

# QH Series UPS

## User's Manual

( Version : 02 )



Beijing Hengdian Power Supply Equipment Co. , LTD.

Please Read The Manual Thoroughly Before Installation

## Important Safety Instructions

THIS MANUAL CONTAINS IMPORTANT SAFETY INSTRUCTIONS.  
PLEASE READ THIS MANUAL THOROUGHLY BEFORE ATTEMPTING TO UNPACK,  
INSTALL OR OPERATE THE UPS. KEEP IT HANDY FOR FUTURE REFERENCE.

- To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area, free of conductive contaminants.
- Risk of electric shock. Do not remove cover. No user serviceable parts inside.
- Risk of electric shock. Hazardous live components inside this UPS are energized from the battery supply even when the input AC power is disconnected.
- To avoid electrical shock, turn off the unit and unplug it from the wall before servicing the battery or installing a computer interface cable.
- Do not dispose of battery or batteries in fire. The batteries may explode.
- Refer servicing to qualified service personal.
- Intended for installation in a controlled environment. Refer to manual for environmental conditions.
- During the installation of this equipment it should be assured that the sum of the leakage currents of the UPS and the connected loads does not exceed 3.5mA.
- The power socket should be installed near the equipment. It should be easily accessible to isolate it from AC input. To disconnect, pull the plug from the receptacle.
- As the UPS is installed, the building itself shall include a protection system.

Safe and continuous operation of the UPS depends partially on the care taken by users. Please observe the following precautions.

- Do not attempt to power the UPS from any receptacle except a 2 – pole 3 – wire grounded receptacle.
- Do not place the UPS near water or in environments of excessive humidity.
- Do not allow liquid or any foreign objects to get inside the UPS.
- Do not block air vents in front of the UPS or air exhausts on the back.
- Do not place the UPS under direct sunshine or close to heat – emitting sources.
- Do not plug appliances such as hair dryers into the UPS receptacles.
- A power cord set with NEMA 5 – 15P plug used in QH1500 – 24R(120V).

Do not open the metal cover. There are no user serviceable parts inside.

**The batteries contained in this UPS are recyclable.**

**The batteries contain lead and pose a hazard to the environment and human health if not disposed of properly.**

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### 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.**

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## 1. Introduction

### 1.1 System Description

The UPS is a cost effective solution for Computer Server protection. The True Sine Wave output and Boost & Buck function makes the Line – Interactive UPS a better choice than Off – Line or On – Line UPS.

### 1.2 Features

- Line – Interactive design provides high reliability and efficiency
- Intelligent microprocessor control
- Sine wave output, low distortion
- Boost and bucking design expands the input voltage range
- User configurable input regulated range and output voltage
- Auto – tracking input frequency, user configurable output frequency of DC mode
- Self – diagnostic function can provide information for troubleshooting reference
- Smart battery reminder, low battery protection
- Over load and short circuit protection
- AC input voltage lower and higher than normal transfer to DC mode automatically
- Press and hold the main on switch 1 second, turn on the UPS
- Press and hold the main off switch 3 second, turn off the UPS
- No load or Load <50W, UPS will turn off automatically, save energy and prevent from damaging the battery
- AC power fail and battery low contact closure communication (DB – 9)
- Emergency remote power off

## 2. Installation and Operating Instruction

### 2.1 Unpacking & Inspection

Examine the packing carton for damage upon receipt. Once the UPS has been removed from its shipping container, everything inside the package should be inspected for damage that may have occurred while in transit. Notify the carrier immediately if any damage is observed.

