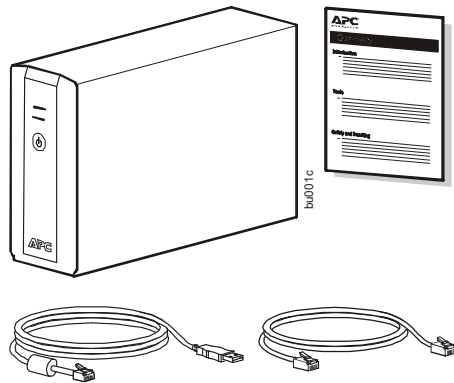


Back-UPS™ CS 350/500 User Manual

EN 990-9230C 11/2021

Inventory



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.

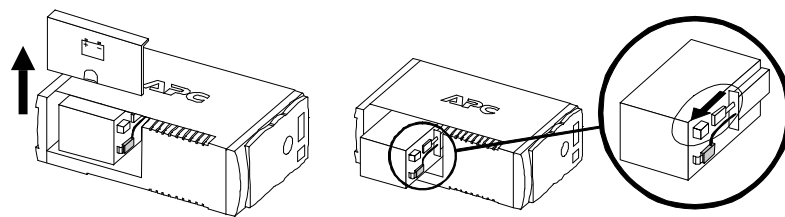
This manual can be downloaded from APC by Schneider Electric Website, www.apc.com.

Installation

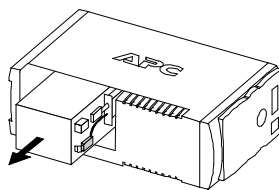
1 Connect the Battery

In compliance with Department of Transportation (DOT) regulations, the Back-UPS is shipped with the internal red battery wire disconnected. **The Back-UPS will not operate until the internal red wire is connected to the battery. Once connected, allow the Back-UPS to charge for a full eight hours prior to use.**

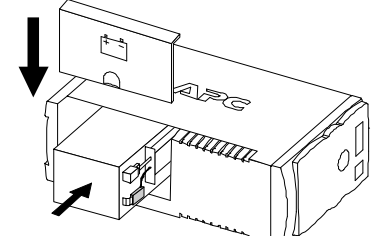
Note: Small sparks may occur during battery connection. This is normal.



- a. Open the battery compartment, as shown. c. Connect the red battery wire to the ⊕ positive battery terminal.



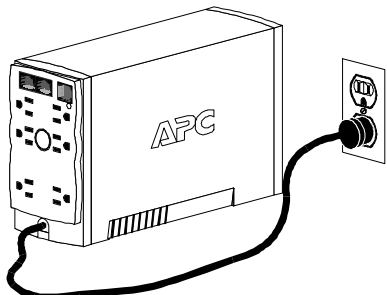
- b. Pull the battery about half way out, as shown.



- d. Push the battery into the battery compartment and re-install the cover, as shown.

2 Placement / Power

- 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 UPS power cable directly to a wall outlet. Do not use surge protectors or extension cords.
- Plug the Back-UPS into a wall outlet, as shown.



3 Check the Building Wiring Fault Indicator

If the red Building Wiring Fault indicator on the rear panel of the Back-UPS is lit, one of the following conditions exists:

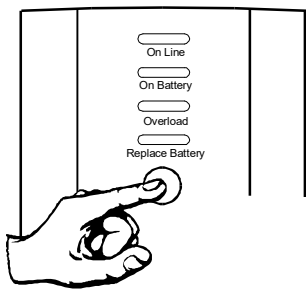
- Open or high resistance ground
- Hot or neutral polarity reversed
- Overloaded neutral circuit

A lit indicator means that a potential shock hazard exists. Improper building wiring should be corrected by a qualified electrician. Do not use the Back-UPS until the condition that caused the fault is corrected.

Note: Improper building wiring will not prevent the Back-UPS from operating, but it will limit its protection capability. It may also result in equipment damage that is not covered by the APC by Schneider Electric Equipment Protection Policy.

