

Operation Manual

Smart-UPSTM

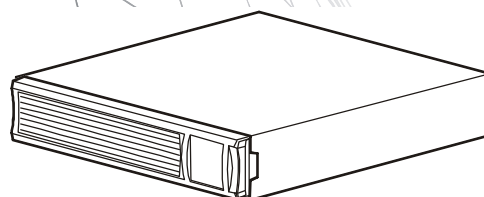
Uninterruptible Power Supply

750/1000/1500 VA
120/230 Vac

2200 VA
120 Vac

3000 VA
100/120/208/230 Vac

Rack-Mount 2U



General Information

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 equipment before attempting to install, operate, service or maintain the UPS. 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 product safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



The addition of this symbol to a Warning or Caution product safety label indicates that a hazard exists that can result in injury and product damage if the instructions are not followed.

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.

- Adhere to all national and local electrical codes.
- All wiring must be performed by a qualified electrician.
- Changes and modifications to this unit not expressly approved by Schneider Electric could void the warranty.
- This UPS is intended for indoor use only.
- Do not operate this unit 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 equipment is heavy. Always practice safe lifting techniques adequate for the weight of the equipment.

Battery safety

- It is not necessary to ground the battery system. The user has the option of referencing the battery system to chassis ground at either a positive or negative battery terminal.
- When replacing batteries, replace with the same number and type.
- Batteries typically last for two to five years. Environmental factors impact battery life. Elevated ambient temperatures, poor quality utility power, and frequent short duration discharges will shorten battery life. Batteries should be replaced before end of life.
- Replace batteries immediately when the unit indicates battery replacement is necessary.
- Schneider Electric uses Maintenance-Free sealed Lead Acid batteries. Under normal use and handling, there is no contact with the internal components of the battery. Over charging, over heating or other misuse of batteries can result in a discharge of battery electrolyte. Released electrolyte is toxic and may be harmful to the skin and eyes.
- CAUTION: Before installing or replacing the batteries, remove jewelry such as wristwatches and rings.
High short circuit current through conductive materials could cause severe burns.
- 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 and may be toxic.

Deenergizing safety

The UPS contains internal batteries and may present a shock hazard even when disconnected from the branch circuit (mains). Before installing or servicing the equipment check that the:

- Input circuit breaker is in the **OFF** position.
- Internal UPS batteries are removed.

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.

Product Description

The APC™ by Schneider Electric Smart-UPS™ product name is a high performance uninterruptible power supply (UPS). The UPS provides protection for electronic equipment from utility power blackouts, brownouts, sags, surges, small utility power fluctuations and large disturbances. The UPS also provides battery backup power for connected equipment until utility power returns to acceptable levels or the batteries are fully discharged.

This user manual is available on the enclosed CD and on the APC by Schneider Electric web site, www.apc.com.

Specifications

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

Environmental

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	

Battery

CAUTION

RISK OF HYDROGEN SULPHIDE GAS AND EXCESSIVE SMOKE

- Replace the battery at least every 5 years.
- Replace the battery immediately when the UPS indicates battery replacement is necessary.
- Replace battery at the end of its service life.
- 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 UPS internal overtemperature, 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).

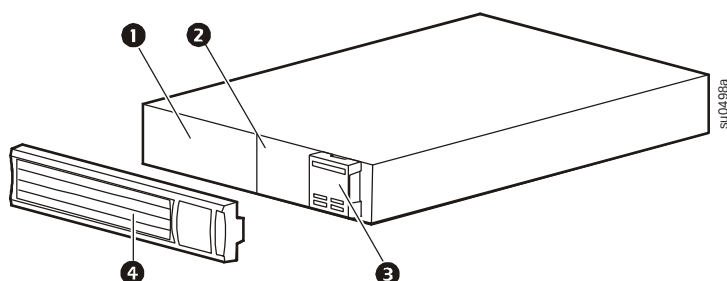
Failure to follow these instructions could result in equipment damage and minor or moderate injury.

