



by **Schneider** Electric

User Manual Back-UPS™ BX1000UXI/BX2000UXI

Important Safety Information

Read the instructions carefully to become familiar with the equipment before trying to install, operate, service or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a Danger or Warning safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in death or serious injury**.



WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in death or serious injury**.



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in minor or moderate injury**.

NOTICE

NOTICE is used to address practices not related to physical injury.

Safety and General Information

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

- This UPS is for indoor use only.
- Do not operate this UPS in direct sunlight, in contact with fluids, or where there is excessive dust or high humidity.
- Do not operate the UPS near open windows or doors.
- Be sure the air vents on the UPS are not blocked. Allow adequate space for proper ventilation.

NOTE: Allow a minimum of 20 cm clearance on all four sides of the UPS.

- Environmental factors impact battery life. Elevated ambient temperatures, poor quality utility power, and frequent discharges will shorten battery life. Follow the battery manufacturer recommendations.
- Connect the Back-UPS power cable directly to a wall outlet. Do not use surge protectors or extension cords.

Electrical safety

- Connection to the branch circuit (mains) must be performed by a qualified electrician.
- The protective earth conductor for the UPS carries the leakage current from the load devices (computer equipment). An insulated ground conductor is to be installed as part of the branch circuit that supplies the UPS. The conductor must have the same size and insulation material as the grounded and ungrounded branch circuit supply conductors. The conductor will be green and with or without a yellow stripe.
- The UPS input ground conductor must be properly bonded to protective earth at the service panel.
- If the UPS input power is supplied by a separately derived system, the ground conductor must be properly bonded at the supply transformer or motor generator set.

Battery safety



CAUTION

RISK OF HYDROGEN SULPHIDE GAS AND EXCESSIVE SMOKE

- Replace the battery at least every 5 years or at the end of its service life, whichever is earlier.
- Replace the battery immediately when the UPS indicates battery replacement is necessary.
- Replace batteries with the same number and type of batteries as originally installed in the equipment.
- Replace the battery immediately when the UPS indicates a battery over-temperature condition or when there is evidence of electrolyte leakage. Power off the UPS, unplug it from the AC input, and disconnect the batteries. Do not operate the UPS until the batteries have been replaced.

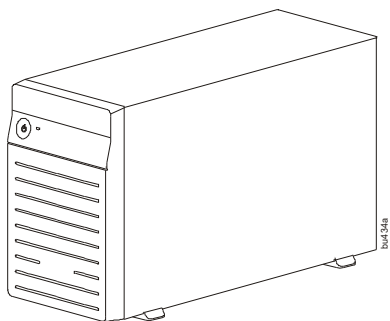
Failure to follow these instructions can result in injury.

- Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and the required precautions.
- CAUTION: Do not dispose of batteries in a fire. The batteries may explode.
- CAUTION: Do not open or mutilate batteries. Released material is harmful to the skin and eyes. It may be toxic.
- CAUTION: Before installing or replacing the batteries, remove conductive jewelry such as chains, wrist watches, and rings. High energy through conductive materials could cause severe burns.
- CAUTION: A battery can present a risk of electrical shock and high short-circuit current. Failed batteries can reach temperatures that exceed the burn thresholds for touchable surfaces. The following precautions should be observed when working on batteries:
 - Disconnect the charging source prior to connecting or disconnecting battery terminals.
 - Do not wear any metal objects including watches and rings.
 - Do not lay tools or metal parts on top of batteries.
 - Use tools with insulated handles.
 - Wear rubber gloves and boots.
 - Determine if battery is either intentionally or inadvertently grounded. Contact with any part of a grounded battery can result in electric shock and burns by high short-circuit current. The risk of such hazards can be reduced if grounds are removed during installation and maintenance by a skilled person.