The box should include the following:

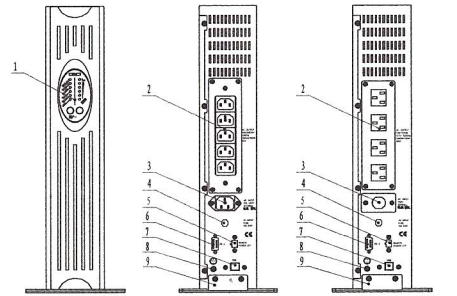
- |   |      |
|---|------|
| ● UPS                                     | 1PCS |
| ● User's Manual                           | 1PCS |
| ● Output Power Cable( IEC320 or NEMA, 3m) | 2PCS |

- Output Power Cable (IEC320 or NEMA, 2m) 2PCS
- DB9 – DB9 Communication Cable (W80) 1PCS
- DB9 – RJ45 Communication Cable (W53) 1PCS
- USB Communication Cable (W81, optional) 1PCS
- Bracket 1PCS
- Cover of Output Socket 1PCS

The AC input power and output power cable, the signal line for instance, DB9 – DB9 communication cable and DB9 – RJ45 communication cable, do not exceed 3m. The Power Cable of 230V UPS Must Exceed AWG16#.

Retain the packing for future use or disposed of properly.

### 2.2 Overview



Front Panel Rear Panel – IEC Rear Panel – NEMA

Figure 1. Overview

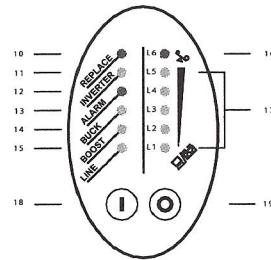


Figure 2. Front Panel

Item	Description	Remark
1	ON/OFF Switch & LED Panel	
2	AC Outlet	Connect to load
3	AC Inlet	Connect to input power cable
4	Fuse	Provides short circuit & badly overload protection for the UPS
5	Terminal of Remote Power off Switch	Two ends of the terminal open, UPS will turn off
6	DB – 9 Terminal	When AC Failure or battery low, it will be low level
7	USB Terminal	Connected to PC, display UPS & the Battery status
8	Ground Pole	Impact the protect ground cable
9	Bracket	Accessory of packaging
10	Battery Replace Indicator	Displays the battery lose effectiveness
11	Backup Mode Indicator	Continuous Green LED displays backup mode
12	UPS Warning / Fault Indicator	Displays Flashing / Continuous Red LED
13	AC Buck Mode Indicator	Continuous Amber LED displays AC buck
14	AC Boost Mode Indicator	Continuous Amber LED displays AC boost
15	AC Normal	Continuous Green LED displays AC normal
16	Over Load Indicator (L6)	Continuous Red LED displays over load
17	Battery Capacity & Load level Indicator (L1 ~ L5)	LED bar shows load size (AC mode) and battery capacity (DC mode)
18	Main ON Switch "I"	Hold 1 Second, turn on UPS/ self – testing
19	Main Off Switch "O"	Hold 3 Seconds, turn off UPS

### 2.3 Installation

Before installation, please read and understand the following instructions:

#### ☆ Placement

The UPS must be installed in a protected environment away from heat – emitting appliances such as a radiator or heater. Do not install this product where excessive moisture is present.

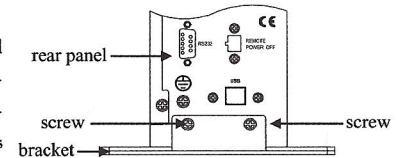


Figure 3. Assemble Bracket

The location should provide adequate air



flow around the UPS with one inch minimum clearance on all sides for proper ventilation.

☆ **Assemble bracket:**

First, remove 2 screws in UPS rear panel. Then, assemble the bracket (accessory) to UPS use the screws.

☆ **Connect to AC**

Make sure that the voltage and frequency are correct. Plug the UPS into a 2 pole, 3 wire grounding receptacle (wall outlet). Make sure the wall outlet branch is protected. Avoid using extension cords if at all possible. If used, make sure the extension cord is rated for 15 Amps(120V). For 230V versions; Swap the input power cord of the equipment to the inlet of UPS. Use the power cord supplied with the UPS to connect from the outlet of the UPS to your equipment.

