



by Schneider Electric

# Installation and Operation Smart-UPS<sup>®</sup> SUA1000UXI-IN

## Product Description

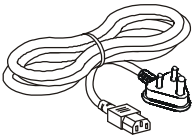
The APC<sup>®</sup> by Schneider Electric Smart-UPS<sup>®</sup> SUA1000UXI-IN is a high performance uninterruptible power supply (UPS). It provides protection for electronic equipment from utility power blackouts, brownouts, sags, and surges; small utility fluctuations and large disturbances. The UPS also provides battery backup power until utility power returns to safe levels or the batteries are fully discharged.

## Inventory

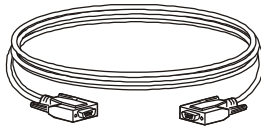
Inspect the UPS upon receipt. Notify the carrier and dealer if there is damage.

Literature Kit containing:

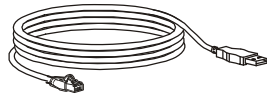
- Product documentation
- Safety guide



Power cable



Serial cable



USB cable

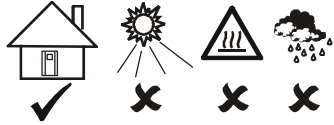


External battery cable

**Note:** The UPS is shipped without the battery.

# Safety and General Information

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.

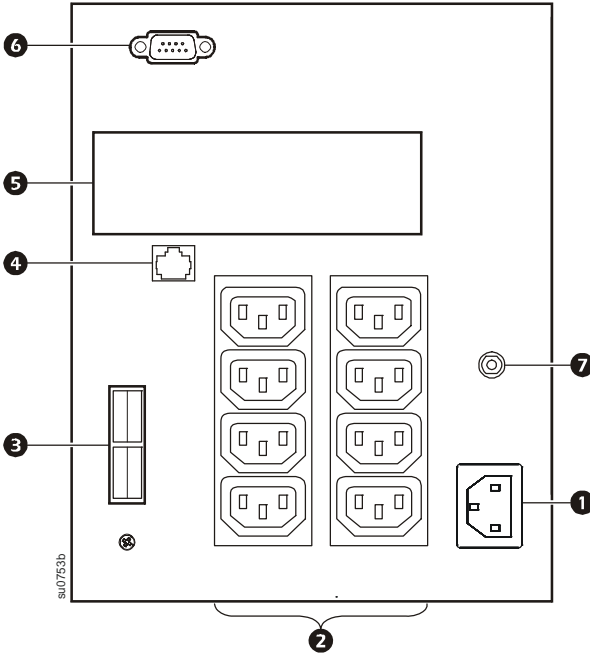
The battery typically lasts for two to three years. Environmental factors impact battery life. Elevated ambient temperatures, poor quality AC power, and frequent short duration discharges will shorten battery life.

Connect the Smart-UPS power cable directly to a wall outlet. Do not use surge protectors or extension cords.

## Specifications

Model	SUA1000UXI-IN
Input Voltage Range	160 Vac - 285 Vac
Output Power Capacity	800 Watts / 1000 VA
Output Voltage	Configurable for 220, 230 or 240 nominal output voltage
Output Voltage Distortion	Less than 5% at full load
Output Frequency (sync to mains)	47 - 53 Hz for 50 Hz nominal 57 - 63 Hz for 60 Hz nominal
Waveform Type	Sine wave
Nominal Input Voltage	230 V
Input Frequency	50/60 Hz $\pm$ 3 Hz (auto sensing)
Typical Recharge Time	Up to 10 hours
Operating Temperature	0° to 40° C
Storage Temperature	-15° to 45° C
Unit Dimensions	216 × 170 × 439 mm (8.5 × 6.6 × 17.3 in)
Unit Weight	12.9 kg
Charger capacity: Internal charger is capable of charging 24 V battery and delivering 15 A maximum charging current. Use appropriate Ah capacity of SMF battery with recommendation from battery manufacturer.	

# Rear Panel Features



<b>1</b>	Utility power cable	Use the power cable (supplied), to connect the UPS to utility power.
<b>2</b>	Output receptacles	Connect electronic devices such as a computer, monitor, or printer to these receptacles.
<b>3</b>	External battery connector	Use the external battery cable to connect the UPS to external batteries.
<b>4</b>	Network cable ports with surge protection	Use a network cable to connect a modem to the Cable In port, and a computer to the Cable Out port.
<b>5</b>	SmartSlot	Use the SmartSlot to install an optional Network Management Card (NMC).
<b>6</b>	Serial port	To use PowerChute software, connect the USB cable (supplied), to the Serial port. <b>Use only interface kits supplied or approved by APC. Any other serial interface cable will be incompatible with the UPS connector.</b>
<b>7</b>	UPS input circuit breaker reset button	Press this button to reset the UPS circuit breaker after an overload condition has occurred.

