

User Manual Easy UPS On-Line SRV10KUXI-IN

Important Safety Instructions

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

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 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 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 before installing the Easy UPS.

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

NOTE: Allow a minimum of 20 cm clearance on both front and rear sides of the UPS.

- Environmental factors impact battery life. Elevated ambient temperatures and poor quality utility power causing frequent discharges will shorten battery life. Follow the battery manufacturer recommendations.

Electrical safety

- When grounding cannot be verified, disconnect the equipment from the utility power outlet before installing or connecting to other equipment. Reconnect the power cord only after all connections are made.
- Connection to the branch circuit (mains) must be performed by a qualified electrician.
- The protective earth conductor for the UPS carries the leakage current from the load devices (computer equipment). An insulated ground conductor is to be installed as part of the branch circuit that supplies input power to the UPS. The conductor must have the same size and insulation material as the grounded and ungrounded branch circuit supply conductors. The conductor will be green and with or without a yellow stripe.
- The grounding conductor is to be grounded to earth at the service equipment, or if supplied by a separately derived system, at the supply transformer or motor generator set.

Battery safety



CAUTION

RISK OF HYDROGEN SULPHIDE GAS AND EXCESSIVE SMOKE

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

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

- Replace batteries with the same number and type of batteries as originally installed in the equipment.
- Over charging, over heating or other misuse of batteries can result in leakage of battery electrolyte. Released electrolyte is toxic and may be harmful to the skin and eyes.
- Use tool with insulated handles.
- Wear rubber gloves and boots.
- A battery can present risk of electric shock and burns by high short-circuit current.
- Failed batteries can reach temperature that exceed the burn thresholds for touchable surfaces.
- Do not lay tools or metal parts on top of batteries.
- 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.

Hardwiring safety

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

Radio Frequency Warning

This UPS is a category C3 product as per IEC 62040-2, meant for commercial and industrial application in the second environment - installation restrictions or additional measures may be needed to prevent disturbances.

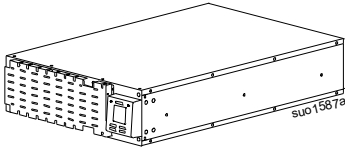
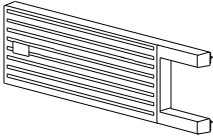

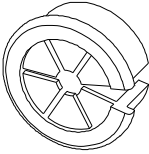


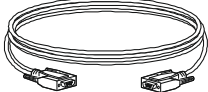
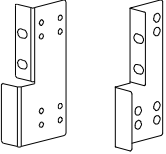

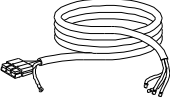

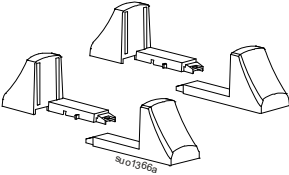

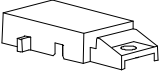
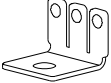

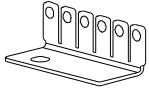
NOTE: To maintain compliance with the EMC directive for products, output cords and network cables connected to the Easy UPS should not exceed 10 meters in length.

Product Description

The APC by Schneider Electric Easy UPS is a high performance, uninterruptible power supply (UPS). The Easy UPS helps to provide protection to connected equipment from utility power blackouts, brownouts, sags, surges, small utility fluctuations and large disturbances. The Easy UPS also provides battery backup power to connected equipment until utility power returns to normal levels or the batteries are fully discharged.

This user manual is available on the APC by Schneider Electric Web site, www.apc.com.

Package Contents

Easy UPS		Front bezel	
			
User documentation	Open Grommets x7	PowerChute software download guide	
			
USB cable	Serial communication cable		
			
Rack-mount bracket x1 pair	Flat head screws x8	Battery cable	Clamp
			
Stabilizer brackets x2 pairs	Foot stand screws x8		
			
	1U Foot extension x4		
			
SJ1 x2	SJ2 x2	SJ3	
			
<p>NOTE: 1 no. of SJ1, 2 nos. of SJ2, and 1 no. of SJ3 are already installed in the hardwire terminal block.</p>			

NOTE:

The model and serial numbers are located on a label in the rear panel.
 The packaging is recyclable; save it for reuse or dispose of it properly.

Optional Accessories

Refer to the APC by Schneider Electric Web site, www.apc.com, for available accessories.

Specifications

Environmental specifications

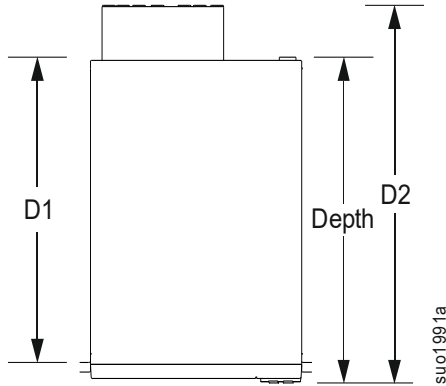
NOTICE	
RISK OF EQUIPMENT DAMAGE	
<ul style="list-style-type: none"> • Easy UPS must be used indoors only. • The installation location should be sturdy to withstand the weight of the Easy UPS. • Do not operate Easy UPS where there is excessive dust or where the temperature or humidity are outside specified limits. 	
Failure to follow these instructions can result in equipment damage.	

Temperature	Operating	<ul style="list-style-type: none"> • 0 to 40 °C at rated load • 40 to 45 °C linearly derated to 85% of maximum load capacity • 45 to 50 °C linearly derated to 75% of maximum load capacity
	Storage	-20 to 60 °C
Elevation	Operating	<ul style="list-style-type: none"> • 0 to 1,000 m: Normal operation • 1,000 to 3,000 m: The output power reduces @ 1% for increase in height of every 100 m • > 3,000 m: Easy UPS will not work
	Storage	0 to 15,000 m
Humidity		0 to 95% relative humidity, non-condensing
International Protection Code		IP20

Physical specifications

Dimensions with package Width x Height x Depth	580 x 250 x 870 mm (23 x 10 x 35 in)
Dimensions without package Width x Height x Depth	438 x 132 x 680* mm (18 x 5.2 x 26.8* in) * from the front bezel to the terminal block cover
Weight with package (approx.)	31 kg
Weight without package (approx.)	25 kg

Dimensions D1 and D2



D1 Dimension	D2 Dimension	Depth
549.7 mm (21.64 in)	748.5 mm (29.47 in)	689.5 mm (27.15 in)

Input specifications

Nominal input voltage	400 VAC (PH - PH)
Input frequency	50 Hz / 60 Hz nominal
Input voltage range (100% load)	176 to 300 VAC (PH + N) 305 to 520 VAC (PH + PH)
Input voltage range (80% load)	150 to 300 VAC (PH + N) 260 to 520 VAC (PH + PH)
Input voltage range (50% load)	110 to 300 VAC (PH s+ N) 190 to 520 VAC (PH + PH)
Input power factor (100% resistive load at nominal voltage)	≥ 0.99

Output specifications

UPS Capacity	Battery Voltage = ± 96 VDC	10 kVA / 8 kW
	Battery Voltage = ± 108 VDC	10 kVA / 9 kW
	Battery Voltage = ± 120 VDC	10 kVA / 10 kW
Nominal output voltage	230 VAC	
Other programmable voltage	220 VAC, 240 VAC	
Efficiency at nominal voltage and rated load (typical)	95%	
Output voltage regulation	$\pm 1\%$ of initial value	
Output voltage distortion	<ul style="list-style-type: none"> • < 2% for full linear load • < 4% for full non linear load • < 15% for the last 60 seconds of the backup time 	
Frequency - On battery	50 Hz / 60 Hz $\pm 0.5\%$	
Frequency - AC mode	50 Hz / 60 Hz ± 4 Hz	
Crest factor	3:1	
Waveform	Sinewave	
Output connection	Refer "Rear Panel Features" on page 14 for details	
Bypass	Internal	
Bypass range	185 - 250 VAC $\pm 1\%$	

