



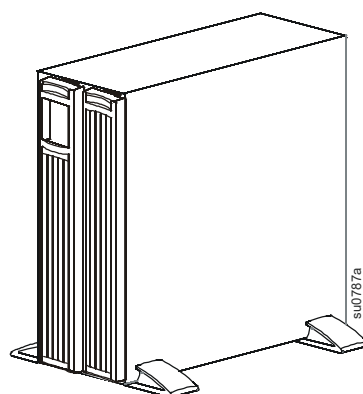
Operation Manual

Smart-UPS[™] X Uninterruptible Power Supply

Low Voltage
SMX2000LV
SMX2000LVNC
SMX3000LV
SMX3000LVNC

High Voltage
SMX2200HV
SMX3000HV
SMX3000HVT
SMX3000HVNC

Tower/Rack-Mount 4U



For Professional Business Applications – Not For Consumer Use

Important Safety Messages

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

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this document 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 either 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.

Product Handling Guidelines



<18 kg
<40 lb



18-32 kg
40-70 lb



32-55 kg
70-120 lb



>55 kg
>120 lb



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.

- Adhere to all local and national electrical codes.
- 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 three to five years. Environmental factors impact battery life. Elevated ambient temperatures, poor quality utility power, and frequent short duration discharges will shorten battery life.
- For a UPS with a factory installed power cord, connect the UPS power cable directly to a wall outlet. Do not use surge protectors or extension cords.
- The batteries are heavy. Remove the batteries prior to installing the UPS in a rack.
- Always install external battery packs (XLBPs) at the bottom of the rack. The UPS must be installed above the XLBPs.
- The UPS display interface will recognize as many as 10 external battery packs connected to the UPS. However there is no limit to the number of XLBPs that can be used with the UPS.
- Refer to “Specifications” on page 3 for UPS and battery weight.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Radio frequency warning

WARNING: This is a category C2 UPS product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

Specifications

For additional specifications, refer to the APC by Schneider Electric web site at www.apc.com.

Temperature	Operating	0° to 40° C (32° to 104° F)
	Storage	-15° to 45° C (5° to 113° F) charge UPS battery every six months
Maximum Elevation	Operating	3,000 m (10,000 ft)
	Storage	15,000 m (50,000 ft)
Humidity	0% to 95% relative humidity, non-condensing	0° to 40° C (32° to 104° F)
Battery	Maintenance free, sealed lead acid	Battery cartridge weight: 23.8 kg (52.4 lb) UPS weight: 17.2 kg (38 lb) UPS + battery cartridge weight: 41 kg (90.4 lb) SMX120BP chassis weight: 13.24 kg (29.2 lb) SMX120BP chassis + battery cartridge weight: 47.54 kg (104.8 lb)
International Protection Code		IP20
Pollution Degree		2
Overvoltage category		II
Applicable power grid power distribution system		TN Power System
Applicable standard		IEC 62040-1

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 overtemperature 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.
- *Replace all battery modules (including the modules in External Battery Packs) which are older than one year, when installing additional battery packs or replacing the battery module(s).

Failure to follow these instructions could result in equipment damage and minor or moderate injury.

*Contact APC by Schneider Electric Worldwide Customer Support to determine the age of the installed battery modules.

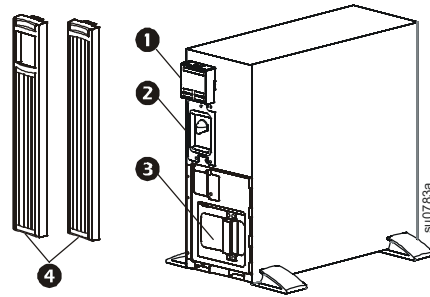
- Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.
- CAUTION – Do not dispose of battery or batteries in a fire. The battery may explode.
- CAUTION – Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
- CAUTION - Before replacing batteries, remove conductive jewelry such as chains, wrist watches, and rings. High energy through conductive materials could cause severe burns.
- CAUTION - Failed batteries can reach temperatures that exceed the burn thresholds for touchable surfaces.

- **CAUTION** – A battery can present a risk of electrical shock and high short circuit current. 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.

