UPS + Isolation Transformer
Battery Backup

UPS-1440-Li-ISO
UPS-2200-Li-ISO
UPS-3000-Li-ISO

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DANGER

Danger- The danger symbol is used to indicate imminently hazardous situations, locations, and conditions which, if not avoided, WILL result in death, serious injury, and/or severe property damage.

CAUTION

Caution- The caution symbol is used to indicate potentially hazardous situations and conditions which, if not avoided, may result in injury. Equipment damage may also occur.

WARNING

Warning- The warning symbol is used to indicate potentially hazardous situations and conditions which, if not avoided, COULD result in serious injury or death. Severe property damage COULD also occur.

ATTENTION

Attention- The attention warning symbol is used to indicate situations and conditions that can cause operator injury and/or equipment damage.

Other warning symbols may appear along with the Danger and Caution symbol and are used to specify special hazards. These warnings describe particular areas where special care and/or procedures are required in order to prevent serious injury and possible death.

Electrical warnings- The electrical warning symbol is a lightning bolt mark enclosed in a triangle. The electrical warning symbol is used to indicate high voltage locations and conditions may cause serious injury or death.

Explosion warnings- The explosion warning symbol is an explosion mark enclosed in a tri- angle. The explosion warning symbol is used to indicate locations and conditions where molten, exploding parts may cause serious injury or death if the proper precautions are not observed.

Alternating Current

Refer to instruction manual/booklet.

Two person lift.

1.0 SAFETY INSTRUCTIONS

IMPORTANT - SAVE THESE INSTRUCTIONS

THIS MANUAL CONTAINS IMPORTANT SAFETY INSTRUCTIONS. KEEP THIS MANUAL HANDY FOR REFERENCE.

CAUTION

A battery can present a risk of electrical shock. Short-circuit currents can be extremely high and can create severe burns as well as the risk of fire or explosion from vented gases. Always observe proper precautions.

When replacing batteries, use the same quantity, rating and type of batteries used by SurgeX. The batteries used in this UPS are sealed lead-acid and are maintenance free. Proper disposal of batteries is required. Refer to your local codes for disposal of batteries.

UPS Rating	*Quantity and Battery Rating*
1440 VA	4 X 23W @ 12 VOLT
2200 VA	8 X 23W @ 12 VOLT
3000 VA	8 X 23W @ 12 VOLT

CAUTION

- This UPS contains voltages which are potentially hazardous. All repairs should be performed by qualified service personnel.
- To reduce the risk of fire, connect only to a circuit provided with 20 amperes maximum branch circuit over-current protection in accordance with the National Electric Code, ANSI/NFPA 70.
- The UPS has its own internal energy source (battery). The output receptacles of the UPS may be live even when the UPS is not connected to an AC Supply.

STATEMENT OF INTENDED USE

NOTE:

- The UPS is intended for stationary use.
- The UPS is not intended for patient contact or for installation that will cause accidental contact of patients.
- Do not use this UPS for life support applications in which a malfunction or failure of the UPS system could cause failure or significantly alter the performance of a life-support device.
- Do not use this UPS near or around flammable gases. Do not use this UPS within oxygen-enriched atmospheres.
- Do not disassemble the UPS.
- The UPS is CLASS 1 equipment.
- Do not attempt to power the UPS from any receptacle except a properly grounded receptacle that matches the input plug provided with the UPS.
- Do not place the UPS near water or in environments of excessive humidity.
- Do not allow liquid or any foreign object to get inside the UPS.
- Do not block air vents on the front of the UPS.
- Do not plug appliances such as hair dryers, fans, heaters, etc. into the UPS.
- Do not place the UPS under direct sunshine or close to heat emitting sources (excessively warm temperatures will shorten battery life).
- This UPS is intended for installation in a temperature controlled, indoor area free of conductive contaminants.
- The AC power source for the UPS should be conveniently near the UPS and easily accessible – avoid extension cords or temporary power strips to power the UPS.

- The total leakage current of the UPS and consumer connected equipment should not exceed 3.5 mA for non-medical units.
- Not for use in a computer room as defined in the Standard for the Protection of Electronic Computer/Data Processing Equipment, ANSI/ NFPA 75.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- The battery should be disconnected from the UPS by unplugging at its quick connectors when maintenance or service work inside the UPS is necessary.
- The battery should be disconnected from the UPS by unplugging at its quick connectors when maintenance or service work inside the UPS is necessary.
- Do not dispose of batteries in a fire – batteries may explode.
- Do not open or mutilate batteries. Doing so may release electrolyte or other toxic substances, which may be harmful to the skin, eyes, or the environment.

A battery can present a risk of electric shock and high short circuit current. The following precautions should be observed when working with batteries:

- Remove watches, rings, or any other metal jewelry or objects which may contact the battery.
- Use tools with insulated handles. Unit is suitable for IT applications.

FCC ISSUES

Attention

This UPS has been tested and found to comply with the limits for a Class A digital devices (Class B compliance optional), pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in both residential and commercial environments.

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 and/or television reception, which can be determined by turning the UPS equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

Relocate the UPS.
Relocate the load.

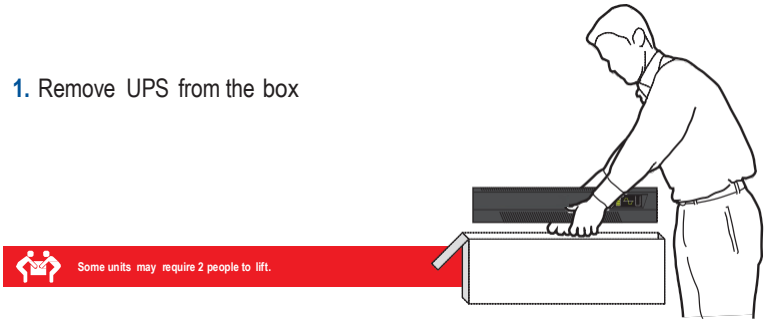
This device complies to Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept interference received, including interference that may cause undesired operation.

