

1 Inspect/Place

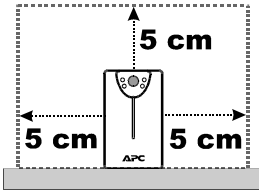
Ensure the following items are inside the box:

- IEC Power Cords (2)
- User's Manual
- RS-232 Interface Cable
- UPS
- Software Installation Sheet
- Safety Guide
- Warranty Registration Form
- PowerChute® plus Software CD-ROM

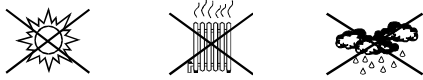
Notify the carrier if there is damage. Please fill out the Warranty Registration Form or fill out an online form at www.apcc.com, to obtain warranty coverage.

Place the UPS:

- Provide 5 cm clearance on top and sides for adequate airflow around the unit.

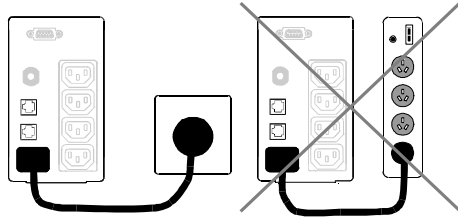


- Avoid direct sunlight.
- Avoid excessive heat.
- Avoid excessive humidity or liquids.
- Avoid excessive dust.

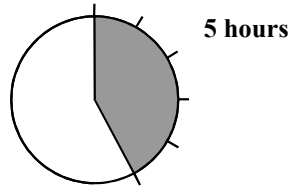


2 Connect UPS to Power

Use the power cord that came with your computer to connect the UPS directly to the wall outlet. *Do not power the UPS using a surge suppressor or power strip.*



Battery Charging: The UPS battery charges whenever the UPS is connected to utility power and typically requires less than five (5) hours to charge fully. Operating runtime is reduced until the battery is fully charged.

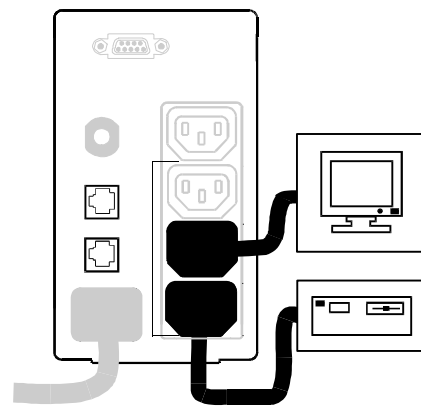


3 Connect Equipment to UPS

Use the supplied IEC cords to connect equipment to either Battery Backup or Surge Protection outlets.

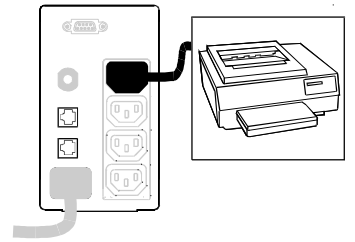
Battery Backup Outlets (3)

Connect computer, monitor, and external drive to these black outlets. These outlets provide battery backup, EMI filtering, line conditioning, and surge protection. Battery power is automatically provided in case of power outage. Power (utility or battery) is not supplied to these outlets when the UPS is switched OFF.

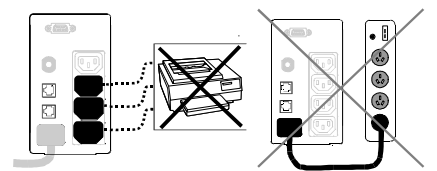


Surge Protection Outlet (1)

Connect a printer, fax machine, or scanner to this white outlet. This outlet does not provide power during a power outage. **This outlet is always On (when utility power is available) and is not controlled by the On/Off button.**

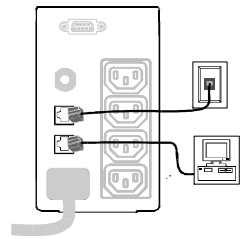


- Do not connect a printer to any Battery Backup outlet.
- Do not connect a surge suppressor, power strip, or extension cord to the UPS.



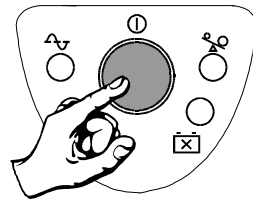
4 Connect Fax/Phone/Modem Surge Protection (optional)

Connect phone cables (not provided) as shown at the right, to protect your fax, phone, and modem from phone line surges.