# Installation



**Prior to connecting the ground cable be sure the UPS is NOT connected to utility or battery power.**

## Connect equipment to the UPS

1. Connect equipment to the UPS (cables not supplied).
2. Connect the internal or external batteries (which ever is applicable), to the UPS. Refer to “Connect Batteries” on page 4 in this manual.
3. Switch on the utility circuit breaker.

Configure the optional Network Management Card (NMC). Refer to NMC documentation for instructions.

# Connect Batteries

## APC battery solution

Connect the batteries. Charge to 90% capacity during the first 24 hours while the UPS is operating on utility power.

Do not expect full runtime capability during the initial charge period.

There are no serviceable parts in the UPS. Do not attempt to open or repair the UPS as this will void the warranty. Contact APC through the Web site [www.apc.com](http://www.apc.com), for customer support.

## Third party battery solution

Batteries must be sealed lead-acid type. Use 40 A, 58 VDC fuses with an interrupt rating of  $\geq 20,000$  A.

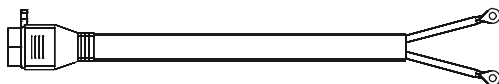
The UPS internal battery chargers are optimized only for SMF type batteries.

The internal battery chargers operate in a constant current/constant voltage charging mode.

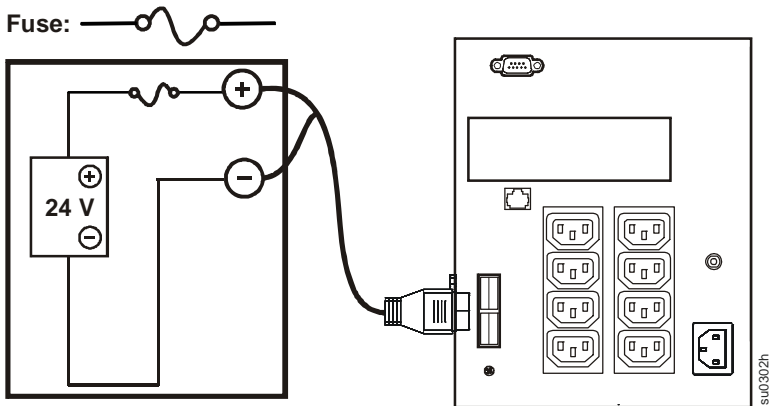
The UPS is intended for use with 24 VDC nominal battery voltage. The external battery system connected to the UPS must not exceed 24 VDC nominal voltage. This equals two 12 V batteries connected in series.

External batteries must be configured prior to connecting batteries to the UPS.

If using a non-APC battery pack, a 24 V battery string must be connected to the UPS using the supplied battery cable.



1. Connect the positive (red), and negative (black), wires to the positive, and negative terminals on each external battery system.
2. Plug the external battery connector cable into the external battery connector receptacle on the rear side of the UPS.
3. Secure the cable connector with one screw.



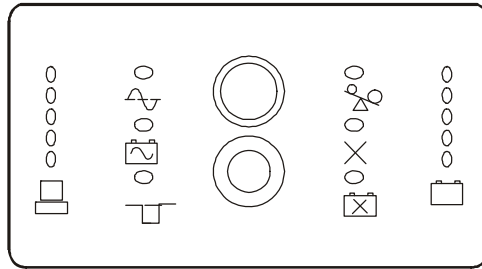
## Install PowerChute® Software









To install PowerChute Personal Edition (PCPE) software, 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](http://www.apc.com/tools/download). Select “Software Upgrades - PowerChute Personal Edition” in the “Filter by Software/Firmware” drop down menu. Select the appropriate operating system. Follow directions to download the software.

# Operation

## Front display panel features



	<p><b>Power On</b>  <b>Manual Self-Test:</b> Press and hold the test button for a few seconds to initiate the self-test</p>
	<p><b>Power Off</b></p>
	<p><b>On Line:</b> The UPS is supplying conditioned AC power to connected equipment.</p>
	<p><b>Overload:</b> The equipment connected to the UPS is drawing more power than the voltage rating allows.</p>
 	<p><b>Automatic Voltage Regulation (AVR):</b> The UPS has an AVR boost and trim feature that automatically regulates high or low levels of input voltage without using battery power. The UPS also features AVR Bypass which temporarily deactivates the AVR circuitry when the input voltage is within normal range. This conserves battery power and helps to maximize battery life.</p> <p>When illuminated, the UPS is compensating for high input voltage.</p> <p>When illuminated, the UPS is compensating for low input voltage.</p>
	<p><b>Replace Battery:</b> The icon illuminates to indicate the battery is not connected securely or the battery is nearing the end of its service life and should be replaced.</p>
	<p><b>On Battery:</b> The UPS is supplying battery backup power to the connected equipment.</p>

# Configuration

## UPS Settings

Configure UPS settings through PowerChute software.