2.0 INSTALLATION

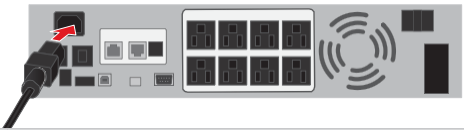
UPS Quick Start Guide

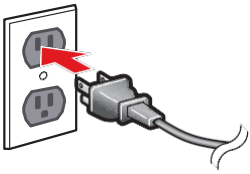
This unit is shipped with the internal batteries disconnected.
Before starting the UPS, please follow these battery connection instructions.

1. Remove UPS from the box



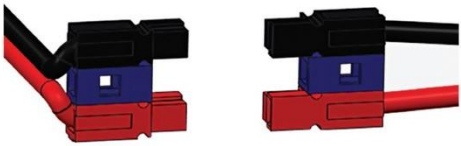
2. Attached included outlet cord and plug UPS into wall.





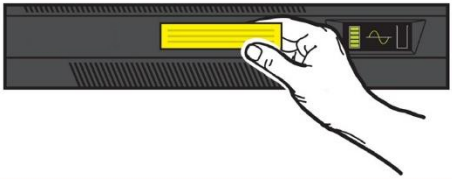
3. Remove the UPS front plastic cover and metal battery cover by removing the screws.

4. Connect battery connector.*
Battery connectors may be partially hidden on the side of the battery.



*The 2.2 & 3KVA units connect 2 batteries

5. Put the metal battery cover and the front cover back on and remove the yellow warning label.

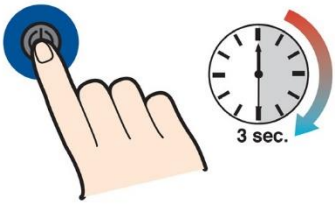


IMPORTANT:

Wait 15 seconds after inserting the battery plug(s) before pressing the ON switch on the UPM front panel.

If you ship the UPM to another location at a later date, disconnect the battery plug(s) first to ensure that safety is maintained during shipment.

6. Turn UPM on by pressing ON button for **3 seconds**



UNPACKING THE UPS

CAUTION

- Unpacking the unit in a low-temperature environment may cause condensation to occur in and on the unit. Do not install the unit until the inside and outside of the unit are absolutely dry {hazard of electric shock}.
- The unit is heavy. Use caution when unpacking and moving the unit.

Use care when moving and opening the carton. Leave the components packaged until ready to install.

To unpack the unit and accessories:

1. Open the outer carton and remove the accessories packaged with the unit.
2. Carefully lift the unit out of the outer carton.
3. Store the carton for future use.

Place the unit in a protected area that has adequate airflow and is free of humidity, flammable gas and corrosion.

NOTE:

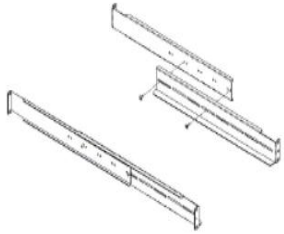
Before installation, please read and understand the following instructions. Carefully examine the carton for damage. Notify the carrier immediately if damage is observed. Be sure to save the carton should you ever need to ship the UPS for repair or maintenance.

This UPS is intended for indoor use only. Although your UPS is very rugged, its internal components are not sealed from the environment. The UPS must be installed in a protected environment away from heat producing appliances such as furnaces, radiators, and heaters. Protect the UPS from exposure to dripping or standing water and high humidity or condensing air conditions.

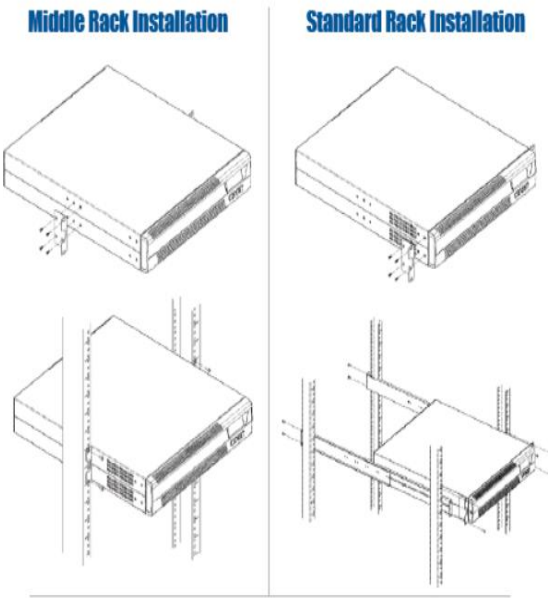
Rack Mount Installation Guide

1. Assemble the side rails and secure each with (2) screws. DO NOT TIGHTEN.
2. Attach front of the rails to front of rack with (1) fastener for each side in the upper mounting hole.
3. Attach rear of rails to rear of rack with the (2) fasteners for each side.
4. Tighten the (2) screws used to assemble each rail in step 1.
5. For 2U* UPMs and battery cabinets, attach (1) angled mounting bracket to each side of the UPM and/or each side of the battery cabinet using the (8) screws provided.
6. For 4U** UPMs - attach (2) angled mounting brackets to each side of the UPM using the (16) screws provided.
7. Lift the battery cabinets and UPM onto the mounting rails and slide each into position.
8. Secure the 2U UPM and battery cabinet with (4) fasteners and the 4U UPMs with (8) fasteners provided.

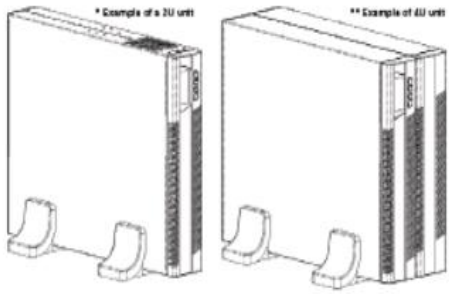
Rackmount UPM and the external battery cabinet are designed to be floor standing as an alternative to rack mounting. The UPM and external battery cabinets use identical mounting hardware and the procedure for mounting is the same for both.



Each unit and each battery cabinet must be mounted to their own rail kits that are included.



Floor Standing Installtion



Rack Mount Installation Guide

INSPECTING THE UPS

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage:

1. File with the carrier within 15 days of receipt of the equipment.
2. Send a copy of the damage claim within 15 days to your service representative.

WARNINGS

⚠ Use all supplied mounting hardware on each UPS and External Battery Cabinet. NEVER depend on devices installed on lower levels to support other devices.

