

USER MANUAL

1000VA/1500VA Line Interactive Sinewave UPS (220/230/240VAC)

Version: 1.5

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SAFETY INSTRUCTION

Thank you for purchasing this power protection product. Please comply with all warnings and operating instructions in this manual strictly. Save this manual properly and read carefully the following instructions before installing the unit. Do not operate this unit before reading through all safety information and operating instructions carefully.

Transportation

- Please transport the UPS system only in the original package to protect against shock and impact.

Preparation

- Do not dismantle the UPS system, except the specialized technical personnel.
- Do not plug the UPS input into its own output.
- Do not attach a power strip or surge suppressor to the UPS.
- Do not attach non-computer-related items, such as medical equipment, life-support equipment, microwave ovens, or vacuum cleaners to UPS.
- Condensation may occur if the UPS system is moved directly from cold to warm environment. The UPS system must be absolutely dry before being installed. Please allow at least two hours for the UPS system to acclimate the environment.
- Do not install the UPS system near water or in moist environments.
- Do not install the UPS system where it would be exposed to direct sunlight or near heater.
- Do not block ventilation holes in the UPS housing.

Installation

- This unit intended for installation in a controlled environment (temperature controlled, indoor area free of conductive contaminants). Avoid installing the UPS in locations where there is standing or running water, or excessive humidity.
- **Caution** - Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- **WARNING:** This is a category C2 UPS product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

Operation

- Prevent no fluids or other foreign objects from inside of the UPS system.
- Do not connect appliances or devices which would overload the UPS system to the UPS output sockets.
- Place cables in such a way that no one can step on or trip over them.
- Do not connect domestic appliances such as hair dryers to UPS output sockets.
- The UPS can be operated by any individuals with no previous experience.
- Connect the UPS system only to an earthed shockproof outlet which must be easily accessible and close to the UPS system.
- Please use only VDE-tested, UL-marked mains cable (e.g. the mains cable of your computer) to connect the UPS system to the building wiring outlet (shockproof outlet).

Maintenance, service and faults

- The UPS system operates with hazardous voltages. Repairs may be carried out only by qualified maintenance personnel.
- **Caution** - risk of electric shock. Even after the unit is disconnected from the mains (building wiring outlet), components inside the UPS system are still connected to the battery and electrically live and dangerous.
- Before carrying out any kind of service and/or maintenance, disconnect the batteries and verify that no current is present and no hazardous voltage exists in the terminals of high capability capacitor such as BUS-capacitors.

Storage & Maintenance

The UPS system contains no user-serviceable parts. If the battery service life (3~5 years at 25°C ambient temperature) has been exceeded, the batteries must be replaced. In this case, please contact your dealer.



Be sure to deliver the spent battery to a recycling facility or ship it to your dealer in the replacement battery packing material.

Before storing, charge the UPS 5 hours. Store the UPS covered and upright in a cool, dry location. During storage, recharge the battery in accordance with the following table:

Storage Temperature	Recharge Frequency	Charging Duration
0 - 40°C	Every 3 months	1-2 hours

1. Introduction

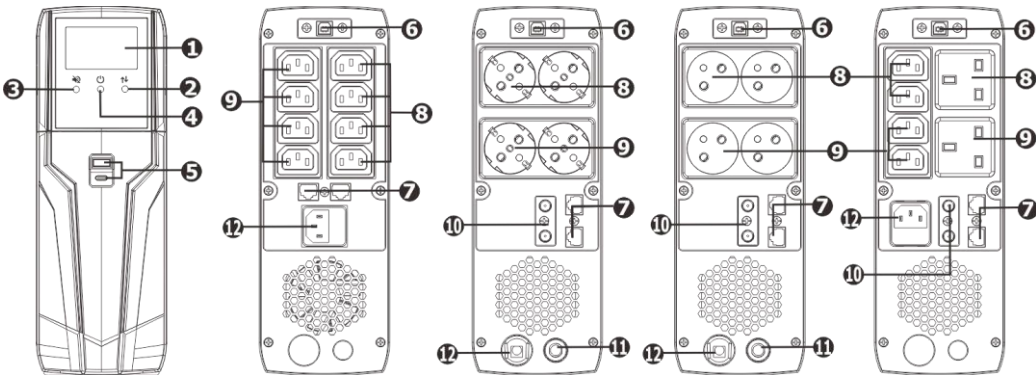
This product is an intelligent line interactive sinewave UPS (Uninterruptible Power Supply) which is designed to protect your personal computer or sensitive electronic equipment from all forms of power interference, including complete power failure.

