



# POWERCOM 500-800VA Uninterruptible Power System UPS User Manual

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**POWERCOM 500-800VA Uninterruptible Power System UPS**



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## IMPORTANT SAFETY INSTRUCTION

**WARNING: SAVE THESE INSTRUCTIONS!!**

- **WARNING:** Manual contains important instructions of UPS and batteries during Installation and maintenance. Follow this instruction at all time
- **WARNING:** It is recommended to install UPS in an ANSI/NFPA75 room in which temperature and humidity are controlled and free from electrically conductive particles. DO NOT expose UPS to direct sunlight or high heat source; DO NOT block off ventilation opening around the housing.
- **CAUTION:** Before conducting maintenance, repair, or shipment, please turn off everything completely and disconnect them.
- **CAUTION:** The UPS is NOT applicable for any inductive loads such as motors or domestic appliances like hairdryers, speakers, and fluorescent lamps.
- **CAUTION:** All interconnection and power cable should be connected ONLY AFTER the UPS shut down and disconnected from main.
- **CAUTION:** Only use No.26 AWG or larger certified cables to connect UPS and device
- **CAUTION:** DO NOT unplug UPS from main power during operation or protective ground will fail. DO NOT disconnect battery under load or shut down may occur.
- **CAUTION:** Ensure the total leakage current of UPS and the connected equipment under 3.SmA.
- **CAUTION:** Ensure UPS connects to grounded main power with a fuse or circuit breaker protection.
- **CAUTION:** Dangerous amount of voltage might still exist even the UPS disconnects from the main power since residual voltage exists due to battery supply.
- **CAUTION:** Beware of all the details on the cautionary sticker located on UPS.
- **CAUTION** (No user-serviceable parts): Do not attempt to remove the unit's cover, no user-serviceable parts inside. Please refer all service to qualified service technicians.
- **CAUTION:** DO NOT dispose UPS and its batteries to fire, the battery may explode
- **CAUTION:** DO NOT attempt to open or mutilate the battery.
- User's operations: Users only permits to:
  - Turning the UPS unit on and off.
  - Operating the user interface.
  - Connecting data interface cables.
  - Changing the battery
- **CAUTION:** Battery can cause shock and short circuit current. When servicing batteries:
  - A. Remove watches, rings, or other metal objects.
  - B. Use tools with insulated handles.
  - C. Wear rubber gloves and boots.
  - D. Please DO NOT place any tools or metal parts on top of batteries.
  - E. Disconnect charging source before connecting/disconnecting battery terminals
  - F. Servicing of batteries should be performed or supervised by personnel with necessary precautions and knowledge. Keep unauthorized personnel away from batteries.
- **DANGER:** Hazardous electric component inside this unit (example: Heat-sinks) remain energized from the battery supply even when the main power is disconnected.
- **DANGER:** Battery circuit is not isolated from the AC input. Hazardous voltage may exist at battery terminals and ground-test for safety before any direct contact.
- **CAUTION:** Remove the battery's pole during service inside the battery cabinet or UPS.
- **CAUTION:** ONLY replace batteries with the same type and quantity

**WARNING (Fuses):** Ensure fuse replacement with the same type and rating ONLY.

## Introduction

The information provided in this manual covers Line-Interactive S00VA-IS00VA, S00VA-3000VA uninterruptible power system (UPS). This manual contains basic functions, operating procedures, and emergencies, also including information on how to ship, store, handle, and install the equipment. Only detailed requirements of the UPS units described herein. The Installation must carry out according to this manual. The electrical Installation must further comply with local legislation and regulations.