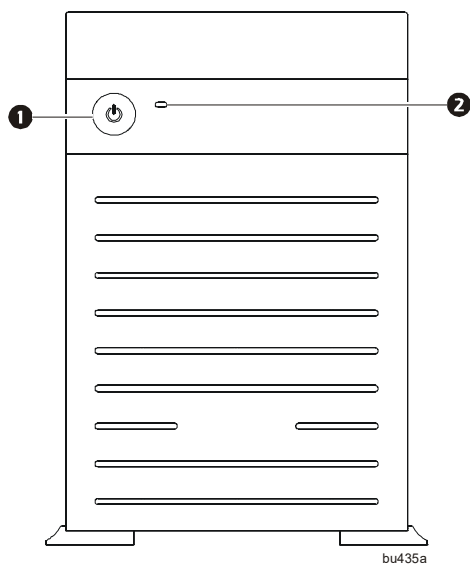
Hardwiring safety

- Verify that all branch circuit (mains) are deenergized, and locked out before installing cables or making connections, whether in the junction box or to the UPS.
- Wiring by a qualified electrician is required.
- Check national and local codes before wiring.
- Select wire size and connectors according to national and local codes.
- Strain relief is required for all hardwiring.
- All openings allowing access to UPS hardwiring terminals must be covered. Failure to do so may result in personal injury or equipment damage.

Package Contents



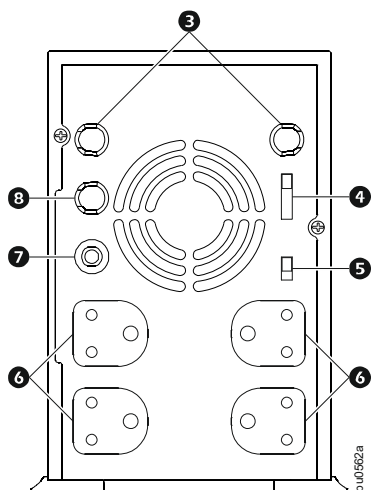
Front Panel Features



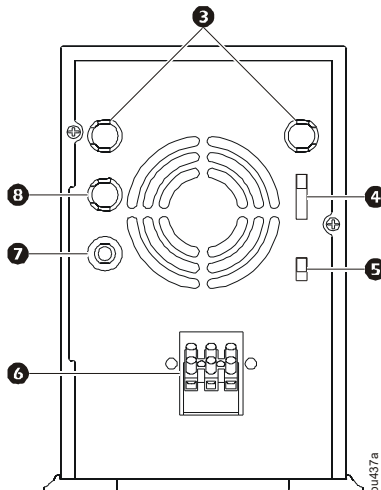
1	POWER ON/OFF button and LED	Press the POWER ON/OFF button to switch the UPS on or off. The LED illuminates green to indicate that power is supplied to the connected equipment both on mains and on battery. The LED illuminates red to indicate detected faults.
2	Charging LED	The LED illuminates to indicate the battery is charging. Once the battery is charged, the LED will turn off.

Rear Panel Features

BX1000UXI



BX2000UXI



3	External battery terminal	Use these terminals to connect the external battery to the UPS. Connect the red wire to the positive and the black wire to the negative terminals of the external battery.
4	Charging current selection switch	Select the charging current of the UPS as per the Ah rating of the connected external battery. NOTE: If wrong charging current is chosen, the battery life might reduce. See “Charging current selection switch” on page 8.
5	Battery type selection switch	Use this switch to select either SMF or Flooded (Tubular) type battery. NOTE: The factory default setting is SMF. Select the battery type before connecting and charging the external battery. Wrong selection of battery type will reduce the battery life.
6	Output receptacles	BX1000UXI model: 4 Indian type receptacles to connect load. NOTE: Connect equipment to these outlets using a standard molded 5 A plug. Do not use surge protectors or extension cords. BX2000UXI model: Hardwire the UPS output. See “Output hardwire instructions for BX2000UXI model” on page 10.
7	Circuit breaker	Press to reset in case the unit trips due to any overload condition. See “Troubleshooting” on page 14 for details.
8	Utility power cable	Use this cable to connect the Back-UPS to utility power. NOTE: Ensure that a 16 A circuit breaker is available at the utility power input.

Connect the UPS to Battery



CAUTION

RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- All electrical work must be performed by a qualified electrician.
- Identify the polarities of the battery terminals before connecting the battery series.
- Do not short the battery terminals.
- Do not touch multiple terminals in the battery strings at the same time.
- Do not wear jewellery when working with electrical equipment.
- Use UL certified external battery cables which are rated for 75 °C or above.
- Do not use copper cables less than 10 mm² (8 AWG).
- Always connect the positive (red) and negative (black) wires, to the positive and negative terminals of the battery.

Failure to follow these instructions can result in injury.