2. Package Contents

NOTE: Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. Please keep the original package in a safe place for future use. You should have received the following items inside of package:

- ❶ UPS unit ❷ User manual ❸ USB cable ❹ Input power cable (only for IEC/UK models)
- ❺ Output power cable (only for IEC/UK models) ❻ Coaxial cable/RJ45 cable (option)

3. Product Overview

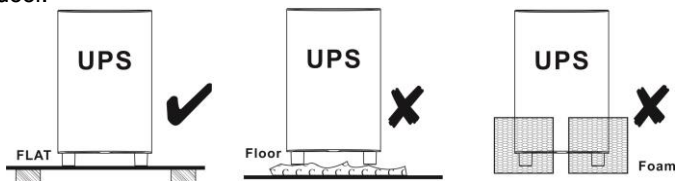


- 1. LCD display (Please check LCD section for the details)
- 2. Up/down button
- 3. Mute button
- 4. ON / OFF button
- 5. USB charger ports (5V 3A, type A/type C) for device charging
- 6. USB communication port for UPS monitoring and control
- 7. Modem/phone/network surge protection
- 8. Battery backup outlets
- 9. Surge-protected outlets
- 10. Coax surge protection (option)
- 11. Input circuit breaker
- 12. AC input for connecting to utility power

4. Installation

Before installing the UPS, please read below to select a proper location to install the UPS.

- UPS should be placed on the flat and clean surface. Place it in an area away from vibration, dust, humidity, high temperature, flammable liquids and gases, corrosive and conductive contaminants. Install the UPS indoors in a clean environment, where it is away from window and door.



- It's required to maintain the maximum altitude of 1000m to keep UPS normal operation at full load UPS. If it's used in high altitude area, please reduce the connected load. Altitude derating power with connected loads for UPS normal operation is listed as below:

Altitude (m)	Derating factor ¹⁾
1 000	1.0
1 500	0.95
2 000	0.91
2 500	0.86
3 000	0.82
3 500	0.78
4 000	0.74
4 500	0.7
5 000	0.67
Based on density of dry air =1.225 kg/m ³ at sea-level, +15°C	
¹⁾ Since fans lose efficiency with altitude, force air-cooled equipment will have a smaller derating.	

- Place UPS: This UPS is equipped with the fan for cooling. Therefore, place the UPS in a well-ventilated area. It's required to maintain the minimum clearance of 100mm in the front of the UPS and 300mm in the back and two sides of the UPS for heat dissipation and easy-maintenance.

Step 1: UPS Input Connection

Plug the UPS into a two-pole, three-wire, grounded receptacle only. Avoid using extension cords. For the best results, suggest to charge the battery at least 5 hours before initial use. The unit charges its battery while connecting to the utility.

Note: Do not expect full battery run capability during this initial charge period.

Step 2: UPS Output Connection

Battery Backup Outlets

Connect computer and monitor to the "Battery Backup" outlets. These outlets provide battery backup, EMI filtering, line conditioning, and surge protection. Battery power is automatically provided in case of power failure.

Surge-Protected Outlets

Connect a printer, fax machine, or scanner to the "Surge-protected" outlets. These outlets do not provide power during power failure.

CAUTION: NEVER connect a laser printer or scanner to the battery backup sockets of UPS.

The equipment may draw significantly power to overload the UPS.

Step 3: Connect Modem/Phone Line/Network Surge Protection

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.

Step 4: Connect Communication Port and Install Software

Connect one end of the USB cable to PC and the other to the USB port at the rear of the UPS.