Battery bank

Configuration	External battery
External battery pack model (optional)	SRV120RLBP2-9A
Type	Sealed maintenance free valve regulated lead acid (SMF)/ Tubular (TUB) type
Battery voltage	± 96 V, ± 108 V, ± 120 V DC (nominal)
Charging voltage	13.6 V
Max AH capacity	120 AH

Tower Installation

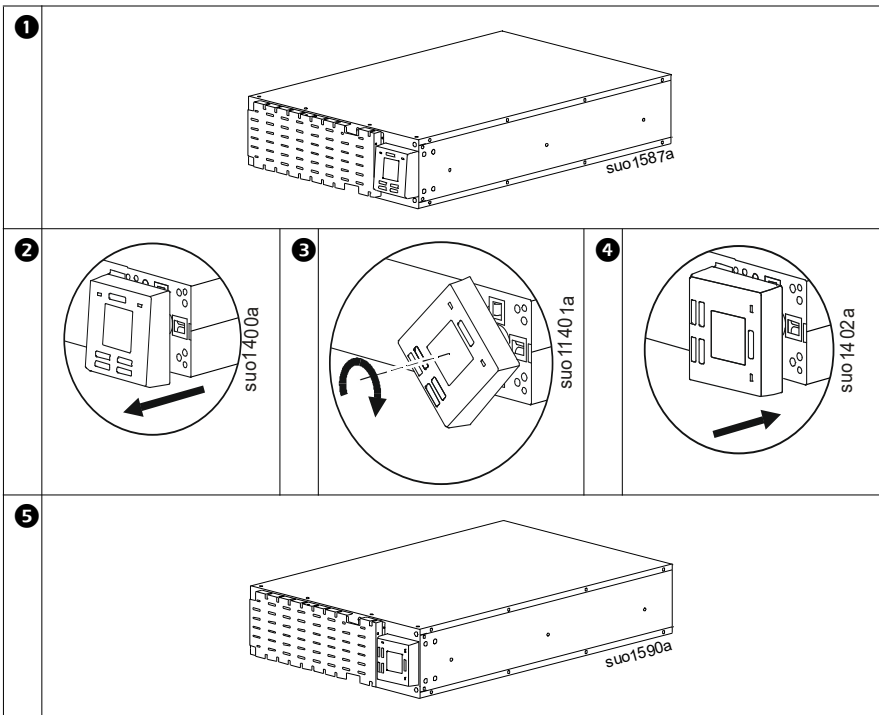
CAUTION

RISK OF FALLING EQUIPMENT

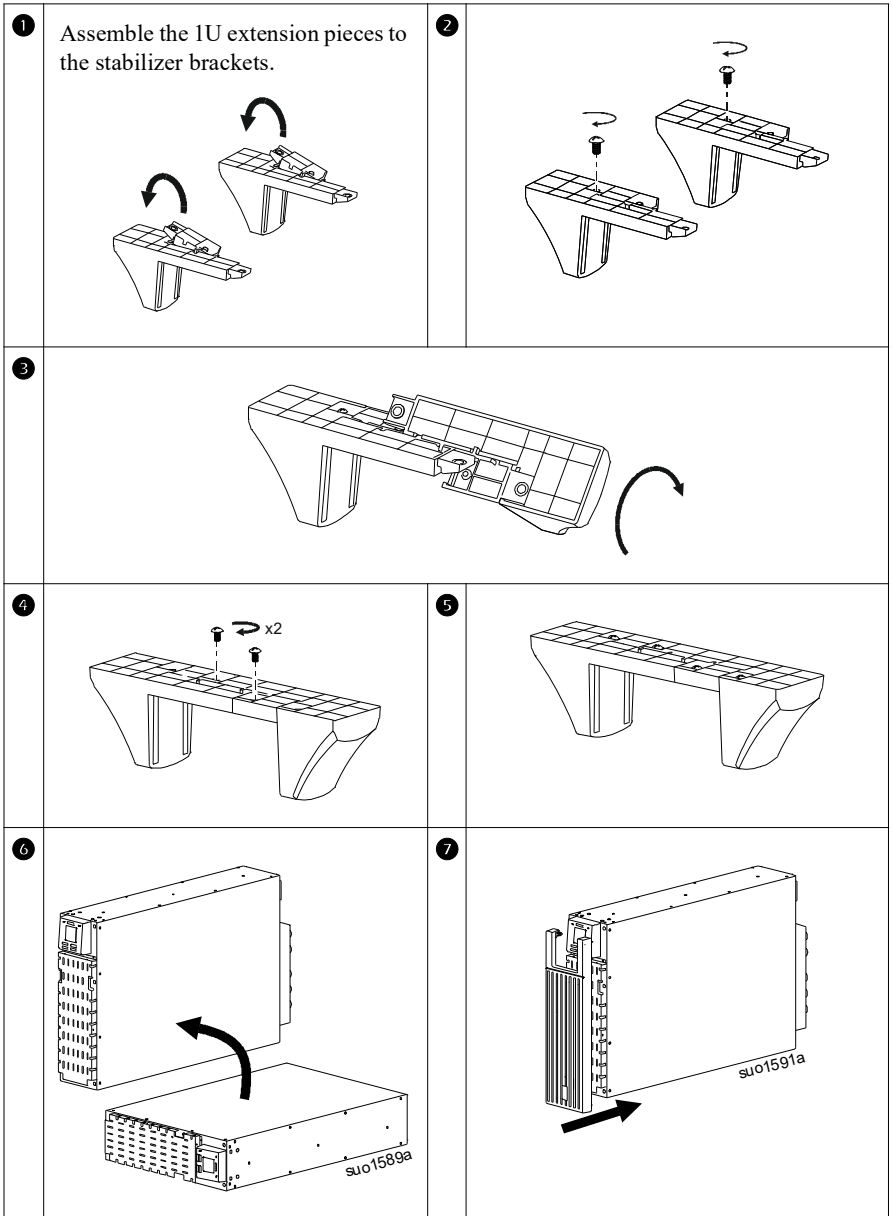
- The Easy UPS is heavy.
- Always practice safe lifting techniques adequate for the weight of the equipment.
- Do not lift the Easy UPS by holding the front panel display.
- Ensure that the stabilizer brackets are installed along with the Easy UPS in the tower orientation.

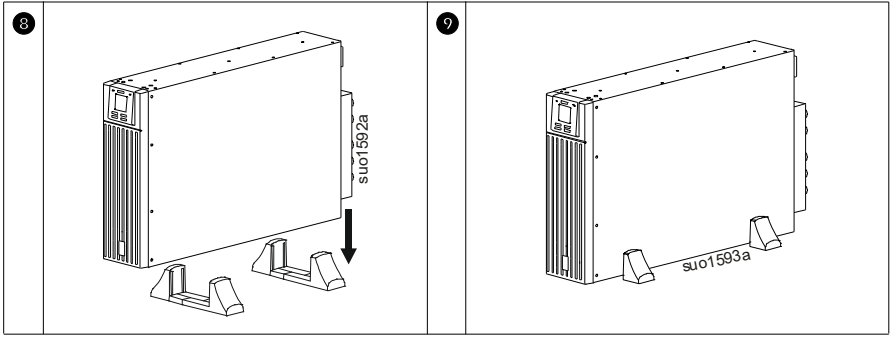
Failure to follow these instructions can result in minor or moderate injury and equipment damage.

