



User's Manual

English

APC Smart-UPS[®]

**2200VA/3000VA 3U Rack Mount
Uninterruptible Power Supply
230VAC/120VAC**

990-1055A, 08/01

1: SAFETY INFORMATION

American Power Conversion Corporation (APC) is the leading national and international manufacturer of state-of-the-art uninterruptible power supplies, redundant switches, power management software, and related equipment. APC products protect hardware, software, and data from the threat of power disturbances in business and government offices throughout the world.

The APC Uninterruptible Power Supply (UPS) is designed to prevent blackouts, brownouts, sags, and surges from reaching your computer and other valuable electronic equipment. The UPS filters out small utility line fluctuations and isolates your equipment from large disturbances by internally disconnecting from the utility line. The UPS provides continuous power from its internal battery until the utility line returns to safe levels.



Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the warranty.

HANDLING SAFETY

The UPS requires two people for installation due to its weight. To lighten the UPS, you may remove the battery while you position or mount the UPS in the rack. Note that the battery module also is heavy and requires two people for removal and installation.

Refer to this manual for instructions on how to remove the battery.



<18 kg (<40 lb)



32–55 kg (70–120 lb)



18–32 kg (40–70 lb)



>55 kg (>120 lb)

This equipment is intended for installation in a temperature-controlled indoor area free of conductive contaminants. Refer to Specifications at the APC web site for the actual temperature range.

LIFE SUPPORT APPLICATION POLICY

As a general policy, APC does not recommend the use of any of its products in life support applications where failure or malfunctions of the APC product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness. APC does not recommend the use of any of its products in direct patient care. APC will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to APC that (a) the risks of injury or damage have been minimized, (b) the customer assumes all such risks, and (c) the liability of APC is adequately protected under the circumstances.

Examples of devices considered to be life support devices are neonatal oxygen and analyzers, nerve stimulators (whether used for anesthesia, pain relief, or other purposes), autotransfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators for both adults and infants,





anesthesia ventilators, infusion pumps, and any other device designated as “critical” by the U.S.F.D.A.

Hospital grade wiring devices and leakage current may be ordered as options on many APC UPS systems, APC does not claim that units with this modification are certified or listed as Hospital Grade by APC or any other organization. Therefore these units do not meet the requirements for use in direct patient care.

ELECTRICAL SAFETY

- To reduce the risk of fire, connect only to a circuit provided with a 30 Amp maximum branch circuit overcurrent protection in accordance with the National Electrical Code ANSI/NFPA or country specific electrical code.
- Do not work alone under hazardous conditions.
- Check that the power cord(s), plug(s), and sockets are in good condition.
- To reduce the risk of electric shock when grounding, disconnect the equipment from the AC power outlet before installing or connecting to other equipment. Reconnect the power cord only after all connections are made.
- Use one hand, whenever possible, to connect or disconnect signal cables to avoid a possible shock from touching two surfaces with different electrical grounds.
- Connect the equipment to a three wire AC outlet (two poles plus ground). The receptacle must be connected to appropriate branch circuit/mains protection (fuse or circuit breaker). Connection to any other type of receptacle may result in a shock hazard.
- In order to maintain compliance with the EMC directive, output cords attached to the UPS should not exceed 10 meters in length.

DEENERGIZING SAFETY

- If the equipment has an internal energy source (battery), the output may be energized when the unit is not connected to an AC power outlet.
- To deenergize **pluggable equipment**, press the OFF button  for more than one second to switch the equipment off. Disconnect the equipment from the AC power outlet. Unplug the battery connector. Push the button labeled  to deenergize the capacitors.
- Pluggable equipment includes a protective earth conductor that carries the leakage current from the load devices (computer equipment). Total leakage current must not exceed 3.5 mA.
- To deenergize **permanently wired equipment**: set the power switch to standby .
- Set the AC circuit breaker to standby , and then disconnect the batteries (including any expansion units). Finally, disconnect the AC power from the building power supply.
- Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended.

BATTERY SAFETY



This equipment contains potentially hazardous voltages that may cause personal injury if handled incorrectly.

This equipment must be installed and serviced only by qualified electrical service personnel.

- This equipment contains potentially hazardous voltages. Do not attempt to disassemble the unit. The only exception is for equipment containing batteries. Battery replacement using the procedures below is permissible. Except for the battery, the unit contains no user serviceable parts. Repairs are to be performed only by factory trained service personnel.
- Do not dispose of batteries in a fire. The batteries may explode.
- Do not open or mutilate batteries. They contain an electrolyte that is toxic and harmful to the skin and eyes.
- Do not connect the terminals of a battery or battery pack with a wire or other electrically conductive objects.
- To avoid personal injury due to energy hazard, remove wristwatches and jewelry such as rings when replacing the batteries. Use tools with insulated handles.
- Replace batteries with the same number and type of batteries or battery packs as originally installed in the equipment.

BATTERY REPLACEMENT AND RECYCLING

See your dealer or visit the APC web site, www.apc.com/support, for information on replacement battery kits and battery recycling.



Be sure to return the spent battery to APC for recycling. Ship it to APC in the replacement battery packing material.

