by Schneider Electric

User Manual Back-UPS™ Pro BX850/1000/1350/1500M/M-LM60

Safety and General Information

Inspect the package contents upon receipt. Notify the carrier and dealer if there is any damage.

SAVE THESE INSTRUCTIONS - This section contains important instructions that should be followed during installation and maintenance of the UPS and batteries.

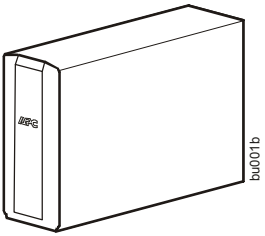
⚠ DANGER

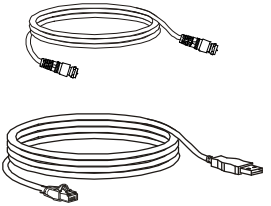
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

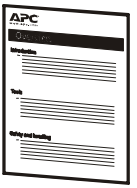
- This UPS is intended for indoor use only.
- Do not operate this UPS in direct sunlight, in contact with fluids, or where there is excessive dust or humidity.
- Connect the UPS power cable directly to a wall outlet.
- Be sure the air vents on the UPS are not blocked. Allow adequate space for proper ventilation.

Failure to follow these instructions will result in death or serious injury.

Inventory



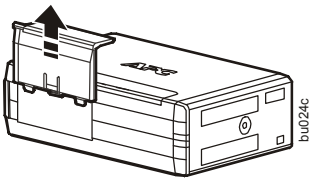




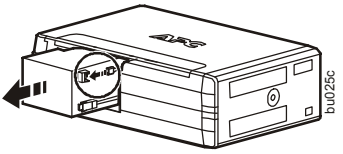
Connect the Battery

The UPS is shipped with the battery disconnected.

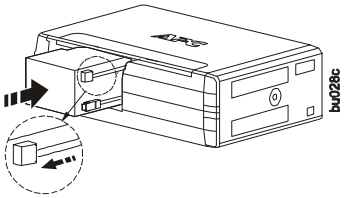
BX850/1000M/M-LM60



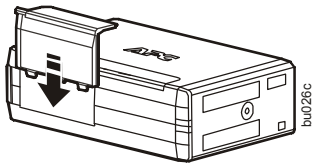
❶ Remove the battery door.



❷ Remove the battery. Connect the wire.

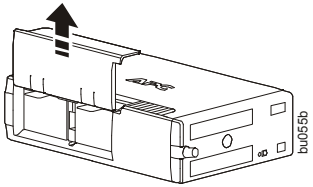


❸ Push the battery into the unit.

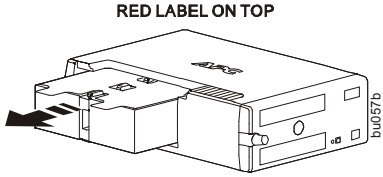


❹ Replace the battery door.

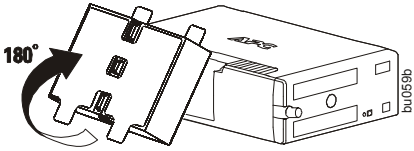
BX1350/1500M/M-LM60



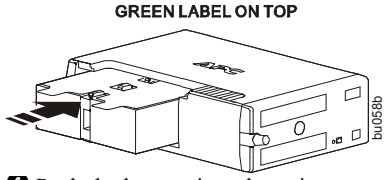
❶ Remove the battery door.



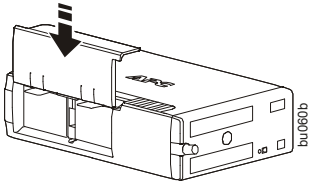
❷ Remove the battery.



❸ Flip or turn the battery 180 degrees upward/downward to let green side of the label face up.



❹ Push the battery into the unit.



❺ Replace the battery door.

Install PowerChute™ Personal Edition Software

Use PowerChute Personal Edition software to configure the UPS settings. During a power outage, PowerChute will save any open files on your computer and shut it down. When power is restored, it will restart the computer.