6 Switch On the Back-UPS

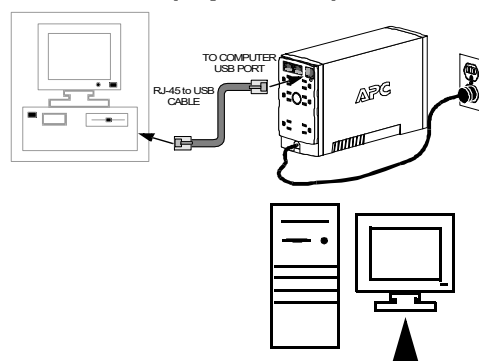
Note: Allow the Back-UPS to charge for a full eight hours prior to use. Press the push-button on the front panel of the Back-UPS.



Observe that the following events occur after pressing and releasing the push-button:

- The green **On-Line** indicator flashes.
- The yellow **On Battery** indicator lights while the **Self-Test** is being performed.
- When **Self-Test** has successfully completed, only the green **On Line** indicator will be lit.
- If the internal battery is not connected, (see Step 1 above) the green **On Line** indicator and red **Replace Battery** indicator will light. The Back-UPS will also emit a chirping sound.

7 Connect USB Cable and Install Software (Optional)



Follow the on-screen instructions.

NOTE: Macintosh Users - for full USB performance, use OS 10.1.5 or higher.

Use the USB cable to connect the Data port on the UPS to the USB port on your computer. Download PowerChute™ Personal Edition Software from www.apc.com/pcpe.

Select the appropriate operating system and follow directions to download the software.

APC PowerChute is compatible with Windows operating system only.

Visit <http://www.apc.com/wp/?um=300> for OS compatibility list.

Transfer Voltage and Sensitivity Adjustment (optional)

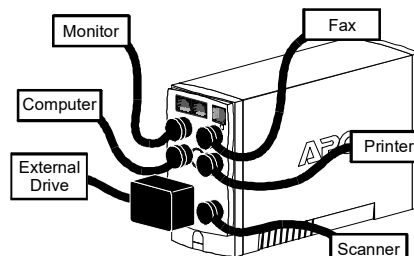
In situations where the Back-UPS or connected equipment appears too sensitive to input voltage, it may be necessary to adjust the transfer voltage. This is a simple task requiring use of the front panel push button. To adjust the transfer voltage, proceed as follows:

- Plug the Back-UPS into the AC power source. The Back-UPS will be in a Standby Mode (no indicators lit).
- Press the front panel push button fully inward for 10 seconds. All indicators on the Back-UPS will flash to acknowledge going into Programming Mode.
- The Back-UPS will then indicate its current Sensitivity Setting, as shown in the following table.
- To select the Low Sensitivity setting, press the push button until the yellow indicator is flashing.
- To select the Medium Sensitivity setting, press the push button until the yellow and red indicators (second and third from the top) are flashing.
- To select the High Sensitivity setting, press the push button until yellow and both red indicators (bottom three) are flashing.
- To exit without changing the Sensitivity Setting, press the push button until the green indicator is flashing.
- Once in Programming Mode, if the push button is not pressed within 5 seconds, the Back-UPS will exit Programming Mode; all indicators will extinguish.

4 Connect Equipment to the Back-UPS

The rear panel of the Back-UPS consists of the following elements:

Battery Back Up Outlets (qty. of 3). These outlets provide battery back-up, surge protection, and Electro-magnetic Interference (EMI) filtering. In case of power outage, battery power is automatically provided to these outlets. Power (AC or battery) is not supplied to these outlets when the Back-UPS is switched **Off**. Connect a computer, monitor, and external disk or CD-ROM drive to these outlets.