⚠ Two people are recommended for safe installation.

⚠ Never attempt to mount the UPS or external battery cabinet with the front mount ears only. Continuous support is required throughout the mounting procedure to prevent damage or injury.

3.0 OPERATION

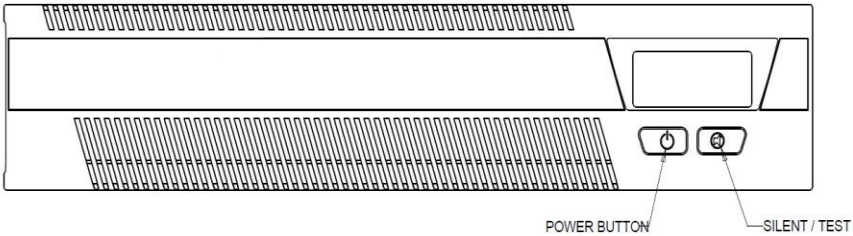
NOTE:

In order to operate the UPS, you must first plug the battery enable plug(s) into the battery enable socket(s) behind the front panel of the UPS.

On/Off Button

The On/Off button is a dual function control:

- When the UPS is off and AC power is present to the UPS input, pressing the On/Off button for more than 2 seconds will turn the UPS output on.
- If battery is connected, pressing the On/Off switch for 2 seconds or more will “cold-start” the UPS on its internal battery with no incoming AC present.
- When the UPS is on, pressing the On/Off button for more than 2 seconds will turn off the UPS output power.



Test/Silence Button

The Test/Silence button is a dual function control:

- Pressing the Test/Silence button when AC power is present and the UPS is operating causes the UPS to enter a self-test mode in which it tests both battery and inverter for a few seconds before returning to the AC supply. We recommend you close all open files before initiating self-test.
- When AC power fails, the UPS warns you with an audible alarm. The Test/Silence button is used to silence the alarm. When battery power begins to run low, the audible alarm will automatically return and beep at a faster rate.

Load Monitor

The Load Monitor is a six-segment LED display that shows the current load percentage. The first 5 LED's each indicate approximately 20% load, with the 6th red LED showing the UPS is overloaded.

Battery Charge Monitor

The Battery Charge Monitor is a five-segment LED display that shows the charge capacity of the internal battery from zero to 100%. Each LED indicates approximately 20% of full charge.

Site Wiring Fault Indicator – (120 VAC models only)

The "SF" symbol will be displayed on the front panel of the UPS if it is connected to an improperly wired AC receptacle. This is to indicate a missing safety ground wire or a reversal in phase and neutral wiring. If the "SF" is displayed on the front panel you should contact a qualified electrician immediately.

NOTE:

Do not operate the UPS if the Site Wiring Fault LED is illuminated. When lit, the LED is indicating a wiring condition, which may represent a hazard of fire or electrocution. In addition, improper wiring may create reliability problems for both the UPS and the connected system. Never use a 3-blade to 2-blade adapter (often called a "cheater") to power UPS. These devices remove the safety ground connection to the UPS and will cause the Site Wiring Fault LED to illuminate.

Display Functionality

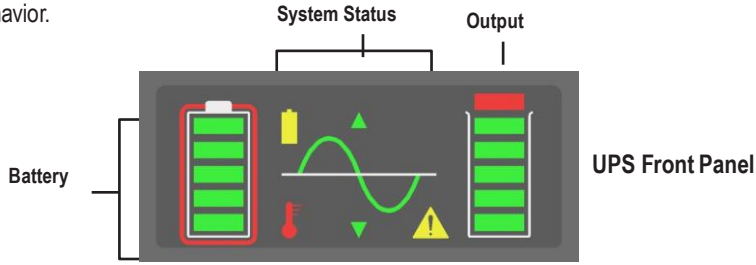
The location should provide adequate airflow around the UPS. Provide a minimum 3” clearance on all sides for proper ventilation.

Applying Power to the UPS

Connect the power cord to a verified grounded 3 wire receptacle. Verify that the Site Wiring Fault “SF” is off (120 VAC models only). Once properly connected and initially checked, turn on the UPS by pressing and holding the front panel On/Off switch for 3 seconds.

Operational Tests

Observe the front panel of the UPS. The following table shows system status behavior.



UPS LED DISPLAY	UNIT STATUS
	UPS output on
	Battery charge status in 20% increments
	UPS in battery operation due to improper incoming AC voltage
	Battery fault or battery disconnected
	UPS load status in 20% increments
	UPS overloaded
	Unit in buck operation due to high incoming AC voltage
	Unit in boost operation due to low incoming AC voltage
	Fault
	UPS over temperature

UPS Load and Battery Indicators
Example:

UPS display showing normal operation
(Fully charged batteries with 60% load shown)

UPS display showing in battery backup operation
(Batteries 80% charged with 60% load shown)

UPS display showing an overload condition (Batteries 100% charged and greater than 100% load shown)

UPS display showing over-temperature condition
(Batteries 80% charged with 80% load shown)

UPS display showing a bad battery condition
(Inspect or replace battery; unit loaded to 60%)

NOTE:
Depending on the charge state of the battery, it is possible that the battery charge level LEDs may be flashing (this is normal).

Initial Startup
With the connected equipment powered off, perform an initial test of the UPS backup function by pressing the Test/Silence button on the front panel. During this test, the Battery LED ( ) on the front panel should briefly ( ) illuminate. It is also possible to test the backup function by unplugging the UPS input power cord. If you choose to test the UPS in this manner, you will note that the UPS will beep every few seconds while the power cord is unplugged. The Battery LED ( ) will also illuminate constantly.

