

**Battery over-charge protection:** When in AC mode, UPS automatically enter the charge mode, battery testing system will automatically detect the battery state of charge. When battery full completely, the charge will be automatically closed system to ensure that the service life of batteries, energy conservation.

**Short circuit protection:** When UPS in battery mode and there is shock or short-circuit, UPS will shut down automatically. (When in mains mode, the UPS will be protected by input fuse firstly and then transfers to the battery mode.)

**Lock Phase**

In AC mode, the UPS system automatically tracks AC phase and ensures that the output wave form of the inverter is the same with AC voltage wave form, in this way, it reduces the peak pulse and surge voltage and minimizes the interference and damage to the equipment.

**Detective Input Frequency**

When it is connected to AC, the frequency is automatically set to 50Hz or 60Hz in accordance with AC.

**4 Important Safety Warning (Save these instructions)**

**CAUTION!** To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area free of conductive contaminants. (See the specifications for the acceptable temperature and humidity range.)

**CAUTION!** To reduce the risk of overheating the UPS, do not cover the UPS' cooling vents and avoid exposing the unit to direct sunlight or installing the unit near heat emitting appliances such as space heaters or furnaces.

**CAUTION!** Do not attach non-computer-related items, such as medical equipment, life-support equipment, microwave ovens, or vacuum cleaners to UPS.

**CAUTION!** Do not plug the UPS input into its own output.

**CAUTION!** Do not allow liquids or any foreign object to enter the UPS. Do not place beverages or any other liquid-containing vessels on or near the unit.

**CAUTION!** In the event of an emergency, press the OFF button and disconnect the power cord from the AC power supply to properly disable the UPS.

**CAUTION!** Do not attach a power strip or surge suppressor to the UPS.

**CAUTION!** If the UPS is with metal chassis, for safety purpose, grounding is a must during UPS installation in order to reduce leakage current below 3.5mA.

**Attention** Hazardous through electric shock. Also with disconnection of this unit from the mains, hazardous voltage still may be accessible through supply from battery. The battery supply should be therefore disconnected in the plus and minus pole at the quick connectors of the battery when maintenance or service work inside the UPS is necessary.

**CAUTION!** Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

**CAUTION!** When replacing the batteries, use the same number and type of batteries.

**CAUTION!** Internal battery voltage is 12V dc. Sealed, Lead-acid, 6-cell battery.

**CAUTION!** Do not dispose of batteries in a fire. The battery may explode. Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes.

**CAUTION!** Unplug the UPS prior to cleaning and do not use liquid or spray detergent.

**CAUTION!** A battery can present a risk of electric shock and high short circuit current.

- The following precaution should be observed before replacing batteries:
- 1) Remove watches, rings, or other metal objects.
  - 2) Use tools with insulated handles.
  - 3) Wear rubber gloves and boots.
  - 4) Do not lay tools or metal parts on top of batteries.
  - 5) Disconnect charging source prior to connecting or disconnecting batteries terminal.

**5 Software Download & Installation (Only for the model with communication port)**

Please follow steps below to install the software and monitor the UPS:

- 1) Insert CD disk into computer, select installation icon and Follow the on-screen instructions to install the software.
- 2) Connect the UPS and computer with communication cable.
- 3) Open the software, select proper port to monitor the UPS.

**6 Maintenance**

**Preventative Maintenance**  
Preventative Maintenance ensures the longer service life of UPS.

Please check the following things every month:

1. Make sure the airway not blocked;
2. Make sure that the UPS surface is not covered by dust;
3. Check whether the input, output and battery connecting lines are firm or not and the insulation is effective or not;
4. Make sure that the UPS is not affected with damp;
5. Let the UPS work in battery mode for about 5 minutes and in this period, if there is no other alarm from the UPS, then the UPS is normal; if there is other alarm message, please contact the local dealer for help.

**Battery maintenance**

The UPS contains sealed lead-acid maintenance-free battery. The bad environment, high discharging frequency, high temperature etc will dramatically reduce the service life of battery. The service life of battery will also reduce even it is not used. It is suggested to discharge the battery once every 3 months when AC is normal. When battery is near the end of its life, the battery will end in bad performance.

