



User Manual

English

APC Smart-UPSTM

**SUA750I-IN
230 Vac**

**Tower
Uninterruptible Power Supply**

Important Safety Information

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation and maintenance of the Smart-UPS and batteries.

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.

DANGER

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

WARNING

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

CAUTION

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

NOTICE

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

Product Handling Guidelines



<18 kg
<40 lb



18-32 kg
40-70 lb



32-55 kg
70-120 lb



>55 kg
>120 lb



Safety and General Information

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

Read the Safety Guide supplied with this unit before installing the UPS.

- 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 for indoor use only.
- Do not operate this UPS in direct sunlight, in contact with fluids, or where there is excessive dust or high humidity.
- Do not operate the UPS near open windows or doors.
- Be sure the air vents on the UPS are not blocked. Allow adequate space for proper ventilation.
- Note: Allow 20 cm clearance on both front and rear sides of the UPS.
- Use only the mains and communication cables provided along with the UPS.
- The equipment is heavy. Always practice safe lifting techniques adequate for the weight of the equipment.

Product Description

The APC™ by Schneider Electric Smart-UPS™ is a high performance uninterruptible power supply (UPS). The UPS provides protection for electronic equipment from utility power blackouts, brownouts, sags, and surges, small utility power fluctuations and large disturbances. The UPS also provides battery backup power for connected equipment until utility power returns to acceptable levels or the batteries are fully discharged.

This user manual is available on the APC by Schneider Electric Web site, www.apc.com.

1: INSTALLATION

Package contents

Attention: Read the safety instruction sheet before installation.

Inspect the UPS upon receipt. Notify the carrier and dealer if there is damage.

The packaging is recyclable; save it for reuse or dispose of it properly.

Check the package contents:

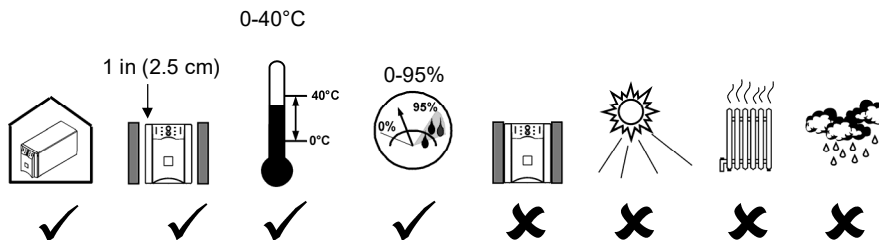
- ❑ UPS
- ❑ UPS literature kit containing:
 - ❑ Product documentation, safety and warranty information
 - ❑ Serial and USB communication cables
 - ❑ Jumper cable (output cable)
 - ❑ Input power cord

Note: The UPS is shipped with the battery disconnected.

Position the UPS

The UPS is heavy. Select a location sturdy enough to handle the weight.

Do not operate the UPS where there is excessive dust or the temperature and humidity are outside the specified limits.



NOTICE

RISK OF EQUIPMENT DAMAGE

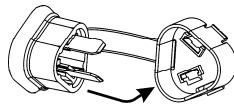
- UPS must be used indoors only.
- The installation location should be sturdy to withstand the weight of the UPS.
- Do not operate UPS where there is excessive dust or where the temperature or humidity are outside specified limits.

Failure to follow these instructions can result in equipment damage.

Connect the Battery

The battery connector is located on the rear panel.

For battery connection, push the tethered jumper plug into the corresponding port.



Connect Equipment and Power to the UPS


1. Connect equipment to the UPS.

Note: A laser printer draws significantly more power than other types of equipment and may overload the UPS.

2. Add accessories to the Smart-Slot (optional).
3. Connect ground leads to the TVSS screw (optional). To make the connection, loosen the screw and connect the surge suppression device ground lead. Tighten the screw to secure the lead.
4. Plug the UPS into a two-pole, three-wire, grounded receptacle only. Avoid using extension cords.

The power cord is supplied in the UPS literature kit.

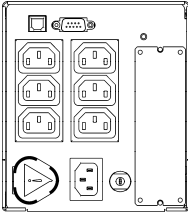
5. Turn on all connected equipment. To use the UPS as a master *on/off* switch, be sure all connected equipment is on.

6. Press the  button on the front panel to power the UPS.

Note: The battery charges to 90% capacity during the first four hours of normal operation. Do not expect full battery run capability during this initial charge period.