2: INSTALLATION

The UPS has a “rack” design so it can be mounted in a 19-inch (46.5 cm) equipment rack. Hardware is provided.

UNPACKING

1. Inspect the UPS upon receipt. APC designed robust packaging for your product. However, accidents and damage may occur during shipment. Notify the carrier and dealer if there is damage.
The packaging is recyclable; save it for reuse or dispose of it properly.
2. Check the package contents. The shipping package contains the UPS (with batteries disconnected), its front bezel (packaged separately), mounting rails, mounting cleats, hardware packet (necessary for rack mounting the UPS), and a literature kit containing cable(s), and product documentation.



The UPS is shipped with the front bezel removed (it is packaged separately within the main box). You will connect the plastic bezel (described later) during the installation procedure.

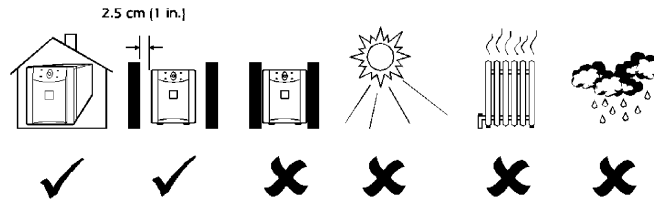
POSITIONING THE UPS

Place the rack and the UPS where they will be used. **The UPS is heavy. Select a location sturdy enough to handle the weight.**

You must install the UPS in a protected area that is free of excessive dust and has adequate airflow. Ensure the air vents on the front and rear of the UPS are not blocked. Allow at least one inch of space on both sides.

Do not operate the UPS where the temperature and humidity are outside the specified limits. Refer to *Specifications* at the APC web site, www.apc.com.

PLACEMENT



INSTALLING THE SMART-UPS

To install the Smart-UPS, follow these basic steps. Details are provided on the following pages.

1. Install the mounting rails in the rack.
2. Remove the battery module.
3. Mount the UPS in the rack. **Install the UPS at or near the bottom of the rack.**
4. Reinstall the battery module.

5. Connect the battery and attach the front bezel.
6. Connect the equipment and power to the UPS.
7. Turn on the UPS.

INSTALLING THE MOUNTING RAILS IN THE RACK

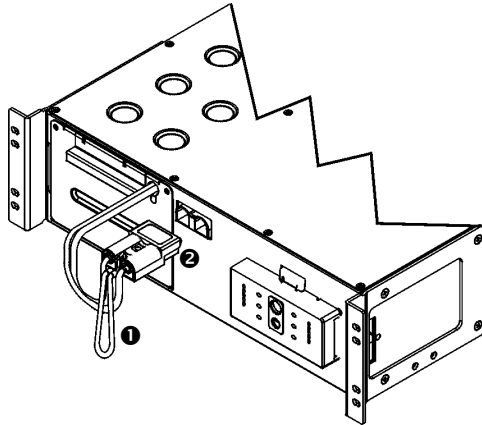
Install the mounting rails in the rack. Directions are included with the rail kit. The UPS comes with standard 19-inch (46.5 cm) rack mounting rails, brackets, and cleats. The rack can have any of the common types of equipment mounting holes (square, round-threaded, or round-non-threaded). All necessary hardware is provided.

REMOVING THE BATTERY MODULE

The UPS is heavy. To lighten it, remove the battery module before mounting the unit in the rack.



Due to its weight, two people are required to remove the battery module.



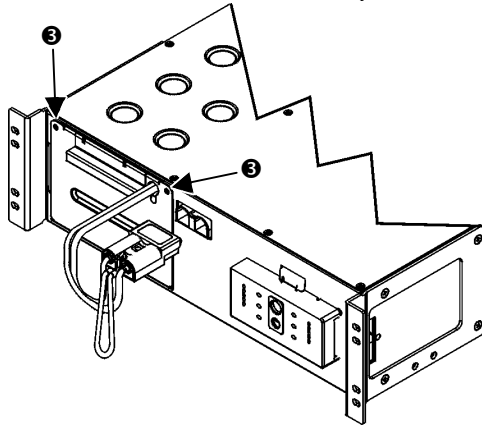
The battery module is accessible from the front of the UPS (shown at left).

This procedure requires a Phillips screwdriver.

1. If the UPS has been in operation, locate the white cord **1** attached to the battery module connector plug **2**. Grasp the cord and pull firmly toward you until the connector plug is disconnected.

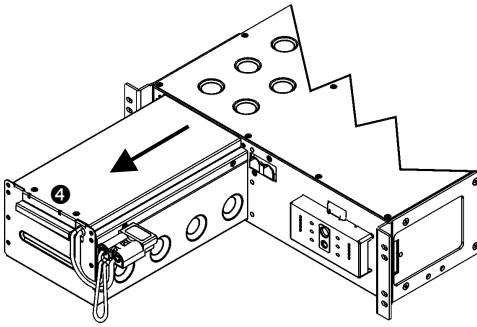
DO NOT pull the battery module cables.

If the UPS has not been in operation, the battery will not yet be connected. The UPS ships with the battery disconnected.



2. Use a screwdriver to remove the two battery module mount screws located at the top corners of the face plate **3**.

Set the screws aside in a safe place. You will replace them later.