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

Product Overview

Front panel

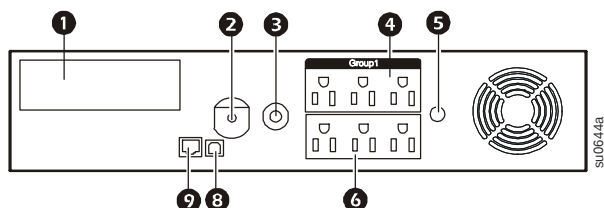
- ❶ Battery
- ❷ Battery connector
*This will vary by model.
- ❸ Display interface
- ❹ Bezel



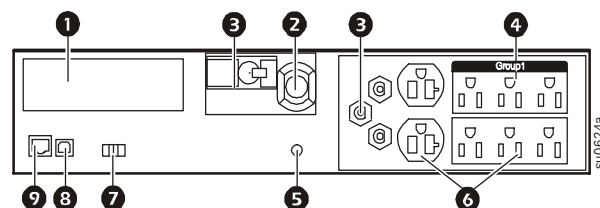
Rear panels

- ❶ SmartSlot for optional NMC accessory card
- ❷ UPS input
- ❸ Circuit breaker/Overload protection
- ❹ Controlled outlet group
- ❺ Chassis ground connection screw (TVSS GND)
- ❻ Outlets
- ❼ EPO connector
- ❽ USB port
- ❾ RJ45 connector - serial UPS monitoring port

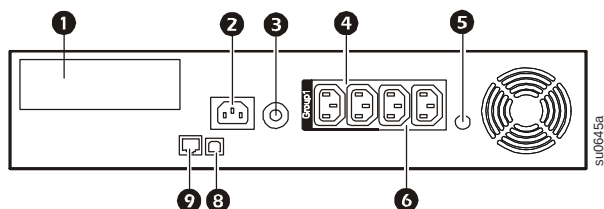
750/1000 VA 120 Vac
1500 VA 100/120 Vac



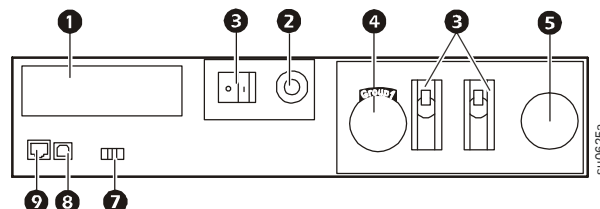
3000 VA 100/120 Vac



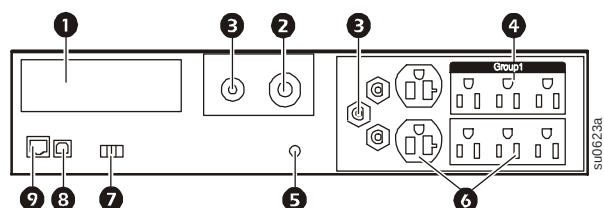
750/1000/1500 VA 230 Vac



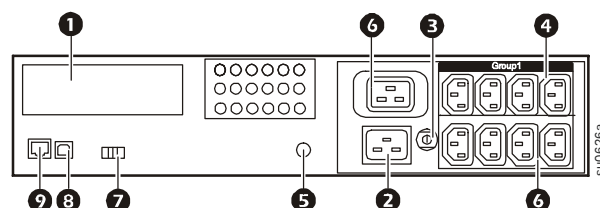
3000 VA 208 Vac



2200 VA 120 Vac



3000 VA 230 Vac



Installation

UPS

For UPS installation information, see the Smart-UPS Installation Guide that is included with the UPS. The guide is also available on the enclosed CD and the APC by Schneider Electric web site at www.apc.com.

Network Management Card

For installation information, see the user manual provided with the Network Management Card (NMC). The user manual is also available on the APC by Schneider Electric web site at www.apc.com.

