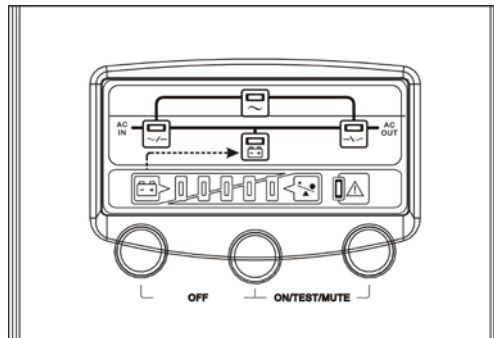
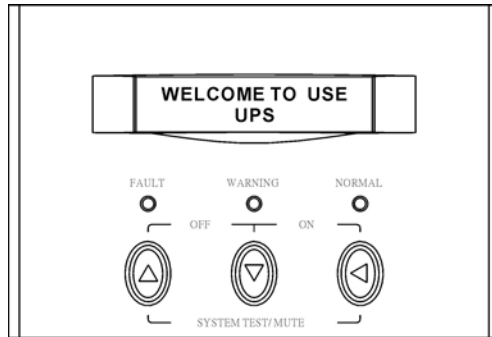


USER'S MANUAL

On-Line 6K-10KVA

Uninterruptible Power Supply



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1. Safety Instructions

1.1 Transport

- ★ Please transport the UPS system only in the original packaging (to protect against shock and impact).

1.2 Set-up

- ★ Condensation may occur if the UPS system is moved directly from a cold to a warm environment. The UPS system must be absolutely dry before being installed. Please allow an acclimatization time of at least two hours.
- ★ Do not install the UPS system near water or in damp environments.
- ★ Do not install the UPS system where it would be exposed to direct sunlight or near heat.
- ★ Do not block off ventilation openings in the UPS system's housing.

1.3 Installation

- ★ Do not connect appliances or items of equipment which would overload the UPS system (e.g. Laser printers) to the UPS outlet socket
- ★ 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.

1.4 Operation

- ★ Do not disconnect the mains cable on the UPS system or the building wiring socket outlet (shockproof socket outlet) during operations since this would cancel the protective earthing of the UPS system and of all connected loads.
- ★ The UPS system features its own, internal current source (batteries). The UPS output sockets or output terminals block may be electrically lived even if the UPS system is not connected to the building wiring socket outlet.
- ★ Ensure that no fluids or other foreign objects can enter the UPS system.
- ★ The UPS operates with hazardous voltages. Only qualified maintenance personnel may carry out repairs

1.5 Maintenance, servicing and faults

- ★ The UPS system operates with hazardous voltages. Only qualified maintenance personnel may carry out repairs.
- ★ Caution - risk of electric shock. Even after the unit is disconnected from the mains power supply (building wiring socket outlet), components inside the UPS system are still connected to the battery and are still electrically live and dangerous.
- ★ Before carrying out any kind of servicing and/or maintenance, disconnect the batteries and verify that no current is present and no hazardous voltage exist in the terminals of high capability capacitor such as BUS-capacitors.

- ★ Only persons are adequately familiar with batteries and with the required precautionary measures may replace batteries and supervise operations. Unauthorised persons must be kept well away from the batteries.
- ★ 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!
- ★ Batteries may cause electric shock and have a high short-circuit current. Please take the precautionary measures specified below and any other measures necessary when working with batteries:
 - remove wristwatches, rings and other metal objects
 - use only tools with insulated grips and handles.
- ★ When changing batteries, install the same number and same type of batteries.
- ★ Do not attempt to dispose of batteries by burning them. This could cause battery explosion.
- ★ Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes. It may be toxic.
- ★ Please replace the fuse only by a fuse of the same type and of the same amperage in order to avoid fire hazards.
- ★ Do not dismantle the UPS system.

2. Introduction

This On-Line Series is an Uninterruptible Power Supply incorporating double-converter technology. It provides perfect protection specifically for Novell, Windows NT and UNIX servers.

The double-converter principle eliminates all mains power disturbances. A rectifier converts the alternating current from the socket outlet to direct current. This direct current charges the batteries and powers the inverter. On the basis of this DC voltage, the inverter generates a sinusoidal AC voltage, which permanently supplies the loads.

Computers and periphery are thus powered entirely by the mains voltage. In the event of power failure, the maintenance-free batteries power the inverter.

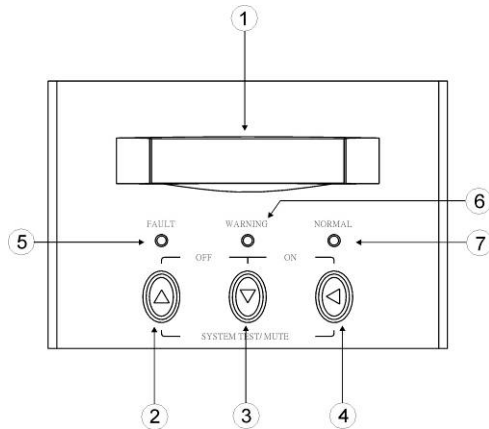
This manual covers the UPS listed as follows. Please confirm whether it is the model you intend to purchase by performing a visual inspection of the Model on the rear panel of the UPS.

Model	Type	Model	Type
6K	LCD	6KL	Long backup time LCD
10K		10KL	
6K-LED	LED	6KL-LED	Long backup time LED
10K-LED		10KL-LED	

“L” Model: Long backup time

3. System Description

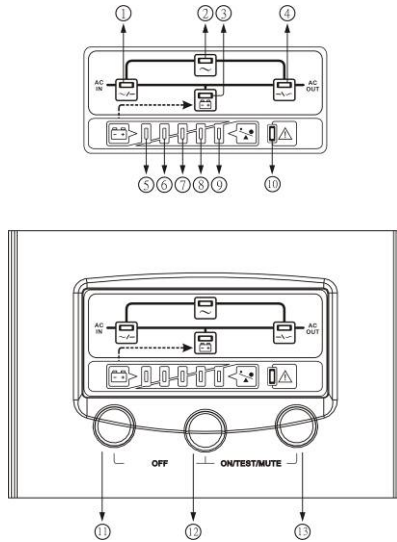
3.1 Front panel description for LCD model



1. LCD Display: This indicates the UPS operation information, including UPS status, input/output voltage, input/output frequency, battery voltage, battery capacity left, output load, inside temperature, and the times of history events.
2. Up-key: Use to select upward the UPS status on LCD Display.
3. Down-key: Use to select downward the UPS status on LCD Display. Beside, press it simultaneously with the Up-key to switch off the UPS.
4. Enter-Key: It is pressed with the Down-key to turn on the UPS. In battery operation mode, press it with Up-key at the same time to disable the buzzer. Beside, it is pressed to confirm and enter the item selected.
5. Fault LED (red): To indicate the UPS is in fault condition because of inverter shutdown or over-temperature.