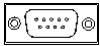
7. For optimal computer system security, install PowerChute Smart-UPS monitoring software.

Rear Panel



Basic Connectors

Serial Port **USB Port** **Ground Screw**



Use only interface kits approved by APC.

Use only the supplied cable to connect to the Serial Port. A standard serial interface cable is incompatible with the UPS. **Serial and USB Ports cannot be used simultaneously.**

The UPS features a ground screw for connecting the ground lead on surge suppression devices such as telephone and network line protectors.

When connecting grounding cable, disconnect the unit from the utility power outlet.

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take corrective actions.

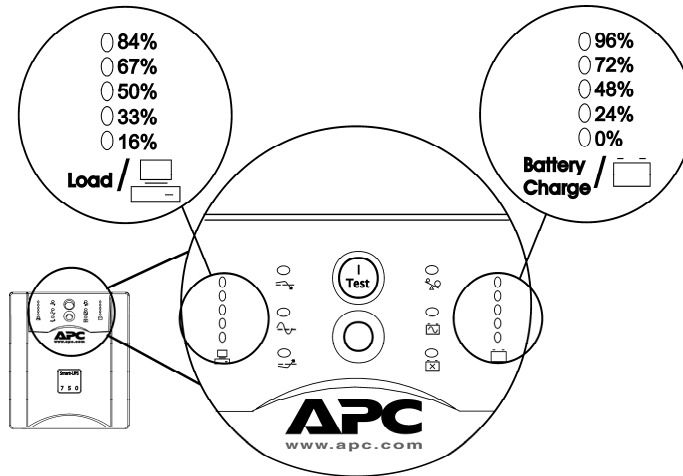
Install PowerChute™ software

To install PCPE, connect the supplied USB cable between the data port on the UPS and to a computer with access to the Web.






On the computer, go to www.apc.com/tools/download. Select Software Upgrades - PowerChute Personal Edition and the appropriate operating system. Follow directions to download the software.

2: OPERATION

Front Display Panel




INDICATOR	DESCRIPTION
Online 	The UPS is supplying utility power to the connected equipment.
AVR Trim 	The UPS is compensating for a high utility voltage.
AVR Boost 	The UPS is compensating for a low utility voltage.
On Battery 	The UPS is supplying battery power to the connected equipment.
Overload 	The connected loads are drawing more than the UPS power rating.
Replace Battery/ Battery Disconnected 	The battery is disconnected or must be replaced.
FEATURE	FUNCTION
Power On 	Press this button to turn on the UPS. (Read on for additional capabilities.)
Power Off 	Press this button to turn off the UPS.

FEATURE	FUNCTION
Self-Test	<p>Automatic: The UPS performs a self-test automatically when turned on, and every two weeks thereafter (by default). During the self-test, the UPS briefly operates the connected equipment on battery.</p> <p>Manual: Press and hold the  button for a few seconds to initiate the self-test.</p>
Cold Start	<p>Supply battery power to the UPS and connected equipment in the absence of utility voltage (see <i>Troubleshooting</i>). Press the  button for one second and release. The UPS will beep briefly and go quiet. Press and hold the button again, but for approximately three seconds. The unit will emit a sustained beep. Release the button during this beep.</p>
<p>Diagnostic Utility Voltage</p> <p>Q266 Q248 Q229 Q210 Q191</p> 	<p>The UPS has a diagnostic feature that displays the utility voltage.</p> <p>The UPS starts a self-test as part of this procedure. The self-test does not affect the voltage display.</p> <p>Press and hold the  button to view the utility voltage bar graph display. After a few seconds, this five-LED <i>battery charge</i>  display on the right of the front panel will show the utility input voltage.</p> <p>Refer to the figure at left for the voltage reading (values are not listed on the UPS).</p> <p>The display indicates the voltage is between the displayed value on the list and the next higher value (see <i>Troubleshooting</i>).</p>

Battery Operation

The UPS switches to battery operation automatically if the utility power is not available. While running on battery, an audible alarm beeps four times every 30 seconds.

Press the  button to silence this audible alarm. If the utility power does not return, the UPS continues to supply power to the connected equipment until the battery is fully discharged.

If PowerChute is not being used, files must be manually saved and the computer must be turned off before the UPS fully discharges the battery.