☆ **Charge the Battery**

Your new UPS may be used immediately upon receipt. However charge loss may occur during shipping and storage. So charging the battery for at least 8 hours is recommended to insure that the battery is fully charged.

To recharge the battery, simply leave the unit plugged into an AC outlet.

(This UPS will recharge in both the On and the Off status.)

☆ **Determining the Load:**

1. Make a list of all equipment that requires protection.  
2. Calculate the sum of all the V × A ratings. (Input voltage/current shown on name-plate).

3. Ensure that the total VA rating does not exceed the rated capacity of the UPS.

If rated unit capacities are exceeded, an overload condition may occur and cause the UPS unit to shut down or the fuse open.

**Do not plug a laser printer or copy machine into the outlets of this UPS. The power demands of these particular devices are much higher than typical peripherals.**

☆ **Connect the Load**

Plug your primary equipment (e. g. computer, monitor, critical data storage device, etc.) into the outlets. Leave the power switches of the equipment in the “Off” position for the moment.

☆ **Connect the Signal Cable to Computer**

Use the enclosed RS - 232 (DB9) cable. Plug the 9 - pin male end into the UPS.

Plug the 9 - pin female end (or RJ45 port) into an open COM port on the computer (9 - pin male).

Or, use the USB cable, connect the USB Standard B plug to the USB port of the UPS, connect the USB Standard A plug to the USB port of the computer.

☆ **Connect the Emergency Remote Power off Switch**

According to the distance between UPS and operator, connect switch cable to the terminal of emergency remote power off. If this switch open, UPS will unable to turn on.

☆ **Assemble the Cover of Output Cable**

To prevent the output cable from falling off accidentally, please remove the screws and assemble the cover of output cable after checking connection above.

2.4 Operation and Functional Test

☆ **AC Mode**

The UPS delivers power to the loads derived from the utility and maintains proper battery charge. It also regulates the output voltage to within a narrow range and serves to isolate the load from surges and electrical noise brought by the utility wiring.

☆ **On - Battery Mode**

The UPS operates on battery when the line voltage or frequency has fallen outside the limits. Local users are alerted to this mode of operation by visual and audible indicators. The UPS provides power to the load from the battery and through its inverter and the output voltage and frequency of the UPS are regulated within a narrow band.

Function	Panel Indicator
Switch On	Press and hold the main on switch on the front panel for more than 1 seconds until the “Line” green LED lights up. The UPS will perform a self - test every time it is switched on.
self - testing (optional)	Use the test function to check both the operation of the UPS and the condition of the battery. In AC operating mode, the level indicator will show the actual load connected to this UPS normally. Press and hold the “I” switch on the front panel for more than 3 seconds. The level indicator will show the battery voltage for 10 seconds. During this 10 seconds, if you press and hold the “I” switch for more than 3 seconds again, this UPS will enter into testing mode. The battery will provide power to the load during this period. Testing mode will check the status of battery and operation of UPS, last for 10 seconds and transfer back to normal status automatically. Testing mode can not performed if the load connected is greater than 100% or the charging voltage is lower than 26Vdc.
Level indicator	In battery backup mode, they will show the battery voltage level and the alarm beeps normally. Press and hold the “I” switch on the front panel for more than 3 seconds. The level indicator will show the load level for 10 seconds.
Switch Off	Press and hold the main off switch for more than 3 seconds until the alarm goes off.
Cold Start	This UPS can be turned on even when AC is not present.

## 2.5 Manual Simulation of Power Outage for the UPS

Backup all unsaved files before you perform the power outage simulation test.

To test the backup function, you may unplug the UPS from the AC outlet to simulate a utility failure or simply press the main on switch (test) button on the front panel. The UPS will beep once every 4 seconds and the inverter LED will turn on. Reminding you that your equipment is running on a limited power source.

If the UPS is left to run continuously, it is a good idea to perform a periodic function test on the unit.