3. Locate the battery module handle at the top of the battery face plate ④.
4. Be careful during this step—the battery module is heavy.

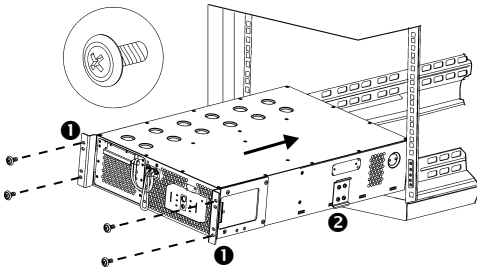
Pull the battery module handle toward you to slide the battery module out of the UPS.

DO NOT pull on the battery cables or the white cord.

MOUNTING THE UPS IN THE RACK

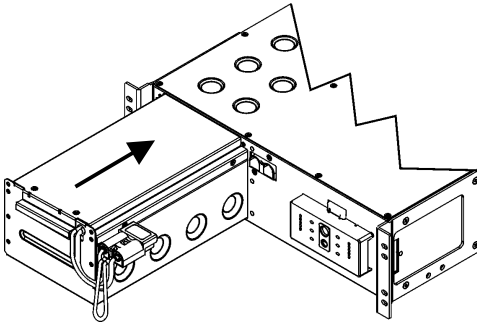


Due to its weight, two people are required to install the UPS in the rack.



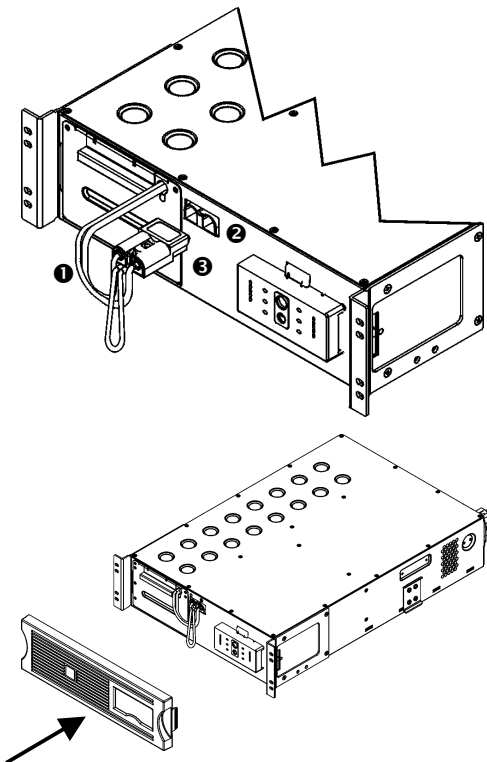
1. Supporting the UPS on both sides, carefully align the unit with the rails. Use the handles ① on the side of the UPS to support the unit.
2. Each side of the UPS has a cleat ② that must slide into the groove on the rails. Insert each cleat into its groove and slide the UPS into position.
3. Use the four ornamental screws supplied with the UPS to attach the mounting brackets to the rack post. Insert the screws into the top and bottom holes in the U-space.

REINSTALLING THE BATTERY MODULE



1. Supporting the battery module on the bottom, align it with the opening and slide the battery module into the compartment.
2. Replace the two screws to secure the battery module face plate.

CONNECTING THE BATTERY AND ATTACHING THE FRONT BEZEL



1. Facing the front of the UPS, locate the battery cables ❶ and the UPS battery connector jack ❷ to the right of the battery module.
2. To connect the battery connector plug ❸ to the battery jack, push the plug into the jack so the metal pieces inside each part are touching. Press firmly to ensure a tight connection. You will hear a “snap” when the connector is seated properly.
3. Push the battery cables and white cord as close to the UPS as possible.
4. The UPS is shipped with the front bezel removed (it is packaged separately within the main box).
Unpack the bezel and hold it with the cutout section on the right. Align the tabs on the side of the bezel with the slots on the front of the UPS and gently snap it into place.



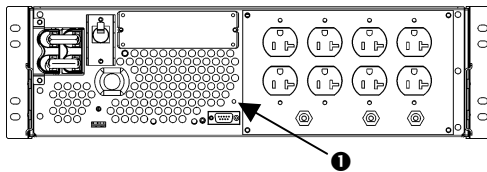
To connect an optional external battery pack(s) to the UPS, refer to the *3U Rack Mount External Battery Pack User's Manual* for instructions.

CONNECTING POWER AND EQUIPMENT TO THE UPS

1. On the back panel, plug the UPS into a two-pole, three-wire, grounding receptacle only. Avoid using extension cords and adapter plugs.
2. Connect equipment to the UPS.



Use the cable provided with your UPS to connect to the Computer Interface Port. DO NOT use a standard serial interface cable since it is incompatible with the UPS connector.




3. **120V Models only:** Connect ground leads to the TVSS screw ❶ on the back panel. The transient voltage surge suppression (TVSS) screw provides grounding through the UPS power cord ground conductor.

To make the connection, loosen the screw and connect the surge suppression device's ground lead. Tighten the screw to secure the lead.

4. Turn on all connected equipment (loads). To use the UPS as a master ON/OFF switch, be sure all connected loads are switched on. The loads will not be powered until the UPS is turned on.
5. Add any optional accessories. See the documentation accompanying the accessory for details.