Note: PowerChute is only compatible with a Windows operating system. If you are using Mac OSX, use the native shutdown feature to protect your system. See the documentation provided with your computer.

Installation

Use the cable supplied with the Back-UPS to connect the data port on the Back-UPS to the USB port on your computer. On the computer, go to www.apc.com Search for "PowerChute Personal Edition" then click on "View Details" to download the latest version of PCPE software**.** Click the download link and select Software product. Select the appropriate operating system. Follow directions to download the software.

Connect the Equipment

Battery Backup and Surge Protected outlets

When the Back-UPS is receiving input power, the Battery Backup with Surge Protection outlets will supply power to connected equipment. During a power outage or other AC problems, the Battery Backup outlets receive power for a limited time from the Back-UPS.

Connect equipment such as printers, fax machines, scanners, or other peripherals that do not need battery backup power to the Surge Protection Only outlets. These outlets provide full-time protection from surges even if the Back-UPS is switched OFF.

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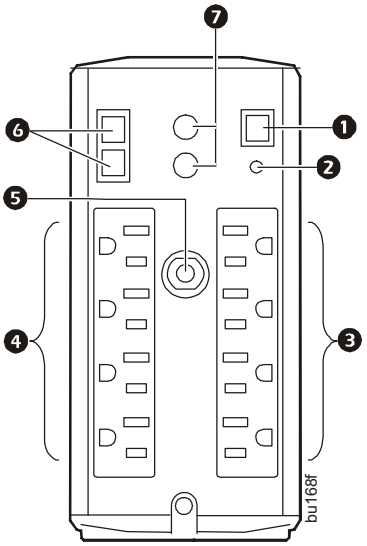
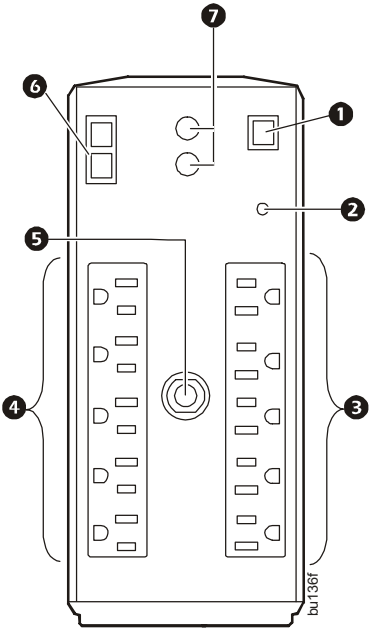


BX1350/1500M/M-LM60



❶	**USB and Serial Data port**	To use PowerChute Personal Edition, connect the supplied USB cable or an optional serial cable (not supplied).
❷	**Building Wiring Fault indicator**	If this indicator is illuminated, there is a problem with the wiring in the building. Contact an electrician immediately and do not use the Back-UPS.
❸	**Surge Protected outlets**	These outlets provide full-time protection from surges, even if the Back-UPS is off. Connect equipment such as printers and scanners that do not require battery backup protection.
❹	**Battery Backup outlets with Surge Protection**	During a power outage or other AC problems, the Battery Backup outlets receive power for a limited time from the Back-UPS. Connect critical equipment such as desktop computer, computer monitor, modem or other data sensitive devices into these outlets.
❺	**Circuit Breaker**	Use to reset the system after an overload condition has occurred causing the circuit breaker to trip.

❻	In/Out **Ethernet surge-protected ports**	Use an Ethernet cable to connect a cable modem to the IN port, and connect a computer to the OUT port.
❼	**Coaxial ports with surge protection**	Connect a cable modem or other equipment with coaxial jacks.

Operation

Power Saving Display

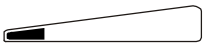
The display interface can be configured to be continuously illuminated, or to save energy, it can be configured to darken after a period of inactivity.