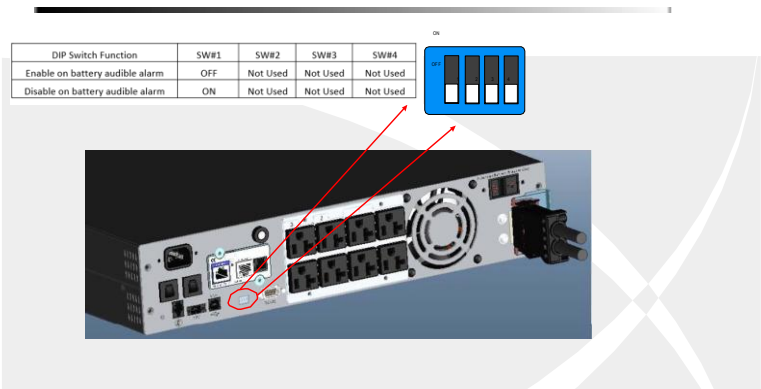
Once you have performed an initial test of the UPS backup function, turn on the connected computer equipment. Verify that the unit is not overloaded. If the unit is overloaded all load LEDs will be on and the fault LED ( ) will flash. Remove the least critical devices from the UPS one by one until the overload LED is extinguished. With the connected loads powered up, perform the backup test once again by pressing the Test/Silence button or unplugging the UPS. When this final test is completed, the UPS will be ready to use.

Reference the below UPS fault code chart to identify the status of the UPS.

UPS Status Code	Definition
IF	Inverter fault
BE	Back-Feed fault
HL	Unit is off due to a high line
LL	Unit is off due to a low line
DB	Unit is off due to a low battery
FF	Fan fault
SF	Site wiring fault

NOTE:

- If the UPS is on continuously, it will perform an auto battery test every six days.
- If you are utilizing MopUPS Pro software, you can configure the system to automatically self-test periodically.
- The UPS is shipped with a charged battery, but some discharge naturally occurs during storage and shipment. You may use the UPS immediately, but you should realize that backup time may be less than the stated rating until the UPS battery has had at least six hours to charge.
- SurgeX recommends that you do not plug laser printers into the UPS. Laser printers are known to draw large amounts of current when the fuser/heater assembly is energized. Laser printers can easily overload the UPS or create a low voltage condition that can interfere with the operation of the Voltage Manager circuit.



DIP Switch Function	SW#1	SW#2	SW#3	SW#4
Enable on battery audible alarm	OFF	Not Used	Not Used	Not Used
Disable on battery audible alarm	ON	Not Used	Not Used	Not Used

4.0 MAINTENANCE

Storage

The UPS may be stored for extended periods in an environment that does not subject the UPS to extremes of temperature or humidity. When storing for extended periods, the battery should be charged every six months. If the storage location is characterized by above normal temperature, the battery should be recharged every two months. The UPS does not need to be turned on for charging to occur – it only needs to be plugged in with batteries connected.

NOTE:

This product is not designed for continuous use on batteries.

Attention

Important Information

The batteries inside this UPS are a special type called “sealed lead-acid”. These batteries use a non-liquid electrolyte, which makes it possible to use them in any physical orientation. The batteries are designed to last from two to five years. Their actual life span will depend on several factors, including how often power outages occur, how long power outages last, and the temperature of the environment in which the UPS operates. Frequent, long duration power outages will shorten battery life more than infrequent, short duration outages. Consistent high temperatures in the area where the UPS is used will also shorten battery life.

The UPS is equipped with a Low/Replace Battery LED ( ) on the front panel. If the LED illuminates, you should make sure that the battery has at least six hours to charge without a power interruption. Inadequate (much shorter than usual) backup time, premature low battery alarm sounds, and persistent Low/Replace Battery LED illumination are all good signs that the batteries inside your UPS requires replacement. The batteries inside your UPS are designed to be replaced by authorized service personnel only.

Please familiarize yourself with the following precautions before proceeding with battery replacement.

WARNING

Servicing of batteries should always be performed or supervised by someone who has read and understood the following precautions and who understands the hazards associated with storage batteries. This procedure should not be performed by someone who is unauthorized or who is incapable of following these precautions.

CAUTION

- Only the battery assembly in this unit is user serviceable (non-medical units only). The battery compartment is accessed by removing the front panel as described in the following instructions. No other user serviceable parts are contained in this UPS. Do not remove any cover other than the front battery access panels.
- A battery (even a depleted one) can deliver very high currents when short-circuited. There is a danger of electrical shock. Remove all watches, rings, bracelets or other metal objects. Use only tools with insulated handles.
- Do not dispose of batteries in a fire. There is a danger of explosion.
- Do not dispose of batteries in an environmentally unfriendly manner.
- Do not open or mutilate the batteries. This may release electrolyte that is toxic to the environment and harmful to the skin and eyes.
- Medical units have no user serviceable parts inside.

User Replaceable Battery (Non-medical units only)

Eventually every UPS requires a new battery. SurgeX expects the battery in your UPS to last a minimum of two years – perhaps longer if power outages are short and infrequent. The UPS makes battery replacement by the user fast and easy. It is not necessary to turn off the UPS or the connected system. The UPS allows the battery to be "hot-swapped" while the system is running.

NOTE:

Changing the batteries in this UPS is designed to be a safe and simple procedure. Batteries may be replaced while the UPS is on and providing power to the connected load. You should remember, however, that if a power outage occurs after the old batteries are disconnected and before the new batteries are installed, power will be lost to your connected system and components.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY INCORRECT TYPE. When replacing batteries, contact SurgeX for correct battery replacement kits.

VA Rating	*Replacement Battery Kit Part No.*
1440	58870-01
2200/3300	58870-02

CAUTION

Risk of Energy Hazard, 12V, maximum 23 Ampere-hour batteries. Before replacing batteries, remove conductive jewelry such as chains, wrist watches, and rings. High energy 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. It may be toxic. A battery can present a risk of electrical shock
and high short circuit current. The following precautions should be observed when working with batteries:

- Remove watches, rings or other metal objects.
- Use tools with insulated handles.
- Wear rubber gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect the charging source prior to connecting or disconnecting battery terminals.
- Determine if battery is inadvertently grounded. If inadvertently grounded remove source from ground. Contact with any part of grounded battery can result in electrical shock.

NOTE:

If you have read and understood the cautions preceding this section, you may proceed with the following steps. Consult the figure on page 26 to assist you in the following battery replacement procedure.