TURNING ON THE UPS

Make sure the battery is connected before turning on the UPS! Then, press the  button on the front panel to power up your UPS. This will power up connected equipment. (Make sure connected loads are switched to their ON position).



The UPS charges its battery when it is connected to utility power. The battery charges fully during the first four hours of normal operation. **Do not** expect full run time during this initial charge period.

The unit performs a self-test automatically when turned on and every two weeks thereafter (by default). Refer to details below on changing the default interval.

120V Models: Check the site wiring fault indicator (located on the rear panel, see *Rear Panel*, below). It lights up if the UPS is plugged into an improperly wired AC power outlet. Wiring faults detected include missing ground, hot-neutral polarity reversal, and overloaded neutral circuit.



If the UPS indicates a site wiring fault, get a qualified electrician to correct the building wiring.

ACCESSORIES

This UPS is equipped with an accessory slot. See the APC website, www.apc.com, for available accessories.

If a standard accessory (such as an SNMP card) is installed on this UPS, see the Utility CD for user documentation.

For additional computer system security, install PowerChutePlus[®] Smart-UPS monitoring software. It provides automatic unattended shutdown capabilities on most major network operating systems.

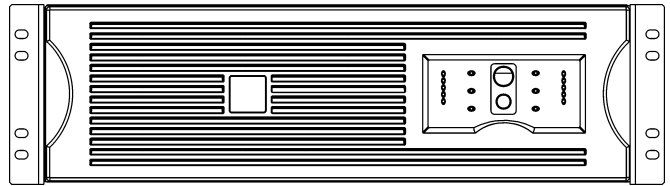
3: OPERATION

INDICATORS AND CONTROLS ON THE SMART-UPS

The APC Uninterruptible Power Supply (UPS) is designed to prevent blackouts, brownouts, sags and surges from reaching your computer and other valuable electronic equipment. The UPS filters out small utility line fluctuations and isolates your equipment from large disturbances by internally disconnecting from the utility line. The UPS provides continuous power from its internal batteries until the utility line returns to safe levels.

The Smart-UPS has the power control and operating indicators located on the front panel. The rear panel has the input and output connectors.

SMART-UPS FRONT PANEL



The ON and OFF buttons are used to power the UPS and act as master controls for the connected equipment. (Make sure connected loads are switched to their ON position) The UPS remains on as long as it is attached to utility power.

OPERATION



Power On

Press and release the button labeled, TEST, to supply power to the UPS and connected equipment. The equipment is immediately powered and the UPS performs a self-test.

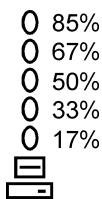


The charger maintains battery charge when the UPS is plugged in and utility voltage is present.



Power Off

Press and release the button labeled, 0, to turn off power to the UPS and connected equipment.




Load


The five-LED display on the left of the front panel shows the percentage of available power used by the connected equipment (load). For example, if three LEDs are lit, the connected load is drawing between 50% and 67% of the UPS capacity. If all five LEDs are lit, the connected load is drawing between 85% and 100% of capacity. Thoroughly test your entire system to make sure that the UPS will not become overloaded. In the graphic to the left, the load capacity threshold is listed next to the LED (these are not shown on the actual UPS).

SELF-TEST

Automatic Self-Test The UPS performs a self-test automatically when turned on, and every two weeks thereafter (by default). Refer to the *User Configuration Items* for details on changing the default interval.

Automatic self-test eases maintenance requirements by eliminating the need for periodic manual self-tests. During the self-test, the UPS briefly operates the connected equipment on-battery. If the UPS passes the self-test, it returns to on-line operation.

If the UPS fails the self-test, the UPS lights the *replace battery* LED  and immediately returns to on-line operation. The connected equipment is not affected by a failed test. Recharge the battery for 24 hours and perform another self-test. If it fails, the battery must be replaced.

Manual Self-Test Press and hold the  button for a few seconds to initiate the self-test.

UTILITY POWER

During normal operation, the UPS monitors the utility power and delivers power to the connected equipment. If your system is experiencing excessive periods of high or low voltage, have a certified electrician check your facility for electrical problems. If the problem continues, contact the utility company for further assistance.




On-Line The on-line indicator illuminates when the UPS is supplying utility power to the connected equipment. If the indicator is not lit, the UPS is supplying battery power and the UPS sounds an alarm—four beeps every 30 seconds.

Utility Voltage

230V	120V
0 266	0 133
0 248	0 124
0 229	0 114
0 213	0 105
0 196	0 96



The UPS has a diagnostic feature that displays the utility voltage. Plug the UPS into the normal utility power.

Press and hold the  button to view the utility voltage bar graph display. After a few seconds the five-LED display on the right of the front panel shows the utility input voltage. Refer to the figure at left for the voltage reading (values are not listed on the UPS).

The UPS starts a self-test as part of this procedure. The self-test does not affect the voltage display.

The display indicates the voltage is between the displayed value on the list and the next higher value. For example, with three LEDs lit, the input voltage for *120V models* is between 114 and 124 Vac, and for *230V models* is between 229 and 248 Vac.