Operation

Connect Equipment to the UPS

CAUTION

RISK OF ELECTRIC SHOCK

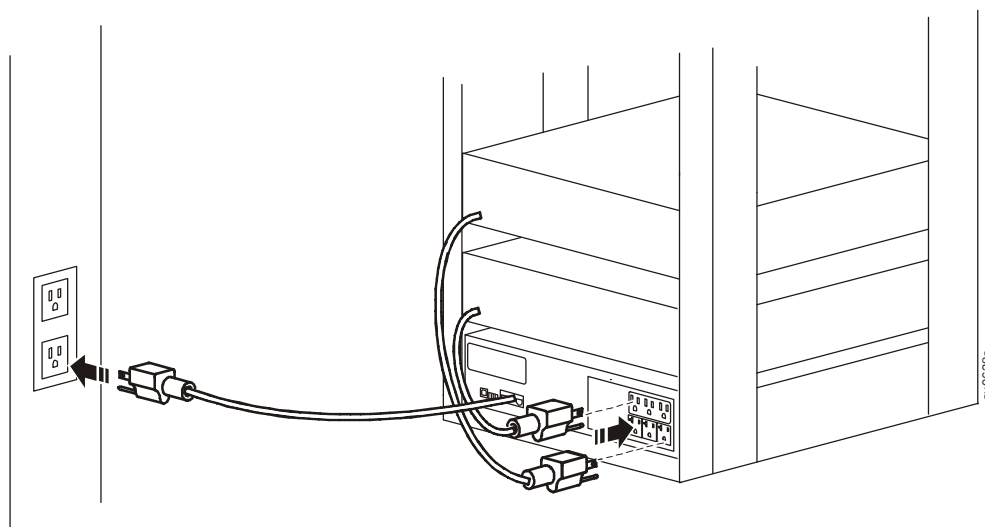
- Adhere to all national and local electrical codes.
- Wiring must be performed by a qualified electrician.
- Do not use the UPS as a safety disconnect.

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.
2. Connect the UPS to the building utility power. **Connect the UPS to a two-pole, three-wire, grounded source only.**
3. Press the ON/OFF button on the front panel of the UPS to power the unit and all connected equipment.
4. To use the UPS as a master on/off switch, turn on all the equipment that is connected to the UPS.

See “UPS Settings” on page 10 for information on how to configure the outlet groups.



Rear Panel Features



Serial port: Connect to a computer to use power management software.



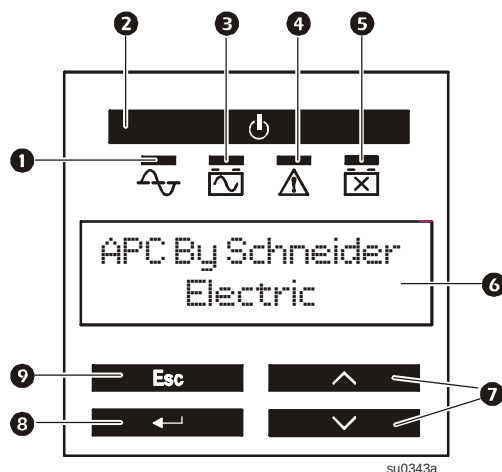
USB port: Connect to a computer to use power management software.



Ground Screw: Connect the ground leads on transient voltage devices to the chassis ground screw(s), located on the rear panel of the UPS.

Display Panel

- ❶ Online LED
- ❷ On Battery LED
- ❸ UPS Output ON/OFF key
- ❹ Alert LED
- ❺ Replace Battery LED
- ❻ Display screen
- ❼ UP and DOWN keys
- ❽ ENTER key
- ❾ ESCAPE key



Using the display interface

Use the UP and DOWN keys 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.

Standard menus

The Standard menus are the most commonly used menus for the UPS.

Menu	General Functions
Status	View basic information about the UPS: • Operating mode • Efficiency of the UPS • Information about the load • Battery capacity • Estimated runtime • Input and output voltage and frequency • Information about the last transfer to battery power • Self-test results
Configuration	Configure the settings for the UPS: • Language • Local power quality: Good, Fair, Poor • Choose Standard or Advanced menus • UPS Test settings • Reset to Factory Defaults • Battery installation date • Display: Always On, Auto Off, Auto Dim
Test & Diags	Use the Test & Diags menu to have the UPS perform a Self-Test, UPS Alarms Test or Calibration Test
About	Display information about this unit: • Unit model number • Serial number • Battery information • Model number • Installation date • Suggested battery replacement date • UPS firmware version

Advanced menus

The Advanced menus provide additional options for the UPS and are available only if the display interface is configured to use the Advanced menus.