UPS Battery Replacement Instructions

The batteries for this unit can be changed while the unit is on. Unit's alarm will beep while changing the battery. To replace the battery pack inside the UPS:

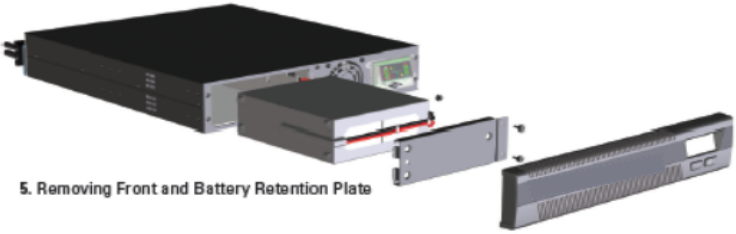
1440 VA

1. Pull bezel slightly at the left corner.

2. Slide to the right then tip away from the front of the unit slightly.

3. Gently remove bezel in direction of arrow.

4. Once the bezel is removed, unscrew the two screws on the battery retention plate located on the center of the unit and remove the plate by sliding slightly to the right to disengage the hooks.



5. Removing Front and Battery Retention Plate

6. Disconnect the battery from the UPS by grasping and pulling the battery connectors straight out. Slide the battery out from the UPS.

7. Slide new battery into the UPS and reconnect proper colors to connectors (red/red, black/black). The battery connector is polarized and will only fit one way. Make sure it is completely installed.

8. Replace and secure the battery retention plate with the screws. Replace the front bezel by reversing all three steps required previously for removal.

***NOTE**: Do not replace the front bezel without first securing the battery retention plate.*

See "Instructions for Returning a Depleted Battery Pack" for instructions on returning depleted battery (s) to SurgeX.

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5.0 TROUBLESHOOTING

The troubleshooting information provided in this section should help you discover the cause of most commonly encountered difficulties. Before following the troubleshooting steps provided, be certain that you have verified the following items:

- The UPS should be plugged into a properly working outlet.
- The line voltage to the UPS is within specified boundaries.
- The circuit breaker on the rear panel of the UPS has been reset.
- The battery enable plug(s) is installed.

Problem	Possible Cause	Action you should take
UPS does not power up and has no audible alarm.	1. On/Off Button not pressed long enough. 2. No incoming line voltage or voltage too high or too low. 3. UPS input power cord is not plugged in. 4. Rear panel circuit breaker	1. Press and hold the On/Off switch for 3 seconds min. 2. Check wall socket and test for proper line voltage. 3. Plug in input power cord. 4. Reduce load and reset circuit breaker.
UPS Overload LEDs are illuminated and continuous audible alarm sounds.	UPS is overloaded.	Reduce load by removing the least critical load items from the UPS output.
Low/Replace Battery LED is illuminated.	Battery voltage is too low or battery is dead.	Recharge battery for at least six hours and reset UPS. If LED is still illuminated, replace the battery.
Site Wiring Fault LED is illuminated.	Site wiring problem.	Contact a qualified electrician to verify wiring at this site.
Backup time is less than expected.	Battery is not fully charged or battery is dead.	Recharge battery for at least six hours and retest back up time.
UPS is normal, but the computer will not turn on.	Computer input power cord is loose or not connected.	Connect the power input power cord.

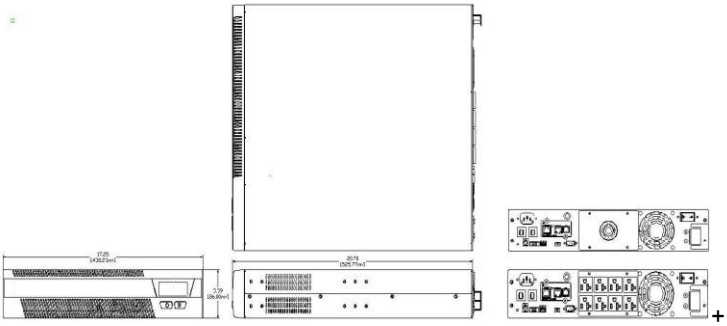
Output Fuse Ratting Chart

Work to be done only by qualified service personnel. It is critical that the same type and rating of fuses are used.

Replace with same type and rating of fuse Fuse must be rated to IEC 60127-2	
Model / Part	Fuse rating (slow-blow)
ABCE1442-11R / UPS-1440-Li-ISO	250 VAC 12.5 A

6.0 SPECIFICATIONS

Model # : ABCE1440-11R / Part # :UPS-1440-Li-ISO



MODEL NUMBER PART NUMBER	ABCE1440-11R UPS-1440-Li-ISO
Type	Standard
Power Rating (VA/Watts)	1440 / 1296
Inverter Waveform	Low Distortion Sine Wave
Transfer Time	4 ms. Typical
Frequency	50 / 60 Hz.
BTU/Hr.	385
T.H.D. w/100% Resistive Load	<4% On Battery
Online Efficiency (w/o Charger)	92%
Input Voltage	120
Input Current	12.0 Amps
Input Voltage Range (w/o Using Battery)	96 to 144 Volts
Output Voltage	120
Output Current (VA/Watts)	12.0 / 10.8 Amps
Output Regulation (On Mains)	± 10%
Output Regulation (On Battery)	± 5%
Backup Time at Full Load (0.7 P.F.)	5 Minutes
Floor Mountable	Yes (Optional)
Communications Interface	DB9, USB (SNMP Optional)
Shipping Weight (lbs./kg)	77 lbs. / 35 kg
Dimensions (in/mm) L x W x H	20.7 x 17.25 x 3.39 / 525.77 x 438.23 x 86
Input Plug	6 Ft Power Cord with NEMA 5-20P Plug
Output Receptacles	8 NEMA - 5-20R
PDU Compatible	No

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Model #: ABCE1442-11R / Part #:UPS-1440-Li-ISO
Rack Mount UPS Specifications

Front Panel Controls
- Power On/Off
- Test
- Load Level LED Gauge
- Battery Charge LED Gauge
- Voltage Manager Boost LED
- Voltage Output On LED
- Voltage Manager Buck LED
- On Battery LED
- Replace Battery LED
- Overload LED
- Fault Code LED
- System Over Temperature LED

Rear Panel Information and Controls
- Integrated Switched Power Distribution Unit (Requires SNMP / Web Card)
- Configuration Manager DIP Switches
- Communications Manager DB9 Port, USB Port
- Circuit Breaker (AC and DC)
- AC Inlet Module
- Communication Option Slot: SNMP / Web Card, Isolated Relay Contacts Card, or Remote Off Card
- DC External Battery Cabinet Connector
- Fan (Forced Cooling)