**7 Trouble Shooting**

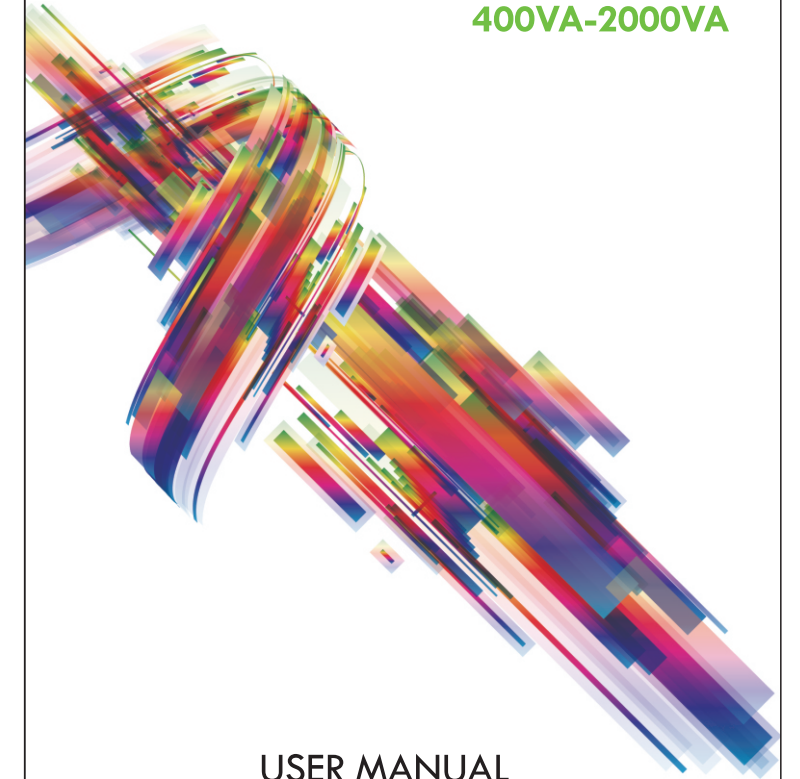
Use the table below to solve minor problems.

Phenomenon	Probably cause	Solution
The mains is normal, but the UPS is in battery mode.	AC input fuse is broken	The fuse is placed on the UPS back panel. After disconnecting the AC plug, put out the fuse and replace it with a new one.
When AC fails, the computer doesn't work.	Battery low voltage.	Please turn on the UPS and charge the battery for at least 10 hours, when AC is normal and then turn on the UPS.
When power fails, backup time is shorten.	The UPS is overload Battery voltage is too low Battery defect. It might due to high temperature operation environment or improper operation to battery.	Remove some critical load. Charge UPS at least 8 hours. Replace the battery with the same type.

**8 Specifications**

CAPACITY	400VA	500VA	600VA 650VA	700VA 750VA	800VA 850VA	1000VA 1200VA	1500VA 1600VA	2000VA	
<b>INPUT</b>									
Voltage	110V/120V/or 220V/230V/240V								
Voltage Range	±25% (-35% optional)								
Frequency Range	50/60Hz±10%								
<b>OUTPUT</b>									
Power factor	0.6								
Voltage Regulation	±10%								
Transfer Time	≤10ms								
Waveform	Simulated sine wave								
<b>BATTERY</b>									
Type & Number	4.5AH*1	7.0AH*1	8.0AH*1	7.0AH*2	8.0AH*2	9.0AH*2	9.0AH*2		
Charging Time	8 hours recover to 90% capacity								
<b>PHYSICAL</b>									
Tower	Dimension (W*D*H)	95*280*165mm	95*320*165mm			125*320*220mm		125*380*220mm	
	Net Weight (kgs)	5.5	5.6	5.8	6.7	6.8	10.3	13.5	
Rack mount	Dimension (W*D*H)	310*440*88mm						310*440*132mm	
	Net Weight (kgs)	6.8	7.8	7.9	8.0	9.0	12.6	15.8	
<b>ENVIRONMENT</b>									
Humidity	20~90% RH @ 0~40°C (non-condensing)								
Noise Level	Less than 45dB								
<b>MANAGEMENT</b>									
USB/RS-232(Optional)	Supports Windows 98/2000/2003/XP/Vista/2008/Windows 7/Windows 8								

**UPS**  
400VA-2000VA



USER MANUAL

Line Interactive UPS

**Line Interactive UPS**

user manual

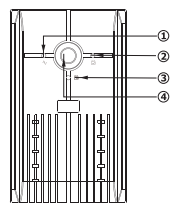
**1 Package Contents**

You should have received following items inside of package:  
-UPS unit  
-User manual  
-2 fuse tubes  
-Communication cable, CD (only for the model with USB/RS232 port)

**2 Product Overview**

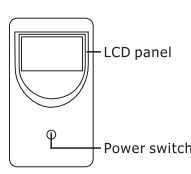
**Front View:**

**LED type:**

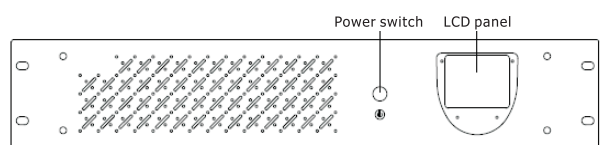


1. Green light--AC output indications, illum when the Mains power on.
2. Yellow light--AC input indications, illum when there is Mains input.
3. Red light--DC output indications, illum under inverter mode.
4. On/Off button