Product Overview

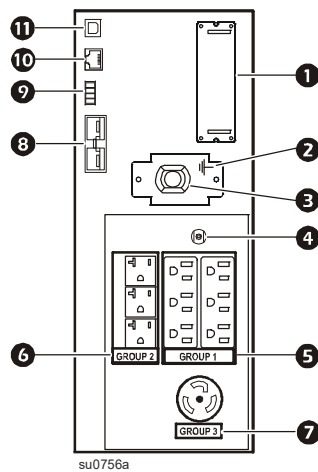
Front panel features

- ❶ Display interface panel
- ❷ UPS battery cable and connector
- ❸ Battery compartment
- ❹ Bezels

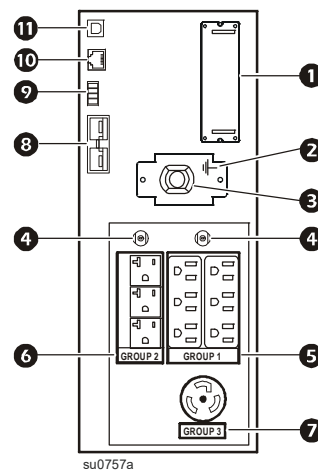


Rear panel features

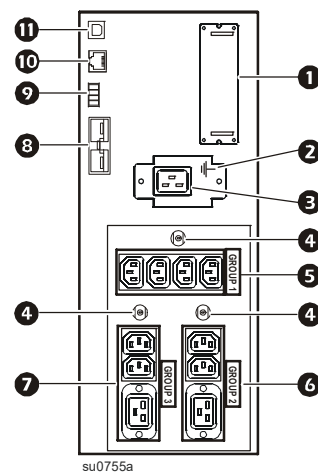
SMX2000, 120 Vac



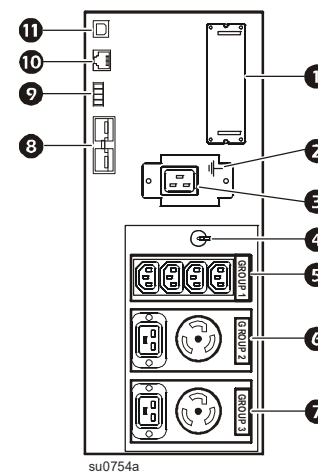
SMX3000, 120 Vac



SMX2200/SMX3000, 230 Vac



SMX3000, 208 Vac



Rear panel features continued

①	SmartSlot	Use the SmartSlot to install an optional Network Management Card (NMC).
②	Chassis ground screw	The UPS has a ground screw for connecting the ground leads on transient voltage devices. Prior to connecting a ground lead, disconnect the UPS from AC power.
③	Utility power cable	Use the power cable (supplied), to connect the UPS to utility power.
④	UPS circuit breaker reset button	Press this button to reset the UPS circuit breaker after an overload condition has occurred.
⑤	Controllable Outlet Group 1	Connect essential electronic devices such as a computer, monitor, modem or other data sensitive devices to these outlets.
⑥	Controllable Outlet Group 2	Connect peripheral electronic devices to these outlets.
⑦	Controllable Outlet Group 3	Connect peripheral electronic devices to these outlets
⑧	External battery connector	Use the external battery cable to connect the UPS to an XLBP. XLBPs provide extended runtime during power outages. The UPS can support up to 10 external battery packs.
⑨	EPO terminal	The Emergency Power Off (EPO) terminal allows the user to connect the UPS to a central EPO system.
⑩	Serial port	To use PowerChute software, connect the serial cable (supplied), to the Serial port. Use only interface kits supplied or approved by APC by Schneider Electric. Any other serial interface cable will be incompatible with the UPS connector.
⑪	USB port	Connect a USB cable from a computer to use power management software. Note: Serial and USB communication can only be used individually, they cannot be used at the same time.

Installation

UPS



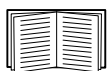
For UPS installation instructions, refer to the Smart-UPS X 2000-3000 VA Installation Guide that is supplied with the UPS. The guide is also available on the enclosed User Manual CD and the APC by Schneider Electric web, site at www.apc.com.

PowerChute network management software



For installation instructions, refer to the PowerChute software CD supplied with the UPS. Installation instructions are also available on the APC by Schneider Electric web site, www.apc.com.