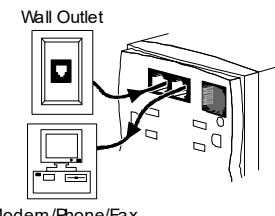


Surge Only Outlets (qty. of 3). These outlets are always **On** (when AC power is available) and are not controlled by the **On/Off** switch. These outlets do not provide power during a power outage. Connect a printer, fax machine or scanner to these outlets.

Black Velcro Straps (qty. of 2 - not shown). For convenience, two velcro traps have been included and can be used to manage power cords.

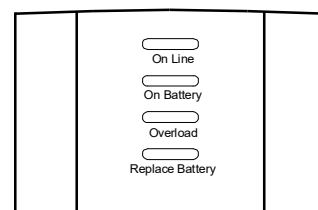
5 Connect the Phone Line to Surge Protection

The telephone ports provide lightning surge protection for any device connected to the telephone line (computer, modem, fax or telephone). The telephone ports are compatible with Home Phoneline Networking Alliance (HPNA) and Digital Subscriber Line (DSL) standards, as well as all modem data rates. Connect as shown.



Status Indicators and Alarms

There are four status indicators (lights) on the front panel of the Back-UPS (On Line, On Battery, Overload, and Replace Battery).



On Line (green) - is lit whenever AC power is powering the Battery Backup outlets.

On Battery (yellow) - is lit whenever the battery of the Back-UPS is powering equipment connected to the Battery Backup Outlets.

Four Beeps Every 30 Seconds - this alarm is sounded whenever the Back-UPS is running On Battery. Consider saving work in progress.

Continuous Beeping - this alarm is sounded whenever a low battery condition is reached. Battery run-time is very low. Promptly save any work in progress and exit all open applications. Shutdown the operating system, computer and the Back-UPS.

Overload (red) - is lit whenever power demand has exceeded the capacity of the Back-UPS.

Continuous Tone - this alarm is sounded whenever the Battery Backup outlets are overloaded.

Circuit Breaker - the circuit breaker button located on the rear panel of the Back-UPS will stick out if an overload condition forces the Back-UPS to disconnect itself from AC power. If the button sticks out, disconnect non-essential equipment. Reset the circuit breaker by pushing the button inward.

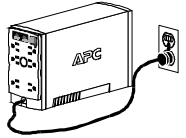
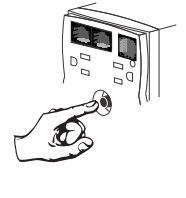

Replace Battery (red) - is lit whenever the battery is near the end of its useful life, or if the battery is not connected (see above). A battery that is near the end of its useful life has insufficient run-time and should be replaced.

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

Indicators Flashing	Sensitivity Setting	Input Voltage Range (for AC operation)	Use When
1 (yellow)	Low	88 - 142 Vac	Input voltage is extremely low or high. Not recommended for computer loads.
2 (yellow, and red)	Medium (factory default)	92 - 139 Vac	Back-UPS frequently goes On Battery.
3 (yellow, red, and red)	High	96 - 136 Vac	Connected equipment is sensitive to voltage fluctuations (recommended).

Troubleshooting

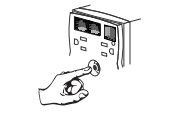
Use the tables below to solve minor Back-UPS installation and operation problems. Consult or call Schneider Electric IT (SEIT) Technical Support for assistance with problems that cannot be resolved using this document:

Possible Cause	Procedure	
Back-UPS will not switch on		
Back-UPS not connected to an AC power source.	Check that the Back-UPS power plug is securely connected to the wall outlet.	
Back-UPS circuit breaker "tripped".	Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker (located on the rear panel of the Back-UPS) by pushing the circuit breaker button fully inward until it catches. If the circuit breaker resets, switch the Back-UPS on and reconnect the equipment one-at-a-time. If the circuit breaker trips again, it is likely that one of the connected devices is causing the overload.	
Very low or no AC voltage.	Check the wall outlet that supplies power to the Back-UPS using a table lamp. If the lamp bulb is very dim, have the AC voltage checked by a qualified electrician.	