Download the latest version of ViewPower software from

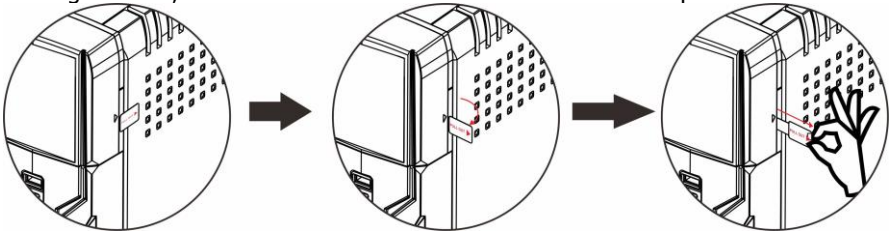
<http://www.power-software-download.com> to your hard drive. Follow on-screen instructions to complete the software installation.

Optional HID Function

If this UPS is equipped with optional HID function, you may simply connect one computer with installed Microsoft windows OS via USB port to execute safely shutdown during power failure even though there is no monitoring software installed.

Step 5: Turn On the UPS

Before using the UPS, be sure to remove this label from LCD remote panel module.

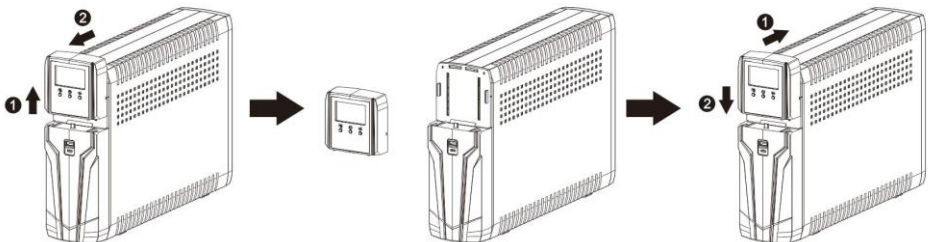


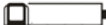
To turn on the UPS, simply press the ON/OFF button on the front panel for 2 seconds. UPS will beep once and LED bars will light up with different colors in order of light blue, orange, yellow, green, blue, purple and scroll from bottom to top in 6 secs. Then, LCD will light on.



Remote panel operation

LCD panel can be removed from the base and place it closed around you when playing PC game. Follow below charts to remove the remote panel. The distance between remote panel and base should not be longer than 6m.



There is a NiMH battery installed on the back of remote panel. Once the remote panel is installed on the base unit, it will automatically charge battery. When the battery capacity is low level,  icon will flash to remind users to charge remote panel.

5. Battery Replacement

Please read all of the WARNINGS and CAUTIONS before attempting to service the batteries. Typical battery life is 3 to 5 years. Environmental factors do affect battery life. High temperatures, poor utility power, and frequent, short duration discharges have a negative impact on battery life.

- **WARNING!** This UPS contains potentially hazardous voltages. Do not attempt to disassemble the UPS beyond the battery replacement procedure.
- This UPS contains no user serviceable parts. Repairs and battery replacement must be performed by QUALIFIED SERVICE PERSONNEL ONLY.
- **Caution** - Do not dispose of batteries in a fire. The batteries may explode.
- **Caution** - Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
- **Caution** - A battery can present a risk of electrical shock and high short-circuit current. Contact with any part of a grounded battery can result in electrical shock. The following precautions should be observed when working on batteries:
 - a) Remove watches, rings, or other metal objects.
 - b) Use tools with insulated handles.
 - c) Wear rubber gloves and boots.
 - d) Do not lay tools or metal parts on top of batteries.
 - e) Disconnect charging source and load prior to installing or maintaining the battery.
 - f) Remove battery grounds during installation and maintenance to reduce likelihood of shock. Remove the connection from ground if any part of the battery is determined to be grounded.
- **Caution** - risk of electric shock. The battery circuit is not isolated from the input voltage. Hazardous voltages may occur between the battery terminals and the ground. Before touching, please verify that no voltage is present.
- Please replace the fuse or circuit breaker only with the same type and amperage in order to avoid fire hazards.
- Only persons are adequately familiar with batteries and with the required precautionary measures may replace batteries and supervise operations. Unauthorized persons must be kept well away from the batteries.
- **Caution** - Replace batteries with the same number and type as originally installed in the UPS. These batteries have pressure operated vents. These UPSs contain sealed non-spillable maintenance-free lead acid batteries.