External battery pack (optional)



For installation instructions, refer to the Smart-UPS X 2000-3000 VA External Battery Pack Installation Guide that is supplied with the external battery pack. The guide is also available on the enclosed User Manual CD and the APC by Schneider Electric web, site at www.apc.com.

Operation

Connect Equipment

CAUTION

RISK OF ELECTRIC SHOCK

- Adhere to all local and national electrical codes.
- Wiring should be performed by qualified electrician.
- Always connect the UPS to a grounded outlet.

Failure to follow these instructions could result in minor or moderate injury.



Note: The UPS will charge to 90% capacity in the first three hours of normal operation. **Do not expect full battery runtime capability during this initial charge period.**

1. Connect equipment to the outlets on the rear panel of the UPS.
Refer to “Switched Outlet Groups” on page 14.
2. Connect the UPS to the building utility power. **Connect the UPS to a two pole, three wire, grounded source only.**
3. To use the UPS as a MASTER ON/OFF switch, turn on equipment that is connected to the UPS.
4. To turn on the UPS and all connected equipment. Press the ON/OFF button on the front panel of the UPS.
5. Follow the prompts to configure the UPS using the set up wizard the first time the UPS is turned on. Refer to “Configuration” on page 11 and “Menu overview” on page 8.

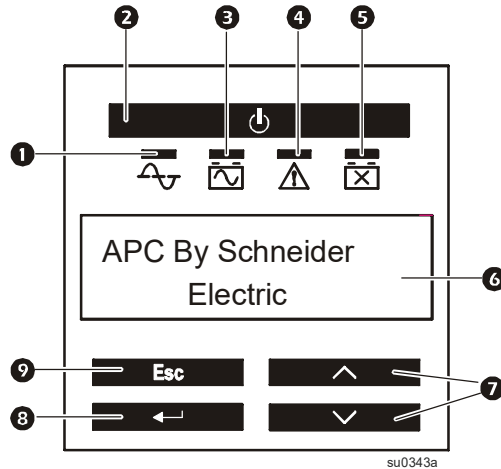
Network Management Card settings

These settings are available only on units that have a Network Management Card (NMC).

- NMC IP Address Mode
- NMC Default Gateway

Display Interface

- ❶ Online LED
- ❷ UPS Output ON/OFF button
- ❸ On Battery LED
- ❹ Event LED
- ❺ Replace Battery LED
- ❻ Display screen
- ❼ UP/DOWN arrow buttons
- ❽ ENTER button
- ❾ ESCAPE button



Display interface operation

Use the UP/DOWN arrow buttons to scroll through the main menu options. Press ENTER to view the sub menus under each main menu option. Press ESCAPE to exit a sub menu and return to a main menu.

Menu overview

The display interface has Standard and Advanced menu screens. The preference for Standard or Advanced menu selections is made during initial installation and can be changed at any time through the Configuration menu.

The Standard menu screens are the most commonly used screens. Default settings are included on the Standard menu screens.

The Advanced menu adds scrolling status screens and additional menus for UPS control and logs.



Note: Actual menu screens may differ by model and firmware revision.

Main Menu	Display Description	Standard Option	Advanced Option
Status Some of these options are displayed as scrolling menus	Operating mode	x	x (scrolling menu)
	Efficiency	x	x
	Load power (Watts, %, VA)	x	x (scrolling menu)
	Load amperage		x
	Load energy meter		x
	Battery charge level %	x	x
	Battery runtime (hours, min)	x	x (scrolling menu)
	Battery temperature	x	x
	Battery voltage		x
	Number of external battery packs		x
	Input voltage and frequency	x	x (scrolling menu)
	Output voltage and frequency	x	x (scrolling menu)
	Last transfer reason	x	x (scrolling menu)
	Last UPS self test result	x	x
	Outlet group status		x (scrolling menu)
	NMC IP address (if used)		x
Control	UPS control		x
	Group outlet control		x
	Language	x	x
Configuration	Output voltage setting		x
	Green mode	x	x
	Power quality	x	x
	Menu type	x	x
	Audible alarms	x	x
	Display mode	x	x
	Sensitivity		x
	Low and high voltage transfer points		x
	Low battery alarm threshold		x
	Automatic self test interval		x
	Battery install date	x	x
	Reset energy meter		x
	Enter start up wizard		x
	Perform firmware update		x
	Reset to factory defaults	x	x
	Outlet group configuration (delays, reboot, min return, load shedding)		x