Internal Batteries
- User Hot-Swappable (See Instruction Manual)
- Type: 12 Volt, High Rate 23W
- Quantity: 4 Batteries
- Recharge Time: 6 Hours to 80%, 24 Hours to Full Charge (For Internal Batteries Only)

Environmental
- Temperature: 0 - +40°C(32 to 104°F) Operating
  -20 to 60°C(-40 to 140°F) Shipment/Storage
- Humidity: 5 to 90% Non-Condensing (Operating, Shipment/Storage)
- Altitude: 3,000m (10,000 ft) max. Operating; 12,000m (40,000 ft) max. Shipment/Storage

Safety Agency and EMC Compliance:
All Units are Listed by UL and Marked With the UL/cUL Marking

Standard UPS:
Products Listed to:
- UL1778 5th Edition
- CSA 22.2 Nos. 107.3-14

Products in Compliance with:
- FCC-Part 15, Subpart B, Sections 15.107b & 15.109b Class A Digital Device*
- CISPR11:2009, A1; 2010, Class A*
- IEC61000-4-2, Electrostatic Discharge
- IEC61000-4-3, Radiated Electromagnetic Field Immunity
- IEC61000-4-4, Electrical Fast Transient/Burst Immunity
- IEC61000-4-5, Surge Immunity
- IEC61000-4-6, Immunity to Conducted Radio Frequency Disturbances
- IEC61000-4-8, Power Frequency Magnetic Field Immunity
- IEC61000-4-11, Voltage Dips, Short Interruptions and Voltage Variations

***Note: Class B is Available as an Option**
Please Consult Your SurgeX Sales Representative

RoHS Compliance:
All Products (Standard and Medical) are RoHS Compliant

1440 VA MODELS TYPICAL RUN-TIMES (MINs)

	10% (130W)	20% (259W)	30% (389W)	40% (518W)	50% (648W)	60% (778W)	70% (907W)	80% (1036W)	90% (1166W)	100% (1296W)
Internal Batteries Only	90	38	20	12	9	6	5	4	2.8	2.5
Internal + 1) E4804-12	480	183	110	72	59	51	35	30	25.8	24.5
Internal + 2) E4804-12	870	328	200	132	109	96	65	56	48.8	46.5
Internal + 3) E4804-12	1260	473	290	192	159	141	95	82	71.8	68.5
Internal + 4) E4804-12	1650	618	380	252	209	186	125	108	94.8	90.5
Internal + 5) E4804-12	2040	763	470	312	259	231	155	134	117.8	112.5
Internal + 6) E4804-12	2430	908	560	372	309	276	185	160	140.8	134.5
Internal + 7) E4804-12	2820	1053	650	432	359	321	215	186	163.8	156.5
Internal + 8) E4804-12	3210	1198	740	492	409	366	245	212	186.8	178.5

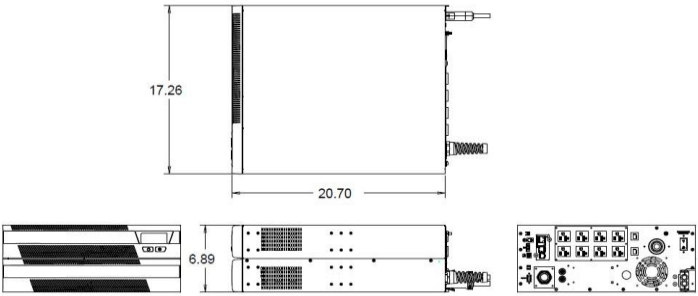
NOISE REJECTION-ISOLATION: With unit under power and an ANSI/IEEE C62.41 Cat. A pulse applied either normal or common mode at the input, the noise output voltage will be less than 10V normal mode and less than 0.5V common mode in all four quadrants (CM-NM, NM-NM, CM-CM, NM-CM).

SURGE VOLTAGE WITHSTAND CAPABILITY: Tested under power to ANSI/IEEE C62.41 Cat. A & B (formerly IEEE587-1980). Cat. A - 6000V @ 200 amps, 0.5 usec risetime, 100 kHZ decay, Cat. B - 6000V @ 500 amps, 0.5 usec risetime, 100 kHZ decay.

Warranty/Support: SurgeX warrants the electronics and transformers used in its uninterruptible power managers to be free from defects in materials and workmanship for a period of five years from the date of shipment. Batteries are warranted for a period of two years from the date of shipment. For service or support on any SurgeX product, please contact SurgeX Technical Support at (800) 645-9721 or visit the SurgeX website at **www.surgex.com**.

Battery Life Disclaimer: SurgeX's standard battery warranty applies only to UPS and UPS products which are continuously connected to AC mains power, except during utility power outages. Products which are regularly and intentionally disconnected from AC mains power will experience battery discharge/charge cycles potentially far more numerous than those for which the battery was designed. As a result, products used in such applications will experience substantially reduced battery life. For that reason, SurgeX's standard battery warranty does not apply for applications in which the UPS or UPS product is regularly and intentionally disconnected from AC mains power. SurgeX UPS and UPS products used in such applications shall receive a 90 day warranty on batteries.

Model #: ABCE2202-11R / Part #: UPS-2200-Li-ISO



MODEL NUMBER PART NUMBER	ABCE2202-11R UPS-2200-Li-ISO
Type	Standard
Power Rating (VA/Watts)	2200 / 1980
Inverter Waveform	Low Distortion Sine Wave
Transfer Time	4 ms. Typical
Frequency	50 / 60 Hz.
BTU/Hr.	355
T.H.D. Max. w/100% Resistive Load	<4% On Battery
Online Efficiency (w/o Charger)	95%
Input Voltage	120
Input Current	24.0 Amps
Output Voltage	120
Output Current (VA/Watts)	18.5 / 16.5 Amps
Input Voltage Range (w/o Using Battery)	96 to 144 Volts
Output Regulation (On Mains)	+ 10%
Output Regulation (On Battery)	+ 5%
Backup Time at Full Load (0.7 P.F)	8 Minutes
Floor mountable	Yes (Optional)
Communications Interface	DB9, USB (SNMP Optional)
Shipping Weight (lbs./kg)	134 lbs. / 61 kg
Dimensions (in/mm) L x W x H	20.7 x 17.26 x 6.89 / 525.77 x 438.23 x 175.00
Output Receptacle	(8) NEMA 5-20R and (1) NEMA L5-30R Receptacles
PDU Compatible	Yes