Back-UPS does not power computer/monitor/external drive during an outage

Internal battery is not connected.	Check the battery connections. (See "Connect the Battery" under "Installation" on the front page of this document.
Computer, monitor or external disk/CD-ROM drive is plugged into a Surge Only outlet.	Move computer, monitor, or external drive power cord plug to the Battery Backup outlets.

Back-UPS operates on battery although normal AC voltage exists

Back-UPS circuit breaker "tripped".	Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker (located on the rear panel of the Back-UPS) by pushing the circuit breaker button fully inward until it catches.	
The wall outlet that the Back-UPS is connected to does not supply AC power to the unit.	Connect the Back-UPS to another wall outlet or have a qualified electrician check the building wiring.	

Back-UPS does not provide expected backup time

Back-UPS is excessively loaded.	Unplug non-essential Battery Backup connected equipment, such as printers and plug them into Surge Only outlets. Note: Devices that have motors or dimmer switches (laser printers, heaters, fans, lamps, and vacuum cleaners, for example) should not be connected to the Battery Backup outlets.
Back-UPS battery is weak due to recent outage and has not had time to recharge.	Charge the battery. The battery charges whenever the Back-UPS is connected to a wall outlet. Typically, eight hours of charging time are needed to fully charge the battery from total discharge. Back-UPS run-time is reduced until the battery is fully charged.
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.

A red indicator is lit

Battery is not connected properly.	Check the battery connections. Consult "Connect the Battery" under "Installation" on the front page of this document. It shows how to access the battery and connect the wires.
The Overload indicator is lit if equipment connected to the Battery Backup outlets is drawing more power than the Back-UPS can provide.	Move one or more equipment power plugs to the Surge Only outlets.
Battery requires replacement.	The battery should be replaced within two weeks (see "Order Replacement Battery"). Failure to replace the battery will result in reduced run-time during a power outage.

Red indicators are flashing

Back-UPS failure.	Call SEIT Technical Support for service.
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Replace Battery indicator lit and an alarm sounds when the Back-UPS is turned on

Internal battery not connected.	Check the battery connections. Consult "Connect the Battery" under "Installation" on the front page of this document. It shows how to access the battery and connect the wires.
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Specifications

Input Voltage (on line)	92 - 139 Vac
Frequency Limits (on line)	47 - 63 Hz (autosensing)
On Battery Waveshape	Stepped Sine Wave
Maximum Load	350 VA - 210 W 500 VA - 300 W
Typical Recharge Time	8 Hours
Operating Temperature	32 to 104 °F (0 to 40 °C)
Storage Temperature	15 to 113 °F (-15 to 45 °C)
Operating and Storage Relative Humidity	5 to 95% non-condensing
Size (H x W x D)	6.5 x 3.6 x 11.2 inches (16.5 x 9.2 x 28.5 cm)
Weight	350 VA - 12.9 lb (5.9 kg) 500 VA - 13.8 lb (6.3 kg)
Shipping Weight	350 VA - 14.0 lb (6.4 kg) 500 VA - 14.9 lb (6.8 kg)
EMI Classification	FCC/DOC Class B Certified
On Battery Run-Time	350 VA - 13.8 Minutes typical - desktop computer and 17 inch (43.2 cm) monitor. 500 VA - 10.7 Minutes typical - desktop computer and 21 inch (53.3 cm) monitor.

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Back-UPS Storage

Before storing, charge the Back-UPS for at least eight hours. Store the Back-UPS covered and upright in a cool, dry location. During storage, recharge the battery in accordance with the following table:

Storage Temperature	Recharge Frequency	Charging Duration
23 to 86 °F (-5 to 30 °C)	Every 6 months	8 hours
86 to 113 °F (30 to 45 °C)	Every 3 months	8 hours

Please contact SEIT Technical Support to troubleshoot the unit before returning it to APC by Schneider Electric.