Main Menu	Display Description	Standard Option	Advanced Option
Test & Diagnostics	UPS self test	X	X
	UPS alarms test	X	X
	UPS calibration test	X	X
Logs	Last 10 transfer events (if applicable)		X
	Last 10 events (if applicable)		X
About	Model identification	X	X
	Part number	X	X
	Serial number	X	X
	UPS manufacture date	X	X
	Replace battery part number	X	X
	External battery part number	X	X
	Battery install date	X	X
	Replace battery date	X	X
	UPS firmware revision	X	X
	NMC Information - part/serial/version numbers/manufacture date/MAC address/firmware revision (if applicable)		X

Configuration

UPS Settings

Start up Settings

Use the display interface to configure these settings at initial start up. The UPS will prompt for a response to each setting, if no response is given, the default setting will be used.



Note: The UPS will not turn on until all of these settings have been configured.

Function	Factory Default	Options	Description
Language	English	• English • French • German • Spanish • Italian • Portuguese • Japanese	The language for the display interface. Language options will vary by model and firmware version.
Output Voltage	Low Voltage: 120 Vac High Voltage: 230 Vac	• 100 • 110 • 120 • 127 • 200 • 208 • 220 • 230 • 240	Set the output voltage while the UPS is in Standby mode.
Input Power Quality	Good	• Good • Fair • Poor	Select the desired utility power input quality. • Good: The UPS will go on battery power more often to provide the cleanest power supply to the connected equipment. • Fair: The UPS will tolerate some voltage fluctuations. • Poor: The UPS will tolerate more voltage fluctuations and will go on battery power less often. If unsure of the local power quality, or the connected equipment is sensitive to voltage fluctuations set the sensitivity level to Good, using the Advanced menu.
Menu Type	Standard	Standard or Advanced	The advanced menus include all parameters. The Standard menus display a limited set of menus and options.
Date	UPS manufacture date + 90 days	mm-yyyy	Enter the current date.

General settings

Configure these settings at any time, using the display interface, PowerChute™ software, or a network management card.

Function	Factory Default	Options	Description
High Transfer Point	Low Voltage		To avoid unnecessary battery usage, set the transfer point higher if the utility voltage is chronically high and the connected equipment is known to work under this condition. The POWER QUALITY setting will automatically change this setting. Note: Use the Advanced Menus to configure this setting.
	100 V: 108 Vac	108-114 Vac	
	110 V: 116 Vac	116-125 Vac	
	120 V: 127 Vac	127-136 Vac	
	127 V: 134 Vac	134-143 Vac	
	High Voltage		
	200 V: 216 Vac	216-228 Vac	
	208 V: 220 Vac	220-235 Vac	
	220 V: 242 Vac	242-254 Vac	
	230 V: 253 Vac	253-265 Vac	
Low Transfer Point	240 V: 264 Vac	264-276 Vac	
	Low Voltage		Set the transfer point lower if the utility voltage is chronically low and the connected equipment can tolerate this condition.The POWER QUALITY setting will automatically change this setting. Note: Use the Advanced Menus to configure this setting.
	100 V: 92 Vac	86-92 Vac	
	110 V: 98 Vac	89-98 Vac	
	120 V: 106 Vac	97-106 Vac	
	127 V: 112 Vac	103-112 Vac	
	High Voltage		
	200 V: 184 Vac	172-184 Vac	
	208 V: 184 Vac	169-184 Vac	
	220 V: 198 Vac	186-198 Vac	
230 V: 207 Vac	195-207 Vac		
Green Mode	240 V: 216 Vac	204-216 Vac	
	If the UPS input voltage is between the high transfer point and the lower transfer point, the UPS will operate in Green Mode . Configure this setting using the Advanced menus.		
Transfer Sensitivity	Normal	• Normal • Reduced • Low	Select the level of sensitivity to power events that the UPS will tolerate. • Normal: The UPS will go on battery power more often to provide the cleanest power supply to the connected equipment. • Reduced: The UPS will tolerate some fluctuations in power. • Low: The UPS will tolerate more fluctuations in power and will go on battery power less often. If the connected load is sensitive to power disturbances, set the sensitivity to Normal using the advanced Configuration menu.