If no LEDs are lit and the UPS is plugged into a working AC power outlet, the line voltage is extremely low.

If all five LEDs are lit, the line voltage is extremely high and should be checked by an electrician.



Voltage Trim

This LED illuminates to indicate the UPS is compensating for a high utility voltage.



Voltage Boost

This LED illuminates to indicate the UPS is compensating for a low utility voltage.

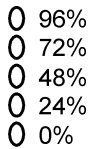
BATTERY POWER

If the utility power fails, the UPS can provide power to the connected equipment from its internal battery for a finite period. The UPS sounds an alarm—four beeps every 30 seconds—while operating on-battery power. The alarm stops when the UPS returns to on-line operation.



On-Battery Power

When the *on-battery power* indicator is lit the UPS is supplying battery power to the connected equipment.



Battery Charge

The five-LED display on the right of the front panel shows the present charge of the UPS battery as a percentage of the battery capacity. When all five LEDs are lit, the battery is fully charged. The LEDs extinguish, from top to bottom, as the battery capacity diminishes. Refer to the figure at left for the battery capacity threshold (it is not listed on the UPS).



As a low battery warning, any LEDs illuminated (for the given capacity) flash and the UPS beeps. The low battery warning default setting can be changed from the rear panel or through the optional PowerChute software. Refer to *Default Settings* in this manual.



Overload

The UPS emits a sustained alarm tone and the LED illuminates when an overload condition occurs (that is, when the connected equipment exceeds the specified “maximum load” as defined in Specifications at the APC web site). The alarm remains on until the overload is removed.

The UPS continues to supply power as long as it is on-line and the breaker does not trip; but, the UPS will not provide power from batteries in the event of a utility voltage interruption.

Disconnect nonessential equipment from the UPS to eliminate the overload. 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.



Replace Battery

Failure of a battery self-test causes the UPS to emit short beeps for one minute and the *replace battery* LED illuminates. LED flashes indicate the battery is disconnected. The UPS repeats the alarm every five hours. Perform the self-test procedure after the battery has charged for 24 hours to confirm the *replace battery* condition. The alarm stops if the battery passes the self-test.

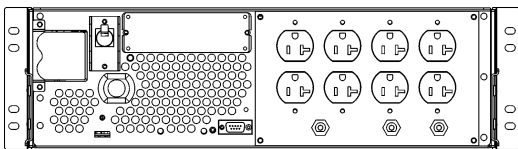
SHUTDOWN MODE (VIA SOFTWARE OR AN ACCESSORY)

In shutdown mode, the UPS stops supplying power to the connected equipment, waiting for the return of utility power. If there is no utility power present, external devices (such as servers) connected to the computer interface or the accessory slot can command the UPS to shut down. This normally is done to preserve battery capacity after the shutdown of protected servers. The UPS scrolls the front panel indicators sequentially in shutdown mode.

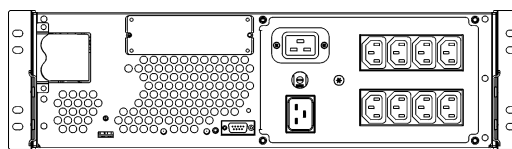
SMART-UPS REAR PANEL

The rear panel has the input and output connectors, computer interface port, and default setting buttons for the low battery warning level and voltage sensitivity indicator.

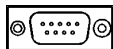
120V Models



230V Models



BASIC CONNECTORS



Computer Interface Port

Power management software and interface kits can be used with the UPS. **Use only interface kits supplied or approved by APC.** If used, connect the interface cable to the 9-pin computer interface port. Secure the connector screws to complete the connection.



Use an APC supplied cable to connect to the Computer Interface Port. DO NOT use a standard serial interface cable since it is incompatible with the UPS connector.

The UPS package contains a serial cable. Refer to the *Software Installation Instruction Sheet* included with the UPS.



Rear Connector

The UPS is shipped with the rear connector plug installed (as shown in the images above for 120V and 230V units). The image at the left shows the receptacle when the plug is removed.

To connect an optional external battery pack, this plug is removed and replaced with the battery pack connector. Refer to the *3U Rack Mount External Battery Pack User's Manual* for details.



120V Models

TVSS Screw

The UPS features a transient voltage surge-suppression (TVSS) screw for connecting the ground lead on surge suppression devices, such as telephone and network line protectors.

DEFAULT SETTINGS






Voltage Sensitivity

The UPS detects line voltage distortions (such as spikes, notches, dips, and swells) as well as distortions caused by operation with inexpensive fuel-powered generators. By default, the UPS reacts to distortions by transferring to on-battery operation to protect the connected equipment. Where power quality is poor, the UPS may frequently transfer to on-battery operation.

If the connected equipment can operate normally under such conditions, reduce the sensitivity setting to conserve battery capacity and service life.

To reduce UPS sensitivity, press the *voltage sensitivity* button. Use a pointed object (such as a pen) to do so. Press the button once to set sensitivity to *reduced*. Press it again to set sensitivity to *low*. Press the button a third time to reset *normal* sensitivity. You also can change the sensitivity level through software.

-  normal
-  reduced
-  low


Brightly lit: UPS is set to *normal* sensitivity.