6. Warning LED (yellow): To indicate the UPS is in the status of overload, bypass and battery back-up.
7. Normal LED (green): To indicate the UPS is operating normally.

3.2 Front panel description for LED module



1. Line LED (green): To indicate the AC power is applied to the UPS input. In case this LED blinks, it means the main AC source is out of tolerance.
2. Bypass LED (yellow): To indicate the load is powered via the bypass.
3. Battery LED (yellow): To indicate the UPS is in battery backup mode when the mains power has failed.

4. Inverter LED (green): To indicate the UPS is powered through inverter.

5~9. Load & Battery Capacity LEDs:

(a) No. 5 to 8 LED is green color and No. 9 (used as warning LED for overload or battery low) is yellow.

(b) These LEDs show the load % of the UPS if the mains power is available (in normal operation). LEDs light up to indicate the following information.

No. 5 LED: 0-25 %

No. 5&6&7&8 LEDs: 76-100 %

No. 5&6 LEDs: 26-50 %

No. 5&6&7&8&9 LEDs: Overload

No. 5&6&7 LEDs: 51-75 %

(c) In the battery operation, the LEDs indicate the capacity (%) of the batteries. LEDs light up to indicate the following information.

No. 9 LED: 0-25 % (battery low level)

No. 8&9 LEDs: 26-50 %

No. 6&7&8&9 LEDs: 76-95 %

No. 7&8&9 LEDs: 51-75 %

No. 5&6&7&8&9 LEDs: 96-100 %

10. Fault LED (red): To indicate the UPS is in fault condition because of inverter shutdown or over-temperature

11. OFF key: It should be pressed with the control key simultaneously to switch off the UPS.

12. Control key: this key is pressed simultaneously with OFF or ON/TEST/MUTE key to switch on/off the UPS, do auto-test and disable the buzzer.

13. ON/TEST/MUTE key: It should be pressed with the control key simultaneously to switch on UPS, do UPS auto-test in normal AC mode and turn off the buzzer in battery operation.

4. Connection and Installation

The system may be installed and wired only by qualified electricians in accordance with applicable safety regulations!

4.1 Unpacking and Inspection for 6K(L)/10K(L)

1. Unpack the packaging and check the package contents. The shipping package contains:
 - A UPS
 - A user manual
 - A communication cable
 - A battery cable (for RP-UPH603T/L, RP-UPH104T/L only)
2. Inspect the appearance of the UPS to see if there is any damage during transportation. Do not turn on the unit and notify the carrier and dealer immediately if there is any damage or lacking of some parts.

4.2 Input and output power cords and protective earth ground installation

1. Notes for installation
 - (a) The UPS must be installed in a location with good ventilation, far away from water, inflammable gas and corrosive agents.
 - (b) Ensure the air vents on the front and rear of the UPS are not blocked. Allow at least 0.5m of space on each side.
 - (c) Condensation to water drops may occur if the UPS is unpacked in a very low temperature environment. In this case it is necessary to wait until the UPS is fully dried inside out before proceeding installation and use. Otherwise there are hazards of electric shock.

2. Installation

- (a) Installation and wiring must be performed in accordance with the local electric code and the following instructions by professional personnel.
- (b) For safety, please cut off the mains power switch before installation. The battery breaker also needs to be cut off if it is a long backup time model ("L" model).
- (c) Open the terminal block cover located on the rear panel of the UPS, please refer to the appearance diagram.
- (d) For 6K(L) UPS, it is recommended to select the UL1015 10AWG(6mm²) wire or other insulated wire which complies with AWG Standard for the UPS input and output wirings.
- (e) For 10K(L), it is recommended to select the UL1015 8AWG(10mm²) wire or other insulated wire which complies with AWG Standard for the UPS input and output wirings.

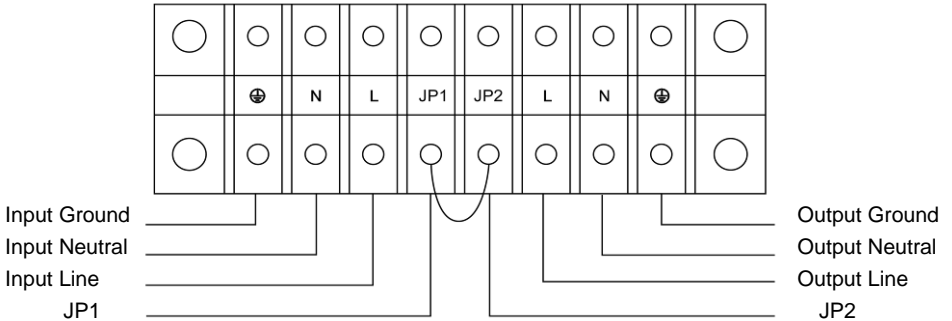
Note: Do not use the wall receptacle as the input power source for the UPS, as its rated current is less than the UPS's maximum input current. Otherwise the receptacle may be burned and destroyed.

- (f) Connect the input and output wires to the corresponding input and output terminals according to the following diagram.

Note: you must make sure that the input and output wires and the input and output terminals are connected tightly.

- (g) The protective earth ground wire refers to the wire connection between the equipment which consumes electric equipment and the ground wire. The wire diameter of protective earth ground wire should be at least as above mentioned for each model and green wire or green wire with yellow ribbon wire is used.
- (h) After having completed the installation, make sure the wiring is correct.
- (i) Please install the leak current protective breaker at the output power distribution panel of the UPS if necessary.
- (j) To connect the load with the UPS, please turn off all the loads first, then perform the connection and finally turn on the loads one by one.
- (k) No matter the UPS is connected to the utility power or not, the output of the UPS may have electricity. The parts inside the unit may still have hazardous voltage after turning off the UPS. To make the UPS have no output, power off the UPS, and then disconnect the utility power supply.
- (l) Suggest charging the batteries for 8 hours before use. After connection, turn the input breaker in the “ON” position, the UPS will charge the batteries automatically. You can also use the UPS immediately without charging the batteries first, but the backup time may be less than the standard value.