If you would like to know the discharging period, just keep on discharging till the audible alarm should sound for every second. This indicates that the UPS is about to discharge completely. Please store your files and record the runtime. The runtime is depending on the load.

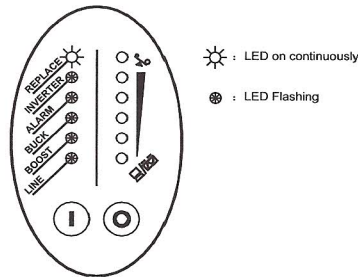
If the utility power is not restored, the alarm will change to rapid beeps alerting the user that the UPS will soon run out of battery power and will shut itself down.

Restore electrical power to connected equipment by re-plugging the UPS power cord into a wall outlet.

## 2.6 Operating Parameter Setting

### 2.6.1 Configuration Mode

Press and hold both the main on switch “ I ” and the main off switch “ O ” on the front panel for more than 3 seconds while the UPS is in the off status. The UPS will now enter parameter configuration mode.



### 2.6.2 Display and control switch

- When the UPS enters into the configuration mode, the turn on of six different status indicator LEDs represent different parameter being programmed.
- Different parameter can be selected by press and hold the main off switch “ O ” for more than 3 seconds.

- Different settings can be selected by pressing and holding the main on switch “ I ” for more than 3 seconds.

### 2.6.3 End of configuration mode

- To exit the configuration mode:

Press and hold both the main on switch “ I ” and off switch “ O ” for more than 3 seconds.

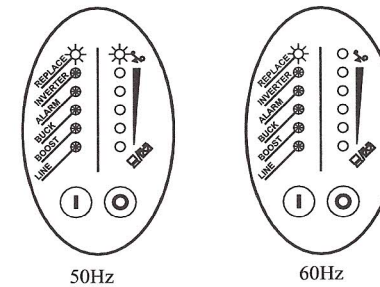
### 2.6.4 Setting of Parameters

#### 2.6.4.1 Output Frequency Setting

Press and hold the main on switch “ I ” for more than 3 seconds to turn on L6. This indicates that the UPS is configured to work at 50Hz output frequency.

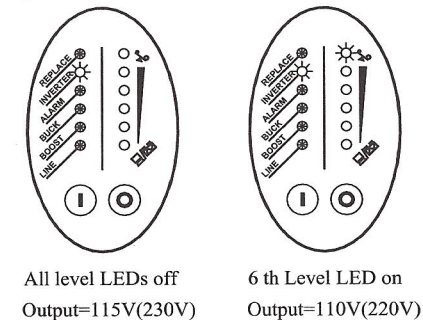
Press and hold the main on switch “ I ” again for more than 3 seconds to configure the UPS to operate in the 60Hz mode.

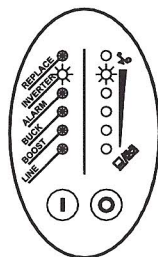
The battery backup mode output frequency will always follow the frequency of AC mains, even if the internal presetting is different.



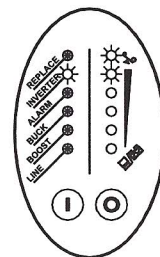
#### 2.6.4.2 Output Voltage Setting

- Press and hold the main off switch “ O ” to select the output voltage setting mode.
- Press and hold the main on switch “ I ” for more than 3 seconds to select different output voltage settings.





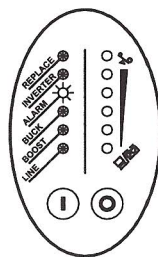
5 th Level LED on  
Output=120V(240V)



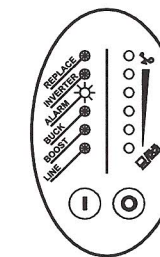
5 th,6th Level LED on  
Output=127V(208V)

2.6.4.3 AVR Buck Range Setting

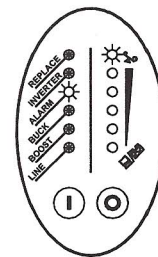
- Press and hold the main off switch “O” to select the AVR Buck Range Setting mode.
- Press and hold the main on switch “I” for more than 3 seconds to select different AVR buck ranges.