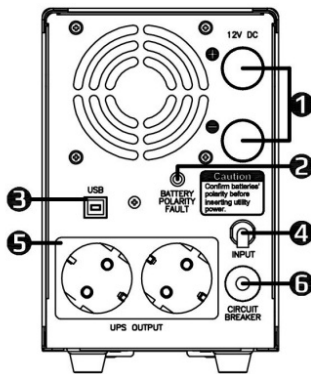
## Installation

### Rear panel view

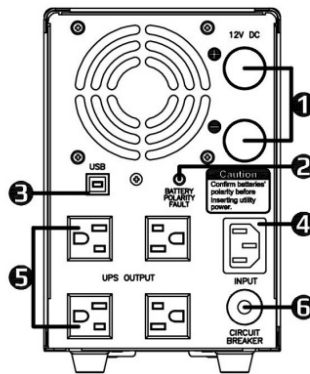
**Tower:**

500-800VA

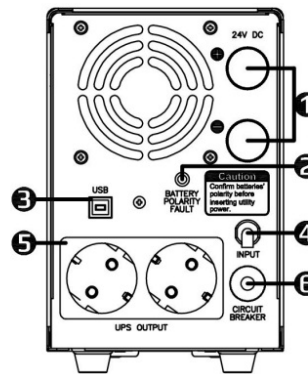
1.1K-1.5KVA



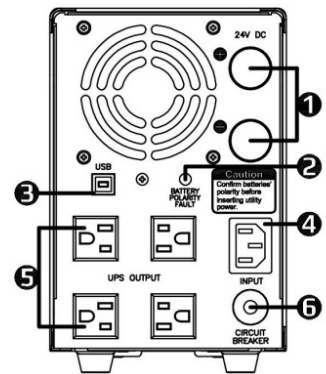
Schuko Type



NEMA Type

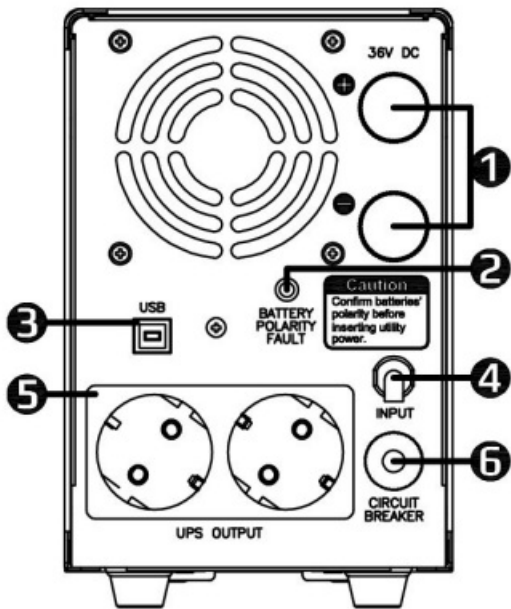


Schuko Type

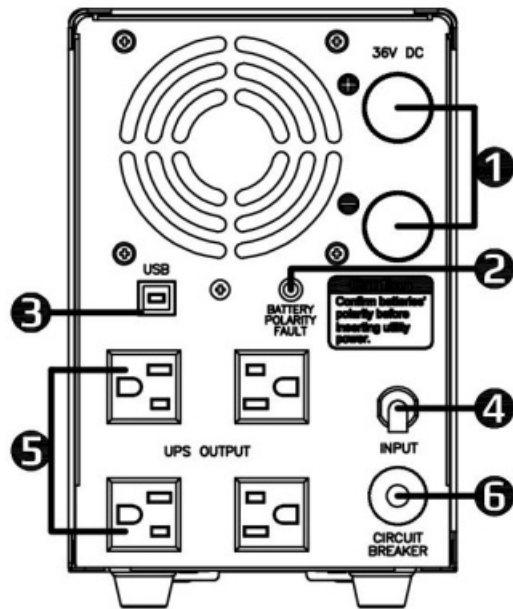


NEMA Type

3KVA



Schuko Type

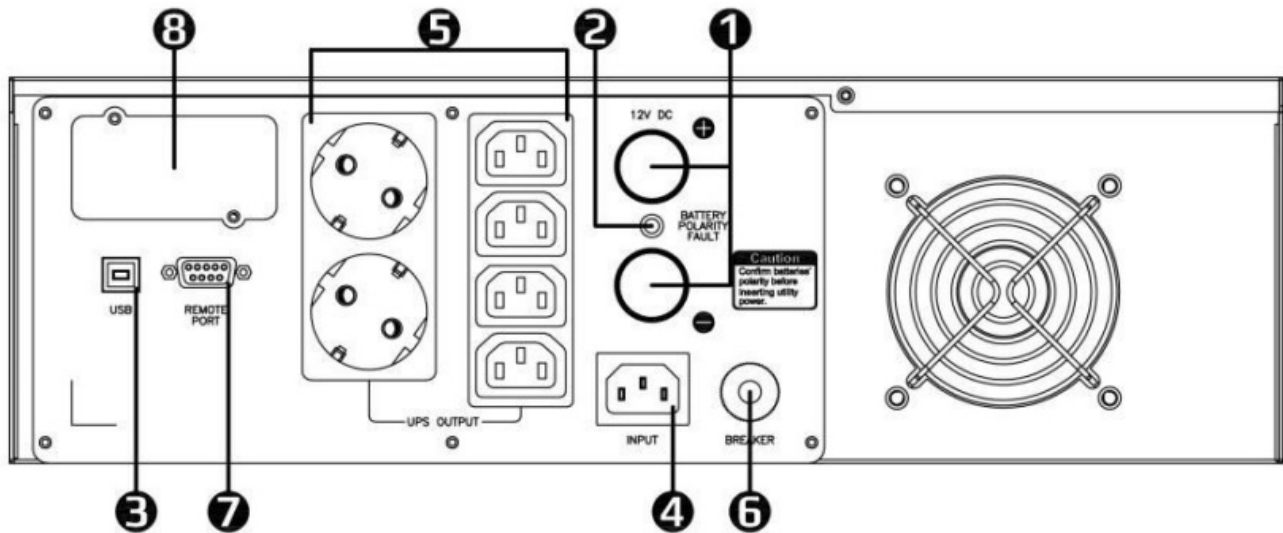