NOTICE

RISK OF IMPROPER CONNECTION

Connect the battery according to the battery voltage indicated on the rear panel. If the connected battery voltage is incorrect, UPS may be damaged and cannot be repaired. Therefore, be sure to confirm that the battery voltage is in accordance with the UPS specification.

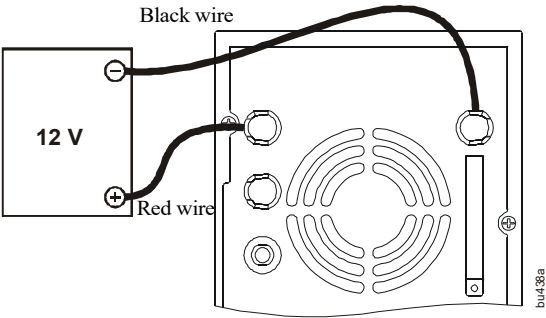
Failure to follow these instructions could result in equipment damage.

NOTE:

- Use batteries having capacity greater than 26 Ah and less than 200 Ah.
- Use batteries which can withstand:
 - boost voltage of 15 V
 - float voltage of 13.8 V
- Maintenance of battery should be done at regular intervals.

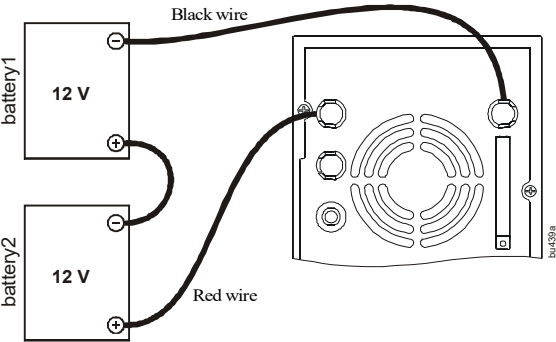
BX1000UXI model

Connect one 12 V SMF/Flooded battery.



BX2000UXI model

Connect two SMF/Flooded 12 V batteries in series. Connect the positive terminal of battery1 with negative terminal of battery2 using a 10 mm² wire (not supplied).



Charging current selection switch

Select the current rating in the charging current selection switch.

NOTE: Default factory settings for charging current selection switch is 10 A.

Current Rating Selection	SMF battery	Tubular battery
5 A	26 Ah - 42 Ah	40 Ah - 70 Ah
10 A	65 Ah - 100 Ah	80 Ah - 120 Ah
15 A	120 Ah - 150 Ah	120 Ah - 150 Ah
20 A	200 Ah	165 Ah - 200 Ah

Installation



WARNING

HIGH LEAKAGE CURRENT, HAZARD OF ELECTRICAL SHOCK

Ensure that the Earth connection is provided before the UPS is connected to AC input power.

Failure to follow this instruction can result in death or serious injury.



Units may vary in appearance from those depicted in this manual.

See “The Back-UPS will switch to battery power if the utility input voltage level becomes too low or too high, or if the utility power is experiencing voltage fluctuations.” on page 13 in this manual before installing units.

BX1000UXI model

Connect loads directly to the provided sockets. Use 0.75 mm^2 wire for BX1000UXI output.

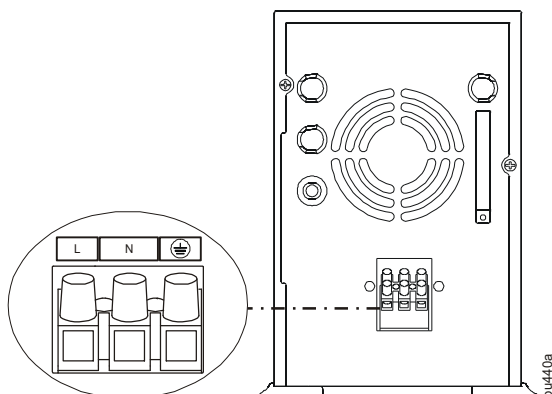
Output hardwire instructions for BX2000UXI model

CAUTION

HAZARD OF ELECTRIC SHOCK

- All electrical work must be performed by a qualified electrician.
- Turn off all power to this equipment before working on the equipment. Practice lockout/tagout procedures.
- Do not wear jewelry when working with electrical equipment.
- Ensure that line, neutral and ground cables are connected to the respective terminals.
- Strain reliefs are not supplied with the unit. Use appropriate strain relief.
- All openings that allow access to UPS hardwire terminals must be covered.
- Select wire size and connectors according to national and local codes.
- Adhere to all national and local electrical codes.
- Secure the wires properly. Loose connections may lead to short circuit, fire or electrical shocks.