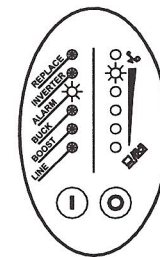
AVR Buck Range mode



All Level LEDs off  
AVR buck=+25%



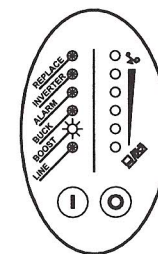
6th level LED on  
AVR buck = +30%



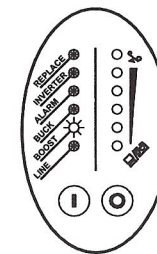
5 th Level LED on  
AVR buck = +20%

2.6.4.4 AVR Boost Range Setting

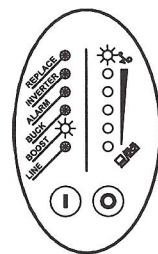
- Press and hold the main off switch “O” to select the AVR Boost Range Setting mode.
- Press and hold the main on switch “I” for more than 3 seconds to select different AVR boost ranges.



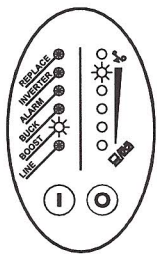
AVR Boost Range mode



All Level LEDs off  
AVR boost = -25%



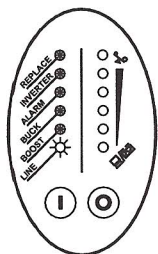
6th level LED on  
AVR boost = -30%



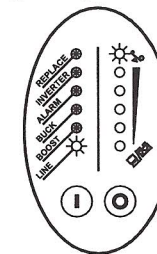
5th level LED on  
AVR boost = -20%

2.6.4.5 Energy saving mode

Press the main off switch “O” to select the energy saving mode.



All level LEDs off  
UPS in energy saving mode



6 th Level LED on  
UPS in normal mode



Press and hold the main on switch “ I ” for more than 3 seconds to select energy saving modes.

In energy saving mode, the UPS can be automatically turned off after 2 minutes if no loads are connected or load < 50W.

Note: Setting of leave factory: Output 120V or 230V, buck and boost 20%, energy saving mode.

### 2.7 Audible / Visual Indicators

\* LED turn on continuously ☆ LED flashing - LED off

#### 2.7.1 Audible / Visual Indicators

Buck	Line	Boost	Alarm	Inverter	Replace	Buzzer	Operating Status
*	—	—	—	—	—	Buzzer off	AC buck mode
—	*	—	—	—	—	Buzzer off	AC normal
—	—	*	—	—	—	Buzzer off	AC boost mode
—	—	—	*	—	—	Beeps continuously	UPS fault
—	—	—	—	*	—	Beeps in every 4 seconds	Backup mode
—	—	—	—	*	—	Beeps in every 15 seconds	Backup time over 30 minutes
—	—	—	—	*	—	Beeps in every 0.5 second	Energy saving mode
—	—	—	—	—	*	Beeps continuously	Battery is dead

#### 2.7.2 Battery Capacity Indicators

L1	L2	L3	L4	L5	L6	Buzzer	Operating Status
*	*	*	*	☆	—	Beeps in every 4 seconds	Battery capacity ≤ 100%
*	*	*	☆	—	—	Beeps in every 4 seconds	Battery capacity ≤ 80%
*	*	☆	—	—	—	Beeps in every 4 seconds	Battery capacity ≤ 60%
*	☆	—	—	—	—	Beeps in every 4 seconds	Battery capacity ≤ 40%
☆	—	—	—	—	—	Beeps in every seconds	Battery capacity ≤ 20%, Battery will running out
—	—	—	—	—	*	Beeps in every seconds	UPS full load.
—	—	—	—	—	*	Beeps 2 times in every second	UPS is over load, Remove the non-critical loads in 20 second.