NEMA Type

1. External battery port (12VDC/ 24VDC/ 36VDC)
2. "Battery Polarity Fault" light
3. USB (optional)
4. Input
5. Outlet
6. Input breaker

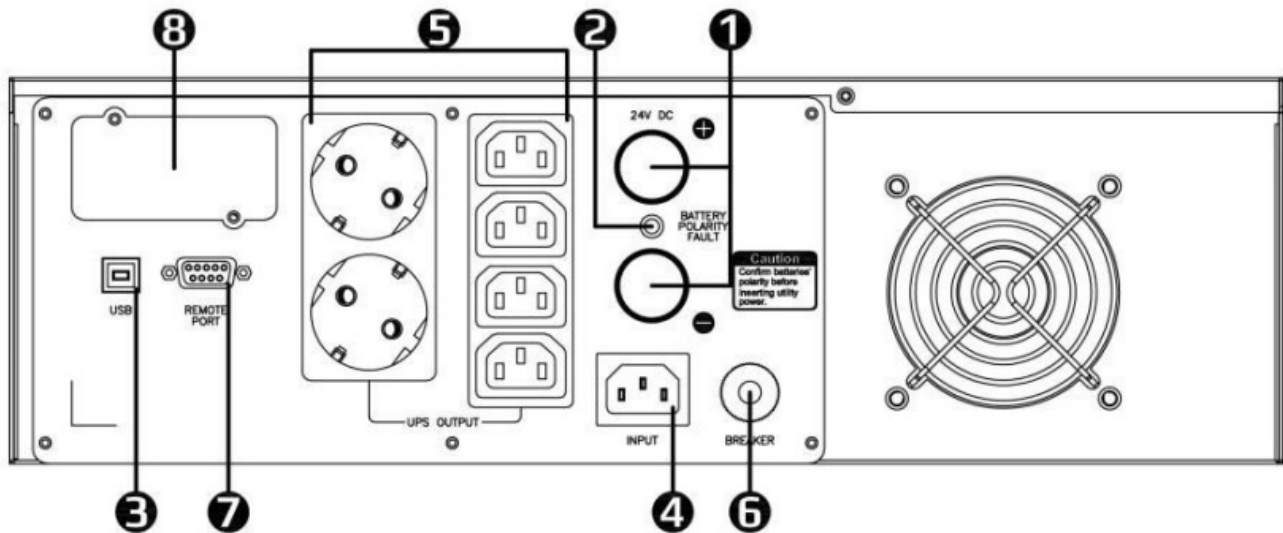
**Rack:**

## 500-800VA



## 1.1K-1.5KVA

Schuko + IEC Type



Schuko + IEC Type

1. External battery port (12VDC/24VDC)
2. "Battery Polarity Fault" light
3. USB
4. Input
5. Out let
6. Input breaker
7. RS232 port
8. Interface port