Dimly lit: UPS is set to *reduced* sensitivity.

Off: UPS is set to *low* sensitivity.

Low Battery Warning Level

The low battery warning beeps to indicate low on-battery run time. It beeps periodically (approximately three times per minute) when less than seven minutes of run time remain. The beeps are continuous when only two minutes of run time remain.

This may not be enough time to shut down some protected computer systems. To change the warning interval default setting, press the *voltage sensitivity* button while pressing and holding the front-panel  button.

-  2 min.
-  5 min.
-  7 min.

Brightly lit: Low battery warning interval is about two minutes.

Dimly lit: Low battery warning interval is about five minutes.

Off: Low battery warning interval is about seven minutes.



120V Models Site Wiring Fault Indicator

This indicator illuminates when the UPS is connected to an improperly wired AC power outlet.



If the UPS indicates a site wiring fault, get a qualified electrician to correct the building wiring.

CIRCUIT BREAKERS

Input Circuit Breaker


One 40 Amp input circuit breaker is provided to the right of the rear connector plug and battery pack connector.

Output Circuit Breakers

Three output circuit breakers are provided.

ON-BATTERY OPERATION

The Smart-UPS switches to battery operation automatically if the utility power fails. While running on-battery, an internal alarm sounds (periodic beeps).

Press the  button (front panel) to silence the UPS alarm (for the current alarm only). You can change the audible indicator if you are using the PowerChute software.

If the utility power does not return, the UPS continues to supply power to the connected equipment until exhausted. The UPS will begin to beep continuously approximately two minutes before the UPS final low battery shutdown. If using a computer, you must manually save your files and power down before the UPS turns off, unless you are using PowerChute interface software that provides automatic, unattended shutdown.

DETERMINING ON-BATTERY RUN TIME



UPS battery life differs based on usage and environment. It is recommended that the battery/batteries are changed once every three years.

Although the following run times are “typical,” these numbers are subject to change. For the most recent and accurate sizing information, please consult the Size-UPS section of APC’s website at www.apc.com/sizing.

<i>LOAD (VA)</i>	<i>LOAD (WATTS)</i>	<i>RUN TIME (MINUTES)</i>
750	600	40m
1125	900	25m
1500	1200	16m
2200	1750	11m
2500*	2000*	9m
3000*	2400*	7m

*Runtimes at these load levels are applicable to the SU3000RMXL3U only.



For non-power factor corrected loads, the power in watts may be limited by the maximum VA rating.

4: USER CONFIGURATION ITEMS

NOTE: SETTING THESE ITEMS REQUIRES SOFTWARE OR OPTIONAL HARDWARE.

<i>FUNCTION</i>	<i>FACTORY DEFAULT</i>	<i>USER SELECTABLE CHOICES</i>	<i>DESCRIPTION</i>
Automatic Self-Test	Every 14 days (336 hours)	Every 7 days (168 hours), On Startup Only, No Self-Test	This function sets the interval at which the UPS will execute a self-test. Refer to your software manual for details.
UPS ID	UPS_IDEN	Up to eight characters to define the UPS	Use this field to uniquely identify the UPS for network management purposes.
Date of Last Battery Replacement	Manufacture Date	Date of Battery Replacement	Reset this date when you replace the battery module.
Minimum Capacity Before Return from Shutdown	0 percent	15, 50, 90 percent	The UPS will charge its batteries to the specified percentage before return from a shutdown.
Sensitivity	Normal	Reduced, Low	Set lower than normal sensitivity to avoid lowered battery capacity and service life in situations where the connected equipment can tolerate minor power disturbances.
Duration of Low Battery Warning	2 minutes	5, 7, 10 minutes	This function sets the time before shutdown at which the UPS issues a low battery warning. Set it higher than the default if the operating system needs more time for shutdown.
Alarm Delay After Line Fail	5 second delay	30 second delay, At Low Battery Condition, No Alarm	Set the alarm delay to avoid alarms for minor power glitches.
Shutdown Delay	20 seconds	0, 80, 300, 600 seconds	This function sets the interval between when the UPS receives a shutdown command and when shutdown occurs.
Synchronized Turn-on Delay	0 seconds	60, 180, 300 seconds	The UPS will wait the specified time after the return of utility power before turn-on (for example, to avoid branch circuit overload).

NOTE: SETTING THESE ITEMS REQUIRES SOFTWARE OR OPTIONAL HARDWARE.			
<i>FUNCTION</i>	<i>FACTORY DEFAULT</i>	<i>USER SELECTABLE CHOICES</i>	<i>DESCRIPTION</i>
High Transfer Point	<i>120V Models</i> 132 VAC <i>230V Models</i> 253 VAC	<i>120V Models</i> 138, 135, 129 VAC <i>230V Models</i> 264, 271, 280 VAC	To avoid unnecessary battery usage, set the high transfer point higher if the utility voltage is chronically high and the connected equipment is known to work under this condition.
Low Transfer Point	<i>120V Models</i> 103 VAC <i>230V Models</i> 196 VAC	<i>120V Models</i> 97, 100, 106 VAC <i>230V Models</i> 188, 204, 208 VAC	Set the low transfer point lower if the utility voltage is chronically low and the connected equipment can tolerate this condition.