1. Full Time Mode: Press and hold DISPLAY for two seconds. The display will illuminate and the Back-UPS will beep to confirm the Full Time mode.
2. Power Saving Mode: Press and hold DISPLAY for two seconds. The display will darken and the Back-UPS will beep to confirm the Power Saving mode. While in Power Saving Mode, the display will illuminate if a button is pressed, it then darkens after 60 seconds of no activity.

Unit sensitivity

Adjust the sensitivity of the Back-UPS to control when it will switch to battery power; the higher the sensitivity, the more often the Back-UPS will switch to battery power.

1. Ensure the Back-UPS is connected to AC power, but is OFF.
2. Press and hold the POWER button for six seconds. The LOAD CAPACITY bar will flash on and off, indicating that the Back-UPS is in programming mode.
3. Press POWER again to rotate through the menu options. Stop at selected sensitivity. The Back-UPS will beep to confirm the selection.

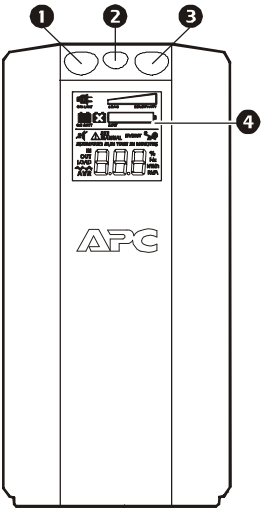
Generator Sensitivity	Default	Sensitive Loads
		
Low sensitivity	Medium sensitivity (Default)	High sensitivity
78-142 Vac	88-139 Vac	88-136 Vac
Input voltage is extremely low or high. (Not recommended for computer loads.)	*The Back-UPS frequently switches to battery power.*	*The connected equipment is sensitive to voltage fluctuations.*

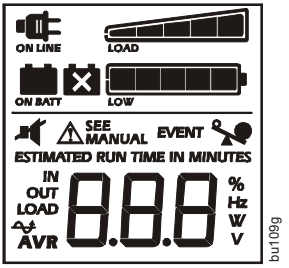
Front Panel Buttons and Display Interface

Use the three buttons on the front panel of the Back-UPS and the display interface to configure the Back-UPS.

Front panel

1. Mute button
2. Power On/Off button
3. Display button
4. Display interface





	**On Line:** The Back-UPS is supplying conditioned AC power to connected equipment
	**Load Capacity:** The load is indicated by the number of sections illuminated, one to five. Each bar represents 20% of the load.
	**Battery Charge:** The battery charge level is indicated by the number of sections illuminated. When all five blocks are illuminated, the Back-UPS is at full charge. When one block is filled, the Back-UPS is near the end of its battery capacity, the indicator will flash and the Back-UPS will beep continuously.
	**Overload:** The power demand from the load has exceeded the capacity of the Back-UPS.
	**Event:** The event counter shows the number of events that occurred that caused the Back-UPS to switch to on-battery operation.
	**Automatic Voltage Regulation:** The Back-UPS can compensate for low input voltage.  When illuminated, the Back-UPS is compensating for low input voltage
	**In:** Input voltage. **Out:** Output voltage.
	**System Error Detected:** The system has an error. The error number will illuminate on the display interface. See *"System Errors" on page 7*.
	**Mute:** If the line through the speaker icon is illuminated, the audible alarm has been turned off.



Replace Battery: The battery is nearing the end of its useful life. Replace the battery as early as possible.



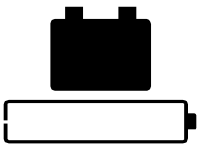
On Battery: The Back-UPS is supplying battery backup power to the connected equipment, it will beep four times every 30 seconds.

Alarms and System Errors

Audible Indicators

Four Beeps Every 30 Seconds	Back-UPS is running on battery. You should consider saving any work in progress.
Continuous Beeping	Low battery condition and battery run-time is very low. Promptly save any work in progress, exit all open applications, and shut down the operating system.
Continuous tone	Battery Backup outputs are overloaded.
Chirps every 2 Seconds with the Load Capacity Bar flashing	Battery is disconnected.
Continuous chirping with the Load Capacity Bar and Replace Battery icon alternately flashing	Battery did not pass the automatic diagnostic test and should be replaced as early as possible. Pressing the MUTE button pauses the chirping.

