



Caution!

This manual is important instructions that you should follow during installation and maintenance of the UPS. Please read all instructions before operating the equipment and save this manual for future reference.



UPS

UNINTERRUPTIBLE POWER SUPPLY

User's Manual

Sine Wave Line-Interactive

UPS

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1. SAFETY INSTRUCTION

- Even UPS disconnected to city power, its sockets may with 220v voltage.
- Can not fire the battery or batteries, it may explode and injure people.
- Do not open or mutilate the battery pack, released electrolyte with strong toxicity and corrosion which is harmful to human body.
- Please avoid the battery to short circuit of plus and minus pole, it will cause electric shock or get fire.
- Please do not open the battery pack by yourself; it can cause danger of electric shock.
- Please do not touch the battery connectors. Battery loop and input voltage loop is un-segregated, it is high voltage risk between the battery connectors and ground.

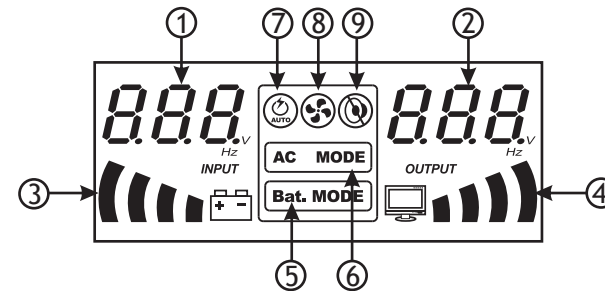
Ensure safety operation, it is inadvisable to use for electric equipment such as air blower, electric heater.

Attention:

- ★ If you have any problems with the UPS, please consult the distributor, do not repair it by yourself in case risk by the high voltage inside UPS.

2. DESCRIPTION OF APPEARANCE

2. 1 DISPLAY PANEL



- ① AC Input Voltage
- ② Output Voltage
- ③ Battery Capacity
- ④ Load Level
- ⑤ UPS is working in battery mode
- ⑥ UPS is working in AC mode
- ⑦ UPS can turn on automaticly
- ⑧ Fan is working(Some models without fan do not indicate)
- ⑨ Buzzer is forbided, no sounding, but while over-load and low battery,UPS still with sound indication.(Models with lock button without this indication.)

3. OPERATION

3.1 Long-term external battery operating procedures

- 3.11 Please follow the parameter table, series battery and ensure proper battery voltage first.
- 3.12 Red battery cable connects to positive and blue cable for negative. Battery cable and polarity must be connected securely. Do not short the positive and negative of the battery electrode or joint reversely.
- 3.13 When connecting the battery cable, occurrence of spark in the joints is normal phenomenon

3.2 Operation Modes

1.Autocharging

Connected to the AC and the UPS will be charged automatically, and the UPS socket is no output voltage. When battery is not fully charged, battery capacity indicator with circle increasing percentage pattern, it shows battery is charging.

When battery is full of charge, battery capacity indicator shows 100% percentage pattern.

2. AC Mode

- 2.1 When the UPS is connected to AC and after pressing the power switch for 3 seconds, then the UPS is working in the AC Mode.
- 2.2 It should be showed the AC input voltage and the UPS output voltage accordingly.
- 2.3 The percentage of the battery capacity is consistent with the indication of the UPS charging situation.
- 2.4 When more loads are connected, it shows that the percentage of the load level will be increased correspondingly. When it is overloaded to 100%, indicator continued flickers with long beeps. We should remove the unnecessary load until stopping alarm.
- 2.5 The UPS will be turned off and no output by pressing the OFF switch for 3 seconds. But the UPS is still under charging, if you want to turn off the UPS completely, please disconnect UPS to AC.

3. OPERATION

3.2 Operation Modes

3. DC Mode

- 3.1 No AC input, the UPS will turn on by pressing the power switch for 3 seconds, now the UPS is in DC Mode.
- 3.2 The buzzer will beep every 8 seconds. The UPS will be silenced by pressing the power switch shortly. When press the switch again, the beep recover.
- 3.3 When battery's capacity decreased, it shows that the percentage of battery capacity level will be increased correspondingly. When the battery is not enough, indicator continued flickers with beeps every second. We should save the documents then turn off the UPS, or connect the UPS to AC .
- 3.4 The UPS will be turned off by pressing the switch for 3 seconds.

4. MAINTENANCE

This UPS series only requires minimal maintenance. The battery of standard UPS is sealed, maintenance free type, which need charging frequently to remain its expected life. Once it is connected with utility power, whether UPS is ON or OFF, it keeps charging the batteries and also offers overcharging and over discharging protection.