Refer to www.apc.com for on battery runtimes.

3: USER CONFIGURABLE ITEMS

NOTE: SETTINGS ARE ADJUSTED THROUGH POWERCHUTE SOFTWARE OR OPTIONAL SMART SLOT ACCESSORY CARDS.

FUNCTION	FACTORY DEFAULT	USER SELECTABLE CHOICES	DESCRIPTION
Automatic Self-Test	Every 14 days (336 hours)	Every 7 days (168 hours), On Startup Only, No Self-Test	Set the interval at which the UPS will execute a self-test.
UPS ID	UPS_IDEN	Up to eight characters (alphanumeric)	Uniquely identify the UPS, (i.e. server name or location) for network management purposes.
Date of Last Battery Replacement	Manufacture Date	mm/dd/yy	Reset this date when you replace the battery module.
Minimum Capacity Before Return from Shutdown	0 percent	0, 15, 30, 45, 50, 60, 75, 90 percent	Specify the percentage to which batteries will be charged following a low-battery shutdown before powering connected equipment.
Voltage Sensitivity The UPS detects and reacts to line voltage distortions by transferring to battery operation to protect connected equipment.	High	High sensitivity, Medium sensitivity, Low sensitivity	Note: In situations of poor power quality, the UPS may frequently transfer to battery operation. If the connected equipment can operate normally under such conditions, reduce the sensitivity setting to conserve battery capacity and service life.
Alarm Delay Control	Enable	Enable, Mute, Disable	Mute ongoing audible alarms or disable all audible alarms permanently.
Shutdown Delay	90 seconds	0, 90, 180, 270, 360, 450, 540, 630 seconds	Set the interval between the time when the UPS receives a shutdown command and the actual shutdown.
Low Battery Alert	2 minutes PowerChute software provides automatic, unattended shutdown when approximately 2 minutes of battery operated runtime remains.	2, 5, 8, 11, 14, 17, 20, 23 minutes (Times are approximate.)	The UPS will beep when 2 minutes of battery runtime remains. Change the low battery alert interval setting to the time that the operating system or system software requires to shut down.

NOTE: SETTINGS ARE ADJUSTED THROUGH POWERCHUTE SOFTWARE OR OPTIONAL SMART SLOT ACCESSORY CARDS.			
FUNCTION	FACTORY DEFAULT	USER SELECTABLE CHOICES	DESCRIPTION
Synchronized Turn-on Delay	0 seconds	0, 60, 120, 180, 240, 300, 360, 420 seconds	Specify the time the UPS will wait after the return of utility power before turn-on (to avoid branch circuit overload).
High Transfer Point	253 Vac	253, 257, 261, 265 Vac	Set the high transfer point higher to avoid unnecessary battery usage when the utility voltage is usually high and the connected equipment is specified to operate with input voltages this high.
Low Transfer Point	208 Vac	196, 200, 204, 208 Vac	Set the low transfer point lower when the utility voltage is usually low and the connected equipment is specified to operate with input voltages this low.
Output Voltage	230 Vac	220, 230, 240 Vac	Select the output voltage.

4: STORAGE, MAINTENANCE, AND SHIPPING

Storage

Store the UPS covered in a cool, dry location, with the battery fully charged.

At -15 to +30 °C (+5 to +86 °F), charge the UPS battery every six months.

At +30 to +45 °C (+86 to +113 °F), charge the UPS battery every three months.

Battery Module Maintenance

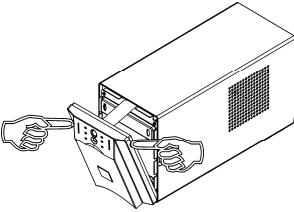
The UPS battery life differs based on usage and environment. Consider replacing the battery every five years.

This UPS has an easy to replace, swappable battery. See your dealer or contact APC by Schneider Electric (see *Contact Information*) for information on replacement batteries.

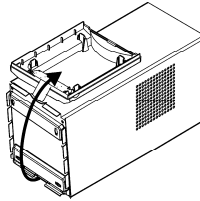
Note: Upon battery disconnection, equipment is not protected from power outages.