NOTE: If there is a power interruption while replacing the batteries, the load will not be backed up even though the UPS is still on. To replace the batteries with UPS on, please start with step 5.

Please follow below steps to replace the batteries if necessary.

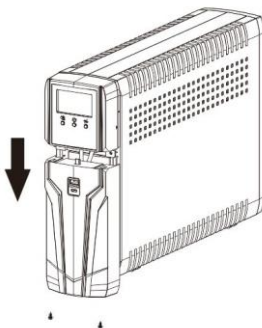
Step 1: Turn off the equipment that is plugged into the output of the UPS.

Step 2: Turn off the UPS.

Step 3: Remove AC input plug of the UPS from the AC wall outlet.

Step 4: Remove all equipment from the output sockets of the UPS.

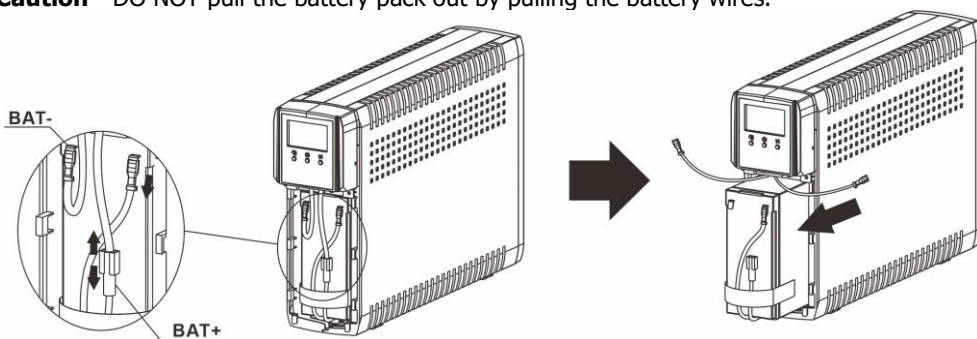
Step 5: Remove battery cover by loosening two screws located on the bottom of the UPS and slide the battery cover downward, then outward. Set it aside.



Step 6: Disconnect the battery wires (BAT+ and BAT-). Then, slide out the existing battery pack from the UPS by grasping the battery tap.

Caution - Do not short the positive wire and negative wire of battery.

Caution - DO NOT pull the battery pack out by pulling the battery wires.



Step 7: Slide the new battery pack into the UPS.

Step 8: Verify proper polarity. Re-connect the battery connectors together.

NOTE- Some sparking might occur and this is normal.

Step 9: Re-install the battery cover onto the UPS. Now, the UPS is ready for normal operation.

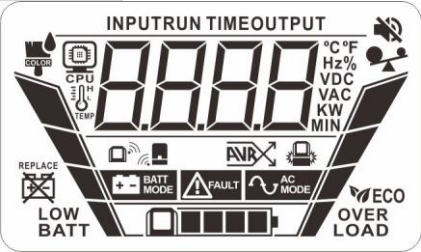
NOTICE: Properly dispose of the old batteries at an appropriate recycling facility or return them to the supplier in the packing material for the new batteries.

6. Operation

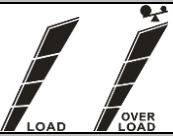
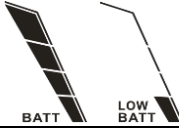
Button Function

Button	Function
ON/OFF	● Press and hold 2 seconds to turn on or off the UPS. ● Hold “on/off” button for 10 seconds can reset the unit in case of communication failure between remote panel and UPS. ● Quick press 5 times to reset pairing when wireless transmission fails.
MUTE	Press and hold 2 second to enable or disable mute function.
UP/DOWN	● Press and hold 0.5 second to switch display information. ● Press and hold 2 seconds to enter the setting menu.

LCD Panel



Display	Function
Configuration and fault information	
	Indicates the fault or warning codes.
Mute operation	
	Indicates that the UPS alarm is disabled.
Input, Battery, Backup time, Output & Load information	
	Indicate the input voltage, input frequency, battery voltage, battery capacity, backup time, output voltage, output frequency, load capacity, load percentage, NiMH battery, PC CPU speed, PC CPU temperature and PC CPU load percentage. K: kilo, W: watt, V: voltage, A: ampere, %: percent, °C: centigrade degree, Hz: frequency, min: minute.