Front panel display rotation

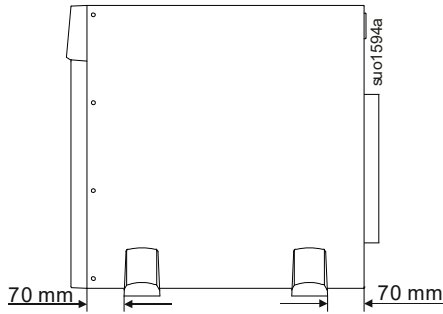


Installing stabilizer brackets





NOTE: Maintain approximately 70 mm distance from the edge of the unit, when installing the stabilizer brackets to the Easy UPS.



Rack-Mount Installation

CAUTION

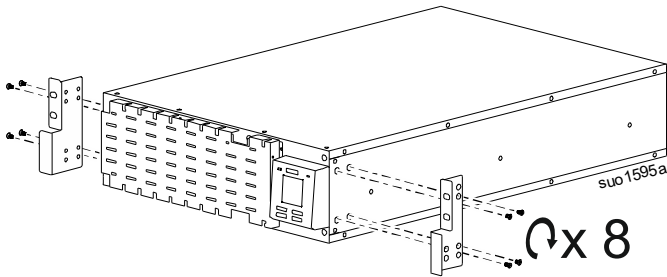
RISK OF FALLING EQUIPMENT

- The Easy UPS is heavy.
- Always practice safe lifting techniques adequate for the weight of the equipment.
- Do not lift the Easy UPS by holding the front panel display.
- Always install the UPS at the bottom of the rack.
- Always use the recommended number of screws to secure brackets to the UPS.
- Given the heavy weight, the use of rack-mount brackets is mandatory during rack installation (guide with L-shaped support).
- Secure the unit in the rack using all the screws supplied for the purpose.

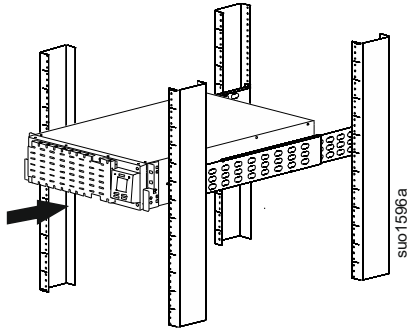
Failure to follow these instructions can result in minor or moderate injury and equipment damage.

Optional Rail Kit accessories SRVRK2 to enable the installation of Easy UPS in rack-mount configuration is available for purchase.

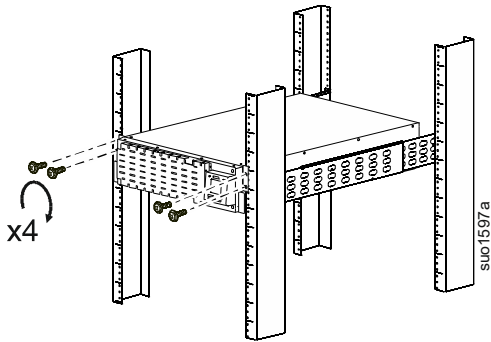
- 1** Install the rack-mount brackets.



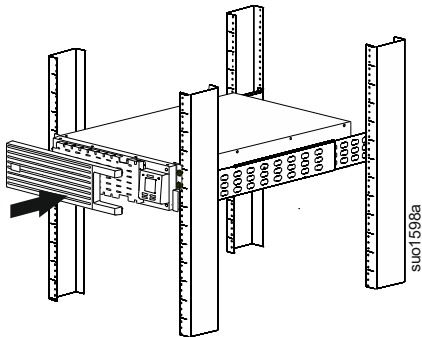
- 2 Lift the Easy UPS module and slide it into rack enclosure.



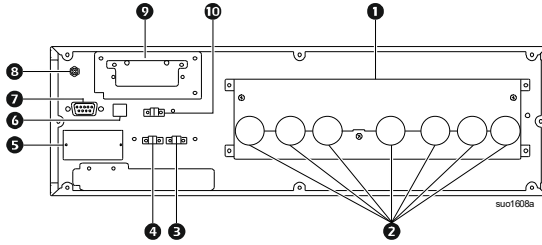
- 3 Secure the Easy UPS module to the rack with screws, nuts and washers (not supplied).



- 4 Install the front bezel.



Rear Panel Features



1	Input and output terminal block Refer “Hardwiring” on page 15 for terminal block details.
2	Grommet
3	Backfeed
4	External maintenance bypass signal port (not enabled currently)
5	Intelligent slot for management accessories
6	USB communication port
7	Serial communication connector
8	Ground terminal
9	Battery connector
10	Emergency power off (EPO) connector

Hardwiring



CAUTION

RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- All electrical work must be performed by a qualified electrician.
- Turn off all power to this equipment before working on the equipment.
- Switch the external circuit breaker off. Practice lockout/tagout procedures.
- Do not wear jewelry when working with electrical equipment.
- Select wire size and connectors according to national and local codes.

Failure to follow these instructions can result in moderate injury.

Backfeed protection



DANGER

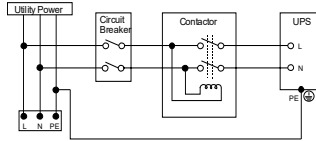
RISK OF VOLTAGE BACKFEED

- There is no backfeed protection (to be sure that there is no AC voltage across the UPS input terminals when UPS is working in on-battery mode) inside the UPS.
- Provide an automatic isolation device (isolation within 15 seconds after mains supply outage) for backfeed protection as per details in the next page to comply with requirements of IEC 62040-1 or IS16242 (Part 1) to prevent hazardous voltage or energy at the input terminals of the isolation device.
- Check for hazardous voltage between all terminals including the protective earth before working on the UPS.

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

- Be sure to isolate the UPS before working on it.
- Easy UPS do not have an inbuilt standard backfeed protection. During installation an additional external isolation device must be installed in UPS system.
- External backfeed protection device connections should be done as per the wiring diagram below for both utility power circuit as well as the external power source for bypass circuit.

Single phase input




- Use external backfeed protection device as per the table below.

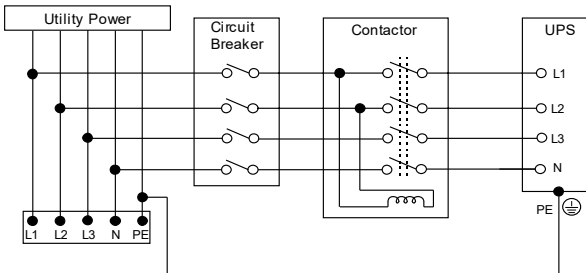
Single phase input	Coil voltage*	Contactors
	240 VAC	LC1D80U5

* The appropriate contactor should be sourced based upon the on-site voltage.

- Use conductors for wiring as per the table below.

Wire function	Recommended wire size	Tightening torque
L, N, 	4 AWG (16 mm ²)	45 lbf-in (5.1 N-m)

Three phase input




- Use external backfeed protection device as per the table below.

Three phase input	Coil voltage*	Contactors
	415 VAC	LC1D80004N5

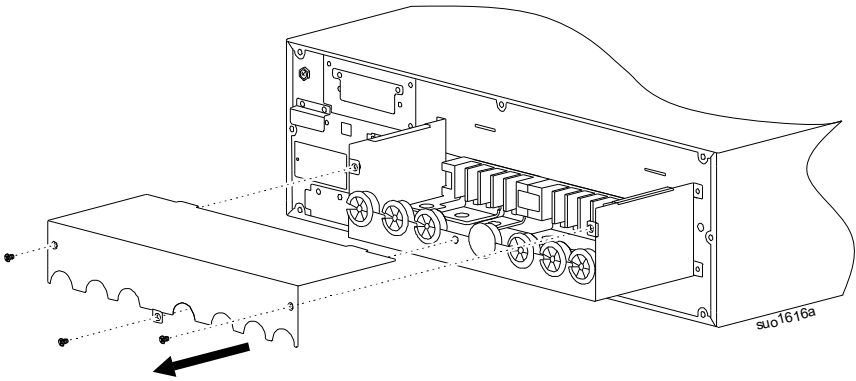
* The appropriate contactor should be sourced based upon the on-site voltage.