**\*Figures only display available function; functions are not on unit if not marked.**

### Connection to External Battery Pack

- Please read safety instructions first before proceeding.
- Connect battery (purchased separately) to UPS by cables from package contents.
- Use only factory supplied or authorized battery cable provided.
- Please refer to 6.4.3 External Battery Pack for recommended battery capacity.
- Connect the second battery to the first one with proper battery cable if installing more than one battery
- The maximum quantity of a battery pack is regulated to 2 by UL approval.
- In factory default:

**Red cable to the positive terminal(+)**

**Black cable to the negative terminal(-)**

**Caution:** For safety concerns, we highly recommend that users use gloves or tapes to isolate battery terminals before operating the unit.

**Caution:** Please ensure batteries are the same type and capacity.

### Single Battery Connection (Tower)

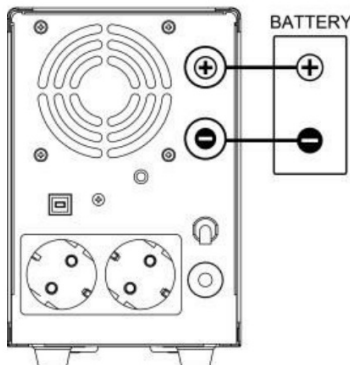


Fig.1 12VDC

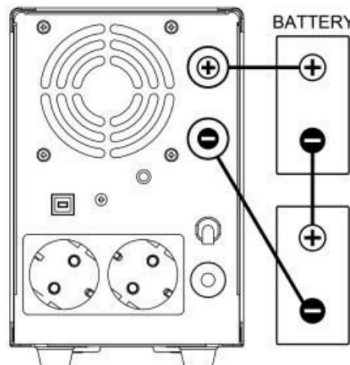


Fig.2 24VDC

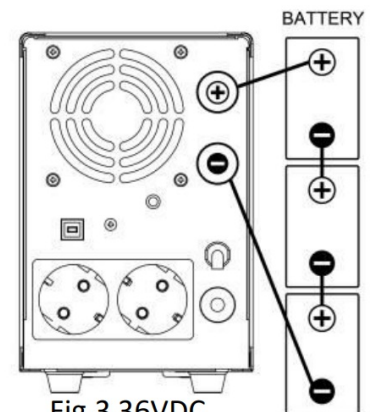


Fig.3 36VDC

As Fig.1, 2 and 3, connecting the battery cable to its proper position. Ensure voltage matches the UPS nominal DC voltage.

### Multiple Battery Connections (Tower)

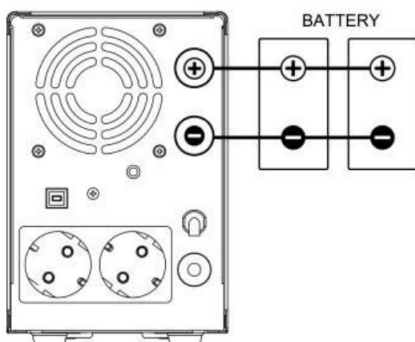


Fig.4 12VDC

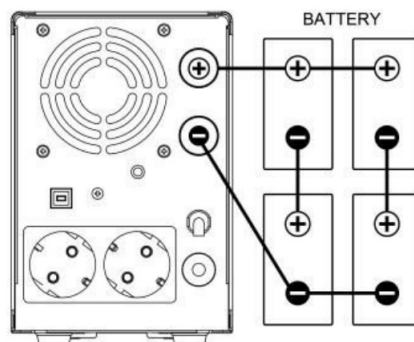


Fig.5 24VDC

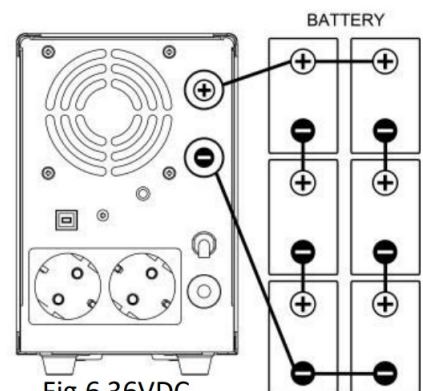


Fig.6 36VDC

As Fig.4, 5 and 6, when connecting two or more batteries, please ensure their type and capacity are the same, and the battery wire is AWG#8 or above.