Load information	
	Indicates the load level by 0-24%, 25-49%, 50-74% and 75-100%, or overload alarm.
Mode operation information	
	UPS operates on the Line mode.
	UPS operates on the AVR mode.
	UPS operates on the Battery mode.
	Setting of LED bars.
	Indicates PC's CPU temperature (°C) Setting the temperature alarm level.
	Indicates PC's CPU speed(Mhz)
	Indicates PC's CPU Load
	Indicates wireless connection matched.
	Indicates the remote panel is connected to docking base.
Battery information	
	Indicates the UPS battery level by 0-24%, 25-49%, 50-74%, and 75-100%. Once the battery is in low level, "LOW BATT" icon will display.
	Indicates the NiMH battery level of remote panel.

*Except UPS fault condition, LCD backlight automatically shuts off if no action for 1 minutes (30 seconds when panel is removed from base).

Audible Alarm

Overload	Sounding every 0.5 seconds
Low battery	Sounding every second
Overcharge	Sounding every 1.5 seconds
Battery replacement	Sounding every 2 seconds
Battery mode	Sounding every 10 seconds
Fault	Continuously sounding

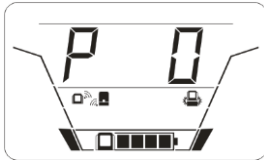
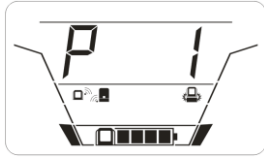
Warning Indicator

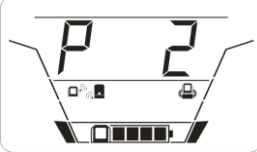
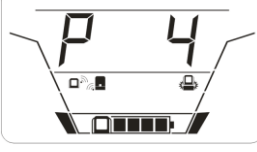
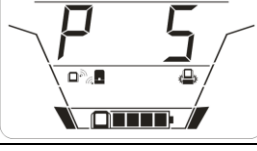
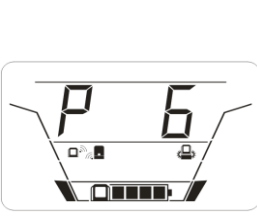
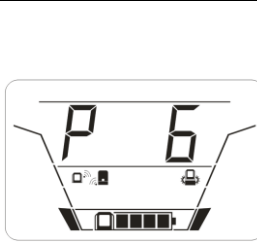
Display	Warning	Flashing/on	Alarm
	Over-current on output	Flashing every 0.5 secs	Sounding every 0.5 secs
	Overload	Flashing every 0.5 secs	Sounding every 0.5 secs
	Low battery	Flashing every 0.5 secs	Sounding every 1 sec
	Battery replacement or battery is not connected.	On	Sounding every 2 secs
	Abnormal NiMH battery charging	Flashing every 0.5 secs	N/A

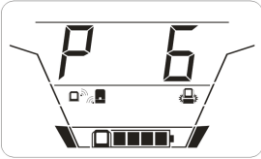
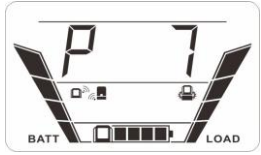
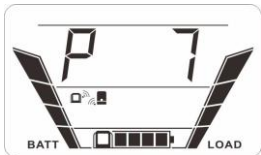
LCD Setting

After pressing and holding “UP/DOWN” button for 2 seconds, the unit will enter setting mode. Press “UP/DOWN” button to select setting programs. Press “ON/OFF” button into selectable option page. Press “ON/OFF” button again to access selectable options. Press “UP/DOWN” button to switch different options. Once the option is selected, press “ON/OFF” button to confirm or “MUTE” button to exit.