- Use conductors for wiring as per the table below.

Wire function	Recommended wire size	Tightening torque
L2, L3	10 AWG (4 mm ²)	35 lbf-in (4.0 N-m)
L1, N, 	4 AWG (16 mm ²)	45 lbf-in (5.1 N-m)

Input/Output hardwiring

1. Locate the terminal block cover on the rear panel of the Easy UPS.
2. Remove the screws securing the cover and remove the upper half of the terminal block cover.

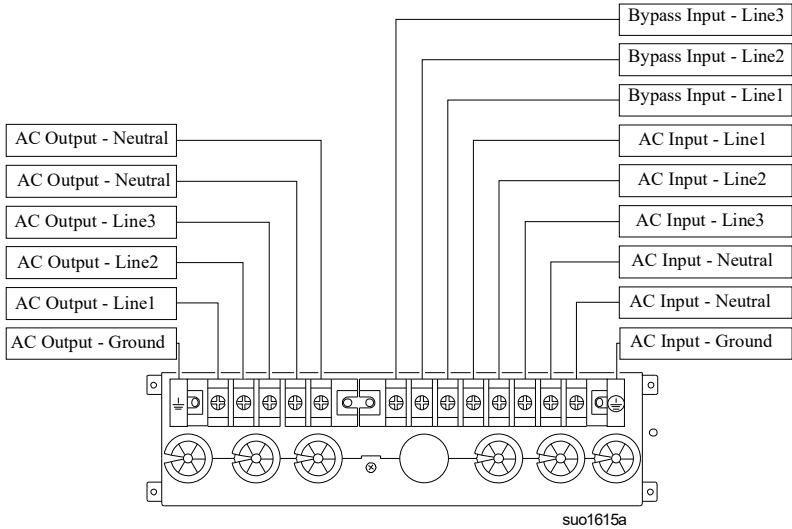


3. Connect the appropriate shorting jumpers for the required configuration. Refer to “Wiring Configuration” on page 18 for details.
4. Replace the closed grommets with open grommets (supplied) where ever the wire enters the terminal block cover.
5. Route the wires through the grommet and connect the wires to the shorting jumpers and terminals as per the required configuration.
NOTE: Connect the ground wire first before connecting any other wire.
6. Replace and secure the hardwire terminal block cover removed in *step 2*.

Wiring specifications

Wiring	External MCB (Recommended)	Wire size*	Tightening torque
Single Phase Input	80 A	4 AWG (16 mm ²)	45 lbf-in (5.1 N-m)
Three Phase Input	32 A	10 AWG (4 mm ²)	35 lbf-in (4.0 N-m)
Input Neutral	80 A	4 AWG (16 mm ²)	45 lbf-in (5.1 N-m)
Bypass Input (Phase)	80 A	4 AWG (16 mm ²)	45 lbf-in (5.1 N-m)
Bypass Input (Neutral)	80 A	4 AWG (16 mm ²)	45 lbf-in (5.1 N-m)
Output (Phase and Neutral)	NA	4 AWG (16 mm ²)	45 lbf-in (5.1 N-m)

Hardwire terminal block



NOTE: This Easy UPS has an option for Single phase input and Single phase output or Three phase input and Single phase output. Separate Bypass input must be Single phase only.

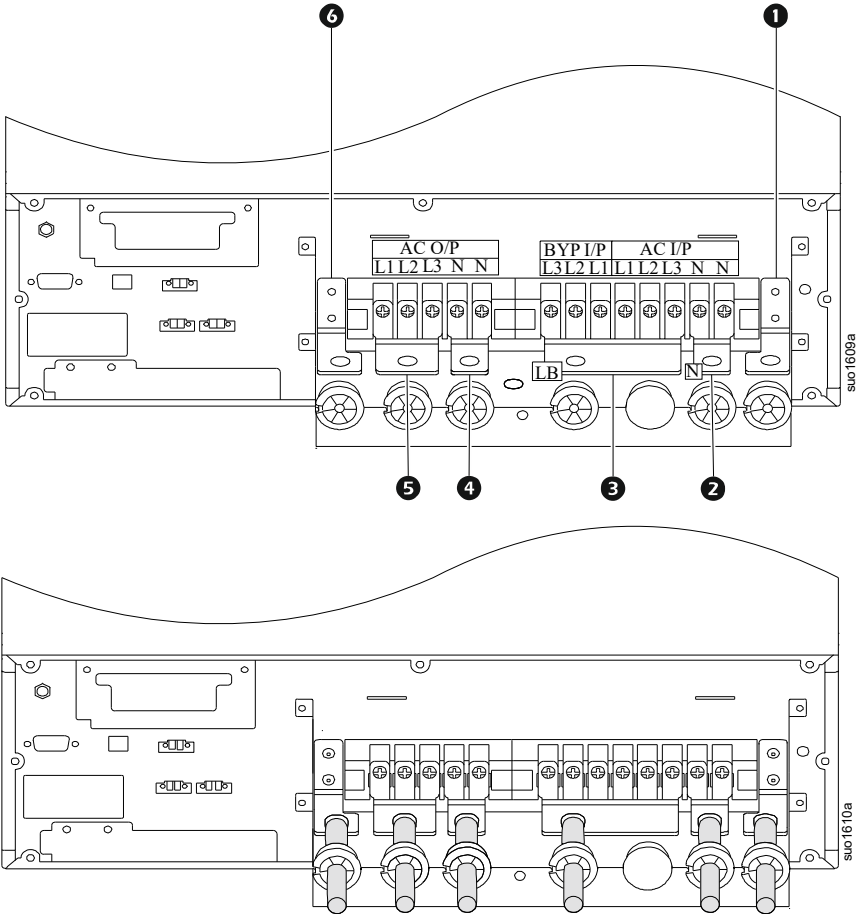
Wiring Configuration

NOTE: Be sure the AC input and Bypass input terminals are connected to the same AC supply in all the wiring configuration.

Single phase input Single phase output configuration (Default configuration)

1. Connect the Input ground wire to Input Terminal - Ground.
2. Connect the Output ground wire to Output Terminal - Ground.
3. Connect the Single phase AC output line wire to Output Line Shorting Jumper SJ1.
4. Connect the Single phase AC output neutral wire to Output Neutral Shorting Jumper SJ2.
5. Connect the Single phase AC input line to Input Line Shorting Jumper SJ3.
6. Connect the Single phase AC input neutral wire to Input Neutral Shorting Jumper SJ2.

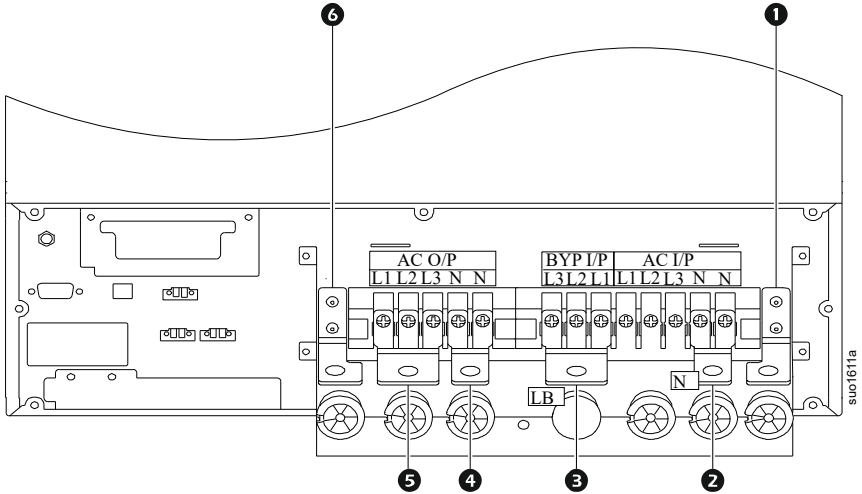
7. Connect wire from L1 in the utility power source to Bypass input (or) for a separate Bypass input, connect the Phase and Neutral wires from the source, through the backfeed protection circuit (refer to “Backfeed protection” on page 15 for details) to terminals LB and N respectively.