Removing the Front Bezel and Battery Module

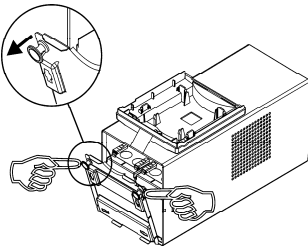
1



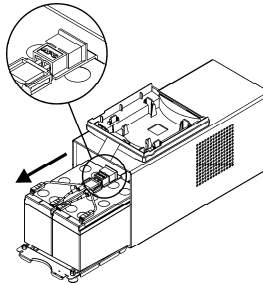
2



3



4



Replacing the Battery Module

CAUTION

RISK OF HYDROGEN SULPHIDE GAS AND EXCESSIVE SMOKE

- Replace the battery at least every 5 years.
- Replace the battery immediately when the UPS indicates battery replacement is necessary.
- Replace battery at the end of its service life.
- Replace batteries with the same number and type of batteries as originally installed in the equipment.
- Replace the battery immediately when the UPS indicates a battery overtemperature condition, or when there is evidence of electrolyte leakage. Power off the UPS, unplug it from the AC input, and disconnect the batteries. Do not operate the UPS until the batteries have been replaced.
- *Replace all battery modules (including the modules in External Battery Packs) which are older than one year, when installing additional battery packs or replacing the battery module(s).

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

*Contact APC by Schneider Electric Customer Support India to determine the age of the installed battery modules.

Reverse the instructions for *Removing the Front Bezel and Battery Module*. Note: To close the battery door, ensure the plungers are in the extended position, push the door shut, and push the plungers into the locked position.



Be sure to deliver the spent battery to a recycling facility or ship it to APC in the replacement battery packing material.

Shipping

1. Shut down and disconnect any equipment attached to the UPS.
2. Shut down the UPS, and disconnect the UPS from the utility power outlet.
3. Unplug the battery connector, located on the rear panel.

For further shipping instructions and to obtain appropriate packing materials, contact APC (see *Contact Information*).

5: TROUBLESHOOTING

Use the chart below to solve minor UPS installation and operation problems. Refer to www.apc.com with complex UPS problems.

PROBLEM AND/OR POSSIBLE CAUSE	SOLUTION
UPS WILL NOT TURN ON	
UPS not connected to utility power supply.	Check that the power cord from the UPS to the utility power supply is securely connected at both ends.
Battery not connected properly.	Check that battery connector on the rear panel is fully snapped into position.
Very low or no utility voltage.	Check the utility power supply to the UPS by plugging in a table lamp. If the light is very dim, have the utility voltage checked.
UPS WILL NOT TURN OFF	
UPS has detected an internal fault.	Do not attempt to use the UPS. Unplug the UPS, unplug the battery connector on the rear panel, and have it serviced immediately.
UPS BEEPS OCCASIONALLY	
Normal operating UPS beeps when running on battery.	None. The UPS is protecting the connected equipment from occasional utility power irregularities.
UPS IS NOT PROVIDING EXPECTED BACKUP TIME	
The UPS battery is weak due to a recent outage or is near the end of the service life.	Charge the battery. Batteries require recharging after extended outages, and wear faster when frequently put into service or when operated at elevated temperatures. If the battery is near the end of the service life, consider replacing even if the <i>replace battery</i> LED is not yet illuminated.
LEFT HALF, RIGHT HALF, OR CENTER SECTION OF FRONT PANEL LEDS ARE FLASHING	
UPS has detected an internal fault. The UPS has shut down.	Do not attempt to use the UPS. Turn off the UPS, unplug the battery connector on the rear panel, and have it serviced immediately.
FRONT PANEL LEDS FLASH SEQUENTIALLY	
The UPS has been shut down remotely through software or an optional accessory card.	None. The UPS will restart automatically when utility power returns.
ALL LEDS ARE OFF AND THE UPS IS PLUGGED INTO A WALL OUTLET	
The UPS is shut down or the battery is discharged from an extended outage.	None. The UPS will return to normal operation when the power is restored and the battery has a sufficient charge.
THE INPUT CIRCUIT BREAKER HAS TRIPPED	
The UPS is overloaded. The plunger on the circuit breaker has popped out.	Reduce the load on the UPS by unplugging equipment. Press in the plunger on the circuit breaker.
THE AVR BOOST OR AVR TRIM LEDS ARE ILLUMINATED	
The system is experiencing excessive periods of low or high voltage.	Seek qualified service personnel to check your facility for electrical problems. If the problem continues, contact the utility company for further assistance.