Function	Factory Default	User Selectable Options	Description
Language	English	English	The language used on the display interface.
Output voltage	230 Vac	220, 240 Vac	Allows the user to select output voltage while the UPS is operating online.
Output Frequency	Automatic	Auto Sense • 50 Hz $\pm$ 3 • 60 Hz $\pm$ 3	Sets allowable UPS output frequency. Whenever possible, output frequency tracks input frequency.
Low Transfer Point	208 Vac	• 196 Vac • 200 Vac • 204 Vac • 208 Vac	<p>The low transfer point setting is the minimum voltage that the UPS will send to connected equipment operating in Bypass mode.</p> <p><b>Note:</b> Use the Advanced menus to configure this setting.</p> <p>Set the lower transfer point lower if the utility voltage is chronically low and the connected equipment can tolerate this condition.</p>
High Transfer Point	253 Vac	• 253 Vac • 257 Vac • 261 Vac • 265 Vac	<p>The high transfer point setting is the maximum voltage that the UPS will send to connected equipment operating in Bypass mode.</p> <p><b>Note:</b> Use the Advanced menus to configure this setting.</p> <p>To avoid unnecessary battery usage, set high transfer point higher if the utility voltage is chronically high and the connected equipment can tolerate this conditions</p>

Function	Factory Default	User Selectable Options		Description
<b>Low Battery Warning</b>	2 minutes	<ul style="list-style-type: none"> <li>• 2 min</li> <li>• 5 min</li> <li>• 8 min</li> <li>• 11 min</li> </ul>	<ul style="list-style-type: none"> <li>• 14 min</li> <li>• 17 min</li> <li>• 20 min</li> <li>• 23 min</li> </ul>	When two minutes of battery run time remain the UPS emits continuous beeps. Adjust the setting for the low battery warning to an interval that will allow the operating system software to safely shut down.
<b>UPS Test</b>	At start up and once every 14 days there after	<ul style="list-style-type: none"> <li>• At start up and once every 14 days there after</li> <li>• At start up and once every 7 days there after</li> <li>• Only at start up</li> <li>• Never</li> </ul>		Set the interval for the UPS to perform a self-test.
<b>Date of Last Battery Replacement</b>	Date set at the factory	Rest the date after the internal battery module is replaced.		
<b>Synchronize Turn On Delay</b>	0 seconds	<ul style="list-style-type: none"> <li>• 60 sec</li> <li>• 120 sec</li> <li>• 180 sec</li> <li>• 240 sec</li> </ul>	<ul style="list-style-type: none"> <li>• 300 sec</li> <li>• 360 sec</li> <li>• 420 sec</li> </ul>	To avoid branch circuit overload, adjust the time interval before the UPS will turn on, once AC power has been restored.
<b>Shutdown Delay</b>	90 seconds	<ul style="list-style-type: none"> <li>• 0 sec</li> <li>• 180 sec</li> <li>• 270 sec</li> <li>• 360 sec</li> </ul>	<ul style="list-style-type: none"> <li>• 450 sec</li> <li>• 540 sec</li> <li>• 630 sec</li> </ul>	Set the interval between the time when the UPS receives a shutdown command and actual shutdown.
<b>Minimum Capacity before return for Shutdown</b>	0%	<ul style="list-style-type: none"> <li>• 15%</li> <li>• 30%</li> <li>• 45%</li> </ul>	<ul style="list-style-type: none"> <li>• 50%</li> <li>• 60%</li> <li>• 74%</li> <li>• 90%</li> </ul>	Specify the percentage to which the batteries will be charged following a low battery shutdown and power is restored to connected equipment.
<b>Voltage sensitivity</b>	High	<ul style="list-style-type: none"> <li>• High</li> <li>• Medium</li> <li>• Low</li> </ul>		The UPS detects and reacts to line voltage distortions by transferring to battery operation to protect the connected equipment. Where power quality is poor, 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.