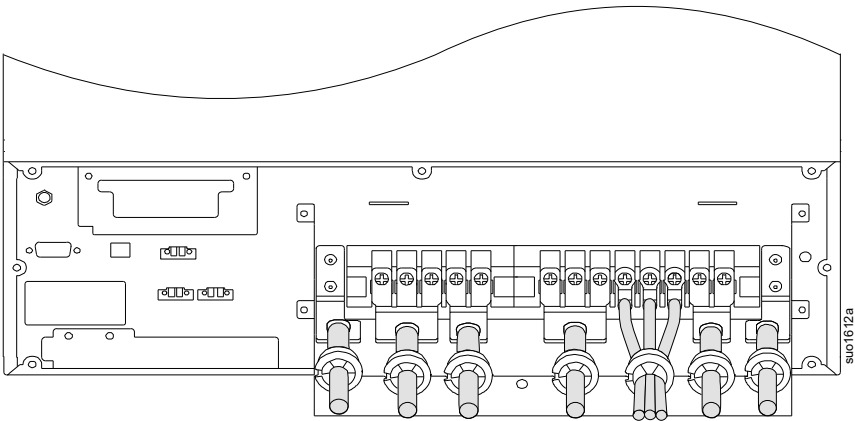
1	Input Terminal - Ground	4	Output Neutral Shorting Jumper SJ2
2	Input Neutral Shorting Jumper SJ2	5	Output Line Shorting Jumper SJ1
3	Input Line Shorting Jumper SJ3	6	Output Terminal - Ground

Three phase input Single phase output configuration

1. Remove the shorting jumper SJ3 (factory installed).
2. Connect the Single phase AC output line wire to Output Line Shorting Jumper SJ1.
3. Connect the Single phase AC output neutral wire to Output Neutral Shorting Jumper SJ2.
4. Connect Three phase AC input to AC Input terminals L1, L2, L3.
5. Connect Input Neutral to Input Neutral Shorting Jumper SJ2.
6. Install shorting jumper SJ1 (supplied) to terminals L3, L2 and L1 of Bypass AC input as shown.
7. Connect wire from L1 in the utility power source to Bypass input or for a separate Bypass input, connect the Phase and Neutral wires from the source, through the backfeed protection circuit (refer to “Backfeed protection” on page 15 for details) to terminals LB and Input Shorting Jumper SJ2 respectively.



1	Input terminal - Ground	4	Output Neutral Shorting Jumper SJ2
2	Input Neutral Shorting Jumper SJ2	5	Output Line Shorting Jumper SJ1
3	Bypass Line Shorting Jumper SJ1	6	Output terminal - Ground



Connect the Battery Bank to Easy UPS

CAUTION

RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- All electrical work must be performed by a qualified electrician.
- Identify the polarities of the battery terminals before connecting the battery. Be sure grounding (green cable) is connected firmly.
- Do not short the battery terminals.
- Do not touch multiple terminals in the battery strings at the same time.
- Do not wear jewelry when working with electrical equipment.

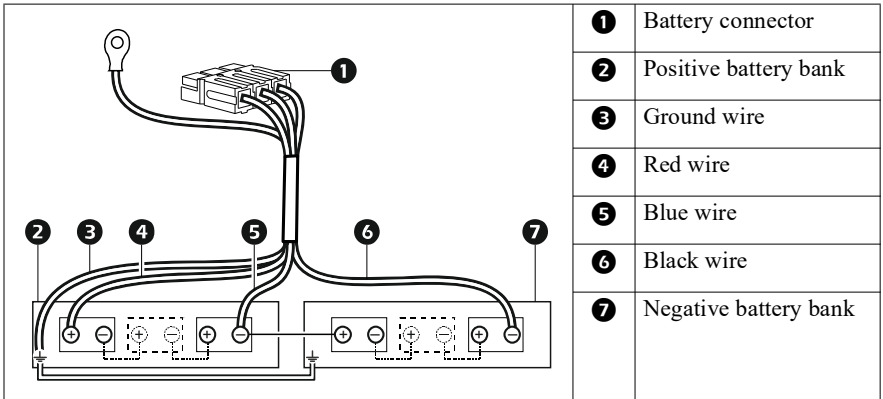
Failure to follow these instructions can result in moderate injury.

NOTICE

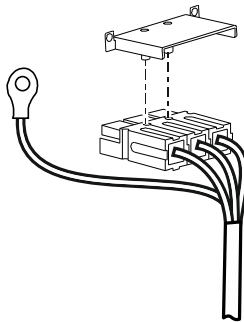
RISK OF IMPROPER CONNECTION

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

Failure to follow these instructions could result in equipment damage.

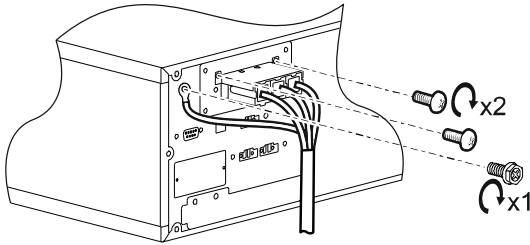


1. Crimp appropriate size lugs suitable for the battery terminals to the free end of the loose wires of the supplied battery connection cable.
 2. Connect the lugs of the positive (red color), negative (black color), and common (blue color) wires, to the positive, negative, and common terminals respectively, on the battery bank. Refer the illustration above.
 3. Locate the battery connector cover on rear panel of Easy UPS.
 4. Remove the screws securing the cover and remove the cover.
 5. Connect one end of the ground wire of the battery connection cable to the metal frame housing the batteries and the other end to the ground terminal on the UPS (refer to the image under *step 8*).
- NOTE:** If a metal frame is not used for housing the batteries, then be sure to properly insulate this ground wire at both ends.
6. Insert the clamp (supplied) to the battery cable connector.



7. Plug the battery cable connector (with the clamp) into the battery connector receptacle on the UPS.
- NOTE:** Be sure that the polarities are correct while plugging in the battery connector.

8. Insert and tighten the screws removed in *step 4* to secure the battery connector (with the clamp) to the Easy UPS.



Start Up

Connect equipment and input power to the Easy UPS

CAUTION

RISK OF ELECTRIC SHOCK

- All electrical work must be performed by a qualified electrician.
- Turn off all power to this equipment before working on the equipment.
- Practice lockout/tagout procedures
- Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions can result in moderate injury.

1. Connect equipment to Easy UPS. Refer “Input/Output hardwiring” on page 17 for details.
2. Connect battery bank to Easy UPS. Refer “Connect the Battery Bank to Easy UPS” on page 21 for details.
3. Connect input utility power to the Easy UPS. Refer “Input/Output hardwiring” on page 17 for details.
4. Switch on the input utility power. The Easy UPS display panel will illuminate.

Set up the battery voltage

Contact APC by Schneider Electric Customer Support for the procedure to set the battery voltage. The selectable options available are ± 96 V, ± 108 V, and ± 120 V. The default battery voltage is set to ± 120 V.

Set up the battery Ah



RISK OF FIRE

Select the correct charger current for the batteries connected to the Easy UPS.