(m) If it is necessary to connect the inductance load such as a monitor or a laser printer to the UPS, the start-up power should be used for calculating the capacity of the UPS, as its start-up power consumption is too big when it is started.



Input and output Terminal Block wiring diagram

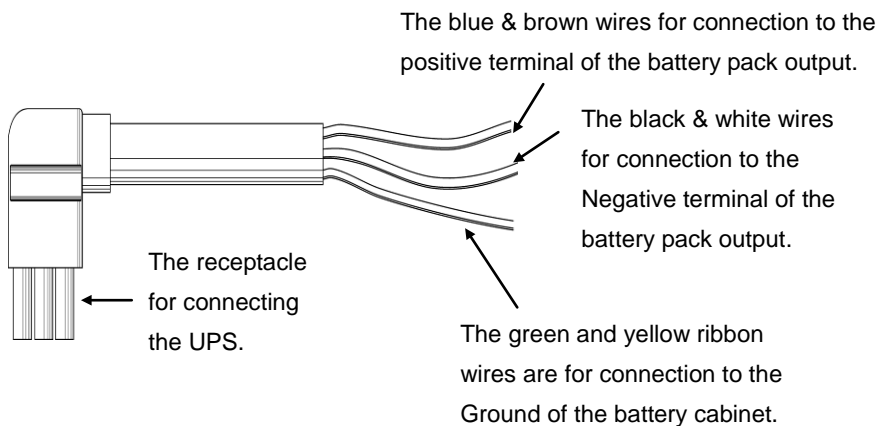
Important notes: If the UPS is used in single mode, JP1 and JP2 must be connected by 10AWG(6mm²). If the UPS is used in parallel mode, the Jumper between JP1 and JP2 must be removed.

4.3 Procedure for connecting the long backup time UPS with the external battery

1. The nominal DC voltage of external battery pack is 240VDC. Each battery pack consists of 20 pieces of 12V maintenance free batteries in series. To achieve longer backup time, it is possible to connect multi-battery packs, but the principle of “same voltage, same type” should be strictly followed.

2. The connector of the external battery cable is used to plug into the external battery socket of the UPS. The other end of the external battery cable is made of three open wires with ring terminals to connect with the external battery pack(s). The procedure of installing battery bank should be complied with strictly.

- (a) A DC breaker must be connected between the battery pack and the UPS. The capacity of breaker must be not less than the data specified in the general specification.
- (b) Set the battery pack breaker in "OFF" position and connect the 20 pieces of batteries in series.
- (c) Must connect the external battery cable to the battery first. The positive pole of the battery is connected to the UPS in parallel with blue and brown wires; the negative pole of the battery is connected to the UPS in parallel with black and white wires; the green and yellow ribbon wire is connected to the ground of the battery cabinet.



3. To complete the connection by plugging the connector of the external battery cable into the external battery socket of the UPS. Do not attempt to connect any loads to the UPS now. You should connect the input power wire to the right position first. And then set the breaker of the battery pack in the ON position. After that set the input breaker in the ON position. The UPS begins to charge the battery packs at the time.

4.4 Parallel installation

1. Brief introduction of the redundancy

$N+X$ is currently the most reliable power supply structure. N represents the minimum UPS number that the total load needs; X represents the redundant UPS number, i.e. the fault UPS number that the system can handle simultaneously. The bigger the X is, the higher reliability of the power system is. For occasions where reliability is highly depended on, $N+X$ is the optimal mode.

As long as the UPS is equipped with parallel cables, up to 3 units can be connected in parallel to realize output power sharing and power redundancy.

2. Parallel installation

- (a) Users need to opt a standard 25-pin communication cable, which should have 25 cores, corresponding stitches and shield, as the UPS parallel cable. The length of the parallel cable is appropriate to be less than 3 m.
- (b) Strictly follow the stand-alone wiring requirement to perform the input wiring of each UPS.

- (c) Connect the output wires of each UPS to an output breaker panel.
- (d) Disconnect the Jumper on JP1 and JP2 of the terminal block first, and connect each output breaker to a main output breaker and then to the loads.

* The requirement of the output wiring is as follows:

- When the distance between the UPSs in parallel and the breaker panel is less than 20 meters, the difference between the wires of input & output of the UPSs is required to be less than 20%.
- When the distance between the UPSs in parallel and the breaker panel is greater than 20 meters, the difference between the wires of input & output of the UPSs is required to be less than 10%.

5. UPS Operation

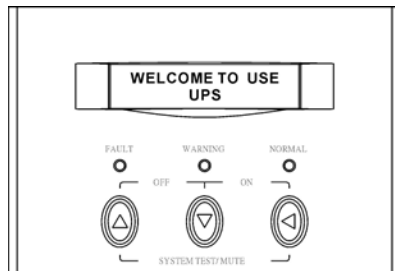
5.1 Check prior to start up

1. Ensure the UPS is in a suitable positioning.
2. Check input cord is secured.
3. Make sure the load is disconnected or in the “OFF” position.
4. Check if input voltage meets the UPS rating required.

5.2 Start-up procedure for LCD model

Please follow the instructions below for UPS operation.

1. Once the AC source is connected, the LCD Display shall light up immediately to display first the main menu of greeting context and the Normal LED is blinking to indicate ready to switch on the inverter.

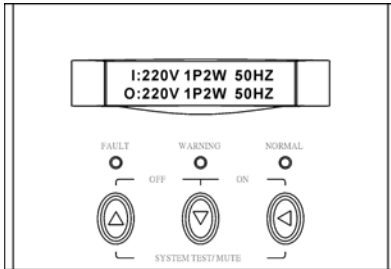


2. By pressing the Enter-key and the Down-key simultaneously for 3 seconds, the UPS will start up after two beeps and Normal LED lights up to indicate the power is from its inverter to the load.
3. When the Down-key and the Up-key are pressed simultaneously for 3 seconds, the inverter will be turned off after two beeps and the UPS is on the standby status (LCD display illuminates and Normal LED is blinking) until AC source is disconnected.