Setting Programs:

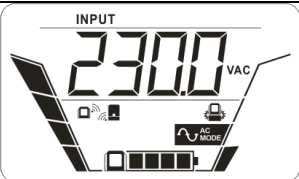
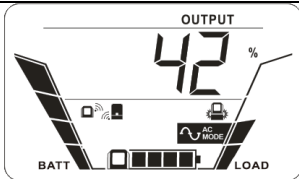
Program	Description	Selectable option	
	On/Off energy star function	Off: If selected, LED bars and LCD works per setting defined. <i>E5d</i>	On: If selected, LED bars and LCD backlight will be automatically off when UPS is operated in bypass mode and battery is fully charged. <i>E5E</i>
	PC's CPU Temp. Alarm Level	50°C <i>P 50</i>	60°C(default) <i>P 60</i>
		70°C <i>P 70</i>	80°C <i>P 80</i>
		90°C <i>P 90</i>	

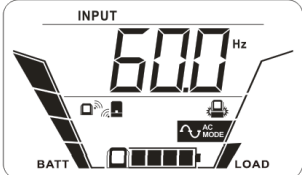
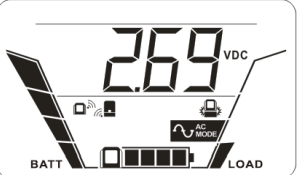
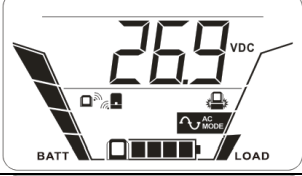
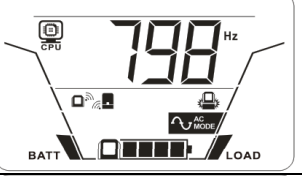
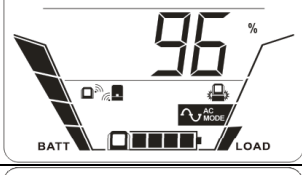
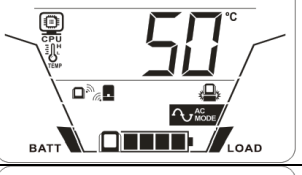
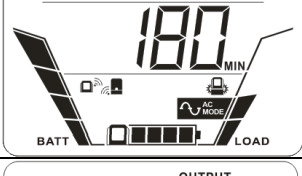
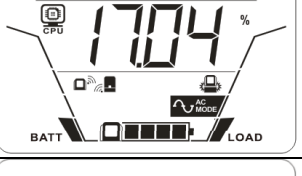
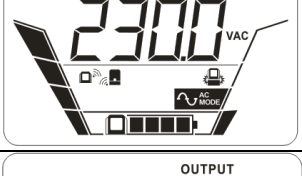
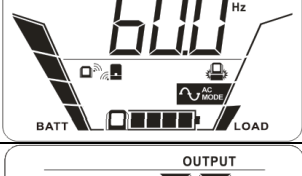
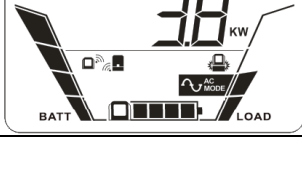
	On-Off RGB LED	LED OFF ELd5	LED ON(default) ELEn
		ENERGY SAVING ELE5	
	Brightness of RGB LED	Low b L0	Normal(default) b n0f
		High b H1	
	Scrolling speed of RGB LED	Low 5 L0	Normal(default) 5 n0f
		High 5 H1	
	Effects of RGB LED	Breath(default) nbtfE	Scrolling n5ff
		Solid n50L	
	Color selection of RGB LED in Line mode	White 1LH1	Orange 10fA
		Yellow(default) 1YEL	Green 1GfE
		Blue 1bLU	Purple 1Puf
		Others 10fH	
	Color selection of RGB LED in AVR mode	White 2LH1	Orange 20fA
		Yellow 2YEL	Green(default) 2GfE
		Blue 2bLU	Purple 2Puf
		Others	

	Color selection of RGB LED in Battery mode	White 20LH	Orange 30LH
		Yellow 34EL	Green 30LE
		Blue(default) 36LU	Purple 3PLU
		Others 30LH	
P7	Backlight control		
	When remote panel is connected to docking base	1min (default) 1 1	Permanent on 1bdE
		Setting range is from permanent on, then 1 to 60 minutes. Increment of each click is 1 min.	
	When remote panel is not connected to docking base	0.5min (default) 2 05	Permanent on 2bdE
		Setting range is from permanent on, then 0.5 to 30 minutes. Increment of each click is 0.5 min.	