5 Switch On and Test the UPS

1. Press the On/Off button to switch the UPS On.
2. Switch On connected equipment.

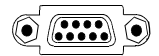


After pressing the On/Off button, the following events will occur:

- The green On Line indicator will flash.
- The yellow On Battery indicator will light while a Self-Test is performed.
- When Self-Test has successfully completed, the green On Line indicator will be lit.

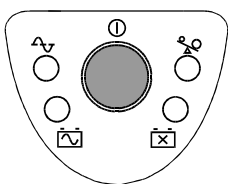
The UPS performs a Self-Test automatically when switched On, and every two weeks of continuous operation.

6 Install File-Saving Software



Connect the RS-232 interface cable, supplied in the software kit, to the computer interface port on the rear panel of the UPS. Connect the other cable end to an unused serial port on the computer. Install the PowerChute *plus* software. Instructions for installation are defined in the software documentation included with the software CD-ROM.

UPS Indicators and Controls



On/Off Button

Press and release the On/Off button to supply power to the Battery Backup outlets. The UPS then performs a Self-Test. Press and release the button again to switch Off power to the Battery Backup outlets.

Note: The Surge Protection outlet is powered whenever the UPS has utility power.

On Line (green)

The UPS is supplying conditioned utility power to the Battery Back-up outlets.

Replace Battery (red)

This indicator is lit whenever the automatic diagnostic test has determined the battery is near the end of its useful life. The battery should be replaced within two weeks (see Order Replacement Battery). Failure to replace the battery may result in insufficient runtime during a power outage.

Chirps for 1 Minute Every 5 Hours- this alarm is sounded whenever the battery has failed the automatic diagnostic test.



On Battery (yellow)

Utility power is outside acceptable limits. The battery is powering only the Battery Backup outlets. The expected run-time for a typical personal computer (PC) is 19 minutes total.



Momentary Tone - a two (2) second duration tone is sounded two seconds after utility power loss has occurred.

The UPS will continue to run without an audible alarm until a low battery condition is reached (see below).



Continuous Beeping- the UPS is near the end of its battery runtime. **Promptly save your data and all applications. Shutdown the operating system.** The UPS beeps continuously (1-2 minutes) until it shuts down from battery exhaustion or returns to On Line operation.



Overload (red)

Power demand has exceeded the UPS's Capacity

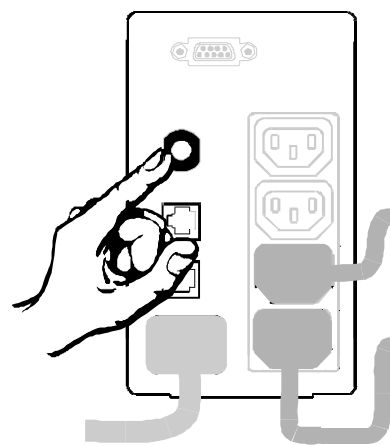


Sustained Tone - this overload alarm is sounded until one or more devices are disconnected from the Battery Backup outlets and is reset by switching the UPS Off and then On again.

Circuit Breaker

If an overload is severe, the circuit breaker may trip (the white resettable center plunger of the circuit breaker pops out). If the circuit breaker trips:

1. Disconnect non-essential load equipment from the UPS to eliminate the overload.
2. Press the center plunger of the circuit breaker back "in" to restart the UPS.



Software Shutdown Mode

If power is outside acceptable limits, and the optional software is installed, the host computer signals the UPS to shutdown. In Shutdown Mode, the UPS disconnects power to the Battery Backup outlets to conserve battery capacity. The On Line and Overload indicators flash alternately for 20 seconds. When utility power is restored, the UPS returns to On Line operation.

Cold Start

When the UPS is "Off" and there is no utility power, it is possible to power essential equipment connected to the Battery Backup outlets. Make sure that only the most necessary equipment is connected to the UPS at this time:

1. **Press and hold** the On/Off button until the UPS emits a sustained tone.
2. **Release** the On/Off button during the sustained tone, to start the UPS.
3. **If the Overload indicator is lit**, reset the UPS by pressing the On/Off button once to switch it Off and again to switch it back on.