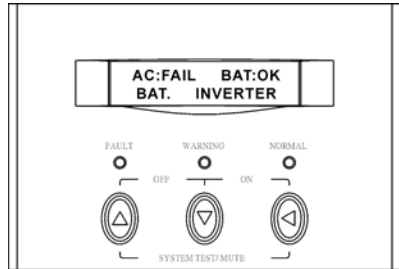
5.3 LCD display menu

Use Up/Down key to select menu-displays of the LCD described below.
This screen will refresh once the system power is enabled.

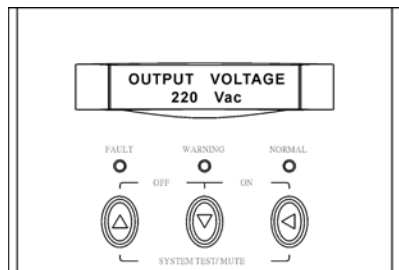
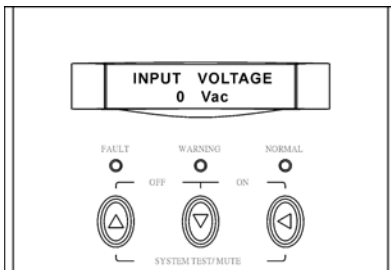
Rated Spec



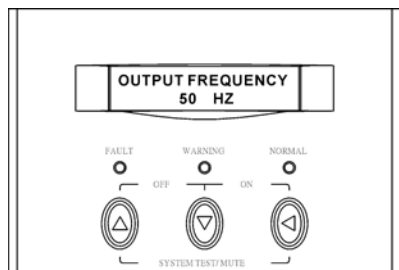
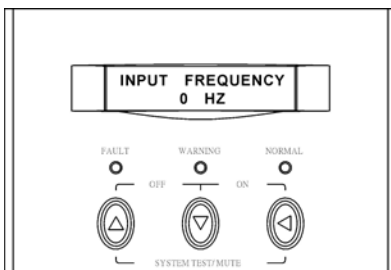
Status



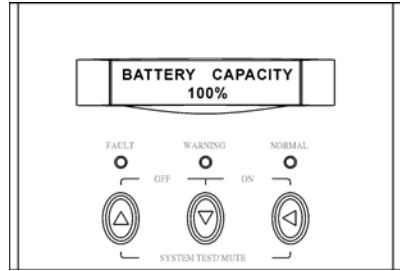
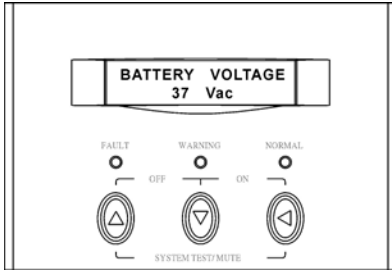
Voltage



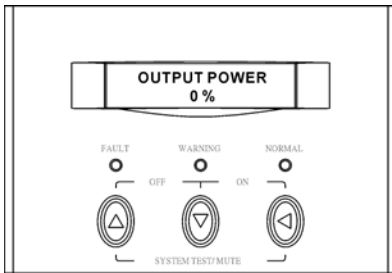
Frequency



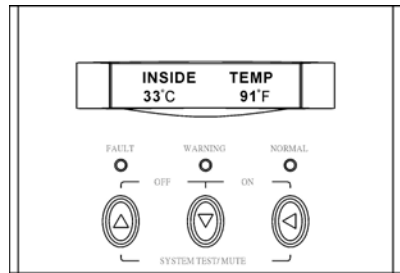
Battery Status



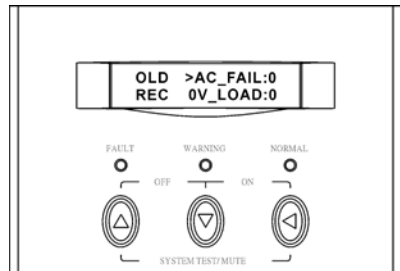
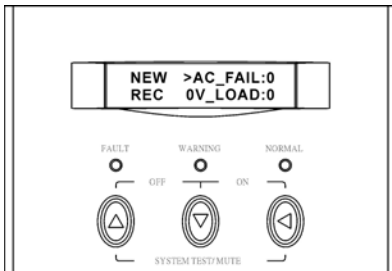
Output Power



Temperature



History Record

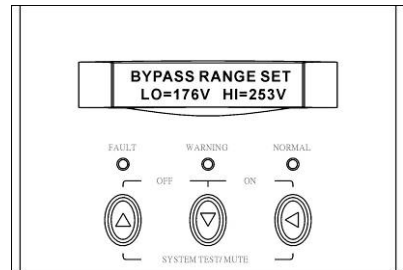


6. Output and bypass setting

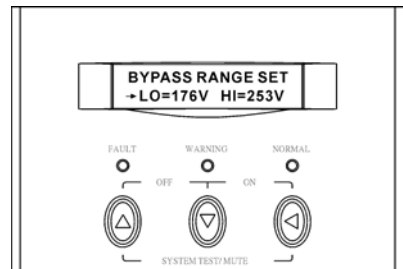
Just connect the AC power (don't need to turn on the UPS) and the LCD will light up with the welcome slogan (initial) screen. Then press the Down-key to find the screen and then press Enter-key for setting. Once finished, please disconnect the AC power and then reconnect power again to refresh the setting.

Bypass Range Set

A. To protect the load, the function of bypass auto-transfer is activated only when the AC main voltage is within the range of LO (low) and HI(high). In this screen, press Enter-key to enter the following steps for LO/HI voltage setting.

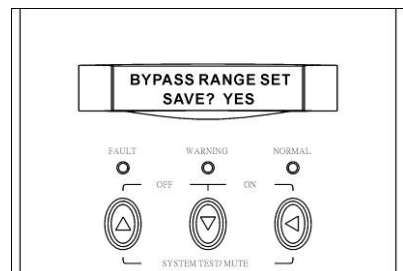


B. The cursor (→) will pop up to indicate the item newly selected. Press Enter-key to get the item of LO or HI range the user want to adjust.