Model #: ABCE2202-11R / Part #: UPS-2200-Li-ISO
Rack Mount UPS Specifications

Front Panel Controls
- Power On/Off
- Test
- Load Level LED Gauge
- Battery Charge LED Gauge
- Voltage Manager Boost LED
- Voltage Output On LED
- Voltage Manager Buck LED
- On Battery LED
- Replace Battery LED
- Overload LED
- Fault Code LED
- System Over Temperature LED

Rear Panel Information and Controls
- 6 Foot Power Cord with NEMA L5-30P Plug
- Configuration Manager DIP Switches
- Communications Manager DB9 Port, USB Port
- Circuit Breaker
- AC Inlet Module
- SNMP Slot (Contact Factory)

Internal Batteries
- User Hot-Swappable (See Instruction Manual)
- Type: 12 Volt, High Rate 23W
- Quantity: 8 Batteries
- Recharge Time: 8 Hours to 80%, 24 Hours to Full Charge

Environmental
- Temperature: 0 - +40^0 C (32 to 104^{0}F) Operating -20 to 60^0 C (-40 to 140^0 F) Shipment/ Storage
- Humidity: 5 to 90% Non-Condensing (Operating, Shipment/Storage)
- Altitude: 3,000m (10,000 ft) max. Operating; 12,000m (40,000 ft) max. Shipment/Storage.

Safety Agency and EMC Compliance:
All Units are Listed by UL and Marked with the UL/cUL Marking.

Standard UPS:
Products Listed To:
- UL1778 5th Edition
- CSA 22.2 Nos. 107.3-14

Products in compliance with:
- FCC-Part 15, Subpart B, Sections 15.107b & 15.109b Class A Digital Device*
- CISPR11:2009, A1; 2010, Class A*
- IEC61000-4-2, Electrostatic Discharge
- IEC61000-4-3, Radiated Electromagnetic Field Immunity
- IEC61000-4-4, Electrical Fast Transient/Burst Immunity
- IEC61000-4-5, Surge Immunity
- IEC61000-4-6, Immunity to Conducted Radio Frequency Disturbances
- IEC61000-4-8, Power Frequency Magnetic Field Immunity
- IEC61000-4-11, Voltage Dips, Short Interruptions, and Voltage Variations

Note: Class B is Available as an Option
Please Consult Your SurgeX Sales Representative

2200VA TYPICAL RUN-TIMES (MINs)

	10% (198W)	20% (396W)	30% (594W)	40% (792W)	50% (990W)	60% (1188W)	70% (1386W)	80% (1584W)	90% (1782W)	100% (1980W)
Internal Batteries Only	95	45	30	19	14	10.5	8	6.5	5.5	4.5
Internal + 1) E4804-12	281	135	85	59	42	32.5	23	19	14.5	12
Internal + 2) E4804-12	467	225	140	99	70	54.5	38	31.5	23.5	19.5
Internal + 3) E4804-12	653	315	195	139	98	76.5	53	44	32.5	27
Internal + 4) E4804-12	839	405	250	179	126	98.5	68	56.5	41.5	34.5
Internal + 5) E4804-12	1025	495	305	219	154	120.5	83	69	50.5	42
Internal + 6) E4804-12	1211	585	360	259	182	142.5	98	81.5	59.5	49.5
Internal + 7) E4804-12	1397	675	415	299	210	164.5	113	94	68.5	57
Internal + 8) E4804-12	1583	765	470	339	238	186.5	128	106.5	77.5	64.5

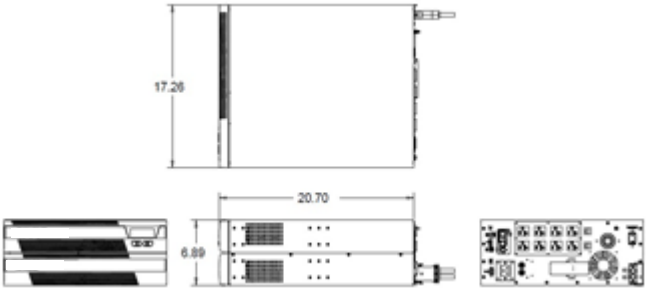
NOISE REJECTION-ISOLATION: With unit under power and an ANSI/IEEE C62.41Cat. A pulse applied either normal or common mode at the input, the noise output voltage will be less than 10V normal mode and less than 0.5V common mode in all four quadrants (CM-NM, NM- NM, CM-CM, NM-COM).

SURGE VOLTAGE WITHSTAND CAPABILITY: Tested under power to ANSI/IEEE C62.41 Cat. A & B (formerly IEEE587-1980). Cat. A - 6000V @ 200 amps, 0.5 usec risetime, 100 kHZ decay, Cat. B - 6000V @ 500 amps, 0.5 usec risetime, 100 kHZ decay.

Warranty/Support: SURGEX wwarrants the electronics and transformers used in its uninterruptible power managers to be free from defects in materials and workmanship for a period of five years from the date of shipment. Batteries are warranted for a period of two years from the date of shipment. For service or support on any SURGEX product, please contact SURGEX Technical Support at (800) 645-9721 or visit the SURGEX website at **www.surgex.com**.

Battery Life Disclaimer: SURGEX's standard battery warranty applies only to UPS and UPS products which are continuously connected to AC mains power, except during utility power outages. Products which are regularly and intentionally disconnected from AC mains power will experience battery discharge/charge cycles potentially far more numerous than those for which the battery was designed. As a result, products used in such applications will experience substantially reduced battery life. For that reason, SURGEX's standard battery warranty does not apply for applications in which the UPS or UPS product is regularly and intentionally disconnected from AC mains power. SURGEX UPS and UPS products used in such applications shall receive a 90 day warranty on batteries.