Complete what you need to do with the powered equipment before the UPS battery is fully discharged.

Manual Shutdown

When the UPS is operating On Battery, perform the following to conserve battery charge:

- Save important working files.
- Exit all applications/operating system.
- Press the On/Off button on the UPS.

Order Replacement Battery

The Back-UPS AVR 500 replacement battery cartridge (RBCs) part number is RBC 2. Replacements can be ordered from local retailers, APC via telephone (requires a credit card), or the APC website (<http://www.apcc.com>).



Troubleshooting

To solve minor UPS installation problems, use the table below. To resolve complex UPS problems, consult the APC web site (<http://www.apcc.com>), or contact APC Technical Support.

Symptom	Possible Cause	Solution
UPS will not switch On.	UPS circuit breaker has tripped.	Reduce the power demand on the UPS by unplugging equipment and then reset the circuit breaker by pressing the plunger back in.
	UPS is not connected to utility power.	Check that the UPS power plug is securely connected to the wall outlet.
UPS will not switch On or Off.	Computer interface problem.	Disconnect the computer interface. If the UPS now works normally, check the interface cable and the attached computer.
UPS operates On Battery even though normal line voltage is thought to exist.	UPS's circuit breaker tripped.	Reduce the power demand on the UPS by unplugging equipment from the UPS and then reset the circuit breaker by pushing the plunger back in.
Single beep.	Normal UPS operation.	This is not a fault. The UPS is indicating that it is protecting the load during a momentary power loss.
UPS does not provide expected back up time.	The UPS is excessively loaded.	Unplug non-essential Battery Backup connected equipment. They can be plugged into the Surge Protection outlet.
	The UPS's battery is weak due to recent outage and has not had time to recharge.	Charge the battery for five hours. The battery charges whenever the UPS is connected to utility power.
	Battery requires replacement.	Replace battery (see Order Replacement Battery). Batteries typically last 3-6 years, shorter if subjected to frequent power outages or elevated temperatures.
PC and/or Monitor is not powered during an outage.	PC and/or monitor is plugged into the Surge Protection outlet.	Move PC and/or monitor to a Battery Backup outlet.
On Line and Overload indicators are flashing alternately.	The UPS was shutdown by PowerChute® plus software.	The UPS will restart automatically when utility power returns.
All indicators are "Off" and the UPS is not operating.	The UPS is shutdown and the battery is discharged from an extended power outage.	The UPS will return to normal operation when the power is restored and the battery has a sufficient charge.
The Replace Battery indicator is illuminated.	Weak battery.	Replace battery (see Order Replacement Battery).
The Overload indicator is illuminated or flashing.	The UPS is overloaded.	Reduce the load on the UPS by unplugging equipment.
Overload and Replace Battery indicators are flashing.	Internal UPS fault.	Do not use the UPS. Switch the UPS Off and have it serviced.
On Line and On Battery indicators are flashing.	Internal UPS fault.	Do not use the UPS. Switch the UPS Off and have it serviced.
All indicators are flashing.	Internal UPS fault.	Do not use the UPS. Switch the UPS Off and have it serviced.

Service

Note: If the UPS requires service, do not return it to the dealer. The following steps should be taken:

- Consult the Troubleshooting section to eliminate common problems.
- Determine if the circuit breaker is tripped. If the circuit breaker is tripped, reset the breaker and determine if the problem still exists.
- If the problem persists, consult the APC Worldwide Web site (www.apcc.com) or call customer service.
 - Record the model number of the UPS, the serial number, and the date purchased. Be prepared to troubleshoot the problem over the telephone with a technician. If this is not successful, the technician will issue a Return Merchandise Authorization Number (RMA#) and a shipping address.
 - If the UPS is under warranty, repairs are free. If not, there is a repair charge.
- Pack the UPS in its original packaging. If the original packing is not available, ask customer service about obtaining a new set. Pack the UPS properly to avoid damage in transit.

Note: Never use Styrofoam™ beads for packaging. Damage sustained in transit is not covered under warranty (insuring the package for full value is recommended).

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- Write the RMA# on the outside of the package.
- Return the UPS by insured, prepaid carrier to the address provided by customer service.