- If UPS will not be using over a long period of time, please charge it once every 4 to 6 months.
- Under normal conditions, battery's life are 3 to 5 years. If the battery is found in poor performance, earlier replacement should be made and must be operated by qualified personnel.
- Do not replace the battery individually. Whole set of batteries should be replaced following the instructions from battery supplier.
- Normally, the batteries should be charged and discharged once every 4 to 6 months. Charging begins automatically after the UPS shut down by discharging, charging time for standard UPS should be at least 12 hours.
- In the regions of hot climates, the battery should be charged and discharged every 2 months, charging time for standard UPS should be at least 12 hours.

Attention:

- ★ Please turn off the UPS and cut off the utility power before replacing the batteries.
- ★ Before disposing the batteries, remove conductive metals such as necklace, wrist watches and rings.
- ★ Please use the screwdriver with insulated handle. Do not put the tools or other conductive substances on the batteries.
- ★ When connecting the battery cable, occurrence of spark in the joints is normal phenomenon, which harmless for UPS and personal safety.
- ★ Do not short the positive and negative of the battery electrode or joint reversely.

5. SPECIFICATIONS

Model	PK-500
Rated capacity	500VA/300W
Battery type	25Ah(lithium battery)
AC input voltage range	147-275±5 (Vac)
AC input frequency range	45-65Hz
Regulated output voltage range	190-255±5 (Vac)
DC output voltage	210-235Vac
DC output frequency	50 60Hz
Transfer time	<10ms
Charging current	8A(max)
DC output wave form	Sine wave
Operating temperature	0-40℃
Humidity	10 to 90% non condensing
Dimension	263×270×115mm
Net weight	7.5kg

6. TROUBLE SHOOTING

Management chart for irregularity instance

Problem	Possible cause	Solution
The utility power is normal, but the UPS always at battery mode	UPS input breaker disconnection	Set the breaker connected
Battery discharging time diminishes	Battery is not yet be fully charged	Keep UPS connecting to utility power persistently for more than 8 hours to recharge the batteries again
	Excessive loads connected at UPS's outlets	Check the loads and remove the non-critical equipment.
	Battery aged	Replace the batteries. Please contact the distributor to obtain the parts and replacement service
The UPS cannot power on after pressing the power switch.	The power switch is pressed too briefly	Press the power switch for more than 3 seconds
	The UPS is not connected to the battery, or turn on the UPS with low battery voltage.	Connect battery to UPS, if the battery voltage is too low, please restart the UPS
	UPS fault	Please connect the distributor for maintenance service

7. BATTERY MAINTENANCE

- 7.1 Before disposing the batteries, remove conductive jewelry such as necklace, wrist watches and rings.
- 7.2 If it is necessary to replace any connection cables, please purchase the original materials from the authorized distributors or service centers, in case overheat or spark resulting in fire due to insufficient capacity.
- 7.3 Do not fire batteries or battery packs, they may explode.
- 7.4 Do not open or mutilate batteries, released electrolyte is highly poisonous and harmful to the skin and eyes.
- 7.5 Do not short the positive and negative of the battery electrode, it may result in electric shock or fire.
- 7.6 Make sure that there is no voltage before touching the batteries, the battery circuit is not isolated from the input potential circuit. There may be hazardous voltage between the battery terminals and ground.
- 7.7 Battery maintenance please refer to the chapter 4 "Maintenance".

8. INSTALLATION

- 8.1 Put the UPS in ventilated area, kept it away from water, combustible gas and corrosive.
- 8.2 Keep UPS upright and all the vent holes on panels opened.
- 8.3 Keep temperature around UPS in degree of 0°C to 40°C.
- 8.4 If transfer the UPS from hot space to cold space, condensation of water trop will happen, please ensure the inside and outside of UPS are totally dry , otherwise it will cause short circuit and damage the UPS.
- 8.5 Please put the UPS near to the utility power input sockets, in order to cut off the utility power in emergency situation.

Cautions:

- ★ Please cut off the load equipment before connecting to UPS, then turn on the equipment from sequence with big load to small load.
- ★ Connect UPS to the special socket with current protection.
- ★ All the power sockets should connect with earth wire.
- ★ UPS output sockets may with current no matter it is connecting to the utility power socket or not, UPS off is not assure the component without current. In order to cut off the UPS output, please cancel the utility power supply then turn off the UPS.
- ★ It is suggested to charge batteries 8 hours for standard type UPS. UPS is automatic charging whenever power is connected. It can be used at once even without charging, but the back up time will be less then the standard value.
- ★ When connecting inductive load equipments to UPS such as motor , monitor, laser printer etc., because their start up power are too big, the estimated capacity of load should be as same as start up power. Start up power is two to five times as regular capacity which based on the load characteristic.(More details please read the chapter 2 “DESCRIPTION OF APPEARANCE”)