Continued

L1	L2	L3	L4	L5	L6	Buzzer	Operating Status
—	—	—	—	—	*	Beeps 2 times in every 0.5 second	UPS is over load, Remove the non-critical loads or UPS shuts off in 2 minutes.

#### 2.7.3 Load Level Indicators (AC Normal)

L1	L2	L3	L4	L5	L6	Buzzer	Operating Status
*	—	—	—	—	—	Buzzer off	Load size ≤ 20%
*	*	—	—	—	—	Buzzer off	Load size ≤ 40%
*	*	*	—	—	—	Buzzer off	Load size ≤ 55%
*	*	*	*	—	—	Buzzer off	Load size ≤ 75%
*	*	*	*	*	—	Buzzer off	Load size ≤ 80%
*	*	*	*	*	*	Beeps in every second	Load size ≤ 100%. UPS full load. Remove the non-critical loads.
*	*	*	*	*	*	Beeps 2 times in every second	Load size ≤ 110%. Remove the non-critical loads
*	*	*	*	*	*	Beeps 2 times in every 0.5 second	Load size ≤ 140%. Remove the non-critical loads or UPS shuts off in 2 minutes.

(Backup Mode)

L1	L2	L3	L4	L5	L6	Buzzer	Operating Status
—	—	—	—	—	*	Beeps in every second	UPS full load. Remove the non-critical loads.
—	—	—	—	—	*	Beeps 2 times in every second	UPS overload. Remove the non-critical loads within 20 seconds

#### 2.7.4 Abnormal Status Indicators

Replace	Alarm	L1	L2	L3	L4	L5	L6	Buzzer	Operating Status
—	*	*	*	—	*	—	—	Beeps continuously	Output circuit short
—	*	*	—	—	—	—	—	Beeps continuously	Inverter over voltage
—	*	*	—	*	—	—	—	Beeps continuously	Inverter under voltage
—	*	*	—	—	*	—	—	Beeps continuously	Over temperature
—	*	*	—	—	—	*	—	Beeps continuously	Charger over voltage
—	*	*	—	*	—	*	—	Beeps continuously	Charger fault
—	*	*	*	—	—	*	—	Beeps continuously	Battery voltage abnormal
*	*	*	—	—	*	*	—	Beeps continuously	Battery is dead



Continued

Replace	Alarm	L1	L2	L3	L4	L5	L6	Buzzer	Operating Status
—	☆	*	*	*	*	*	*	Beeps in every second	Load size100%
—	☆	*	*	*	*	*	*	Beeps 2 times in every seconds	Load size 110%
—	☆	*	*	*	*	*	*	Beeps 2 times in every 0.5 seconds	Load size140%
—	☆	—	*	*	—	—	—	Beeps in every second	Charger voltage abnormal
—	☆	—	*	—	*	—	—	Beeps in every 0.5 seconds	AC abnormal

### 3. Interface With Computer for UPS Status Monitoring

The communication port on the back of the UPS may be connected to a host computer. The port simulates relays closing to communicate with the computer. Its major functions are the following:

DB -9	Description
Pin 2	UPS simulates a relay closing between Pin 2 and Pin 4 when input power fails.
Pin 4	Common for Pin 2 and 5.
Pin 5	UPS simulates a relay closing when the battery inside the UPS has less than 2 minutes backup time left (depending on the load).

Users can also use USB cable, monitor the UPS status and battery capacity.

### 4. Service and Maintenance

Refer to “Important Safety Instructions”.

#### 4.1 Storage

The UPS should be stored in a cool dry location. Make sure the battery is fully charged before the UPS is stored. If you plan to store the UPS, there is a risk that the battery might discharge to the point where it is permanently discharged. To prevent this from happening, follow these steps before storing the unit:

- Fully charge the battery before storing the unit.
- Recharge the battery for 24 hours at intervals not greater than 6 months. Repeat every 3 months in high temperature locations.