When using two battery sets simultaneously, connect them in parallel. Additional cables (to be purchased separately) are required to connect extra batteries. When two or more batteries are connected, connect the plus(+) terminal of one battery to the plus(+) terminal of the other battery; Connect the Minus(-) terminals of

batteries to the minus(-) terminals of the other battery.

### Single Battery Connection (Rack)

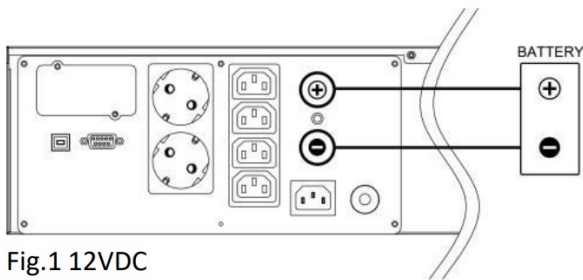


Fig.1 12VDC

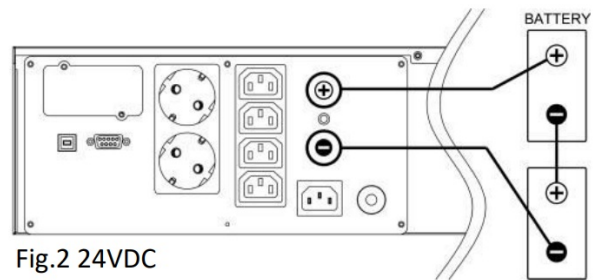


Fig.2 24VDC

As Fig.1 and Fig.2, connecting the battery cable to its proper position. Ensure voltage matches the UPS nominal DC voltage.

### Multiple Battery Connections (Rack)

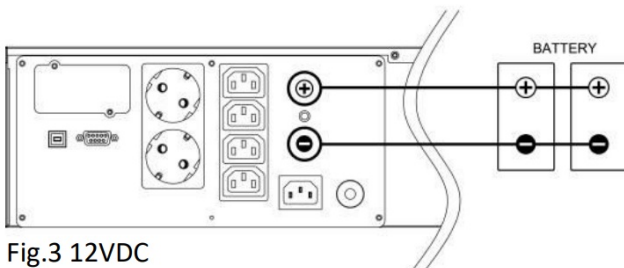


Fig.3 12VDC

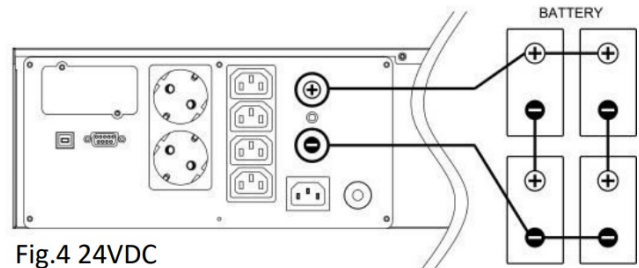


Fig.4 24VDC

As Fig.3 and Fig.4, when connecting two or more batteries, please ensure their type and capacity are the same, and the battery wire is AWG#8 or above.

When using two battery sets simultaneously, connect them in parallel. Additional cables (to be purchased separately) are required to connect extra batteries. When two or more batteries are connected, connect the plus(+) terminal of one battery to the plus(+) terminal of the other battery; Connect the Minus(-) terminals of batteries to the minus(-) terminals of the other battery.

### Connection to Main and Load

- Follow all installation and safety instructions very carefully; failure to do so may cause hazardous situations to personnel and equipment.
- Ensure the main power voltage matches with UPS. (110V/220V)
- For electrical Installation, closely observe the nominal current rating of the source.
- Check the equipment's power requirement to prevent overloading situations.
- Do not connect devices that draw either massive power shortly or half-wave rectified current – such as hairdryer, vacuum cleaner, laser printer, and plotter.

**Note:** Although you may use the UPS immediately, maximum back up time will not be available yet. It is recommended to charge the batteries for a minimum of 8 hours before use.