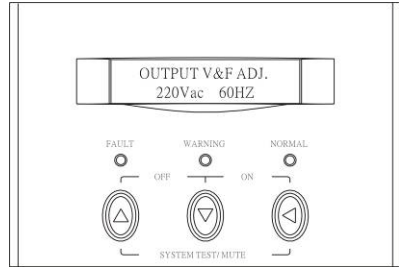
C. Use Up or Down-key to adjust the voltage (changing 1V by every press). LO (low rang):176V+/-20V, HI(high range):253V+/-20V).

D. Once the value is confirmed, press Enter-key again to save the data.

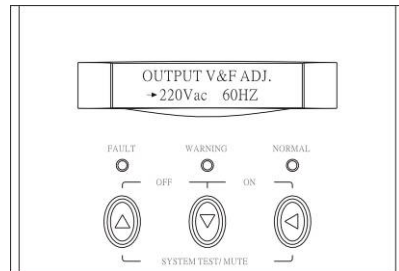


Output Voltage & Frequency Adjust

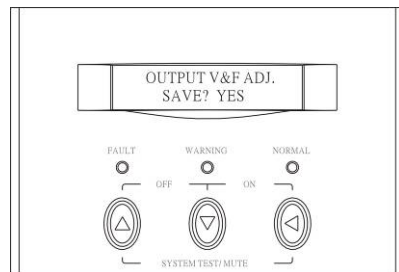
A. In this screen, press Enter-key to enter the following steps for output voltage and frequency adjustment.



B. The cursor (→) will pop up to indicate the output voltage and frequency newly selected.



C. Use Up or Down-key to adjust the output voltage (220V, 230V, and 240V). Press Enter-key to confirm voltage and then the cursor will move to frequency selection. The output frequency (50Hz or 60Hz) can be adjusted by the same key operation.

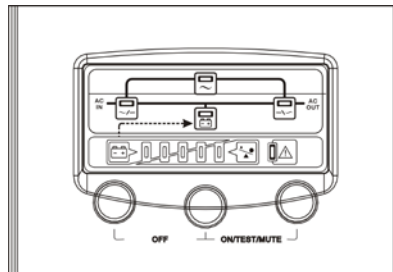


D. Once the correct voltage is selected, press Enter-key again to save the selection.

5.4 Start-up procedure for LED model

Please follow the instructions below for UPS operation.

1. Once the AC source is connected, Line LED shall light up immediately to indicate ready to switch on the inverter. In case this LED blinks, it means the main AC source is out of tolerance.
2. Press both of the Control Key and the ON/TEST/MUTE key simultaneously for 3 seconds, the UPS will start up after two beeps and Inverter LED lights up to indicate the UPS is powered through inverter.



5. 5 Parallel machine maintenance

This UPS system has parallel machine function, if you want to add single machine to parallel system, please follow operational process of joining new machine; if because of cutting down load or attaining UPS, and you must remove UPS, please follow operational processes of removing parallel machine.

1. Join new UPS process

- (a) Before joining new UPS, user should prepare input & output line, switch and combine line.
- (b) New UPS input & output switch should be turned off, according to port sign, link
- (c) Input & output line and batteries; synchronously, remove the connection between JP1 and JP2.
- (d) Turn off UPS system, when all UPS work at bypass model, please take apart every UPS repaired board, turn all UPS repaired switches from 'UPS' to 'BPS' and then turn off all UPS input switch.
- (e) If UPS system works at single UPS model, then have to remove the connection of JP1 and JP2.
- (f) Take apart the board of parallel ports, insert one end of combine line into parallel card's slot and screw down its pin; and then lock up the board of parallel ports over again; at the same time, take apart the maintain board of new UPS.
- (g) Turn on the battery switch of new UPS and line input connection switch outside; measure voltage difference between output live wire of new UPS and output live wire of parallel system. If the voltage difference $< 1V$, please close output live wire's witch of new UPS.

- (h) Take apart the board of parallel ports when UPS has turned to bypass mode, insert the other end of combine line into parallel card's slot and screw down its pin; and then lock up the board of parallel ports over again
- (i) Close line input switch of all UPS (including new UPS) in the parallel system; lock up maintain board, unless all UPS turn to bypass mode; press the open key in turn, observe whether the display state of every UPS is normal; at the same time, observe whether all UPS all together turn to inverter model; and measure the voltage difference of every UPS ports' JP2.
- (j) Turn off all UPS, take apart maintain board of all UPS unless they all have turned to bypass mode. Turn all the maintain switches from "BPS" to "UPS" and lock up every maintain board.
- (k) Turn on UPS, make all UPS changed into line inverter mode to work parallel.

Note: If the state of UPS is abnormal in step 8, please follow operational process of removing single UPS to maintain.

2. Process of removing single UPS

- (a) If want to remove UPS which is running normally, please press the close key of the removing one continuously for 2 times
- (b) Shut off the UPSs own line switch, line output switch outside and battery switch, when this UPS need to remove out.

- (c) Turn off other UPS which are running, take apart the maintain cover of every UPS and turn all UPS maintain switch from “UPS” to “BPS” until all running UPS turn to BPS mode. Then turn off every UPS own input switch.
- (d) After removing single UPS, if leaving UPS system is changed to single running, please connect the short line between JP1 and JP2 of this UPS output port.
- (e) Take apart another UPS parallel cover and combine line connected with the UPS which need to remove until all UPS panels become black, then lock up the cover of parallel ports again.
- (f) Take apart UPS parallel cover and combine line when the UPS have to remove, then lock up the cover of parallel ports again.
- (g) Shut input line switch of leaving UPS system, turn maintain switch from “BPS” to “UPS” until all UPS turn to BPS mode and lock up the maintain cover, then turn on the machine and turn all UPS to line inverter mode running.

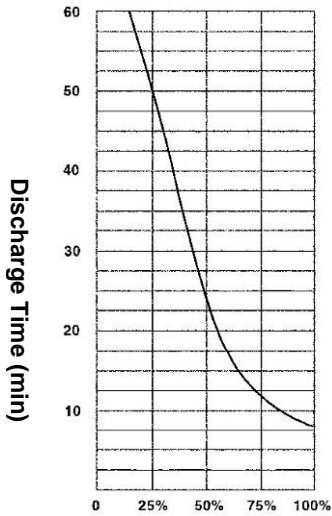
3. Combine machine warning

- (a) When UPS combine system work at inverter mode, make sure that all UPS maintain switches at the same place, that is to say, be at the position of “UPS”, or be at the position of “BPS”.
- (b) When turning on the UPS combine system before enter into inverter mode, UPS output switch must at “OFF” model.
- (c) When UPS combine system work at inverter model, please do not operate any UPS maintain switch.