#### 4.2 Cleaning

- Before cleaning, turn off the switch of the UPS. Unplug the UPS from the outlet.

- Clean all surfaces with a soft, lint - free cloth that you have dampened in a mild solution of detergent and water. The cloth must not be too wet.
- Never spill water or cleaning fluid inside the unit. Should this happen accidentally, call your maintenance authority immediately.
- Do not use detergent that contains alcoholic ingredient, scouring pads, steel wool, harsh chemical agents, or anything that can damage the surface of the unit.

### 4.3 Testing Operations

Before testing, verify the battery has been fully charged.

- Unplug the UPS from power inlet.
- If you would like to know the discharging period, just keep on discharging till the audible alarm should sound for every second. This indicates that the UPS is about to discharge completely. Please store your files and record the runtime. The runtime is depending on the load.

### 4.4 Replace battery and treatment

Refer “Important Safety instruction”

- The expected lifetime of the battery is around 5 years. Improper operation or harsh environment will reduce the actual lifetime.
- The battery should be serviced only by the qualified technicians.
- When replacing batteries, use the sealed lead - acid maintenance free battery with the same number and capacity.
- When replacing batteries, use tools with insulated handles.

### 5. Troubleshooting

The TROUBLESHOOTING TABLE following covers most of the difficulties that you may encounter under normal working conditions. If the UPS fails to operate properly, please review the following steps before calling the repair center:

1. Is the UPS plugged into a proper working outlet?
2. Is the line voltage within the rating specified?
3. Does the fuse on the rear panel need to be replaced?

**Please note the following information when you call for service:**

Model / Serial No / Date of purchase / Full description of problem.

### 5.1 Trouble Shooting Table

Abnormal Situation	Cause	Solution
UPS can not turn on and LED not lit	Main on switch not pushed or pushed less than 1 seconds	Press and hold the Main on switch for more than 1 seconds
	Battery voltage is too low	Recharge the battery for at least 4 hours
UPS always at battery mode	Line voltage too high or too low or Line frequency over range	Check input voltage and frequency
	Input fuse blown	Remove load and replace fuse
	Power cord loose	Re - plug the power cord firmly
UPS is normal but the computer won't turn on	Computer input power cord is loose or not connected	Reconnect computer input power cord
Backup time is less than the rating	Battery is not fully charged	Recharge the battery for 24 hours and re - test the backup time. If problem remains, call for service
	UPS is slightly overload	Remove the least non - critical load
Backup mode, the UPS beeps in every 0.5 second and UPS will automatically turn off in 2 minutes	UPS is in green power mode	Connect to load
		Disable green power mode
AC fail, UPS automatic turn off	Battery is not fully charged or battery is dead	Recharge the battery for 24 hours and start the UPS again, call for service
	UPS is over load	Remove non - critical load and start the UPS again
The UPS beeps in every second and fault LED flash, LED6 lit	UPS is at full load	Remove the non - critical loads
During AC fail, the UPS beeps 2 times in every second and fault LED flash, LED6 lit, UPS shuts down in 20 seconds	UPS is over load	Remove non - critical loads and start the UPS again
AC is normal, the UPS beeps 2 times every second and fault LED flash, LED 6 lit	UPS is over load	Remove the non - critical loads

Continued

Abnormal Situation	Cause	Solution
AC boost mode, the UPS beeps 2 times in every 0.5 second and fault LED flash, LED 6 lit, UPS will automatic turn off in 2 minutes	UPS is over load	Remove the non - critical loads, start the UPS again
LED 1,2,4 lit	UPS output circuit short	Check output circuit
LED 1,2 lit	UPS Inverter over voltage	Call for service
LED 1,3 lit	UPS Inverter under voltage	Call for service
LED 1, 4 lit	UPS over temperature	Remove the UPS to provide adequate air flow area, or check fan of UPS
LED 1,5 lit	Charger over voltage	Call for service
LED 1,3,5 lit	Charger fault	Call for service
LED 1,2,5 lit	Battery voltage abnormal	Plug in AC power, charge the battery
LED 1,4,5 lit	Battery dead	Refer 4.4 instruction to replace batteries