Menu	General Functions
Status	View detailed information about the UPS: • Energy meter • Load current • Status of the Switched Outlet Group • Battery voltage • Operation mode • Efficiency • SmartSlot Card (if applicable)

Menu	General Functions
Configuration	Configure advanced settings for the UPS: • Main and Switched Outlet Group—delays and settings • High and lower transfer points • Sensitivity settings • Date of last battery replacement • Output voltage • Battery settings • Number of battery packs (not available on all models) • Reset energy meter • UPS test settings • Display: Always On, Auto Off, Auto Dim
Control	Control the Main and Switched Outlet Group to turn on, turn off, shutdown, or reboot.
Test & Diags	Perform UPS test and diagnostic functions such as user interface testing, battery tests, and battery calibration.
Log	View the event and logs for information about any changes to the UPS and any detected faults.
About	View information about the unit: • Hardware version • Software version • NMC information (if applicable) • SmartSlot Card information (if applicable)

Configuration

UPS Settings

Start-up Settings

Configure these settings at initial start-up, using the display interface. As an alternative, configuration can be performed using APC by Schneider Electric PowerChute™ software.

Note: During start-up, use the display interface to configure these settings. If nothing is selected, the unit will use the default settings.

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.
Local Power Quality	Good	• Good • Fair • Poor	Select the quality of input utility power. • If Good is selected, the unit will go on battery power more often to provide the cleanest power supply to the connected equipment. • If Poor is selected, the UPS will tolerate more fluctuations in power and will go on battery power less often. If unsure of the local power quality, select Good.
Menu Type	Standard	Standard or Advanced	The Standard menus display a limited set of menus and options. The Advanced menus include all parameters.

General Settings

Configure these settings at any time, using the display interface or PowerChute software.

Function	Factory Default	Options	Description
High Transfer Point	100 Vac: 108 Vac	• 108 Vac • 110 Vac • 112 Vac • 114 Vac	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.
	120 Vac: 127 Vac	• 127 Vac • 130 Vac • 133 Vac • 136 Vac	
	208 Vac: 225 Vac	• 225 Vac • 229 Vac • 233 Vac • 237 Vac	
	230 Vac: 253 Vac	• 253 Vac • 257 Vac • 261 Vac • 265 Vac	

Function	Factory Default	Options	Description
Low Transfer Point	100 Vac: 92 Vac	• 86 Vac • 88 Vac • 90 Vac • 92 Vac	Set the transfer point lower if the utility voltage is chronically low and the connected equipment can tolerate this condition. This setting may also be adjusted using the power quality setting. Note: Use the Advanced Menus to configure this setting.
	120 Vac: 106 Vac	• 97 Vac • 100 Vac • 103 Vac • 106 Vac	
	208 Vac: 182 Vac	• 170 Vac • 174 Vac • 178 Vac • 182 Vac	
	230 Vac: 208 Vac	• 196 Vac • 200 Vac • 204 Vac • 208 Vac	
Nominal Output Voltage	100 Vac	N/A	Set the nominal output voltage of the UPS on battery. This is available on 230 Vac models only.
	120 Vac	N/A	
	230 Vac	208-252 Vac	
Transfer Sensitivity	High	High, Reduced, Low	Select the level of sensitivity to power events that the UPS will tolerate. • High: The UPS will go on battery power more often to provide the cleanest power supply to the connected equipment. • 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 High.
Low Battery Alert	120 sec	Set the value 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 the display keys are pressed.
Battery Self-Test Interval Setting	On start-up and every 14 days since the last test	• Never • Start-up only • Frequency of test (every 7 to 14 days)	The interval at which the UPS will execute a self-test.
Reset to Factory Default	No	Yes/No	Restore the UPS factory default settings.

Main Outlet Group and Switched Outlet Group

Overview

The Main Outlet Group and the Switched Outlet Group can be configured to independently turn off, turn on, shut down, and reboot connected equipment. (These features are not available on the 750 VA tower units.)

The Main and 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.

In addition, the Main Outlet Group and the Switched Outlet Group 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

Note: If the Main and Switched Outlet Groups are not configured, all of the outlets on the unit will still provide battery back-up power.

Using the Main and Switched Outlet Groups

The Main Outlet Group functions as a master switch. It will turn on first when power is applied, and shut off last when there is a power outage and battery runtime has been exhausted.

The Main Outlet Group must be turned on for the Switched Outlet Group to turn on.