Warranty

The standard warranty is 2 years from date of purchase. APC's standard procedure is to replace the original unit with a factory reconditioned unit. APC will ship out the replacement unit once the defective unit has been received by the repair department or cross ship upon the receipt of a valid credit card number. The customer pays for the shipping to APC and APC pays ground freight transportation costs back to the customer.

Customers who must have the original unit back due to assigned asset tags and set depreciation schedules must declare such a need at first contact with APC Customer Service.

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132 Fairgrounds Rd West Kingston, RI 02892 USA
Toll free: (800) 800-4APC Phone: (401) 789-5735 Fax: (401) 789-3710

Battery Replacement

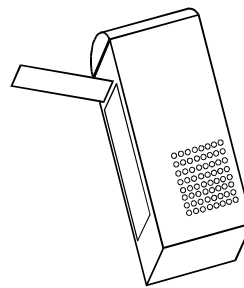


Please read the cautions in the APC Safety Information Guide first.

Note: This procedure requires a coin or flat-blade screwdriver.

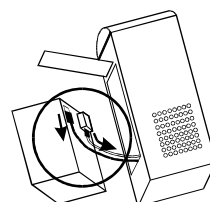
Battery replacement is a safe procedure, isolated from electrical hazards. The replacement battery must match the specifications of RBC 2. The UPS may be left connected to utility power and the connected equipment left "On" during the procedure. *Do not replace the battery when the UPS is On Battery (yellow indicator is lit).*

Note: Once the battery is disconnected, the connected equipment is not protected from power outages.

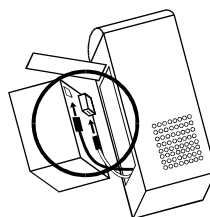


- Lay the UPS on its left side to permit access to the battery access door on the bottom of the UPS. Remove the two (2) screws that secure the battery access door to the chassis. Open the battery access door.

Note: It may be necessary to pull the battery door slightly outward or toward the front of the unit in order to open the door fully.



- Grasp the white tab attached to the battery and gently pull the battery out of the chassis.



- Disconnect the two wires connecting the battery to the UPS. Loosen the wires by wiggling them while pulling straight back from the battery connector.

- Connect the replacement battery in place of the old battery as follows:

Red wire - to red terminal.
Black wire - to black terminal.

Note: Small sparks at the battery connections are normal during connection

- Insert the replacement battery in the UPS. Carefully avoid pinching the wires.
- Carefully close the battery compartment door and replace the screws.

- Batteries must be recycled. Deliver the old battery to an appropriate recycling facility or ship it to APC in packaging from the replacement battery. See the information supplied with the new battery for more details.



UPS Storage

Before storing, the UPS should be connected to utility power for at least 4-5 hours. Disconnect the UPS from facility power, cover and store the UPS upright in a cool, dry location. During long-time storage, the battery should be charged in accordance with the below:

Storage Temperature	Recharge Frequency	Charging Duration
5 to 86° F (-15 to 30° C)	Every 6 Months	10 Hours
86 to 113° F (30 to 45° C)	Every 3 Months	10 Hours

APC Contact Information

APC Web Site	http://www.apcc.com
Technical Support	http://support.apcc.com
India	91 44 433 1124
United States	(401) 789-5735 (fax) (401) 789-3710

Specifications

Expected runtime for a Typical PC (110 Watts)	19 Minutes (For more accurate runtime information, consult http://www.apcc.com/sizing)
Acceptable Input Voltage	0 - 320 VAC, Single Phase
Input Voltage Range for On Line Operation	160 - 120 VAC
Maximum Load	500 VA, 300 W
On Battery Output Voltage	230 VAC ± 8% of nominal input voltage
On Battery Output Frequency	50 Hz - unless synchronized to utility during deep brownout.
On Battery Waveshape	Stepped sine-wave
Output Over Current Protection	Overcurrent and short circuit protected, latching shutdown on overload
Typical Battery Life	3 to 6 years, depending on number of discharge cycles and ambient temperature
Operating Temperature	0 to 40° C (32 - 104° F)
Storage Temperature	-15 to 45° C (5 - 113° F)
Operating and Storage Relative Humidity	0 to 95%, non-condensing
UPS Size (H x W x D)	15.0 x 8.9 x 35.6 cm (5.9" x 3.5" x 14.0")
UPS Weight	7.0 kg (15.43 lbs.)
Shipping Weight	8.2 kg (18.08 lbs.)