5: STORAGE AND MAINTENANCE

STORAGE

STORAGE CONDITIONS

Store the UPS covered and flat (rack mount orientation) in a cool, dry location, with its batteries fully charged. Disconnect any cables connected to the computer interface port to avoid unnecessary battery drainage.

EXTENDED STORAGE

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.

REPLACING THE BATTERY MODULE

This UPS has an easy to replace, hot-swappable battery module. Replacement is a safe procedure, isolated from electrical hazards. You may leave the UPS and connected equipment on for the following procedure. See your dealer or contact APC for information on replacement battery modules.

REMOVING THE FRONT BEZEL AND BATTERY MODULE

1. Remove the front bezel by reversing the instructions for attaching the front bezel found in the *Installation* section of this manual. Set the bezel aside – you will reinstall it later.
2. Following the instructions in the *Installation* section of this manual, disconnect the battery module connector plug, remove the battery face plate (set the screws aside, you will replace them when you install a new battery), and remove the battery by sliding it out of the UPS.
3. Return the battery module to APC for recycling.



Once the battery is disconnected, the loads are not protected from power outages.

REPLACING THE BATTERY MODULE AND FRONT BEZEL

1. Following the instructions in the *Installation* section of this manual, slide the new battery into place in the UPS, reattach the battery face plate (using the screws set aside in Step 2 above), and insert the battery module connector plug.
2. Replace the front bezel.

6: TRANSPORTING YOUR SMART-UPS

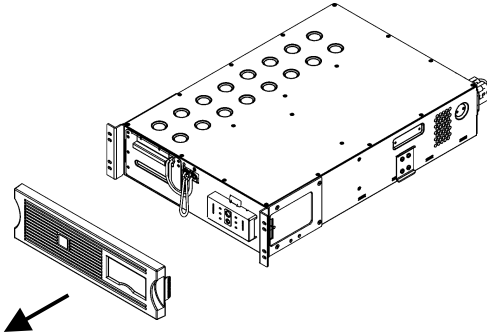
REMOVING THE UPS FROM THE RACK



Always **DISCONNECT THE BATTERY** before shipping the UPS to avoid damage during transport. (U.S. Federal Regulation *requires* that batteries are disconnected during shipment.) The battery may remain in the UPS; it does not have to be removed.

This requirement applies whether the UPS is shipped alone or installed in an equipment rack or system.

REMOVING THE FRONT BEZEL



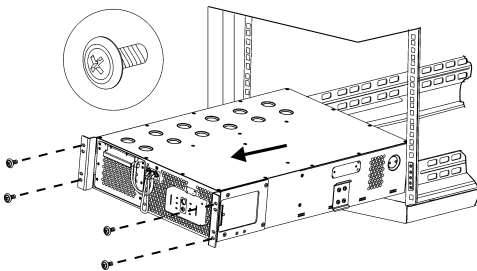
1. Shut down any equipment attached to the UPS.
2. Disconnect the UPS from the power supply.
3. If you are using the original UPS packaging, you must transport the front bezel separate from the UPS.

Remove the front bezel. Use both hands and grasp the finger clips on either side of the bezel. Pull it toward you. The bezel will unsnap from the UPS.

REMOVING THE UPS FROM THE RACK



Due to its weight, removing the UPS from a rack requires two people.



1. Remove the four rack screws (two screws on each mounting bracket) that secure the UPS to the rack.
2. Grasp the battery module handle and pull it toward you to pull the UPS out far enough to support the front of the UPS from the underside.
3. Use the handles on the sides of the UPS for additional support. Continue to pull the UPS out of the rack while a second person supports the rear underside.

7: TROUBLESHOOTING

Use the chart below to solve minor UPS installation problems. Also refer to the APC web site. Contact APC for assistance with complex UPS problems.

PROBLEM AND POSSIBLE CAUSE	SOLUTION
UPS WILL NOT TURN ON	
ON button not pushed.	Press the ON button once to power the UPS and the load.
UPS not connected to AC power supply.	Check that the power cable from the UPS to the utility power supply is securely connected.
UPS input circuit breaker tripped.	Reduce the load on the UPS by unplugging equipment and re-setting the circuit breaker (on the back of UPS) by pressing the plunger in.
Very low or no utility voltage.	Check the AC power supply to the UPS by plugging in a table lamp. If the light is very dim, have the utility voltage checked.
Rear Connector Plug not engaged	Check the back of the unit to verify that the Rear Connector Plug is fully engaged.
Battery not connected properly.	Check that both battery connectors are fully engaged.
UPS WILL NOT TURN OFF	
Internal UPS fault.	Do not attempt to use the UPS. Unplug the UPS and have it serviced immediately.
UPS OPERATES ON-BATTERY ALTHOUGH NORMAL LINE VOLTAGE EXISTS	
UPS input circuit breaker tripped.	Reduce the load on the UPS by unplugging equipment and re-setting the circuit breaker (on the back of UPS) by pressing the plunger in.
Very high, low, or distorted line voltage. Inexpensive fuel powered generators can distort the voltage.	Move the UPS to a different outlet on a different circuit. Test the input voltage with the utility voltage display. If acceptable to the connected equipment, reduce the UPS sensitivity.
UPS BEEPS OCCASIONALLY	
Normal UPS operation.	None. The UPS is protecting the load (connected equipment).
UPS DOES NOT PROVIDE EXPECTED BACKUP TIME	
The UPS battery is weak due to a recent outage or is near the end of its service life.	Charge the battery. Batteries require recharging after extended outages. They wear faster when put into service often or when operated at elevated temperatures. If the battery is near the end of its service life, consider replacing the battery even if the <i>replace battery</i> LED indicator is not yet lit.
The UPS is overloaded.	Check the UPS load display. Unplug unnecessary equipment, such as printers.
FRONT PANEL INDICATORS 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.