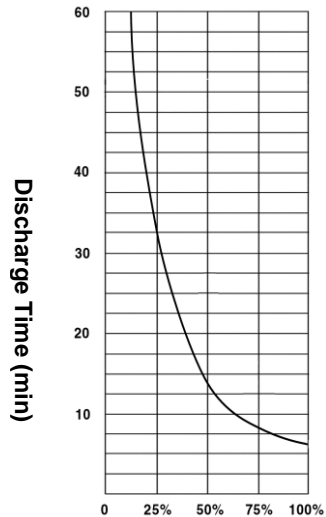
5.6 Backup time for the standard model

The backup time of the long backup time model is dependent on the external battery pack capacity and the load level as well as other factors.

The backup time of standard model may vary from different models and load level. Please refer to the following:



Load level for 6K



Load level for 10K

5.7 Battery Maintenance

- The battery used for this models are regulated sealed lead-acid maintenance free battery. Please charge the UPS regularly in order to maximize the expected life of the battery. When being connected to the utility power, whether the UPS is turned on or not, the UPS keeps charging the batteries and also offers the protective function of overcharging and over-discharging.
- The UPS should be charged once every 4 to 6 months if it has not been used for a long time.
- In the regions of hot climates, the battery should be charged and discharged every 2 months. The standard charging time should be at least 12 hours.
- Under normal conditions, the battery life lasts 3 to 5 years. In case if the battery is found not in good condition, earlier replacement should be made. Battery replacement should be performed by qualified personnel.
- Replace batteries with the same number and same type of batteries.
- Do not replace the battery individually. All the batteries should be replaced at the same time following the instructions of the battery supplier.
- Normally, the batteries should be charged and discharged once every 4 to 6 months. Charging should begin after the UPS shuts down automatically in the course of discharging, the standard charging time for the standard UPS should be at least 12 hours.

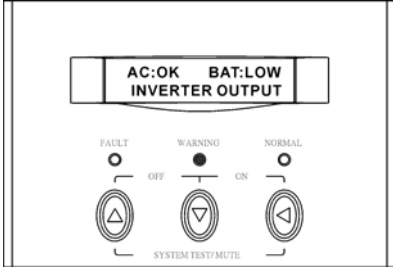
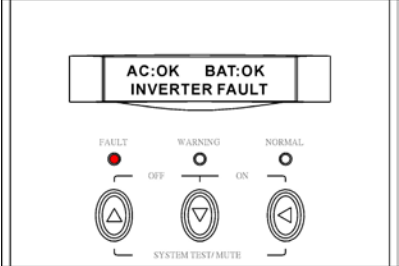
5.8 Notes for Battery Disposal and Battery Replacement

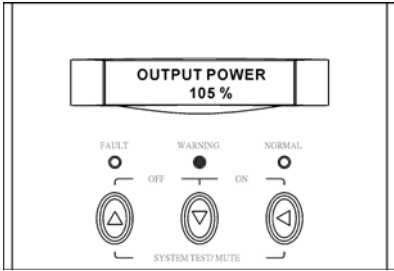
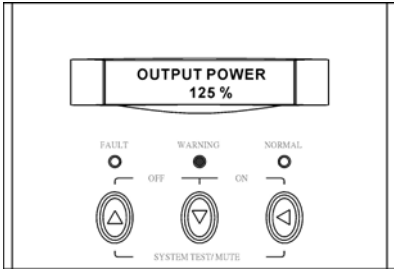
- Before disposing of batteries, remove conductive jewelry such as necklace, wrist watches and rings.
- If it is necessary to replace any connection cables, please purchase the original materials from the authorized distributors or service centers, so as to avoid overheat or spark resulting in fire due to insufficient capacity.
- Do not dispose of batteries or battery packs in a fire, they may explode.
- Do not open or mutilate batteries, released electrolyte is highly poisonous and harmful to the skin and eyes.
- Do not short the positive and negative of the battery electrode, otherwise, it may result in electric shock or fire.
- 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 the ground.
- Even though the input breaker is disconnected, the components inside the UPS are still connected with the batteries, and there are potential hazardous voltages. Therefore, before any maintenance and repairs work is carried out, switch off the breaker of the battery pack or disconnect the jumper wire of connecting between the batteries.
- Batteries contain hazardous voltage and current. Battery maintenance should be carried out by qualified personnel who are knowledgeable about batteries.

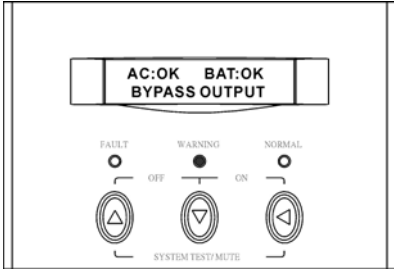
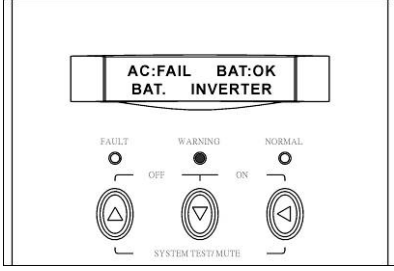
7. Trouble Shooting Guide

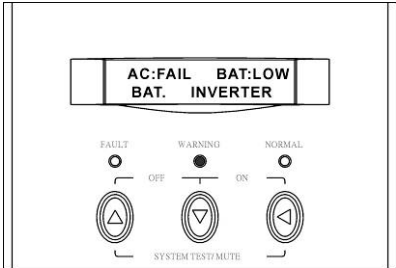
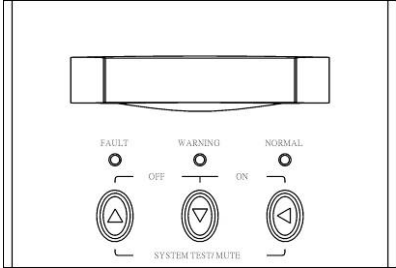
6.1 For LCD Model

The following guideline may be helpful for basic problem solving.