Model #: ABCE3002-21R / Part #: UPS-3000-Li-ISO



MODEL NUMBER PART NUMBER	ABCE3002-21R UPS-3000-Li-ISO
Type	Standard
Power Rating (VA/Watts)	2760 / 2484
Inverter Waveform	Low Distortion Sine Wave
Transfer Time	4 ms. Typical
Frequency	50 / 60 Hz.
BTU/Hr.	446
T.H.D. Max. w/100% Resistive Load	<4% On Battery
Online Efficiency (w/o Charger)	95%
Input Voltage	208
Input Current	16.0 Amps
Output Voltage	230 and 115
Output Current (VA/Watts)	12.0 / 11.5 and 24.0 / 21.6 Amps
Input Voltage Range (w/o Using Battery)	166 to 250 Volts
Output Regulation (On Mains)	+ 10%−_
Output Regulation (On Battery)	+ 5%
Backup Time at Full Load (0.7 P.F)	6 Minutes
Floor Mountable	Yes (Optional)
Communications Interface	DB9, USB (SNMP Optional)
Shipping Weight (lbs./kg)	142 lbs. / 64.4 kg
Dimensions (in/mm) L x W x H	20.7 x 17.26 x 6.89 / 525.77 x 438.23 x 175.00
Output Receptacle	Eight (8) NEMA 5-20 and (1) NEMA L6-20 Receptacles
PDU Compatible	Yes

Model #: ABCE3002-21R / Part #: UPS-3000-Li-ISO
Rack Mount UPS Specifications

Front Panel Controls
- Power On/Off
- Test
- Load Level LED Gauge
- Battery Charge LED Gauge
- Voltage Manager Boost LED
- Voltage Output On LED
- Voltage Manager Buck LED
- On Battery LED
- Replace Battery LED
- Overload LED
- Fault Code LED
- System Over Temperature LED

Rear Panel Information and Controls
- 1.8 Meter Power Cord with C20 to L6-20 Plug
- Eight (8) NEMA 5-20R and (1) NEMA L6-20 Receptacles
- Configuration Manager DIP Switches
- Communications Manager DB9 Port, USB Port
- Circuit Breaker
- AC Inlet Module
- SNMP Slot (Contact Factory)

Internal Batteries
- User Hot-Swappable (See Instruction Manual)
- Type: 12 Volt, High Rate 23W
- Quantity: 8 Batteries
- Recharge Time: 8 Hours to 80%, 24 Hours to Full Charge

Environmental
- Temperature: 0 - +40^0 C (32 to 104^{0}F) Operating
  -20 to 60^0 C (-40 to 140^0 F) Shipment/ Storage
- Humidity: 5 to 90% Non-Condensing (Operating, Shipment/Storage)
- Altitude: 3,000m (10,000 ft) max. Operating; 12,000m (40,000 ft) max. Shipment/Storage.

Safety Agency and EMC Compliance:
All Units are Listed by UL and Marked with the UL/cUL Marking.

Standard UPM:
Products Listed To:
- UL IEC62040, CE Mark with CB Report

Products in compliance with:
- FCC-Part 15, Subpart B, Sections 15.107b & 15.109b Class A Digital Device*
- CISPR11:2009, A1; 2010, Class A*
- IEC61000-4-2, Electrostatic Discharge
- IEC61000-4-3, Radiated Electromagnetic Field Immunity
- IEC61000-4-4, Electrical Fast Transient/Burst Immunity
- IEC61000-4-5, Surge Immunity
- IEC61000-4-6, Immunity to Conducted Radio Frequency Disturbances
- IEC61000-4-8, Power Frequency Magnetic Field Immunity
- IEC61000-4-11, Voltage Dips, Short Interruptions, and Voltage Variations

Note: Class B is Available as an Option
Please Consult Your SurgeX Sales Representative

3000VA TYPICAL RUN-TIMES (MINs)

	10% (248W)	20% (297W)	30% (745W)	40% (993W)	50% (1242W)	60% (1490W)	70% (1739W)	80% (1987W)	90% (2235W)	100% (2484W)
Internal Batteries Only	89	58	20	14	10	7	6	4.8	3.2	3
Internal + 1) E4804-12	239	178	62	42	30	24	16	10.8	9.2	7.5
Internal + 2) E4804-12	389	298	104	70	50	41	26	16.8	15.2	12
Internal + 3) E4804-12	539	418	146	98	70	58	36	22.8	21.2	16.5
Internal + 4) E4804-12	689	538	188	126	90	75	46	28.8	27.2	21
Internal + 5) E4804-12	839	658	230	154	110	92	56	34.8	33.2	25.5
Internal + 6) E4804-12	989	778	272	182	130	109	66	40.8	39.2	30
Internal + 7) E4804-12	1139	898	314	210	150	126	76	46.8	45.2	34.5
Internal + 8) E4804-12	1289	1018	356	238	170	143	86	52.8	51.2	39

NOISE REJECTION-ISOLATION: With unit under power and an ANSI/IEEE C62.41Cat. A pulse applied either normal or common mode at the input, the noise output voltage will be less than 10V normal mode and less than 0.5V common mode in all four quadrants (CM-NM, NM-NM, CM-CM, NM-COM).

SURGE VOLTAGE WITHSTAND CAPABILITY: Tested under power to ANSI/IEEE C62.41 Cat. A & B (formerly IEEE587-1980). Cat. A - 6000V @ 200 amps, 0.5 usec risetime, 100 kHZ decay, Cat. B - 6000V @ 500 amps, 0.5 usec risetime, 100 kHZ decay.

Warranty/Support: SurgeX warrants the electronics and transformers used in its uninterruptible power managers to be free from defects in materials and workmanship for a period of five years from the date of shipment. Batteries are warranted for a period of two years from the date of shipment. For service or support on any SurgeX product, please contact SurgeX Technical Support at (800) 645-9721 or visit the SurgeX website at **ww.surgex.com**.

Battery Life Disclaimer: SurgeX's standard battery warranty applies only to UPS and UPM products which are continuously connected to AC mains power, except during utility power outages. Products which are regularly and intentionally disconnected from AC mains power will experience battery discharge/charge cycles potentially far more numerous than those for which the battery was designed. As a result, products used in such applications will experience substantially reduced battery life. For that reason, SurgeX's standard battery warranty does not apply for applications in which the UPS or UPM product is regularly and intentionally disconnected from AC mains power. SurgeX UPS products used in such applications shall receive a 90 day warranty on batteries.