



# Back-UPS ES <sup>®</sup> 350/500

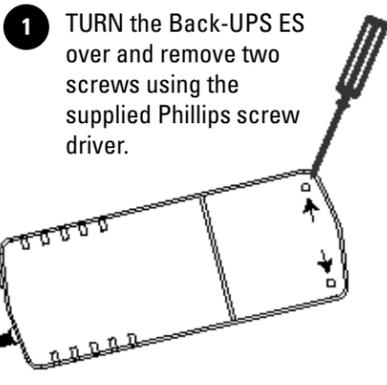
User's Guide

www.apc.com

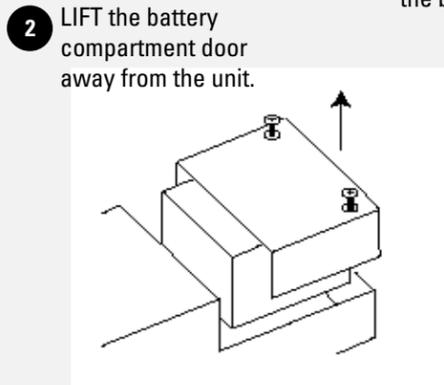
## 1 Connect Battery

The Back-UPS ES is shipped with one battery wire disconnected in compliance with Department of Transportation (DOT) regulations. The Back-UPS ES will not operate until the wire is connected to the touch safe battery terminal.

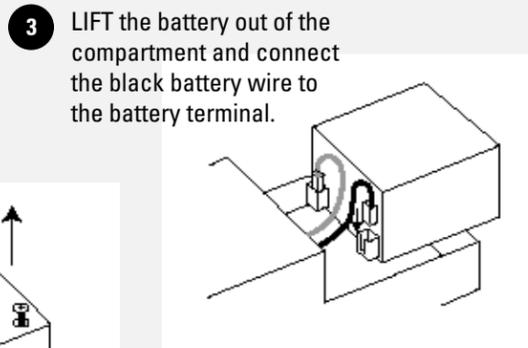
*Note: Small sparks may occur during battery connection. This is normal.*



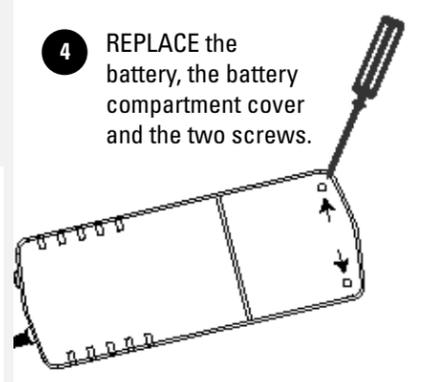
**1** TURN the Back-UPS ES over and remove two screws using the supplied Phillips screw driver.



**2** LIFT the battery compartment door away from the unit.



**3** LIFT the battery out of the compartment and connect the black battery wire to the battery terminal.



**4** REPLACE the battery, the battery compartment cover and the two screws.

## 2 Connect Equipment

Place the Back-UPS ES to avoid:

- Direct sunlight
- Excessive heat
- Excessive humidity or contact with fluids

Plug the Back-UPS ES power cord directly into a wall outlet; not into a surge protector or power strip.

Connect Computer Cable

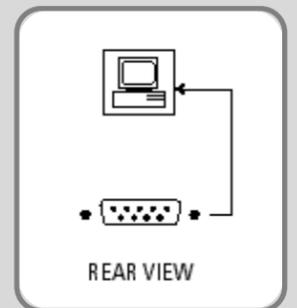
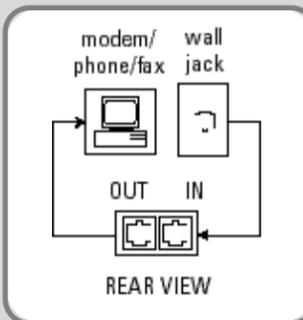
The supplied cable and software provide automatic file saving and shutdown of the operating system in the case of a sustained power outage.

Connect the cable to the Comm Port of the Back-UPS ES.