No.	LED and LCD status	ACTION
1	 <p>AC utility power is normal. UPS is running normally, but battery capacity is low (referring to Battery Status Menu). Buzzer beeps once every second for battery low.</p>	<p>Charger may break down. Please replace charger board.</p>
2	 <p>AC utility power is normal. The output load is supplied through bypass of AC utility. Fault LED lits up and buzzer beeps continuously.</p>	<p>Please contact your agent for service.</p>

No.	LED and LCD status	ACTION
3	 <p>The LCD display shows 'OUTPUT POWER 105%'. Below the display are three indicator lights: 'FAULT' (unlit), 'WARNING' (lit), and 'NORMAL' (unlit). There are also 'OFF' and 'ON' labels between the lights, and 'SYSTEM TEST/MUTE' labels below the 'FAULT' and 'NORMAL' lights.</p> <p>AC utility power is normal but UPS is overloaded. Warning LED lits up and buzzer beeps per second.</p>	<p>Please reduce the critical load to $POWER(\%) < 100\%$.</p>
4	 <p>The LCD display shows 'OUTPUT POWER 125%'. Below the display are three indicator lights: 'FAULT' (unlit), 'WARNING' (lit), and 'NORMAL' (unlit). There are also 'OFF' and 'ON' labels between the lights, and 'SYSTEM TEST/MUTE' labels below the 'FAULT' and 'NORMAL' lights.</p> <p>AC utility power is normal but UPS is overloaded up to 125%. Warning LED does not fade out and buzzer beeps per 0.5 second.</p>	<p>Please reduce the critical load to $POWER(\%) < 100\%$.</p>

No.	LED and LCD status	ACTION
5	 <p>AC utility power is normal, but the load is supplied by AC utility power via bypass. Output power is more than 150% (referring to the Output Power Menu). Warning LED lits up and buzzer beeps continuously.</p>	Please reduce the critical load to $POWER(\%) < 100\%$.
6	 <p>AC utility power fails .The full load is supplied by battery power in UPS. Buzzer alarm sounds every 4 seconds.</p>	If AC utility power fails, reduce the less critical load in order to extend backup time. If it is not abnormal power failure, please check the rated input or connected line.

No.	LED and LCD status	ACTION
7	 <p>AC utility fails. The load is supplied by UPS in backup mode and battery power is approaching low level. Buzzer alarm beeps every second.</p>	<p>UPS will shut down automatically. Please save data soon.</p>
8	 <p>AC utility power fails and battery runs out. UPS has shut down automatically.</p>	<p>UPS will restart up when AC utility power is restored. In case AC utility power fails more than 6 hours, please follow storage instruction.</p>

6.2 For LED Model

The following guideline may be helpful for basic problem solving.

No.	UPS STATUS	ACTION
1	AC utility power is normal. UPS is running normally, but battery capacity is low. Buzzer beeps once every second for battery low.	Charger may broke down. Please replace charger board.
2	AC utility power is normal. The output load is supplied through bypass of AC utility. Fault LED lits up and buzzer beeps continuously.	Please contact your agent for service.
3	AC utility power is normal but UPS is overloaded. Warning LED lits up and buzzer beeps per second.	Please reduce the critical load to <100%.
4	AC utility power is normal but UPS is overloaded up to 125%. Warning LED does not fade out and buzzer beeps per 0.5 second.	Please reduce the critical load to <100%.
5	AC utility power is normal, but the load is supplied by AC utility power via bypass. Output power is more than 150%. Warning LED lits up and buzzer beeps continuously.	Please reduce the critical load to <100%.

No.	UPS STATUS	ACTION
6	AC utility power fails .The load is supplied by battery power. Buzzer alarm sounds every 4 seconds.	If AC utility power fails, reduce the less critical load in order to extend backup time. If it is not abnormal power failure, please check the rated input or connected line.
7	AC utility fails. UPS is in battery backup mode and battery power is approaching low level. Buzzer alarm beeps every second.	UPS will shut down automatically. Please save data soon.
8	AC utility power fails and battery runs out. UPS has shut down automatically.	UPS will restart up when AC utility power is restored. If AC utility power failure is more than 6 hours, please follow storage instruction.

8. Communication Port

7.1 RS232 Interface

The following is the pin assignment and description of DB-9 connector.

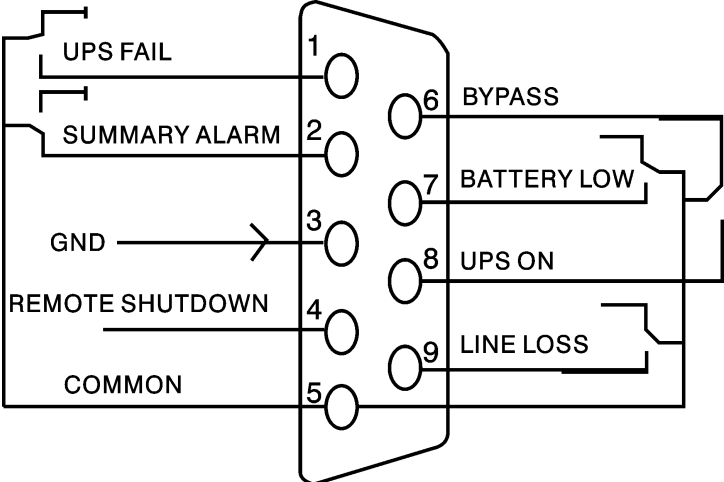
Pin #	Description	I/O
2	TXD	Output
3	RXD	Input
5	GND	Input

7.2 AS400 Interface (Option)

Except for the communication protocol as mentioned above, this series UPS has AS400 card (an optional accessory) for AS400 communication protocol. Please contact your local distributor for details. The following is the pin assignment and description of DB-9 connector in AS400 card.