PROBLEM AND/OR POSSIBLE CAUSE	SOLUTION
THE OVERLOAD LED IS ILLUMINATED AND THE UPS EMITS A SUSTAINED ALARM TONE	
The UPS is overloaded. The connected equipment is drawing more VA than the UPS can sustain.	<p>The connected equipment exceeds the specified “maximum load.”</p> <p>The audible alarm remains on until the overload is removed. Disconnect nonessential equipment from the UPS to eliminate the overload.</p> <p>The UPS continues to supply power as long as it is online and the circuit breaker does not trip; the UPS will not provide power from batteries in the event of a utility voltage interruption.</p> <p>If a continuous overload occurs while the UPS is on battery, the unit turns off output in order to protect the UPS from possible damage.</p>
THE REPLACE BATTERY/BATTERY DISCONNECTED LED IS ILLUMINATED	
This LED flashes and a short beep is emitted every two seconds to indicate the battery is disconnected.	Check that the battery connector on the rear panel is fully engaged.
Weak battery.	Allow the battery to recharge for 24 hours. Then, perform a self-test. If the problem persists after recharging, replace the battery.
Battery self-test has not passed.	The UPS emits short beeps for one minute and the <i>replace battery</i> LED illuminates. The UPS repeats the audible alarm every five hours. Perform the self-test procedure after the battery has charged for 24 hours to confirm the <i>replace battery</i> condition. The audible alarm stops and the LED clears if the battery passes the self-test.
UPS OPERATES ON BATTERY ALTHOUGH UTILITY VOLTAGE EXISTS	
The UPS input circuit breaker has tripped.	To reduce the load on the UPS, unplug equipment and press in the plunger on the circuit breaker.
The line voltage is very high, low or distorted.	Move the UPS to a different outlet on a different circuit, as inexpensive fuel powered generators may distort the voltage. Test the input voltage with the utility voltage display (see <i>Operation</i>). If acceptable to the connected equipment, reduce the UPS sensitivity (see <i>User Configurable Items</i>).
BATTERY CHARGE AND LOAD LED BAR GRAPHS FLASH SIMULTANEOUSLY	
The UPS has shutdown. The internal temperature of the UPS has exceeded the allowable threshold for operation.	<p>Check that the room temperature is within the specified limits for operation.</p> <p>Check that the UPS is properly installed, allowing for adequate ventilation (see <i>Position the UPS</i>).</p> <p>Allow the UPS to cool down. Restart the UPS. If the problem continues, contact APC by Schneider Electric (see <i>Contact Information</i>).</p>

PROBLEM AND/OR POSSIBLE CAUSE	SOLUTION
<i>DIAGNOSTIC UTILITY VOLTAGE</i>	
All five LEDs are illuminated.	The line voltage is extremely high and should be checked by an electrician.
There is no LED illumination.	If the UPS is plugged into a properly functioning utility power outlet, the line voltage is extremely low.
<i>ONLINE LED</i>	
There is no illumination.	The UPS is running on battery, or it must be turned on.
The LED is blinking.	The UPS is running an internal self-test.

6: 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 by Schneider Electric Customer Support.
 - Note the model number and serial number and the date of purchase. The model and serial numbers are located on the rear panel of the unit and are available through the LCD display on select models.
 - Call APC by Schneider Electric Customer Support and a technician will attempt to solve the problem over the phone. If this is not possible, the technician will issue a Service Request Number.
 - If the unit is under warranty, the repairs are free.
3. An Authorised Service Representative will visit your location and try to resolve the issue.

7: WARRANTY INFORMATION

Two Year Limited Factory Warranty

Schneider Electric IT Business India Private Ltd. (SEITBIPL), warrants its products to be free from defects in materials and workmanship for a period of two (2) years from the date of purchase. The SEITBIPL obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products or parts thereof. Repair or replacement of a defective product or part 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 or by mailing in the completed warranty registration card that is included with the documentation.

SEITBIPL 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 end user's or any third person's misuse, negligence, improper installation, testing, operation or use of the product contrary to SEITBIPL's recommendations or specifications. Further, SEITBIPL 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, 6) theft. In no event shall SEITBIPL have any liability under this warranty for any product where the serial number has been altered, defaced, or removed, 7) normal wear resulting from frequent use.

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APC by Schneider Electric Customer Support India

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