Connect the other end of the cable to the Comm port on your computer. The software will automatically use Comm Port 1 of your computer.

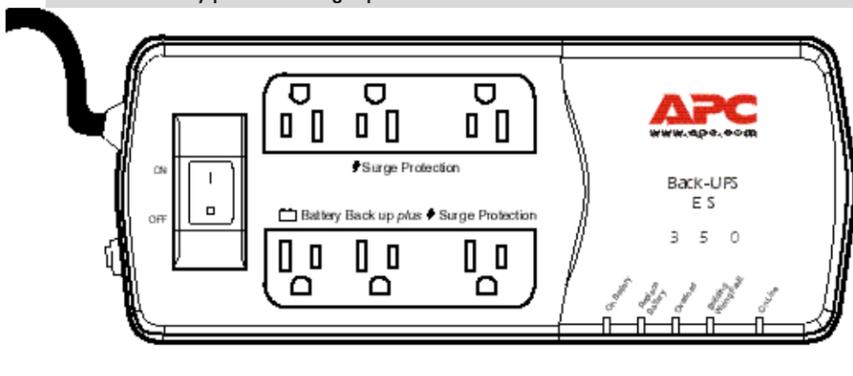
Connect Fax/Modem/Phone

Back-UPS ES protects a single line (two-wire) fax, modem or phone from surges when it is connected through the Back-UPS ES outlets as shown.



### Surge Protection

These outlets provide protection from surges and are powered whenever the Back-UPS ES is switched on. Plug your printer, fax machine, scanner, or other peripherals that do not need battery power during a power failure into these outlets.



### Battery Backup plus Surge Protection

These outlets are powered whenever the Back-UPS ES is switched ON. During a power outage or other utility problems (brownouts, over-voltages), these outlets will be powered for a limited time by the Back-UPS ES. Plug your PC, monitor, and one other data-sensitive device (Zip™ drive, for example) into these outlets.

## 3 Power on and Install Software

Press the ON/OFF switch to power the unit ON. This starts the automatic Self-test.

A single short beep and the green "On Line" indicator confirms that Back-UPS ES is on and ready to provide protection.

The Back-UPS ES must charge for four hours to ensure full runtime. The unit is being charged whenever it is connected to utility power, whether the unit is turned ON or OFF.

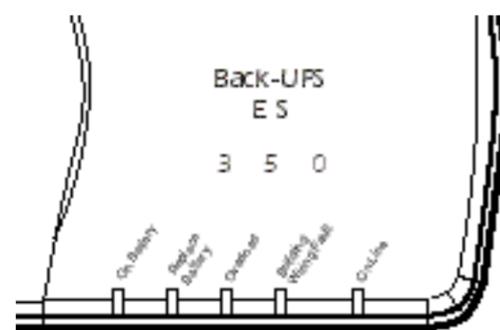
If the red Building Wiring Fault indicator is lit, your building wiring presents a shock hazard that should be corrected by a qualified electrician.

### Install the PowerChute plus® software

Place the PowerChute plus CD-ROM into your PC and follow installation instructions on the screen. See the software documentation on the PowerChute plus CD-ROM for detailed instructions.

## Back-UPS ES Status Indicators

The following are the visual and associated audible indicators which are used to determine the status of the BackUPS ES. See the Troubleshooting section for additional information.



### On Line (green)

Back-UPS ES is switched on and utility power is normal.

### Building Wiring Fault (red)

Your building wiring presents a shock hazard that should be corrected by a qualified electrician.

### Overload (red)

Continuous tone: Battery Backup outlets are overloaded.

### On Battery (green)

Single beep: A brief power loss has occurred.

One beep repeated every 10 seconds: Utility power is unacceptable. The battery is supplying power.

Continuous beeping: Battery capacity is low. Connected devices will lose power shortly.

### Replace Battery (red)

Continuous short beeps: Battery may need to be replaced, charged or has not been properly connected.