- Connect the input cable to the UPS and the other end to the mains. The battery will automatically charge when connecting to the main power.
- Connect the loads to the UPS; Ensure receptacles are connected firmly.
- (Optional) To protect your telecom/internet system, use RJ45/RJ11 cable to install the input/output cable with



matching in/out jack.

## **Operation**

Necessary information for the operation of the unit is covered in this chapter. Normally UPS runs automatically, but on a few occasions such as just after Installation, all procedures are described herein.

### **General Description**

As Line-Interactive UPS, it is capable of providing clean and stable power to your critical system. While the UPS regulates and filters power fluctuation, it also keeps the battery charged for any emergency.

- Automatic transformer regulates over and under-voltage power.
- During a power failure, the UPS immediately provides backup power from the battery to support your essential equipment.
- Power transference is typically achieved uninterrupted within 4 milliseconds.

### **Line-Mode/Battery-Mode**

UPS will operate in Line-Mode that supports power and charge battery while connected to power. During a power failure, the UPS will switch to Battery-Mode, in which power is maintained from the battery. In case of failure time exceed Battery-Mode duration, UPS will shut down until voltage return to prevent battery discharge.

While the advanced battery management system monitors the conditions of the batteries, it sends early warnings if a battery replacement is needed. Diagnostic tests can be performed from the control panel.







### **System Configuration**

The UPS device and battery make up the system. Depending on site and load requirements, certain additional options are available as tailored solutions. Please consider the following when planning your UPS system:

- The total demand for the protected system shall dictate the output power rating (VA). When measuring demand, please allow a margin for future expansion and calculation error.
- Battery-mode duration needs dictate the battery size. If the load is less than the UPS nominal power rating, then the actual backup time is longer.

External battery packs

### **UPS Control Panel Functions**

Displav	Function Description	Displav	Function Description
LED Display			
LED Light	<u>Status indicator</u> Line-Mode: steady light/ Battery mode: flash every 2 second/ Fault: rapid flash		
LCD Display			
	Line mode UPS is operating with Main power		<u>AVR MODE</u> Correcting over-voltage or under-voltage condition . Output power remain normal
	Battery mode UPS is operating with battery power		Overload Load exceeds UPS capacitive
	Battery Fault Battery fault occurred	Output	Output Display of current out out voltage
Load	Load level Display of current load on UPS (25/50/75/100)%	Battery	Battery level Display of battery power remaining (25/50/75/100)%
Button Display			
	<u>ONLINE Test Silence</u> The master button for UPS control, refer to Button Operation		

## Button operation

### Cold Start function

When the main power is disconnected from UPS, it is capable of starting with battery power for users' needs. Simply start the UPS as the instruction below. "On/Off/Test/Silence" button

### Turn on the UPS

- Switch on the Load
- Press the "ON" button until a single "beep" alarm disappeared or the LED display turns on.

## Shut Down the UPS

- Switch off the Load
- Press the “OFF” button for 3 seconds during Line/Battery-mode.
- (If applicable) To avoid electrical hazards, please turn off the internal/external input breaker. Then, turn off any external battery breaker and wait till all fans completely shut down.

**Test:** Press once to start self-test function during Line-Mode

**Silence:** Press once to enable/disable alarm buzzer during Battery-Mode

## 4.4 UPS Configuration

### UPS Manual test

Manual tests for UPS or battery can be conducted from the UPS configuration as well and are functional even when the UPS is not charging the battery.

Simple test: It's recommended to conduct a simple simulation test when

1. The first use of UPS.
2. Adding new loads.
3. 6 months' regular check-up Switch on the UPS and wait for the power indicator to light up, then unplug UPS to simulate the main power failure.

### UPS Monitoring Connection

UPSMON Pro software (Or other power monitoring software) can further utilize the UPS with warning reminders, monitoring, control shut down, and setting adjustments. UPS must connect to a computer or the internet to use the monitoring feature.

Connect UPS to Computer with USB

- Locate the USB port on UPS.
- Connect with factory-provided
- Ensure your computer can install and support power management software.

### Maintenance

Please read the following instruction to ensure your safety and maintain a longer product lifetime. This section contains detailed information about moving, maintaining, and placing the UPS. With a minimal amount of maintenance, you can expect the UPS to function smoothly.

