
| Wiring errors detected include missing ground, line-neutral pol arity reversal, and overloaded n eutral circuits. | If the UPS indicates a site wiring error, have a qualified electrician inspect the building wiring. |

## Limited Factory Warranty

Schneider Electric IT Corporation (SEIT), warrants its products to be free from defects in materials and workmanship for a period of three (3) years excluding the batteries, which are warranted for two (2) years from the date of purchase. The SEIT obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. Repair or replacement of a defective product or parts thereof does not extend the original warranty period. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase. Products may be registered online at warranty.apc.com. SEIT shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by the end user's or any third person's misuse, negligence, improper installation, testing, operation, or use of the product contrary to SEIT's recommendations or specifications. Further, SEIT shall not be liable for defects resulting from 1) unauthorized attempts to repair or modify the product, 2) incorrect or inadequate electrical voltage or connection, 3) inappropriate on-site operation conditions, 4) Acts of God, 5) exposure to the elements, or 6) theft. In no event shall SEIT have any liability under this warranty for any product where the serial number has been altered, defaced, or removed.

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To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. Customers with warranty claims issues may access the SEIT worldwide customer support network through the SEIT Web site: **www.apc.com**. Select your country from the country selection drop-down menu. Open the Support tab at the top of the web page to obtain information about customer support in your region. Products must be returned with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase.

**Transport the Unit**

1. Shut down and disconnect all connected equipment.
2. Disconnect the unit from the utility power.
3. Disconnect all internal and external batteries (if applicable).
4. Follow the shipping instructions outlined in the Service section of this manual.

**Service**
If the unit requires service, do not return it to the dealer. Follow these steps:

1. Review the Troubleshooting section of the manual to eliminate common problems.
2. If the problem persists, contact APC Customer Support through the APC by Schneider Electric web site,**www.apc.com**.
    - Note the model number and serial number and date of purchase. The model and serial numbers are located on the rear panel of the unit and are available through the LCD interface on select models.
    - Call APC Support and a technician will attempt to solve the problem over the phone. If this is not possible, the technician will issue a Returned Material Authorization Number (RMA#).
    - If the unit is under warranty, it will be repaired or replaced at no cost.
    - Service procedures and returns may vary internationally. Refer to the APC by Schneider Electric website for country-specific instructions.
3. Pack the unit properly to avoid damage in transit. Never use foam beads for packaging. Damage sustained in transit is not covered under warranty.
4. Before shipping, always disconnect all battery modules in a UPS or external battery pack.
5. Write the RMA# provided by Customer Support on the outside of the package.
6. Return the unit by the insured, prepaid carrier to the address provided by Customer Support.

**APC by Schneider Electric Worldwide Customer Support**

- Customer support for this or any other APC by Schneider Electric product is available at no charge in any of the following ways:
- Visit the APC by Schneider Electric website to access documents in the APC by Schneider Electric
- Knowledge Base and to submit customer support requests. – **www.apc.com** (Corporate Headquarters)
- Connect to localized APC by Schneider Electric websites for specific countries, each of which provides customer support information. – **www.apc.com/support/**.
- Global support searching APC by Schneider Electric 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 another distributor from whom you purchased your APC by Schneider Electric product.



## Documents / Resources

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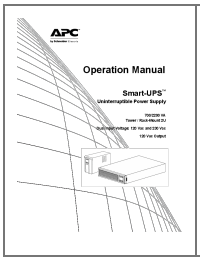
|   | **APC SMT700X167 Interactive Tower Smart-UPS** [pdf] User Manual<br>SMT700X167, Interactive Tower Smart-UPS, Tower Smart-UPS, Interactive Smart-UPS, Smart -UPS |

## References

- **APC, a flagship brand of Schneider Electric - APC USA**
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