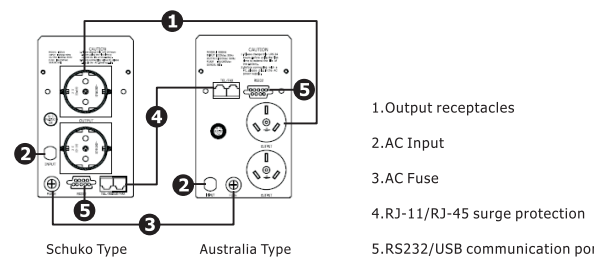
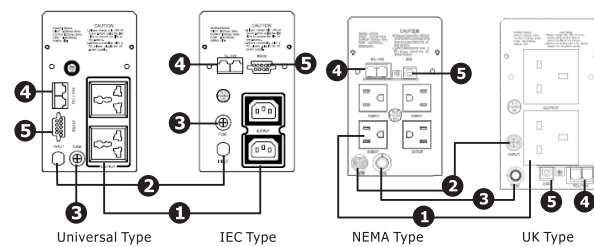
**LCD type:**



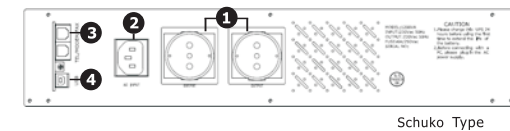
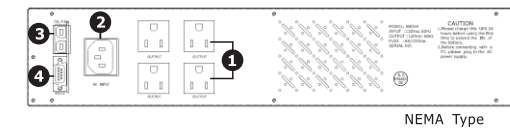
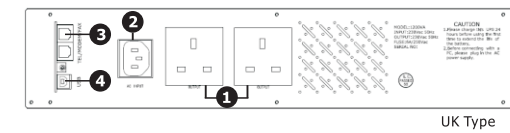
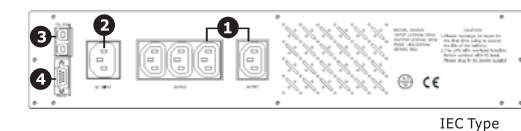
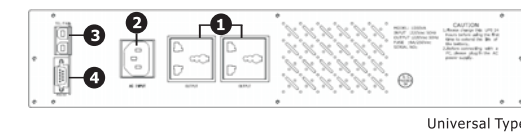
1. Alarm
2. Hello
3. Battery capacity
4. Load percentage
5. Output voltage
6. Input voltage/frequency



**Tower Type Back View**



**Rack Mount Type Back View:**



1. Output receptacles
2. AC Input
3. RJ-11/RJ-45 surge protection
4. RS232/USB communication port

**3 Installation & Initial Startup**

NOTE: Before installation, please inspect the unit. Be sure that nothing inside the package is damaged.

**Placement & Storage Conditions**

Install the UPS in a protected area that is free of excessive dust and has adequate air flow. Please place the UPS away from other units at least 20 cm to avoid interference. DO NOT operate the UPS where the temperature and humidity is outside the specific limits. (Please check the specs for the limitations)



**Connect to utility and charging**

Plug in the AC input cord to the wall outlet. For the best results, suggest to charge the battery at least 8 hours before initial use. The unit charges its battery while connecting to the utility.



**Connect to the load**

Plug in the loads to output receptacles on the rear panel of the UPS. Simply turn on the power switch of UPS unit, then devices connected to the UPS will be protected by UPS unit.

**CAUTION: NEVER** connects a laser printer or scanner to the UPS unit. This may cause the damage of the unit.



**Connect TEL/Modem/Fax for surge protection (Only for the model with RJ11/RJ45)**

Connect a single modem/phone line into surge-protected "IN" outlet on the back panel of the UPS unit. Connect from "OUT" outlet to the computer with another phone line cable.

**Connect Communication Cable (Only for the model with USB/RS232 port)**

To allow for unattended UPS shut down/start-up and status monitoring, connect the communication cable one end to the UPS/RS232 port and the other to the communication port of your PC. With the monitoring software installed, you can schedule UPS shutdown/start-up and monitor UPS status through PC.

**Turn on/off the unit**

Turn on the LED ups unit by pressing the power switch. Turn off the LED UPS unit by pressing again the power switch. Turn on the LCD ups unit by pressing the power switch for 3 seconds. Turn off the LCD unit by pressing again the power switch for 3 seconds.

**Cold start Function**

When the UPS is off and there is no power utility, it's still possible to cold start the ups unit to power the loads

**Alarm Function**

When AC fails, and the battery supplies power, UPS will alarm once every 6 seconds and the beep stops about 40 seconds later. When battery is nearly used up, the UPS will alarm automatically and the beep frequency is once 2 seconds. When battery is really used up, the UPS will alarm for a very long time and turn off automatically.

**Protection**

Battery over discharge protection: when the battery discharges and the UPS is in inverter mode, the battery will check and monitor the working status of the battery; when the battery voltage drops to the limited lowest voltage, the inverter will turn off automatically and protect the battery; When AC comes back, UPS will turn on automatically.