Order Replacement Battery

The typical battery lifetime is 3-6 years (depending on the number of discharge cycles and operating temperature). A replacement battery can be ordered over the phone from APC by Schneider Electric, or the battery can be ordered on-line from the APC by Schneider Electric web site (go to <http://www.apc.com>, a valid credit card is required).

When ordering, please specify Battery Cartridge **RBC2**.

Battery Replacement

Battery replacement is a safe procedure. The Back-UPS can be left on with the equipment connected during this procedure. Do not replace the battery when the Back-UPS is On Battery. Refer to the Safety Guide for additional information.

Please consult the "Connect Battery" diagrams (a through d) on the front page of this document when performing the following procedures:

- While viewing the Back-UPS from the front, lay the Back-UPS on its left side (diagram a).
- Slide the battery compartment cover off of the Back-UPS (diagram a).
- Grasp the tab attached to the battery and slide the battery partially out of the case. Grab the battery firmly and pull it straight out. The battery wires will disconnect as the battery is pulled out (diagram b).
- Carefully unpack the new battery. Retain the packing carton so that the old battery can be recycled.
- Insert the new battery halfway into the Back-UPS (diagram d).
- Connect the wires to the new battery as follows:
- Red Wire - to red (positive) terminal
- Black Wire - to black (negative) terminal
- Note: Small sparks at the battery terminals are normal during connection.
- Carefully insert the battery fully into the Back-UPS.
- Slide the battery compartment cover back into place.
- The Replace Battery indicator will shut off within the 14-day self-test interval, or when the Back-UPS is switched On.

The old battery must be recycled. Deliver the battery to an appropriate recycling facility or return it to APC by Schneider Electric in the packing carton that came with the new battery. Additional recycling information is provided with the new battery.

Service

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

- Review the *Troubleshooting* section of the manual to eliminate common problems.
- If the problem persists, contact Schneider Electric IT (SEIT) Customer Support through the APC by Schneider Electric Web site, www.apc.com.
 - 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 SEIT Customer Support and a technician will attempt to solve the problem over the phone. If this is not possible, the technician will issue a Returned Material Authorization Number (RMA#).
 - If the unit is under warranty, the repairs are free.
 - Service procedures and returns may vary internationally. Refer to the APC by Schneider Electric Web site for country specific instructions.
- Pack the unit in the original packaging whenever possible to avoid damage in transit. Never use foam beads for packaging. Damage sustained in transit is not covered under warranty.
- Always DISCONNECT THE UPS BATTERIES before shipping. The United States Department of Transportation (DOT), and the International Air Transport Association (IATA) regulations require that UPS batteries be disconnected before shipping.** The internal batteries may remain in the UPS.
- Write the RMA# provided by Customer Support on the outside of the package.
- Return the unit by insured, pre-paid carrier to the address provided by Customer Support.

Warranty

The standard warranty is two (2) years from the date of purchase. Schneider Electric IT (SEIT) standard procedure is to replace the original unit with a factory reconditioned unit. Customers who must have the original unit back due to the assignment of asset tags and set depreciation schedules must declare such a need at first contact with an SEIT Technical Support representative. SEIT will ship 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 shipping the unit to SEIT. SEIT pays ground freight transportation costs to ship the replacement unit to the customer.

APC by Schneider Electric IT Customer Support Worldwide

For country specific customer support, go to the APC by Schneider Electric Web site, www.apc.com.



Select models are ENERGY STAR® qualified.

For more information go to

www.apc.com/site/recycle/index.cfm/energy-efficiency/energy-star/.



This UPS is certified to comply with California Battery Charger System regulations.

For more information go to

www.apc.com/site/recycle/index.cfm/energy-efficiency/cec-battery-charger/.

EMI Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Locate the label on the bottom of this device that contains, among other information, the FCC registration number [US: 1XH-USA-25572-XP-N]] and ringer equivalence number (REN) for this device. If requested, this information must be provided to the telephone company.

If you experience trouble with this equipment, you disconnect it from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.