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

Go to the display menu settings, set the correct battery Ah connected to the Easy UPS. The battery charging current is automatically set based on the battery Ah selection.

NOTE:

It is recommended to use the battery having capacity of more than 26 Ah and less than 120 Ah.

- Use batteries which can withstand:
 - boost voltage of 15 V
 - float voltage of 13.8 V
- Maintenance of battery should be done at regular intervals.

Charging current	3 A	6 A	9 A	13 A
SMF/TUB battery capacity (Ah)	> 26 Ah and ≤ 42 Ah	> 42 Ah and ≤ 60 Ah	> 60 Ah and ≤ 100 Ah	> 100 Ah and ≤ 120 Ah

Start the Easy UPS

Press and hold the POWER ON/OFF button located on the front panel of Easy UPS until a beep is heard. The **Status** LED will illuminate green.

Register the Easy UPS when it is started for the first time. Refer “Easy UPS Registration” on page 26 for details.

- Be sure to charge the battery to its full capacity initially.
- **Do not** expect full backup time during this initial charge period.

Cold start the Easy UPS

Use cold start feature to supply power to connected equipment from the Easy UPS batteries.

Press and hold the POWER ON/OFF button located on the front panel of Easy UPS until a beep is heard. The display panel will illuminate.

Press the POWER ON/OFF button again to supply battery power to the connected equipment.

Turn off Easy UPS

To turn off the Easy UPS, press and hold the POWER ON/OFF button on the front display panel until a beep is heard.

Connect and install management software

Easy UPS SRV models are provided with PowerChute™ management software for unattended operating system shutdown, UPS monitoring, UPS control and energy reporting.

1. Connect the USB cable from the rear of the UPS to the protected device such as a server.

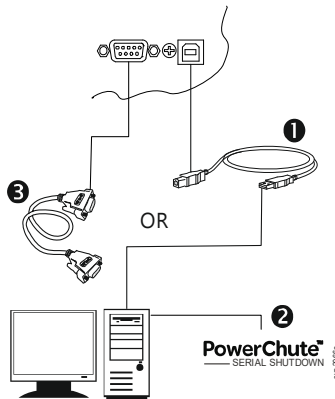
NOTE: A USB driver is required to communicate with PowerChute over USB. For more information, refer to Knowledge Base article FAQ000223363 on the APC by Schneider Electric website (<https://www.apc.com/us/en/faqs/home>).

2. For a server or other device with an operating system, download and install the latest version of the PowerChute Serial Shutdown from www.apc.com/pcss. PowerChute Serial Shutdown supports graceful shutdown in the event of an extended power outage.

NOTE: PowerChute is a 64-bit application and cannot be installed on a 32-bit operating system

3. A built-in serial port is also available for additional communication options with serial cable.

NOTE: Both RS232 Serial Port and USB Communication Port cannot be used at the same time.



1	Connect the USB cable from the rear of the Easy UPS to the computer.
2	Download and install the latest version of PowerChute Serial Shutdown from https://www.apc.com/pcss .
3	A built-in serial port is also available for additional communication options with serial cable.

Additional communication options are available via the built-in intelligent slot. Refer to APC by Schneider Electric Web site, www.apc.com for more information.

Easy UPS Registration

Register the Easy UPS with APC by Schneider Electric customer support. This is a one time process required to be done only during initial installation. The Easy UPS output cannot be turned on without successfully completing registration process. After successful completion of the registration process, the Easy UPS will function normally.

1. When the Easy UPS is started up for the first time after installation, the display screen will display 3 numeric digits, “ON LINE”, “ON BATT”, “BYPASS” and “ALARM” symbols (refer “Front panel display features” on page 28 for details) on the display get illuminated. All other symbols are not illuminated.
2. Call APC by Schneider Electric Customer Support on the toll free number given in page 40 for obtaining the 3 digit Personal Identification Number (PIN).
3. Press the ENTER button to enter the 3 digit PIN given by APC by Schneider Electric Customer Support. When the ENTER button is pressed, all the 3 displayed digits change to ‘0’ and the first digit flashes every 1 second. Use the UP ARROW button to increment the flashing digit or the DOWN ARROW button to decrement the flashing digit till the first digit of the PIN is displayed. Press the ENTER button to accept the flashing digit and move to enter the second digit of the PIN. Repeat this process till all the 3 digits of the PIN are entered.
4. After successful entry of the PIN, a long beep will be heard and the home screen is displayed on the Easy UPS.
5. If the authentication of the PIN fails, then a new 3 digit number is displayed and *steps 2 to 4* have to be repeated.

Emergency Power Off

NOTICE

RISK OF EQUIPMENT DAMAGE

- Adhere to all national and local electrical codes.
- All electrical work must be performed by a qualified electrician.
- Do not connect the EPO interface to any circuit other than an unused circuit.

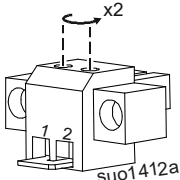
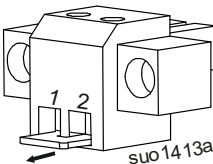
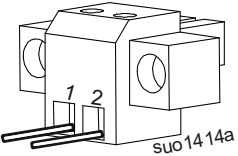
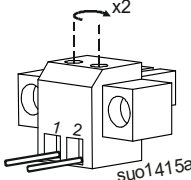
Failure to follow these instructions can result in equipment damage.

The Emergency Power Off (EPO) function is a feature that will immediately remove power to all connected equipment. *Turn off* AC input power to the UPS when EPO is enabled.

The EPO interface is a Safety Extra Low Voltage (SELV) circuit and should be connected only to other SELV circuits.

The EPO switch is internally powered by the Easy UPS for use with non-powered switches or potential free normally closed (N/C) contacts.

Connecting normally closed (N/C) contacts

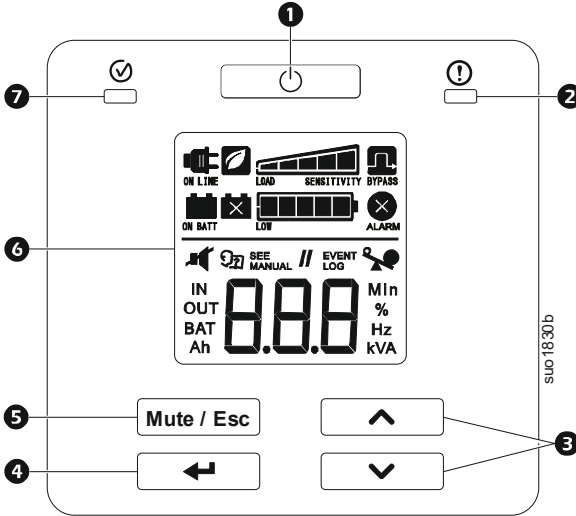
<p>1 Loosen the screws of terminals 1 and 2 in the EPO connector.</p> 	<p>2 Remove the metal link between pins 1 and 2.</p> 
<p>3 Connect N/C relay contacts between pins 1 and 2 of the EPO terminal block. Use 0.5 to 1 mm² wire.</p> 	<p>4 Secure the EPO connector screws beneath pins 1 and 2.</p> 

NOTE: If the N/C contact is open, the Easy UPS output power will turn off. Use Class 2 cable (CL2) to connect the Easy UPS to the EPO switch.