Pin #	Description	I/O
1	UPS Fail	Output
2	Summary Alarm	Output
3	GND	Input
4	Remote Shutdown	Input
5	Common	Input
6	Bypass	Output
7	Battery Low	Output
8	UPS ON	Output
9	Line Loss	Output

DB-9 Interface of AS400 communication protocol



9. Product Specification

8.1 General Specification

Model		6K	6KL	10K	10KL
Power Rating		6KVA/4.2KW	6KVA/4.2KW	10KVA/7KW	10KVA/7KW
Frequency (Hz)		50/60	50/60	50/60	50/60
Input	Vac	176~276 V	176~276 V	176~276 V	176~276 V
	Amp	31A max.	31A max.	50A max	50A max.
Battery	Vdc	240V	240V	240V	240V
	Amp	24A max	24A max	40A max	40A max
Output	Vac	220V	220V	220V	220V
	Amp	27A	27A	45A	45A
(WxDxH) mm		260x570x717	260x570x717	260x570x717	260x570x717
Weight (kg)		90	35	93	38

8.2 Electrical Performance

Input	Hz Range	46Hz-54Hz or 56Hz-64Hz
	Power Factor	>0.98 (Full load)
Output	Voltage Regulation	±1%
	Frequency Tolerance.	Synchronized ±4Hz in Line mode (AC mode) ; ±0.1% of normal frequency in Battery mode
	Power Factor	0.7 lag
	Distortion	THD<2% Full load (Linear Load)
	Overload Capacity	105%-130% load transfers to bypass mode after 10 minutes; >130% load transfers to bypass mode after 1 second and shutdown the output after 1 minute
	Current Crest Ratio	3:1 maximum

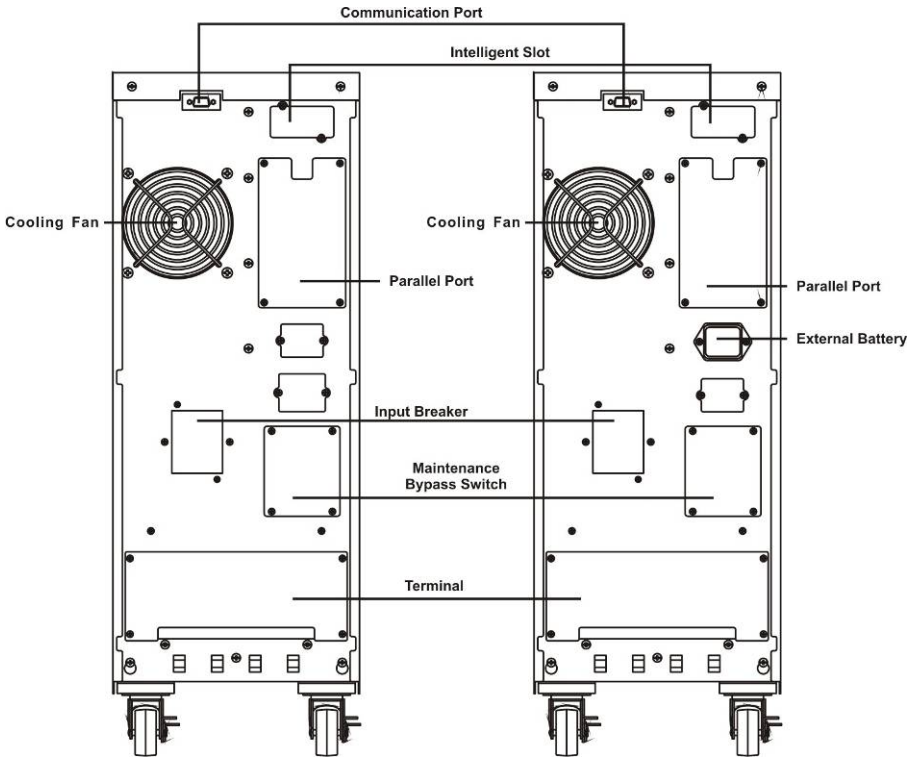
8.3 Operating Environment

Operation Temperature	0°C-40°C
Humidity	0- 95% non-condensing
Altitude	< 1000 M

Note: if the UPS is installed or used in a place where the altitude is above than 1000m, the output power must be derated in use, please refer to the following:

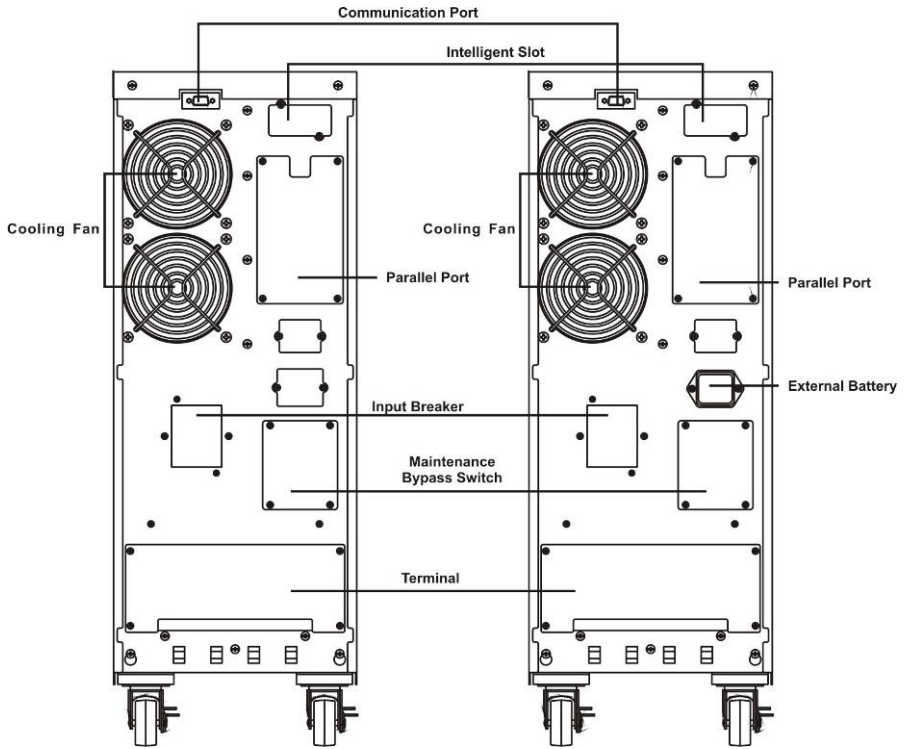
Altitude (M)	1000	1500	2000	2500	3000	3500	4000	4500	5000
Derating Power	100%	95%	91%	86%	82%	78%	74%	70%	67%

Appendix 1 – Outline Description and Back Panel



Back view of 6K

Back view of 6KL



Back view of 10K

Back view of 10KL