Failure to follow these instructions can result in serious injury.



- Use 2.5 mm² wire (not supplied)
1. Locate the hardwire terminal block cover on rear panel of UPS. Remove the screw securing the cover and remove the cover.
 2. Connect the line, ground and neutral wires to the terminal block. Terminals are labeled for proper wire configuration.
 3. Replace and secure the cover removed in *step 1*.

Status Indicators

Visual indicator	Audible indicator	Condition
Power on/off LED		
Illuminates green	2 sec long beep when power restores	Power on: UPS is supplying conditioned utility power to the load.
Flashes Green: 4 sec on, 1 sec off until the UPS reaches low battery condition	Can start after some delay. 2 quick beeps at the start	On battery: UPS is supplying battery power to the load connected to the battery outlets
Flashes Green: 1 sec on, 1 sec off till low bat shut down	Beeps at 1 second intervals till shut down	Low battery indication: UPS is supplying battery power to load and the battery is near the discharge state. The Back-UPS has less than 2.5 minutes of runtime remaining before shutdown.
Flashes Green: Blinks once every second and UPS will turn off after 32 seconds	Long beep for 4 sec	Low battery shutdown normal mode: During on battery operation the battery is at a complete discharge state and the Back-UPS stops providing output power. Once utility power is restored the Back-UPS will return to normal operation. Press POWER ON/OFF button to return to normal operation if the Back-UPS does not return to this status.
Flashes Red: 1 sec ON and 1 sec OFF	Beeper: every 2 sec ON and 2 sec OFF	Overload alert: Power drawn by the load from the UPS on mains/on battery exceeds the capacity of unit. Disconnect non-essential equipment, one device at a time until the overload condition is corrected.

Visual indicator	Audible indicator	Condition
Flashes Red: 2 sec on and 2 sec off	Beeper: every 2 sec ON and 2 sec OFF	Overload condition: While operating on mains/on battery the connected equipment draws more power than the capacity of the unit. Disconnect non-essential equipment, one device at a time and restart the UPS until the overload condition has been corrected. If the problem persists, contact APC by Schneider Electric support.
		Short circuit condition: The UPS is on mains/battery and short circuit occurs at output. Disconnect one device at a time and restart the UPS to check if the condition can be corrected. If problem persists, contact APC by Schneider Electric support.
Flashes Red: 1 sec ON and 6 sec OFF	Beeper: (1 sec ON and 6 sec OFF)	Over temperature on mains/battery: The UPS is over heated. Ensure that the operating ambient temperature is within product specifications. Allow a minimum of 20 cm clearance on all four sides of the UPS, for better ventilation. Note: The UPS will beep and the red LED will illuminate till the internal temperature reaches the normal range.
Illuminates red	Constant tone	Internal error detected: The UPS has detected an internal error and is no longer providing power to the connected equipment. Contact APC by Schneider Electric support.
Charging LED		
Flashes red: 1 sec on 5 sec off	1 sec on and 5 sec off	Battery disconnected: Battery is not connected to the UPS. See “Connect the UPS to Battery” on page 7.
Illuminates red	Constant tone for 2 sec on and 40 sec off	Replace battery indication: Battery is at the end of its life, need to be replaced.
Illuminates green	Off	Battery charging: Battery charging when power is restored
LED is off	Off	Battery fully charged: Charger shut off

Turn On the Back-UPS

Press the POWER ON/OFF button located on the front panel of the Back-UPS. The Power On/Off LED will illuminate and a single long beep will be audible to indicate that the Back-UPS is providing protection for the connected equipment.

The Back-UPS battery charges to capacity during the first 10 hours while connected to the utility power. The Back-UPS battery will charge while the Back-UPS is turned on or off as long as it is connected to utility power. Do not expect the battery to run for its expected capacity during the initial charge period.

Voltage regulation

The Back-UPS will switch to battery power if the utility input voltage level becomes too low or too high, or if the utility power is experiencing voltage fluctuations.