Operation

Front panel display features











Easy UPS models are equipped with an intuitive and configurable LCD display. The display complements the software interface as they convey similar information and either may be used to configure the Easy UPS settings




1 POWER ON/ OFF button	Press the POWER ON/OFF button to turn on the Easy UPS. Press and hold the POWER ON/OFF button until a beep is heard to turn off the Easy UPS. Press the POWER ON/OFF button to reset alerts.
2 Alert LED	The Alert LED illuminates red when the Easy UPS detects an internal error and blinks red for Easy UPS notifications. Refer “Alerts and Notifications” on page 36 for details.
3 UP/DOWN ARROW button	Press the UP/DOWN ARROW button to scroll through the main menu options and display screens.
4 ENTER button	Press the ENTER button to enter the menu or to select a menu item/value during navigation.
5 MUTE/ESC button	Press the MUTE/ESC button: <ul style="list-style-type: none"> • To acknowledge audible alerts and suppress them temporarily. • To exit a sub menu and return to the main menu.
6 LCD Display	The display interface options are visible on this LCD screen. Press any button to activate LCD, if the display is not illuminated.

7	Status LED	<p>The Status LED illuminates green when the power is on. The LED indicates two different states of output power:</p> <ul style="list-style-type: none"> • Output off: LED blinks on and off. Press POWER ON/OFF button to turn the output power on. • Output on: LED illuminates green continuously.
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Display icons

 ON LINE	<p>On Line: The Easy UPS is drawing utility power and performing double conversion to supply power to the connected equipment.</p>
 ON BATT	<p>On Battery: The Easy UPS is supplying battery backup power to the connected equipment.</p>
	<p>Replace Battery: The battery is not connected securely or the battery is nearing the end of its service life and should be replaced.</p>
 BYPASS	<p>Bypass: The Easy UPS is in bypass mode, sending utility power directly to connected equipment. Bypass mode operation is the result of an internal UPS event, an overload condition, or an user initiated command either through the display interface or through an accessory. Battery operation is not available while the Easy UPS is in bypass mode. Refer “Alerts and Notifications” on page 36 for details.</p>
 ALARM	<p>System Alerts: The Easy UPS has detected an internal error. Refer “Alerts and Notifications” on page 36 for more details.</p>
	<p>Overload: The equipment connected to the Easy UPS is drawing more power than rated.</p>
	<p>Battery Charge: The battery charge level is indicated by the number of bar sections illuminated. When all five blocks are illuminated, the battery is fully charged. Each bar represents approximately 20% of the battery charge capacity.</p>
	<p>Load Level: The load percentage is indicated by the number of load bar sections illuminated. Each bar represents approximately 20% of the load.</p>
	<p>Mute: An illuminated line through the icon indicates that the audible alert is disabled.</p>
	<p>Green Mode: An illuminated icon indicates that the unit is working in Green mode. The connected equipment is receiving the utility input directly as long as the input voltage and frequency are within the configured limits.</p>

 SEE MANUAL	Alert or notification: The Easy UPS has detected an internal error or the Easy UPS is in configuration mode. Refer “Alerts and Notifications” on page 36 for details.
EVENT LOG	Event: The icon is illuminated when the user is viewing the event log.

Status Indicators

Audible Alert	Condition
Continuous beeps, every half second	Low Battery State - The battery is nearing its discharge state. The Easy UPS is about to shutdown. Overload condition - The equipment connected to the Easy UPS is drawing more power than rated.
4 beeps every 30 sec (first beep starts after 4 sec on battery)	On Battery State - The Easy UPS is supplying battery backup power to the connected equipment.
Continuous beeps	Alert State - Easy UPS has detected an internal error. Refer “Alerts and Notifications” on page 36 for details.
Short beep every 2.5 sec	Battery disconnected.
Continuous short beeps for every half second for 1 minute, repeats every 5 hours	Replace battery.
Two short beeps every 5 sec	Event Bypass State - Easy UPS has detected an internal error. Connected equipment receives utility input power through the bypass relay.

Easy UPS Display Parameters

Operational data displayed in the display panel is given in the table. Navigate using the UP/DOWN ARROW buttons. Configuration

Parameter	Units	Indicator Icons
Output voltage	VAC	OUT, V
Output frequency	Hz	OUT, Hz
Input voltage	VAC	IN, V
Input frequency	Hz	IN, Hz
State of battery charge	%	BAT, %
Battery voltage	VDC	BAT, V
Battery charging current	A DC	BAT, A

Parameter	Units	Indicator Icons
Ambient temperature	°C	NUMBER, C
Remaining On Battery runtime	Minutes	BAT, Min
Load level in percentage (Maximum of Watts or VA)	%	OUT, %
Load level in kVA	kVA	OUT, kVA
Total Ah capacity of connected battery	Ah	BAT, Ah

Easy UPS settings

Configure Easy UPS settings using the display interface. Refer “Configure Easy UPS parameters” on page 34 to edit the parameters.

Function	Factory Default	User Selectable Options	Description
Output voltage	230 VAC	<ul style="list-style-type: none"> • 220 VAC • 230 VAC • 240 VAC 	Allows the user to select output voltage while the Easy UPS is in standby mode.
Audible alert	☑(Enable)	☑ (Enable) ☐ (Disable)	Allows the user to mute the audible alerts of the Easy UPS when set to disable or when the display panel buttons are pressed.
Green mode / high efficiency mode	☐ (Disable)	☑ (Enable) ☐ (Disable)	When this mode is enabled, connected equipment receives utility input power through the bypass relay as long as input voltage is within the range of ±5% of configured output voltage and ±4 Hz of configured output frequency. Inverter is turned off during this mode. If utility power input goes out of range, inverter is turned on. The load is transferred to online mode or battery mode. The power to the connected equipment may be interrupted up to 10 milliseconds.

Function	Factory Default	User Selectable Options	Description
Battery Ah Capacity	26 Ah	7 to 200 Ah	Allows the user to set the Total Ah of the batteries connected to the Easy UPS. NOTE: It is recommended to use the battery having capacity of more than 26 Ah.
Output voltage adjustment	230 VAC	<ul style="list-style-type: none"> • 220 ± 0~9 V • 230 ± 0~9 V • 240 ± 0~9 V 	Allows the user to adjust the output voltage by using the UP/DOWN ARROW button. This parameter can be set either in line mode or battery mode.
Inverter voltage adjustment	Add 0	<ul style="list-style-type: none"> • Add 000 ~ 09.9 V • Sub 000 ~ 09.9 V 	Allows the user to adjust the inverter voltage by choosing Add or Sub. The voltage range is from 0 V to 9.9 V. The default value is 0 V. This parameter can be set either in line mode or battery mode.

Advanced Display Navigation

The Easy UPS display has five menu options in the main menu options. Press the ENTER button from the Home Screen to access these menu options. Use the UP/DOWN ARROW buttons to navigate between the menu options.

Menu option	Description
SET	Configure the Easy UPS Use this menu option to configure the Easy UPS parameters. Press the ENTER button to see the configuration options. Refer “Configure Easy UPS parameters” on page 34 for details. Press the MUTE/ESC button to return to the Home Screen.