PROBLEM AND POSSIBLE CAUSE	SOLUTION
<i>ALL INDICATORS ARE LIT AND THE UPS EMITS A CONSTANT BEEPING</i>	
Internal UPS fault.	Do not attempt to use the UPS. Turn the UPS off and have it serviced immediately.
<i>ALL INDICATORS ARE OFF AND THE UPS IS PLUGGED INTO A WALL OUTLET</i>	
The UPS is shut down and 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.
<i>THE REPLACE BATTERY LED IS LIT</i>	
Weak battery.	Allow the battery to recharge for at least four hours. Then, perform a self-test. If the problem persists after recharging, replace the battery.
Replacement battery not connected properly.	Check that the battery connector is fully engaged.

SERVICE

If the unit requires service, do not return it to the dealer. Instead, follow these steps:

1. Review the problems discussed in the *Troubleshooting* section of this manual to eliminate common problems.
2. Verify that no circuit breakers are tripped. A tripped circuit breaker is the most common problem.
3. If the problem persists, call APC Customer Service or visit the APC website (www.apc.com).
 - Note the model number of the unit, the serial number, and the date purchased. If you call APC Customer Service, a technician will ask you to describe the problem and try to solve it over the phone, if possible. If this is not possible the technician may arrange for the unit to be serviced or may issue a Returned Material Authorization Number (RMA#).
 - If the unit is under warranty, repairs are free. If not, there is a repair charge.
 - Procedures for servicing or returning your product may vary internationally. Please contact the APC Customer Service office in the appropriate country (www.apc.com/support) for questions about warranty and RMA.
4. Pack the unit in its original packaging. If the original packing is not available, ask APC Customer Service about obtaining a new set.

Pack properly to avoid damage in transit. Never use Styrofoam beads for packaging. Damage sustained in transit is not covered under warranty.

Remove the rear connector plug to disconnect batteries when returning unit.



Always DISCONNECT THE BATTERY before shipping in compliance with U.S. Department of Transportation (DOT) regulations.

5. Mark the RMA# on the outside of the package.
6. Return the unit by insured, prepaid carrier to the address given to you by Customer Service.

8: CONTACT, REGULATORY, AND WARRANTY INFORMATION

CONTACTING APC

Refer to the information provided at the APC Internet site:

<http://www.apc.com/support/contact>

REGULATORY AGENCY APPROVALS

230V MODELS



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.

120V MODELS



RADIO FREQUENCY INTERFERENCE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Shielded signal cables must be used with this product to ensure compliance with the Class A FCC limits.

DECLARATION OF CONFORMITY



2001

EC Declaration of Conformity

We, the undersigned, declare under our sole responsibility that the equipment specified below conforms to the following standards and directives:

Standards to Which Conformity Declared:	EN50091-1, EN60950, EN50091-1-1, IEC60950 EN55022, EN50091-2, EN61000-3-2, EN61000-3-3 73/23/EEC, 93/68/EEC 89/336/EEC, 92/31/EEC, 93/68/EEC, 91/157/EEC
Application of Council Directives:	Uninterruptible Power Supply
Type of Equipment:	SU3000RXXL13U
Model Numbers:	American Power Conversion
Manufacturer's Name and Address:	132 Fairgrounds Road West Kingston, Rhode Island, 02892, USA -or- American Power Conversion (A. P. C.) b. v. Ballybritt Business Park Galway, Ireland -or- American Power Conversion Main Avenue, Peza Rosario, Cavite, Philippines -or- American Power Conversion 2nd Street, Peza, Cavite Economic Zone Rosario, Cavite Philippines -or- American Power Conversion Lot 32 Phase 1 Carmelray Industrial Park Canlubang, Calamba, Laguna Philippines -or- APC (Suzhou) UPS Co., Ltd No. 189 Suhong Road, China-Singapore Suzhou Industrial Park Suzhou 215021, Jiangsu, P.R.C American Power Conversion (A. P. C.) b. v. Ballybritt Business Park Galway, Ireland
Importer's Name and Address:	
Place:	N. Billerica, MA U.S. <i>Richard J. Everett</i> 5 Jan 01 Richard J. Everett, Sr. Regulatory Compliance Engineer
Place:	Galway, Ireland <i>Ray S. Ballard</i> 5 Jan 01 Ray S. Ballard, Managing Director, Europe Phone: 353 917 02000 Fax: 353 9175 6909

LIMITED WARRANTY

American Power Conversion (APC) warrants its products to be free from defects in materials and workmanship for a period of two years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. 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. 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. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

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