1. Connect critical equipment to the Main Outlet Group.
2. Connect peripheral equipment to the Switched Outlet Group.
 - Nonessential equipment that should shut off quickly in the event of a power outage to conserve battery runtime can be added to a short power off 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 added to a separate group
3. Use the Configuration menus to configure how the Switched Outlet Group will react in the event of a power outage.

Customize the Main and Switched Outlet Groups

Use the **Control** menus to change the Main Outlet Group and the Switched Outlet Group settings.

Function	Factory Default	Options	Description
Name String	Outlet Group 1	Edit these names using an external interface, such as the Network Management Card Web interface.	
Outlet Group			
UPS Name String	UPS Outlets		
Turn On Delay	0 sec	Set the value in seconds	The amount of time the UPS or the Switched Outlet Group will wait between receiving the command to turn on and the actual startup.
Turn Off Delay	0 sec (UPS Outlets) 90 sec (Switched Outlet Groups)	Set the value in seconds	The amount of time that the UPS or the Switched Outlet Group 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 UPS or the Switched Outlet Group 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 UPS or the Switched Outlet Group will turn on.
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 Group 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	When the battery runtime falls below the specified value, the Switched Outlet Group will turn off. 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 Group will turn off.
Load Shed on Overload	Disabled	- Disabled - Enabled	In the event of an overload (greater than 100% output), the Switched Outlet Group will immediately turn off to conserve power for critical loads. The the Switched Outlet Group 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) and are set in the factory. These settings can only be modified using an external interface, like the NMC web interface.

- NMC IP Address Mode
- NMC IP Address
- NMC Subnet Mask
- NMC Default Gateway

Emergency Power Off

EPO Overview

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

The UPS should be manually restarted to reapply power to connected equipment. Press ON/OFF on the front panel of the unit.

CAUTION

RISK OF ELECTRIC SHOCK

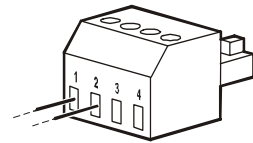
- Adhere to all local and national electrical codes.
- Wiring must be performed by qualified electrician.
- Always connect the UPS to a grounded outlet.

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.

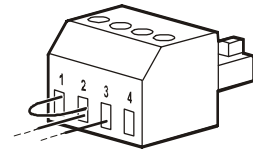
If the contacts are closed, the UPS will turn OFF and power will be removed from the load.



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: The power for operating the EPO circuit is sourced from pin 1. This is an isolated 24 V which can source only a few milliamperes.

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
The UPS will not turn on or there is no output.	
The unit has not been turned on.	Press the ON key 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 input utility voltage.	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 connector plug is not securely connected.	Be sure that all battery connections are secure.
The UPS has detected an internal fault.	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 emitting an audible beeping sound.	
The UPS is operating normally.	None. The UPS is protecting the connected equipment.

Problem and Possible Cause	Solution
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.
The Alert LED is illuminated. The UPS displays a message and emits a constant beeping sound.	
The UPS has detected an internal fault.	Do not attempt to use the UPS. Turn the UPS off and have it serviced immediately.
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 has a Site Wiring Fault message.	
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 V units only.)

Transport

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.

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 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 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, **www.apc.com** for country specific instructions.
3. Pack the unit properly to avoid damage in transit. Never use foam beads for packaging. Damage sustained in transit is not covered under warranty.
 - a. **Note: When shipping within the United States, or to the United States always DISCONNECT ONE UPS BATTERY before shipping in compliance with U.S. Department of Transportation (DOT) and IATA regulations.** The internal batteries may remain in the UPS.
 - b. Batteries may remain connected in the XBP during shipment. Not all units utilize XLBPs.
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.

Limited Factory Warranty

Schneider Electric IT Corporation (SEIT), warrants its products to be free from defects in materials and workmanship for a period of three (3) years excluding the batteries, which are warranted for 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's or any third person's misuse, negligence, improper installation, testing, operation or use of the product contrary to SEIT's 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.

EXCEPT AS SET FORTH ABOVE, THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, APPLICABLE TO PRODUCTS SOLD, SERVICED OR FURNISHED UNDER THIS AGREEMENT OR IN CONNECTION HERewith.

SEIT DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTION AND FITNESS FOR A PARTICULAR PURPOSE.

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