Menu option	Description
LOG	<p>Show Event Log Use this menu option to see the Easy UPS event log. The Easy UPS records the last 10 events and displays the codes in this log. Press the ENTER button to see the log. Use the UP/DOWN ARROW buttons to see the logged events. The DOWN ARROW button navigates towards old events and the UP ARROW button navigates to new events. Every log entry has a numeric and textual event code. At the end of the log, the word “End” will be displayed. Press the MUTE/ESC button to return to the Home Screen.</p>
UPS	<p>Show Easy UPS information Use this menu option to see the Easy UPS information. Press the ENTER button to see the rating of the Easy UPS. Press the UP ARROW button to see the Easy UPS firmware version. Press the MUTE/ESC button to return to the Home Screen.</p>
byp	<p>User Command to bypass Use this menu option to switch the Easy UPS to bypass mode or bring the Easy UPS to online mode from bypass mode. Press ENTER button:</p> <p>Put Put: Use to switch the Easy UPS to bypass mode of operation. NOTE: Power to the connected equipment will drop, if the mains voltage is not within the threshold limits.</p> <p>Out Out: Bring the Easy UPS out of bypass and restore clean power to the connected equipment.</p> <p>The Easy UPS will start a count down on the display while switching to Bypass mode or coming out of Bypass mode.</p>
tSt	<p>Execute Battery Self Test Use this menu option to conduct a self test and determine the battery status. Press the ENTER button to initiate the test. If the test command is accepted, the Easy UPS will initiate a self test and will start a count down on the display. Display messages are shown at the end of the test.</p> <p>rFd Test refused. The output is off or battery is not charged or battery is disconnected.</p> <p>FLd Test not passed.</p> <p>PAS Test passed.</p> <p>Press the MUTE/ESC button to return to the Home Screen.</p>

Configure Easy UPS parameters

Follow the steps to configure parameters in the Easy UPS:

1. Press the ENTER button.
2. Press the UP/DOWN ARROW buttons to navigate to “Set”.
3. Press the ENTER button.
4. Navigate through the parameters using the UP/DOWN ARROW buttons.
5. Press the ENTER button to edit a parameter. Icons start flashing to indicate the editing.
6. Press the UP/DOWN ARROW buttons to navigate between the options available for the selected parameter.
7. Press the ENTER button to select the option or MUTE/ESC button to abort the editing of current parameter. Flashing of icons stops after this.
8. Press the UP/DOWN ARROW buttons to navigate between parameters.
9. Press the MUTE/ESC button to exit menu navigation.

Troubleshooting

Use the table below to solve minor installation and operation problems. Refer to the APC by Schneider Electric Web site, www.apc.com for assistance with complex Easy UPS problems.

Problem and/or Possible Cause	Solution
Easy UPS will not turn on when utility input is available	
The Easy UPS is not turned on.	Press the POWER button to turn on the Easy UPS.
The Easy UPS is not connected to utility power supply.	Be sure that the power cable from the Easy UPS to the utility power supply is securely connected at both ends.
Input circuit breaker on the Easy UPS is tripped.	Reset the circuit breaker in the rear panel. Refer “Rear Panel Features” on page 14 for details.
The Easy UPS is operating on battery, while connected to the input utility power	
Input voltage and frequency are beyond specifications.	Connect the UPS to a different outlet on a different circuit. Test the utility input power to ensure the unit is receiving input power. If display is on, navigate and check the input voltage and frequency.
Easy UPS, when connected to battery, is not supplying power to the connected equipment	

Problem and/or Possible Cause	Solution
The Easy UPS is not turned on.	If the Easy UPS has shutdown (the display is not on), follow the “Cold start the Easy UPS” on page 24 procedure.
The battery is not connected.	Connect battery to the Easy UPS. Refer “Connect the Battery Bank to Easy UPS” on page 21 for details.
Low battery cut off. Easy UPS may have discharged the battery due to utility power outage and turned the output off due to low battery condition.	Wait for the utility power to be restored and charge the battery.
Easy UPS emits an audible beeping sound at long intervals	
The Easy UPS is operating normally when running on battery.	Refer “Alerts and Notifications” on page 36 for details.
Alert LED is illuminated. The Easy UPS displays an alert message and emits a constant beeping sound	
The Easy UPS has detected an internal error.	Refer “Alerts and Notifications” on page 36 for details.
No audible sounds from Easy UPS even when the Alert LED is illuminated	
Audible alert is disabled.	Change the Easy UPS configuration to enable audible alerts.
Easy UPS is not providing expected backup time	
Battery is not charged properly.	Be sure that the battery is charged to its full capacity.
The battery is near the end of its service life.	If the battery is near the end of its service life, consider replacing the battery, even if the replace battery indicator is not illuminated.
Charger taking more time to charge battery.	<ul style="list-style-type: none"> • Be sure that the correct battery capacity is selected. • Input voltage is low to charge the battery with full current.
Easy UPS is not turning off	
Utility input power is available.	Easy UPS logic power cannot be turned off if utility input power is available. To turn off the Easy UPS, turn off utility input power and press POWER OFF button. Release when a beep is heard.
Easy UPS is in Bypass mode and the LED is not illuminated red	
Easy UPS is configured to stay in the bypass mode.	Change the configuration to exit bypass mode.

Problem and/or Possible Cause	Solution
Easy UPS is in Bypass mode and the LED is illuminated red	
Easy UPS is in bypass mode even after over temperature alarm is cleared.	Wait for some time for the Easy UPS to come back to online mode.
The Easy UPS has experienced an overload condition and transferred to bypass.	<p>Connected equipment exceeds the maximum load as defined in specifications.</p> <p>The alerts remain on until the overload condition is corrected. Disconnect nonessential equipment from the Easy UPS to eliminate the overload condition.</p> <p>The Easy UPS continues to supply power as long as it is in bypass mode and the circuit breaker does not trip.</p> <p>The Easy UPS will not provide battery power in the event of a utility voltage interruption.</p>
Easy UPS detected an internal error and transferred to bypass.	Refer “Alerts and Notifications” on page 36 for details.

Alerts and Notifications

Easy UPS displays a text code and a numeric code on the display when it detects an internal error.

Alerts

Display code	Description	Solution
SC	Easy UPS has experienced a short circuit at the output.	<ol style="list-style-type: none"> 1. Turn off input circuit breaker. 2. Turn off battery circuit breaker. 3. Wait for 10 seconds. 4. Remove the short circuit. 5. Turn on input circuit breaker. 6. Turn on battery circuit breaker. 7. Press POWER ON/OFF button to start the Easy UPS.
OL	Easy UPS is experiencing an overload condition.	Disconnect nonessential equipment from the Easy UPS to eliminate the overload condition.
dCH	The Easy UPS has detected a DC voltage error.	Press POWER ON/OFF button to reset the error. If the Easy UPS does not recover, contact APC by Schneider Electric.

Display code	Description	Solution
H0t	Temperature of the unit is rising above the set limits.	Disconnect nonessential equipment from the Easy UPS to reduce the load. Ensure that ambient temperature is within limits. Ensure that adequate clearance is maintained.
CHG	Easy UPS has detected a charger error.	<ol style="list-style-type: none"> 1. Turn off input circuit breaker. 2. Turn off battery circuit breaker. 3. Wait for 10 seconds. 4. Remove the short circuit. 5. Turn on input circuit breaker. 6. Turn on battery circuit breaker. 7. Press POWER ON/OFF button to start the Easy UPS.
FF	Easy UPS has detected fan failure.	Contact APC by Schneider Electric Customer Support.
Contact APC by Schneider Electric for all other alert codes.		

Notifications

Display code	Description	Solution
bdc	Battery is not connected.	Connect battery to the Easy UPS. Refer “Connect the Battery Bank to Easy UPS” on page 21 for details.
EPO	EPO enabled.	Set the circuit in closed position to disable EPO function.
bYL	Bypass loss.	Be sure that the bypass connection is secured properly and bypass voltage and frequency are within the specified limits.
04	Incorrect phase sequence at the input terminals.	Be sure that the phase sequence at the UPS input terminals is correct.
Contact APC by Schneider Electric for other notifications.		

Transport

1. Shut down and disconnect all connected equipment.
2. Disconnect the unit from mains power.
3. Disconnect external batteries.

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.
 - a. Note the model number and serial number and the date of purchase. The model and serial numbers are located on a label in the rear panel of the unit.
 - b. Call APC by Schneider Electric Customer Support and a technician will attempt to solve the problem over the phone. If this is not possible, the technician will issue a Service Request Number.
 - c. If the unit is under warranty, the repairs are free.

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

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 part 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, 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 by Schneider Electric website: **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 website 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 websites 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 distributor from whom you purchased your APC by Schneider Electric product.