Specifications

		BX1000UXI	BX2000UXI
Input	Voltage	230 Vac nominal	
	Voltage range	140 - 300 Vac	
	Frequency range	40 Hz - 70 Hz	
Output	Voltage range	190 - 256 Vac	
	UPS capacity (total)	1000 VA / 600 W	2000 VA / 1200 W
	Frequency range (Battery mode)	50 Hz ± 1 Hz	
	Transfer time	4-10 ms typical, 15 ms maximum	
	Waveform in battery mode	Step-approximated sine wave	
Battery	Voltage	12 V	24 V
	Charge current	5 A / 10 A / 15 A / 20 A (selectable)	
Physical	Net weight	9.3 kg	13.4 kg
	Dimensions (H x W x D)	392 mm × 145 mm × 220 mm	
	Operating temperature	0 to 40 °C	
	Storage temperature	-20 to 40 °C	
	Operating relative humidity	0 to 95% non-condensing	
	Operating elevation	0 to 3000 m	
	Power cord	1.5 meters	

Troubleshooting

Problem	Possible Cause	Corrective Action
The Back-UPS works in battery mode even when utility power is available.	The Back-UPS is not connected to utility power.	Be sure that the Back-UPS is securely connected to the utility power outlet.
	The circuit breaker has tripped.	Disconnect nonessential equipment from the Back-UPS. Reset the thermal circuit breaker. Reconnect equipment one at a time. If the circuit breaker trips again, disconnect the device that caused the short circuit. Press POWER ON/OFF button to supply power to the connected equipment.
The Back-UPS will not turn on.	The external battery is not connected.	Connect the external battery to the UPS. See "Connect the UPS to Battery" on page 7.
	The external battery connection is incorrect.	
	The UPS battery is discharged due to a recent power outage or is near the end of its service life.	Allow the Back-UPS battery to charge for 8-10 hours before using the Back-UPS. The battery requires recharging after an extended outage.
The Back-UPS is operating on battery power, while connected to utility power.	• The Back-UPS power cable is not securely connected to the wall outlet. • The wall outlet is no longer receiving utility power. • The circuit breaker has tripped.	• Verify that the power cable plug is securely connected to the wall outlet. • Verify that the wall outlet is receiving utility power by checking it with another device. • Reset the circuit breaker on the rear panel.
	The Back-UPS is performing an automatic self test.	No action is necessary. The Back-UPS will complete self test and work on mains within 11 seconds.
	• The utility input voltage is out of range. • The frequency is out of range. • The waveform is distorted.	If the voltage is beyond acceptable range of 145 V to 300 V or the frequency is beyond acceptable range of 40 - 70 Hz, then UPS will switch to battery. No action is required.

Problem	Possible Cause	Corrective Action
The Back-UPS does not provide the expected amount of backup time.	The battery is discharged due to a recent power outage or is near the end of its service life.	Allow the battery to charge for 8-10 hours before using the Back-UPS. The battery requires recharging after an extended outage.
	Battery takes more time for charging as the Input Voltage to the UPS could be low.	Check the input voltage to the UPS. Input voltage to be in the range 170 V to 290 V for less time for Battery charging.
Connected equipment loses power.	The Back-UPS has experienced an overload condition.	Disconnect non-essential equipment one device at a time to reduce the overload condition.
	The Back-UPS has exhausted its available battery power.	The Back-UPS will shut down when the available battery power has been exhausted. Allow the Back-UPS battery to charge for 8-10 hours before using the Back-UPS.
	The equipment connected to the Back-UPS does not accept the step approximated sine waveform from the unit.	The output waveform is designed for computers and computer-related equipment. It is not designed for use with motor-type equipment.
	The Back-UPS may require service.	Contact APC by Schneider Electric support for further troubleshooting.

Service

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

1. Review the *Troubleshooting* section of the manual to eliminate common problems.
2. If the problem persists, contact APC by Schneider Electric Customer Support.
 - a. Note the model number and serial number and the date of purchase. The model and serial numbers are located on the side panel of the unit.
 - b. Call APC by Schneider Electric Customer Support and a technician will attempt to solve the problem over the phone. If this is not possible, the technician will issue a Service Request Number.
 - c. If the unit is under warranty, the repairs are free.

An Authorised Service Representative will visit your location and try to resolve the issue.

APC by Schneider Electric Customer Support India

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