### Transportation

Please handle UPS with extreme caution since a high amount of energy is within the batteries. Keep the unit in position as marked on the packaging and never drop the unit.

### Storage

Please read the following instructions if the UPS is not installed immediately:

- Store the equipment as is in its original packing and shipping carton.
- Do not store in temperatures outside the range of +15°C to +25°C.
- Protect the equipment from wet or damp areas and moist air.
- To maintain the vitality of the batteries, please recharge the UPS at least 8 hours every six months.

## **Operation**

**CAUTION:** Ensure that all environmental concerns and requirements are met according to safety instruction; otherwise, the safety of installation personnel cannot be guaranteed since the unit may malfunction.

- Please ensure no flammable substances such as gases or fumes.
- Avoid extreme temperature and humidity. Protect the equipment from moisture.
- Ensure there is enough space (300mm or above recommended) at the rear and side of UPS for proper ventilation.
- Ensure that the front of the UPS remains clear for user operation.
- Only authorized agents or technicians may service the unit.
- Do not open the UPS cabinet. Components may contain hazardous or fatal voltage.
- Output receptacles may carry live voltage without connecting to the main power.
- Pay special attention to UPS air inlet; do not let it covered by dust.

## **Battery**

### **Maintenance**

The reliability of the battery is heavily related to the environmental issue.  
At the temperature of 25 degrees Celsius, A regular 6-12 months' checkup is advised.

### **Replacement**

1. Ensure the UPS is turned off and disconnected from the main power
2. Disconnect the battery from the UPS
3. Replace the battery with the same type and quantity of battery
4. Refer to Installation for battery connection

### **External Battery Pack**

The following chart is the recommended specification of the external battery pack/cabinet.

For other options, please ensure that the option meets safety instruction and local legislation.

The following chart is the recommended specification of the external battery pack/cabinet. For other options, please ensure that the option meets safety instructions and local legislation.

<b>Model (Tower)</b>	<b>500va 800va</b>	<b>1100VA 1500VA</b>	<b>3000VA</b>
Capacity	300W 480W	770W 1050W	1800W
Battery Voltage	12V DC	24VDC	36VDC
Recommended Battery Capacity	65AH-200AH	100AH-200AH	65AH-200AH
Maximum Charge Current	10Amax	15A max	10A max

<b>Model (Rack)</b>	<b>500VA 800VA</b>	<b>1100VA 1500VA</b>
Capacity	300W 480W	770W 1050W
Battery Voltage	12VDC	24VDC
Recommended Battery Capacity	65AH-200AH	100AH-200AH
Maximum Charge Current	10A max	15 A max

For detail of battery set wiring, please refer to Installation.

## **APP-A. Troubleshooting**

Troubleshooting procedures give simple instructions in determining UPS malfunctions. Start the troubleshooting procedure if you witness any alarm indication.

### **Alarm**

The UPS has an audible alarm. When different situations occurred, UPS will alert users with display and buzzer.

#### **Battery-mode (Slow alarm)**

During battery mode, the alarm will beep every 2 seconds for the first 15 seconds, then dropped to twice per minute. The alarm will stop when UPS resumes Line-mode.

#### **Battery-Low (Rapid alarm)**

During Battery-low (less than 30%), the UPS will beep every 0.5 seconds. The alarm will stop when UPS shutdown or returns to Line-mode.

#### **Overload/Fault (Constant alarm)**

When UPS operating with load exceeded its maximum capacity, UPS will emit a continuous alarm to warn an overload condition. UPS will automatically turn off to protect your essential load. Please consider remove or shutdown less-essential loads.

Also, when the unit encounters other problems (battery failure, charger failure), the unit emits the alarm . Please refer to the function description and troubleshooting chart to identify the precise cause.

## Silencing Alarm

Here is the instruction to mute the active alarm or future alarm notification:

**Note:** During battery-mode, if the battery is low on power, the alarm will sound regardless of silent-mode enable/disable.

Silent alarm Enable/Disable: Press the “on” button during the Battery-Mode alarm .

If troubleshooting does not include or resolve your situation, feel free to contact for technical assistance.