Function	Factory Default	Options	Description
Low Runtime Alarm	150 sec	Value set in seconds	The UPS will emit an audible alarm when the remaining runtime has reached this level.
Date of Last Battery Replacement	Date set at factory	Reset this date when the battery module is replaced.	
Audible Alarm	On	On/Off	The UPS will mute all audible alarms if this is set to Off or when any of the display buttons are pressed.
Display Dimmer	Always on	• Always on • Auto dim • Auto off	To conserve energy, the display panel illumination dims or extinguishes when no events are present. Full display panel illumination returns when the UPS changes status as a result of an event or if the display panel is touched.
Auto Self-Test Interval Setting	On start up and every 14 days there after	• Last test + 14 days • Last test + 7 days • Turn on + 14 days • Turn on + 7 days • On startup only • Never	The interval at which the UPS will execute a self-test. The batteries must be charged to at least 70% capacity to perform the self-test.
Reset to Factory Default	No	Yes/No	Restore the UPS factory default settings.

Switched Outlet Groups



Note: Switched Outlet Groups provide battery backup power to connected equipment.

Overview

The Switched Outlet Groups can be configured to independently turn off, turn on, shut down, go into sleep mode, and reboot connected equipment.

The Switched Outlet Groups can be configured to do the following:

- Turn off: Disconnect from power immediately and restart only with a manual command
- Turn on: Connect to power immediately
- Shutdown: Disconnect power in sequence, and automatically reapply power in sequence when utility power becomes available
- Reboot: Shut down and restart
- Sleep: Reboot after a long delay

In addition, the Switched Outlet Groups can be configured to do the following:

- Turn on or off in a specified sequence
- Automatically turn off or shut down when various conditions occur

Use of Switched Outlet Groups

1. Connect essential equipment to a Switched Outlet Group.
2. Connect peripheral equipment to the other Switched Outlet Groups.
 - During a power outage, to conserve battery runtime, nonessential equipment can be configured to shut down after a short delay
 - If equipment has dependent peripherals that must restart or shut down in a specific order, such as an ethernet switch that must restart before a connected server, connect the devices to separate groups
 - Equipment that needs to reboot independently from other equipment should be connected to a separate group
3. Use the **Configuration** menus to configure how the Switched Outlet Groups will react in the event of a power outage.

Customize Switched Outlet Groups

Use the **Control** menus to customize the Switched Outlet Groups.

Function	Factory Default	Options	Description
Name String	Outlet Groups	Edit these names using an external interface, such as the Network Management Card web interface.	
Outlet Group	1, 2, 3		
UPS Name String	APC UPS		
Turn On Delay	0 sec	Set the value in seconds	The amount of time the Switched Outlet Groups will wait between receiving the command to turn on and the actual startup.
Turn Off Delay	90 sec	Set the value in seconds	The amount of time that the Switched Outlet Groups will wait between receiving the command to turn off and the actual shut down.
Reboot Duration	8 sec	Set the value in seconds	The amount of time that the Switched Outlet Groups must remain off before it will restart.
Minimum Return Time	0 sec	Set the value in seconds	The amount of battery runtime that must be available before the Switched Outlet Groups will turn on again after a shutdown.
Load Shed On Battery	Disabled	• Shutdown with Delay • Shutdown immediately • Turn off immediately • Turn off with delay • Disabled	When the unit switches to battery power, the UPS can disconnect power to the Switched Outlet Groups to save runtime. Configure this delay time, use the LOAD SHED TIME WHEN ON BATTERY setting.
Load Shed Time when On Battery	Disabled	Set the value in seconds	The amount of time the outlets will function on battery power before they will turn off.
Load Shed On Runtime	Disabled	• Shutdown with delay • Shutdown immediately • Turn off immediately • Turn off with delay • Disabled	Configure this time using the LOAD SHED RUNTIME REMAINING setting.
Load Shed On Runtime Remaining	Disabled	Set the value in seconds	When the remaining runtime reaches this level, the Switched Outlet Groups will turn off.
Load Shed on Overload	Disabled	• Disabled • Enabled	In the event of an overload (greater than 105% output), the Switched Outlet Groups will immediately turn off to conserve power for essential loads. The Switched Outlet Groups will only turn on again with a manual command.