# Troubleshooting

Use the table below to solve minor Back-UPS ES installation or operation problems. Consult APC Online Technical Support or call APC Technical Support for assistance with problems that cannot be solved using the table below:

| Problem   | Probable Cause   | Solution   |
|---|--|--|
| <b>Back-UPS ES will not turn on.</b>  | Battery is disconnected.<br>Circuit Breaker has tripped.   | Connect the battery by following the instructions listed in the "Connect Battery" section.<br>Reduce the amount of equipment plugged into the "Battery Backup plus Surge Protection" outlets of the unit. Next, reset the circuit breaker by pushing it back in.<br>Reduce the amount of equipment plugged into the "Surge Protection" outlets of the unit. Next, reset the circuit breaker by pushing it back in.   |
| <b>Connected equipment loses power.</b>   | Equipment is connected to the "Surge Protection" outlets.<br>The Back-UPS ES is overloaded.<br>PowerChute <i>plus</i> software has performed a shutdown due to a power failure.<br>The Back-UPS ES has exhausted its available battery power.<br>The connected equipment does not accept the step-approximated sine wave from the Back-UPS ES.<br>The Back-UPS ES may require service. | Ensure that the equipment you want to stay powered during a power failure is plugged into the "Battery Backup <i>plus</i> Surge Suppression" outlets and NOT the "Surge Protection" outlets.<br>Make sure that the equipment plugged into the outlets of the unit are not overloading the capacity of the unit. Try removing some of the equipment and see if the problem continues.<br>The Back-UPS ES is operating normally.<br>The Back-UPS ES can only operate on battery power for a limited amount of time. The unit will eventually turn off when the available battery power has been depleted. Allow the unit to recharge for at least 4 hours before continuing operation of the unit.<br>The output waveform of this product is designed for computers and computer-related equipment. It is not designed for use with motor-type equipment.<br>Call for further troubleshooting. |
| <b>The On Battery indicator is lit and the Back-UPS ES is sounding one beep every 10 seconds.</b> | The Back-UPS ES is using battery.  | The Back-UPS ES is operating normally and using battery power. Once On Battery, you should save your current work, power down your equipment, and turn the unit off. Once normal power is restored, you may turn the unit back on and power on your equipment again.   |
| <b>The On Battery indicator is lit and the Back-UPS ES is making continuous beeps.</b>            | The Back-UPS ES is On Battery and the battery is almost discharged.  | The Back-UPS ES is about to turn off due to a low battery charge condition! Immediately power down your computer and turn the unit off. When normal power returns, the unit will recharge its batteries. When this beeping tone starts, you have approximately two minutes before the unit will shut itself down.  |
| <b>The Overload indicator is lit and the Back-UPS ES is making a low, continuous tone.</b>        | The "Battery Backup plus Surge Protection" outlets are overloaded.   | Reduce the amount of equipment connected to these outlets. The Back-UPS ES will shut itself down abruptly if this condition is not corrected.  |
| <b>The Replace Battery indicator is lit and the Back-UPS ES is making continuous short beeps.</b> | The battery may not be properly connected.<br>The battery may need to be charged.<br>The battery may need to be replaced.  | See "Connect Battery" section.<br>Allow the unit to charge for at least 4 hours. Initiate a self-test by switching the unit off and back on again. The unit will run a self-test to determine the condition of the battery.<br>If the Replace Battery indicator lights again after completing the self-test, then the battery must be replaced. Go to <a href="http://www.apc.com">www.apc.com</a> for information on replacing your battery, or call 800.800.4272.  |
| <b>The Building Wiring Fault indicator is lit.</b>  | Your building wiring presents a shock hazard.  | Call a qualified electrician for service.  |
| <b>Inadequate runtime.</b>  | The battery is not fully charged.<br>Battery near end of useful life.  | Allow the unit to charge by leaving it plugged into the wall for a full 10 hours.<br>As a battery ages, the amount of runtime available will decrease. You can replace the battery by ordering one at <a href="http://www.apc.com">www.apc.com</a> . Batteries also age prematurely if the Back-UPS ES is placed near excessive heat.  |