Display Setting

The LCD display information will be switched in turns by pressing “UP/DOWN” button. The selectable information is switched as below order: input voltage, input frequency, battery voltage, battery capacity, estimated backup time, output voltage, output frequency, output in kW, output load percentage, NiMH battery voltage, PC CPU frequency, PC CPU temperature, CPU utilization, panel board firmware version, Base board firmware version and UPS control board firmware version.

Selectable Information	LCD Screen	Selectable Information	LCD Screen
Input Voltage		Output load in percent	

Selectable Information	LCD Screen	Selectable Information	LCD Screen
Input frequency		NiMH battery voltage	
Battery voltage		PC CPU frequency	
Battery Capacity		PC CPU temperature	
Estimated backup time		CPU utilization	
Output Voltage		Panel board firmware version	
Output Frequency		Firmware version of docking base board	
Output in kW		UPS control board firmware version	

7. Trouble Shooting

If the UPS system does not operate correctly, please solve the problem by using the table below.

Problem/Fault code	Possible Cause/Fault Event	Solutions
UPS will not be turned on after pressing On/Off button.	Hold the On/Off button too short.	Press and hold the On/Off button for at least 2 seconds and then release.
The mains supply is normal, but the UPS is operating in battery mode.	Power cord is loosen.	Re-connect AC input power cord.
	Circuit breaker is tripped.	Reset the input circuit breaker. If the input circuit breaker trips after UPS restarts, remove excessive loads from the UPS.
The AC normal icon is illuminated, but there is no output.	The UPS has an internal fault.	Disconnect the computer cable from the UPS, press the On button. If UPS works normally, the software has control of the UPS.
Battery backup time is shorter than nominal value.	Batteries are not fully charged.	Charge the batteries for at least 5 hours and then check capacity. If the problem still persists, consult your dealer.
	Battery defect.	Contact your dealer to replace the battery.
Fault code E12 and  icon is on.	Output voltage is too high on battery mode.	Contact your dealer.
Fault code: E13 and  icon is on.	Output voltage is too low on battery mode	Contact your dealer.
Warning code E32 and  icon is flashing.	Communication lost between UPS and Base.	Contact your dealer.
Warning code E32 and  icon flashes.	The distance between remote panel and the docking base is out of wireless transmission range.	Keep the distance of remote panel and the docking base closer.
	Error occurs on the process of pairing password.	Quick press "ON/OFF" button for 5 times to reset pairing. At this time, the remote panel is required to connect to the docking base.
Fault code E14 and  icon is on.	Output is short circuited.	Check if connected devices are in short circuit status. Disconnect short-circuited loads and restart the UPS again.
Fault code E15 and  icon is on.	Over current on output.	Reduce the connected load by switching off some equipment.
Fault code E20 and  icon is on.	Fan lock fault.	Contact your dealer.

Fault code E21	Over charge voltage	Contact your dealer.
Fault code E28 and  icon is on.	Low battery voltage.	Please replace the battery. If the fault still occurs after battery is replaced, contact your dealer.
Fault code E43 and  icon is on.	Overload fault	Contact your dealer.
 icon is illuminated and a constant alarm.	The UPS has an internal problem.	Contact your dealer.

8. Specifications

Model	1000	1500
CAPACITY	1000 VA / 600 W	1500 VA / 900 W
Input Voltage	220/230/240 VAC	
Input Voltage Range	162~290 VAC	
Output Voltage Regulation	+/-10% (Batt. Mode)	
Transfer Time	Typical 6 ms, 10 ms max.	
Waveform	Pure Sine Wave	
Battery Type & Number	12 V/9 AH plus x 1	12 V/9 AH x 2
Charging Time	6-8 hours recover to 90% capacity	
Dimension (DxWxH)	308 x 99 x 280mm	430 x 99 x 280mm
Net Weight (kgs)	9.2	13.8
Humidity	0-90 % RH @ 0-40°C (non-condensing)	
Noise Level	Less than 40 dB @ 1 meter	Less than 45 dB @ 1 meter

*Specifications are subject to change without further notice.