PROBLEM	POSSIBLE CAUSE	Solutions
UPS can't operate switching on. No lights on, no warning sound	Power source mistake or low battery power	Check the main power connection If operating with battery power , ensure enough charging time for UPS .
	Time of pressing the Button is too short	Press and hold the “ON” button for a longer duration
	Output short circuit or overload on UPS	Turn off UPS and take off all load. Check for any potential internal short circuit Then attempt to turn on UPS again.
	Hardware failure	Contact for technical assistance
	Battery out of order	Replace battery or contact for technical assistance.
UPS always remain on battery-mode regardless of main power connection	No power source input	Check the main power source and cable
	Fuse melted or Circuit breaker tripped	Reset the breaker or replace the fuse ( spare fuse is in UPS inlet .) then restart the UPS
	The main voltage is out of the UPS input range.	UPS function normally, check your main power voltage .
Overload/Fault indicator lit or constant buzzer beeping	UPS load exceed the Capacity UPS overloading	Remove or shut down the less essential load
Battery mode duration below expectation	Batteries aren't fully Charged Batteries are worn out or faulted	Ensure enough recharge time for UPS. Run a self-test to check battery status. Replace UPS battery if the problem remains
	The charger is out of order	Contact for technical assistance
	Green mode enabled. No-load or light load shutdown engaged.	Operation normal. Turn off green mode to disable such function
The battery fault indicator occurred	Battery not connected	Check the UPS batteries ; make sure they are well connected .
	Battery out of order or damaged	Replace battery

## APP-B Technical Specifications

Model	S00AP S00AP	U00AP   1500AP	3000AP
Configuration			
Capacity (VA)	500VA 800VA	1100 VA 1500 VA	3000 VA
Capacity (Watts)	300W 480W	770W 1050 W	1800 W
Form	Tower Type		
Input			
Voltage	100 / 110 / 120 VAC or 220 / 230 / 240 VAC		220 / 230 / 240 m VAC
Input Voltage Range	70 – 150 or 140 – 300 VAC		140 – 300 VAC
Input Frequency Range	50 Hz / 60 Hz (Auto Sensing)		
Output			
Waveform	Pure Sine Wave		
Voltage	100 / 110 / 120 VAC or 220 / 230 / 240 VAC		220 / 230 / 240 VA C
Frequency	50 Hz /60 Hz ± 1 Hz		
Transfer Time	2 – 4 ms {Typical}		
Protection			
Full Protection	Overload, Fuse, Surge, Short Circuit		
Management & Communication			
Indicator	LED Panel, LCD Panel		
Communication Port	USB B type :AP Model		
Physical			
Dimensions (WxDxH) (mm)	130 X 412 X 200		

Weight (kgs)	5.8 7 . 2	10.8 1 2.2	13.4
Shipping Dimensions (mm)	253 X 488 X 321		
Shipping Weight (kgs)	7.3 8.7	12.3 1 3.7	14.9
Alarm			
Overload / Fault	Continuous Beeping		
Battery Mode	Beep every 2 seconds		
Low Battery	Beep every 0.5 second		
Environment			
Operating Humidity	0-90 % RH at 0-40 °C {Non-condensing}		
Audible Noise	Less than 50 dB		
Battery (Recommends Form)			
Voltage	12 VDC	24VDC	36VDC
Battery Capacity	65 Ah – 200 Ah	100 Ah – 200 Ah	65 Ah – 200 Ah
Maximum Charge Current	10 A max	15 A max	10 A max
Discharge Protection	Auto Diagnostics, Over- Discharge, Shot Circuit, Fuse		

- Specifications are subject to change without further notice .
- Specifications are for reference; actual information should be based on the real product.

# U P S

**Documents / Resources**



<div>UPS</div> <div>Line-Interactive Tower type: 500VA-3000VA Rack type: 500VA-1500VA</div> <div>■ USER MANUAL ■</div>	<div><a href="#">POWERCOM 500-800VA Uninterruptible Power System UPS</a> [pdf] User Manual</div> <div>Line-Interactive Tower type 500VA-3000VA, Rack type 500VA-1500VA, 500-800VA, 500-800VA Uninterruptible Power System UPS, Uninterruptible Power System UPS, Power System UPS, System UPS, UPS</div>
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