Network Management Card settings

These settings are available only on units that have a Network Management Card (NMC).

- NMC IP Address Mode
- NMC Default Gateway

Emergency Power Off

Overview

The Emergency Power Off (EPO) option is a feature that will immediately disconnect all connected equipment from AC power. The UPS will immediately shut down and will not switch to battery power.

Connect each UPS to the EPO switch. In configurations where multiple units are connected in parallel, each UPS must be connected to the EPO switch.

The UPS must be restarted for power to return to connected equipment. Press the ON/OFF button on the front panel of the UPS.

⚠ CAUTION

RISK OF ELECTRIC SHOCK

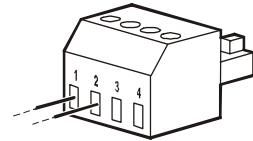
- Adhere to all local and national electrical codes.
- Wiring should be performed by qualified electrician.
- Always connect the UPS to a grounded outlet.

Failure to follow these instructions could result in minor or moderate injury.

Normally open contacts

1. If the EPO switch or relay contacts are normally open, insert the wires from the switch or contacts at pins 1 and 2 of the EPO terminal block. Use 16-28 AWG wire.
2. Secure the wires by tightening the screws.

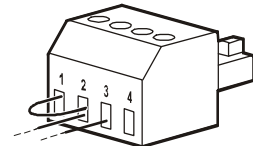
If the contacts are closed, the UPS will turn OFF and power will be removed from the load.



Normally closed contacts

1. If the EPO switch or relay contacts are normally closed, insert the wires from the switch or contacts at pins 2 and 3 of the EPO terminal block. Use 16-28 AWG wire.
2. Insert a wire jumper between pins 1 and 2. Secure the wires by tightening the three screws at positions 1, 2, and 3.

If the contacts are opened, the UPS will turn OFF and power will be removed from the load.



Note: Pin 1 is the power source for the EPO circuit, it provides a few milliamperes of 24 V power.

If the normally closed (NC) EPO configuration is used, the EPO switch or relay should be rated for dry circuit applications, the rating should be for low voltage and low current applications. This normally implies the contacts are gold plated.

The EPO interface is a Safety Extra Low Voltage (SELV) circuit. Connect the EPO interface only to other SELV circuits. The EPO interface monitors circuits that have no determined voltage potential. SELV circuits are controlled by a switch or relay properly isolated from utility power. To avoid damage to the UPS, do not connect the EPO interface to any circuit other than a SELV circuit.

Use one of the following cable types to connect the UPS to the EPO switch.

- CL2: Class 2 cable for general use.
- CL2P: Plenum cable for use in ducts, plenums, and other spaces used for environmental air.
- CL2R: Riser cable for use in a vertical run in a floor-to-floor shaft.
- CLEX: Limited use cable for use in dwellings and for use in raceways.
- Installation in Canada: Use only CSA certified, type ELC, (extra low voltage control cable).
- Installation in countries other than Canada and the USA: Use standard low voltage cable in accordance with national and local regulations.

Troubleshooting

Problem and Possible Cause	Solution
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The UPS will not turn on or there is no output

The unit has not been turned on.	Press the ON button once to turn on the UPS.
The UPS is not connected to utility power.	Be sure the power cable is securely connected to the unit and to the utility power supply.
The input circuit breaker has tripped.	Reduce the load on the UPS. Disconnect nonessential equipment and reset the circuit breaker.
The unit shows very low or no utility power.	Check the utility power supply to the UPS by plugging in a table lamp. If the light is very dim, check the utility voltage.
The battery is not securely connected.	Be sure that all battery connections are secure.
There is an internal UPS event.	Do not attempt to use the UPS. Unplug the UPS and have it serviced immediately.

The UPS is operating on battery, while connected to input utility power

The input circuit breaker has tripped.	Disconnect nonessential equipment and reset the circuit breaker.
There is very high, very low, or distorted input line voltage.	Move the UPS to a different outlet on a different circuit. Test the input voltage with the utility voltage display. If acceptable to the connected equipment, reduce the UPS sensitivity.