Status Icons

If these icons are illuminated...	This may be the problem.
	The Back-UPS is operating on AC power, but is overloaded. Disconnect one of the items connected to the Back-UPS. If the Overload icon stops flashing, the Back-UPS is no longer overloaded and will continue to operate normally.
	The Back-UPS is operating on battery power, but is overloaded. Disconnect one of the items connected to the Back-UPS. If the Overload icon stops flashing, the Back-UPS is no longer overloaded and will continue to operate normally.
	The Back-UPS is operating on AC power, but the battery is not functioning properly. Contact Schneider Electric IT (SEIT) Customer Service to order a replacement battery. See *"Replacement Battery" on page 9*.
	The Back-UPS is operating on battery power and the battery power is getting low. Shut down all connected equipment to avoid losing an unsaved data. When possible, connect the Back-UPS to AC power to recharge the battery.

System Errors

The Back-UPS will display these error messages. Except for errors F01 and F02, contact SEIT Technical Support.



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F01	On-Battery Overload	Turn the Back-UPS off. Disconnect non-essential equipment from the Battery Backup outlets and the turn Back-UPS on.
F02	On-Battery Output Short	Turn the Back-UPS off. Disconnect all equipment from the Battery Backup outlets and the turn Back-UPS on. Re-connect equipment one item at a time. If the output is tripped again, disconnect the device that caused the error.
F03	On-Battery Xcap Overload	Errors F03-F09 cannot be corrected by the user, contact SEIT Technical Support for assistance.
F04	Clamp Short	
F05	Charge Error	
F06	Relay Welding	
F07	Temperature	
F09	Internal Error	

Function Button Quick Reference

Function	Button	Timing (seconds)	UPS Status	Description
Power				
Power On		0.2	Off	Press POWER to start receiving input AC power. If AC input power is not available, the Back-UPS will run on battery power.
Power Off		2	On	The Back-UPS is not receiving input AC power, but is providing surge protection.
Display				
Status Inquiry		0.2	On	Verify the status or condition of the Back-UPS. The LCD will illuminate for 60 seconds. Press the button the toggle into various information.
Full-Time/ Power-Saving mode		2	On	The LCD will illuminate and the Back-UPS will beep to confirm the Full-Time mode. The LCD will darken and the Back-UPS will beep to confirm the Power-Saving mode. While in Power-Saving Mode, the LCD will illuminate if a button is pressed, then darkens after 60 seconds of no activity.
Mute				
General Status Enable/ Disable		2	On	Enable or disable the audible alarms. The Mute icon will illuminate and the Back-UPS will beep one time. The Mute function will not activate unless the Back-UPS is operating on battery power.

Function	Button	Timing (seconds)	UPS Status	Description
Sensitivity		6	Off	The Load Capacity icon will blink, indicating that the Back-UPS is in programming mode. Use the POWER button to scroll through Low, Medium, and High, stop at selected sensitivity. The Back-UPS will beep to confirm selection. See *"Unit sensitivity"* for details.
Self-Test (manual)		6	On	The Back-UPS will perform a test of the internal battery. Note: This will happen automatically when the Back-UPS is turned ON or when the Back-UPS previously detected a bad battery.
Event Reset		0.2	On	When the Event screen is visible, press and hold DISPLAY, then press POWER, to clear the detected error event counter.
Error Reset		2	Error	After an error has been identified, press POWER to remove the visual indication and return to standby status.