### 6. Specification

Model	QH1500 - 24R(120V)	QH1500 - 24R(230V)	
Capacity	1500VA		
Power	1000W		
Topology	Line - interactive		
Input	Nominal Voltage	AC120V AC220 - 240V	
	Voltage Range	AC96 ~ 144V AC176 ~ 288V	
	Frequency Range	50/60Hz ± 5%	
	Power Factor	>0.95 (full load condition)	
Output	Nominal Voltage	110/115/120/127VAC 208/220/230VAC	
	Voltage Regulation	± 10% (Line Mode), ± 3% (DC mode)	
	Frequency Stability	Same as the line (AC mode) 50/60Hz ± 0.5% (DC mode)	
	Waveform	Sine Wave	

Continued

Model		QH1500-24R(120V)	QH1500-24R(230V)
Output	Distortion	<5% (Linear Load)	
	Overload Capacity	110% ~ 140% for 20 sec. (Back up mode) > 140% for 10 cycles (Back up mode)	
	Transfer Time	< 6mS (typical)	
Battery	Type	Sealed, Maintenance-free Lead Acid	
	DC Voltage	24Vdc	
	Number	2 * 2pcs	
	Backup Time	5 Minutes(Linear Load)	
	Recharge Time	10 Hours Recovery to 90% (typical)	
DB-9 Contact Closure		AC failure & Battery Low	
Remote Power Off Function		>200mA, In an Emergency, Open Remote Power Off Switch	
Environment Period		20 years	
Indicators	Front Panel LEDs	Line Normal (Green), Inverter (Green), Boost (Amber), Buck (Amber), Battery Replacement (Red), Fault (Red), Overload (Red), Load/Battery Capacity (Green * 5pcs)	
	Fault Message	Display by Load/Battery Capacity LED (Green * 5pcs)	
	Audible Alarms	Battery Backup (Every 4 Seconds), Battery Back up Over 30 Minutes (Every 15 Seconds) Battery Low (Every Second), Overload (Twice Every Second), Fault (Continuously)	
Safety	North America	UL 1778	
	Europe	EN62040-1-1	
EMC	North America	FCC Part 15 Subpart B:2006	
	Europe	EN62040-2:2006	
ROHS	Europe	2011/65/EU	
	China	GB/T 26572-2011	
Environ-ment	Operation	3000 Meters max Elevation 0°C ~ +40°C 95% Relative Humidity, Non-condensing	
	Storage	-20 °C ~ +60 °C	
	Audible noise	<50dB (1 meter from surface)	
Physical	Dimension (W * H * D)	430 * 88 * 528	
	Net Weight	26 kg	

Note: 230 V(16AWG \* 3 5.7A max.) Input Power Cable to bring their own users, do not allow direct access to the 120VAC network, can be connected to the user-supplied equipment.

**RoHS Material List**

Unit: mg/kg

Item		Pb	Cd	Cr VI	Hg	PBBs	PBDEs
Standard		<1000	<100	<1000	<1000	<1000	<1000
Result	Battery	×	0	0	0	0	0
	Metal shell	0	0	0	0	0	0
	Plastic panel	0	0	0	0	0	0
	PCBA	0	0	0	0	0	0
	Transformer	0	0	0	0	0	0
	Wire	0	0	0	0	0	0
	Other materials	0	0	0	0	0	0

Remark: 0 Passed, × Out of Limits

Batteries contain lead (Pb). Do not discard, environmental protection use period 20 years.

There is lead (Pb) in lead-acid batteries. Do not throw them randomly.