UPS is beeping

The UPS is operating normally.	None. The UPS is helping protect the connected equipment.
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UPS does not provide expected backup time

The UPS battery is weak due to a recent power outage or is near the end of its service life.	Charge the battery. Batteries require recharging after extended outages and wear out faster when put into service often or when operated at elevated temperatures. If the battery is near the end of its service life, consider replacing the battery even if the replace battery LED is not illuminated.
The UPS is experiencing an overload condition.	Check the UPS load display. Unplug unnecessary equipment, such as printers.

Display interface LEDs flash sequentially

The UPS has been shut down remotely through software or an optional accessory card.	None. The UPS will restart automatically when utility power is restored.
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The Event LED is illuminated, the UPS displays an event message and emits a constant beeping sound

Internal UPS event detected.	Do not attempt to use the UPS. Turn the UPS off and have it serviced immediately.
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Problem and Possible Cause	Solution
All LEDs are illuminated and the UPS is plugged into a wall outlet	
The UPS has shut down and the battery has discharged from an extended outage.	None. The UPS will return to normal operation when the power is restored and the battery has a sufficient charge.
The Replace Battery LED is illuminated	
The battery has a weak charge.	Allow the battery to recharge for at least four hours. Then, perform a self-test. If the problem persists after recharging, replace the battery.
The replacement battery is not properly connected.	Be sure the battery connector is securely connected.
The display interface shows a Site Wiring Fault message	
Site wiring faults detected include missing ground, hot-neutral, polarity reversal, and overloaded neutral circuit.	If the UPS indicates a site wiring fault, have a qualified electrician inspect the building wiring. Applicable for 120 Vac models only.

Service and Transport

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 through the APC by Schneider Electric web site, **www.apc.com**.
 - a. 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.
 - 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 Returned Material Authorization Number (RMA#).
 - c. If the unit is under warranty, the repairs are free.
 - d. Service procedures and returns may vary internationally. Refer to the APC by Schneider Electric web site for country specific instructions.
3. 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.
 - a. **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.
 - b. External Battery Pack products are deenergized when disconnected from the associated UPS product. It is not necessary to disconnect the internal batteries for shipping. Not all units utilize an external battery pack.
4. Write the RMA# provided by Customer Support on the outside of the package.
5. Return the unit by insured, prepaid carrier to the address provided by Customer Support.

Transport the unit

1. Shut down and disconnect all connected equipment.
2. Disconnect the unit from utility power.
3. Disconnect all internal and external batteries (if applicable).
4. Follow the shipping instructions outlined in the *Service* section of this manual.

Limited Factory Warranty

Schneider Electric IT Corporation (SEIT), warrants its products to be free from defects in materials and workmanship for a period of two (2) years from the date of purchase. The SEIT obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. Repair or replacement of a defective product or parts thereof does not extend the original warranty period.

This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase. Products may be registered online at warranty.apc.com.

SEIT shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by end user or any third person misuse, negligence, improper installation, testing, operation or use of the product contrary to SEIT recommendations or specifications. Further, SEIT shall not be liable for defects resulting from: 1) unauthorized attempts to repair or modify the product, 2) incorrect or inadequate electrical voltage or connection, 3) inappropriate on site operation conditions, 4) Acts of God, 5) exposure to the elements, or 6) theft. In no event shall SEIT have any liability under this warranty for any product where the serial number has been altered, defaced, or removed.

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To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. Customers with warranty claims issues may access the SEIT worldwide customer support network through the APC web site: www.apc.com. Select your country from the country selection drop down menu. Open the Support tab at the top of the web page to obtain information for customer support in your region. Products must be returned with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase.

APC by Schneider Electric Worldwide Customer Support

Customer support for this or any other APC by Schneider Electric product is available at no charge in any of the following ways:

- Visit the APC by Schneider Electric Web site to access documents in the APC by Schneider Electric Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC by Schneider Electric Web sites for specific countries, each of which provides customer support information.
 - **www.apc.com/support/**
Global support searching APC by Schneider Electric Knowledge Base and using e-support.
- Contact the APC by Schneider Electric Customer Support Center by telephone or e-mail.
 - Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.
 - For information on how to obtain local customer support, contact the APC by Schneider Electric representative or other distributors from whom you purchased your APC by Schneider Electric product.



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