## Specifications

| model                 | BE350                       | BE500  |
|-----------------------|-----------------------------|--|
| Input                 | Voltage                     | 120 Vrms, Nominal  |
|                       | Frequency                   | 60 Hz +/-5%  |
|                       | Brownout Transfer           | 99 Vrms, typical   |
|                       | Over-voltage Transfer       | 138 Vrms, typical  |
| Output                | UPS Capacity (3 outlets)    | 350 VA, 180 W  |
|                       | Surge Capacity (6 outlets)  | 12 Amps (including UPS output)   |
|                       | Voltage (On Battery)        | 115 Vrms +/-5% (step-approximated sine wave)                                 |
|                       | Frequency (On Battery)      | 60 Hz +/- 0.5%   |
|                       | Transfer Time               | 6 ms typical   |
| Protection and Filter | AC Surge Protection         | Full time, 720 Joule   |
|                       | Telephone Surge Protection  | Single line (two-wire)   |
|                       | EMI/RFI Filter              | Full time  |
|                       | UPS Overload Protection     | UPS automatic shutdown if UPS outlets overload exceeds 110% of rated nominal |
|                       | AC Input                    | Resettable circuit breaker   |
| Battery               | Type                        | Sealed, Maintenance free lead acid   |
|                       | Recharge Time               | 4 hours typical, 10 hours max  |
|                       | Average life                | 2 - 4 years depending on discharge cycles and environment temperature        |
| Physical              | Net Weight                  | 6.6 lb (3.0kg) / 7.2 lb (3.2kg)  |
|                       | Size (H x W x D)            | 3.2 in x 10.7 in. x 4.9 in (8.2cm x 27.2cm x 12.4cm)                         |
|                       | Operating Temperature       | +32°F to 104°F (0°C to 40°C)   |
|                       | Operating Relative Humidity | 0 to 95% non-condensing  |
|                       | Operating Elevation         | 0 to 10,000 ft. (0 to 3,000m)  |
|                       | Storage Temperature         | +5°F to 113°F (-15°C to 45°C)  |
| Safety/Regulatory     | Safety Approvals            | UL 1778 listed, cUL certified per CSA standard C22.2 No 107.1                |
|                       | EMC Compliance              | FCC part 68; FCC part 15 Class B   |

Note: Detailed UPS product specifications are available online at [www.apc.com](http://www.apc.com) or through the APC faxback system (800-347-3299).

## Order Replacement Battery

Replace with an APC qualified battery. Replacement batteries can be ordered from [www.apc.com](http://www.apc.com). Have your Back-UPS ES model number available when ordering. Your model number can be found on the bottom of the Back-UPS ES.

## Warranty

The standard warranty is 2 years from date of purchase.

## Service

**Please DO NOT RETURN Back-UPS ES to the place of purchase under any circumstances!**

- Consult the Troubleshooting section to eliminate common problems.
- Verify the battery is connected as shown in the Connect Battery section and that the circuit breaker is not tripped (see Troubleshooting section).

**If you still have problems or questions, please contact APC via the Internet or at one of the phone numbers listed at the bottom of the page.**

- Before contacting APC, please be sure to record the date purchased, UPS model, and serial number (on bottom of unit).
- Be prepared to troubleshoot the problem over the telephone with a Technical Support Representative. If this is not successful, the Technical Support Representative will issue a Return Merchandise Authorization Number (RMA#) and a shipping address.
- Pack the unit in its original packaging. If the original packing is not available, ask APC Technical Support about obtaining a new set. Pack the unit properly to avoid damage in transit. Never use foam beads for packaging. Damage sustained in transit is not covered under warranty (insuring the package for full value is recommended).
- Write the RMA# on the outside of the package.
- Return the unit by insured carrier to the address given to you by APC Technical Support.

## APC Contact Information



|                             |   |
|-----------------------------|---|
| USA/Canada .....            | 1.800.800.4272  |
| Mexico.....                 | 292.0253 / 292.0255   |
| Brazil .....                | 0800.12.72.1  |
| Worldwide .....             | +1.401.789.5735   |
| Web site.....               | <a href="http://www.apc.com">http://www.apc.com</a>         |
| Online Technical Support... | <a href="http://support.apc.com">http://support.apc.com</a> |