# Troubleshooting

Problem and Possible Cause	Solution
<b>The UPS will not turn on or there is no output.</b>	
The unit has not been turned on.	Press the ON button once to turn on the UPS.
The UPS is not connected to AC power.	Be sure the power cable is securely connected to the UPS and to the AC power supply.
The input circuit breaker has tripped.	Disconnect nonessential equipment and reset the circuit breaker.
The UPS shows very low or no AC input voltage.	Check the AC power supply to the UPS by connecting a table lamp. If the light is very dim, check the AC voltage.
The battery is not securely connected.	Verify that all batteries are securely connected.
There is an internal UPS fault.	Do not attempt to use the UPS. Unplug the UPS and have it serviced immediately.
<b>The UPS is operating on battery while connected to input AC power.</b>	
The input circuit breaker has tripped.	Disconnect nonessential equipment and reset the 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, reduce the UPS sensitivity.
<b>UPS emits an audible beeping sound.</b>	
The UPS is operating normally.	None. The UPS is protecting the connected equipment.
<b>UPS does not provide expected battery backup time.</b>	
The UPS is experiencing an overload condition.	Check the UPS load display. Unplug nonessential equipment, such as printers.

<b>Problem and Possible Cause</b>	<b>Solution</b>
The UPS battery is weak due to a recent power outage or is near the end of its service life.	Charge the battery. Batteries require recharging after an extended outage. Elevated ambient temperatures, poor quality AC power, and frequent short duration discharges will shorten battery life. If the battery is near the end of its service life, consider replacing the battery even if the replace battery LED is not illuminated.
<b>Display interface LEDs flash sequentially.</b>	
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.
<b>The Fault LED is illuminated. The UPS displays a fault message and emits a constant beeping sound.</b>	
Internal UPS fault.	Do not attempt to use the UPS. Turn the UPS off and have it serviced immediately.
<b>All LEDs are illuminated and the UPS is plugged into a wall outlet.</b>	
There is no AC power and the UPS has shut down. The battery has completely 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.
<b>The replace battery LED is illuminated.</b>	
The battery has a weak charge.	Allow the battery to recharge for at least four hours. Then, perform a self-test. If the problem persists after recharging, replace the battery.
The replacement battery is not properly connected.	Be sure the battery connector is securely connected.
<b>The display interface shows a Site Wiring Fault message.</b>	
Building wiring faults detected include missing ground, hot-neutral, polarity reversal, and overloaded neutral circuit.	If the UPS indicates a site wiring fault, have a qualified electrician inspect the building wiring, (applicable for 120 Vac units only).

## 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.
  - a. 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.
  - b. Call APC 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.
  - c. 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.

## Two-Year Factory Warranty

This warranty applies only to the products you purchase for your use in accordance with this manual.

### Terms of warranty

APC warrants its products to be free from defects in materials and workmanship for a period of two years from the date of purchase. APC will repair or replace defective products covered by this warranty. This warranty does not apply to equipment that has been damaged by accident, negligence or misapplication or has been altered or modified in any way. Repair or replacement of a defective product or part thereof does not extend the original warranty period. Any parts furnished under this warranty may be new or factory-remanufactured.

### Non-transferable warranty

This warranty extends only to the original purchaser who must have properly registered the product. The product may be registered at the APC Web site, [www.apc.com](http://www.apc.com).

## Exclusions

APC 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 or testing. Further, APC shall not be liable under the warranty for unauthorized attempts to repair or modify wrong or inadequate electrical voltage or connection, inappropriate on-site operation conditions, corrosive atmosphere, repair, installation, exposure to the elements, Acts of God, fire, theft, or installation contrary to APC recommendations or specifications or in any event if the APC serial number has been altered, defaced, or removed, or any other cause beyond the range of the intended use.

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**NO SALESMAN, EMPLOYEE OR AGENT OF APC IS AUTHORIZED TO ADD TO OR VARY THE TERMS OF THIS WARRANTY. WARRANTY TERMS MAY BE MODIFIED, IF AT ALL, ONLY IN WRITING SIGNED BY AN APC OFFICER AND LEGAL DEPARTMENT.**

### **Warranty claims**

Customers with warranty claims issues may access the APC customer support network through the Support page of the APC Web site, **www.apc.com/support**. Select your country from the country selection pull-down menu at the top of the Web page. Select the Support tab to obtain contact information for customer support in your region.

## **APC Customer Support India**

<b>Internet</b>	<a href="http://www.apc.com/support">http://www.apc.com/support</a>
<b>Toll Free BSNL network</b>	1 800 425 4272
<b>All other networks</b>	city code + 39022272
<b>E-mail</b>	<a href="mailto:indiainfo@apc.com">indiainfo@apc.com</a>