Troubleshooting

Problem	Possible Cause	Corrective Action
Back-UPS will not switch on.	The Back-UPS is not connected to AC power.	Ensure that the Back-UPS is securely connected to an AC outlet.
	The circuit breaker has been tripped.	Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker. Re-connect equipment one item at a time. If the circuit breaker is tripped again, disconnect the device that caused the trip.
	The internal battery is not connected.	Connect the battery.
	The AC input voltage is out of range.	Adjust the transfer voltage and sensitivity range.
The Back-UPS does not provide power during a AC power outage.	Ensure that essential equipment is **not** plugged into a SURGE ONLY outlet.	Disconnect equipment from the SURGE ONLY outlet and re-connect to a Battery Backup outlet.
The Back-UPS is operating on battery power, while connected to AC power.	The plug has partially pulled out of the wall outlet, the wall outlet is no longer receiving AC power, or the circuit breaker has been tripped.	Ensure that the plug is fully inserted into the wall outlet. Ensure that the wall outlet is receiving AC power by checking it with another device.
	The Back-UPS is performing an automatic self test.	No action is necessary.
	The AC input voltage is out of range, the frequency is out of range, or the waveform is distorted.	Adjust the transfer voltage and sensitivity range.
The Back-UPS does not provide the expected amount of backup time.	Battery Backup outlets may be fully or improperly loaded.	Disconnect non-essential equipment from the Battery Backup outlets and connect the equipment to SURGE outlets.
	The battery was recently discharged due to a power outage and has not fully recharged.	Charge the battery cartridge for 16 hours.
	The battery has reached the end of its useful life.	Replace the battery.

Problem	Possible Cause	Corrective Action
The REPLACE BATTERY indicator is illuminated.	The battery has reached the end of its useful life.	Replace the battery as early as possible.
The OVERLOAD indicator is illuminated.	The equipment connected to the Back-UPS is drawing more power than the Back-UPS can provide.	Disconnect non-essential equipment from the Battery Backup outlets and connect the equipment to SURGE outlets.
The SYSTEM ERROR indicator is illuminated, all the front panel indicators are flashing.	There is an internal error.	Determine which internal error message is displayed by matching the number displayed on the LCD with the corresponding Error Message (see *"System Errors"*) and contact SEIT Technical Support.

Specifications

Model	BX850M BX850M-LM60	BX1000M BX1000M-LM60	BX1350M BX1350M-LM60	BX1500M BX1500M-LM60
VA	850 VA	1000 VA	1350 VA	1500 VA
Maximum Load	510 W	600 W	810 W	900 W
Nominal Input Voltage	120 Vac			
Online Input Voltage Range	88 - 139 Vac			
Automatic Voltage Regulation	(88-107) +11.2% (compensate for low input voltage)			
Frequency Range	60 Hz ± 1 Hz			
Battery Type	Lead acid, 12V with 1 battery		Lead acid, 24V with 2 batteries	
On-battery Waveshape	Step-approximated sine-wave			
Typical Recharge Time	12 hours		16 hours	
Transfer Time	8 ms (typical), 10 ms (maximum)			
On Battery Runtime	Go to: www.apc.com			
Interface	USB			
Operating Temperature	0° to 40° C (32° to 104° F)			
Storage Temperature	-5° to 45° C (23° to 113° F)			
Unit Dimensions	19 x 9.1 x 31 cm (7.5 x 3.6 x 12.2 in)		25 x 10 x 38.2 cm (9.8 x 3.9 x 15 in)	
Unit Weight	6.8 kg (15 lbs)	7.2 kg (15.9 lbs)	10.2 kg (22.5 lbs)	11.0 kg (24.3 lbs)

Replacement Battery

The battery typically lasts for 3 to 5 years, a shorter period if subjected to frequent outages or elevated temperatures. Battery replacement parts for Back-UPS BX850M/M-LM60 is **RBC17**, for BX1000M/M-LM60 is **APCRBC158**, for BX1350M/M-LM60 is **APCRBC123**, and for BX1500M/M-LM60 is **APCRBC124**. Delaying the replacement of parts may corrode the batteries in the cartridge. Recycle spent battery cartridges.

Warranty

The standard warranty is three (3) 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 on your specific model go to www.apc.com.



This UPS is certified to comply with California Battery Charger System regulations. For more information go to www.apc.com/company/us/en/sustainability/energy-efficiency/california-battery-charger-regulations/

EMC 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.

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