G.P.E. S.r.l.

General Power Equipment

ISO 9001

Education

Thank you for purchasing this series UPS.
This series UPS is an intelligent, three-phase, single phase out, High Frequency UPS on-line designed by our team D, that is with years of design experience on R & UPS. With excellent electrical performance, perfect functions of monitoring and smart grid, elegant appearance, than EMC and safety standards, This UPS meets the advanced world level.
Read this manual carefully before installation
This manual It provides technical support to the equipment operator.

Safety instructions

1. Prohibition

1.1 There is a high risk of electric shock by UPS within, so please do not open or remove the casing or on the front panel, unless it is run by authorized technicians; otherwise, Will void the warranty as well.

1.2 Please contact and discuss with distributors before connecting the UPS to the following equipment

- Medical devices that have direct bearing on the lives of patients
- Equipment such as elevators that can do harm to human beings
- Similar devices as mentioned above

1.3 Do not dispose of the battery by fire to prevent explosions

2. Security

1) The standard output UPS with internal batteries can be supplied even if the UPS input is not connected to the utility.

2) Do not disconnect the UPS input and ensure that the UPS is completedly before moving the UPS or re-configured the connection; otherwise, there will be the potential for electric shock.

3) For the good of the human 'safety, please earth the UPS well before starting.

4) Work environment and storage will affect the life and reliability of the UPS. Avoid to have the UPS work under the following environment for a long time

   - Area where the humidity and temperature is beyond the specified range (temperature 0℃ to 40℃, Relative humidity 5% -95%).
   - Direct sunlight and heat zone
   - Area that can be stopped easily
   - Area corrosive gases, flammable, excessive dust ... etc.

5) Keep vents in good condition otherwise the temperature of the components within the UPS will be high and the component life and UPS will be affected.

6) And 'it is forbidden to spill liquid or insert objects into the UPS.

7) Do not use liquid fire extinguishers in case of fire, it is recommended that a powder extinguisher.

8) Battery lifecycle will shorter as the ambient temperature increases. Periodic

replacement batteryly It can help keep the UPS in normal statwe and ensure the backup time required. Battery Replacement must be performed by an authorized technician.

9) Keep the UPS in a dry environment or if it will be free to run for a long time. Storage temperature UPS with internal battery is -20℃~ +55℃Ed extendand backup model is no internal battery -40℃~ +70℃.

10) Taking the UPS or battery storage, it is recommended to connect them with the usefulness for at least 12 hours for 3 months to prevent the battery from over-discharging.

11) Do not open the battery electrolyte inside will do harm to eyes and skin. Please use plenty of clean water to wash if touching then go see a doctor.

Content

1. Production Introduction

1.1 Application

This series UPS,provide reliable AC power for various equipments, can be used for computing center, management center of the network, the automatic control system, telecommunication systems, etc.

1.2 Product range

This series contains many capabilities of UPS products.

UPS models and configuration of 10 k (H / S); 15 k (H); 20 k (H) are the following.

Capacity	10kVA		15kVA	20kVA
Model	10k(S)	10k(H)	15k(H)	20k(H)
Observations	Standard model, with internal battery	Extendand Model, external battery	Extendand Model, external battery	Extendand Model, external battery

1.3 System block diagram

The system can operate as Single units or parallel one, so as to improve her reliability.

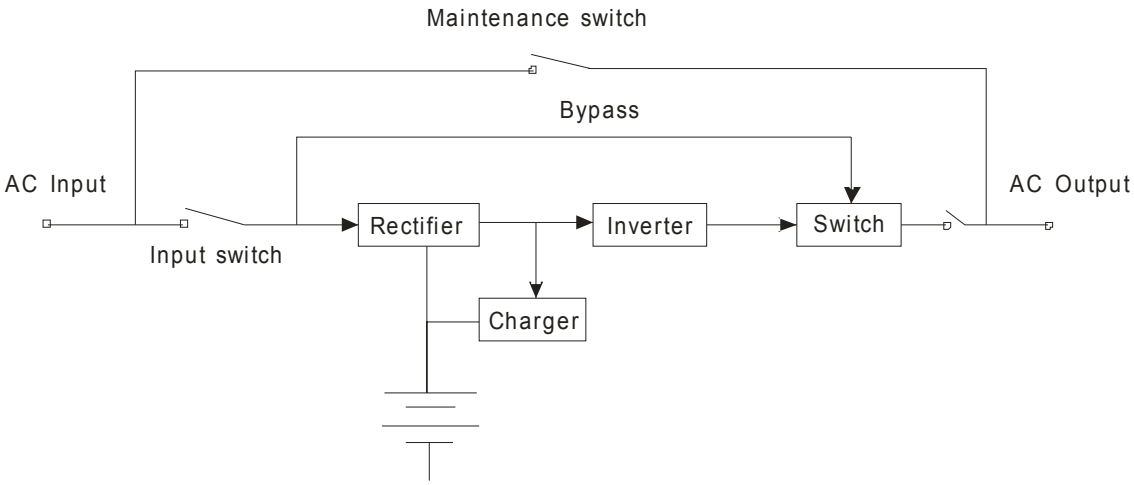


Fig.1-3 1 Single Unit

1.4 Features

This series is newly introduced.It is an intelligent online UPS sine wave.

- High-frequency, dual conversion, high power factor at the input, wide range of input voltages, the output will not be disturbed by mains electricity, suitable for the area with bad power supply conditions
- DSP technology for all-digital control, high reliability, car-Diagnostic and protections exist
- Intelligent battery management that extends battery life
- LCD panel and LEDs clearly indicate system status and parameters such as the voltage input / output, frequency, load, temperature inside UPS, etc.
- Perfect network management can be achieved by using UPS monitoring software
- Maintenance bypass switch is provided so the power supply to load will not be interrupted during the repair

1.5 Product Overview

1.5.1 Pview roduct

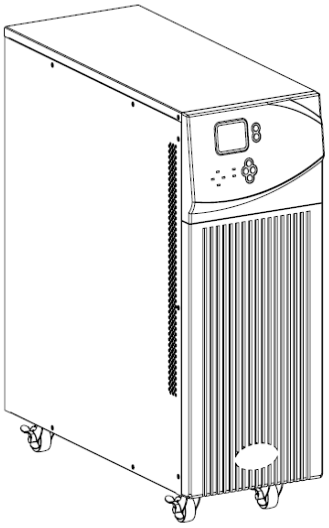


Fig. 1 to 5 January view complete unit

1.5.2 Manual Rear Panel

1.5.2.1 10/ Del 15/20k(H) of the rear panel

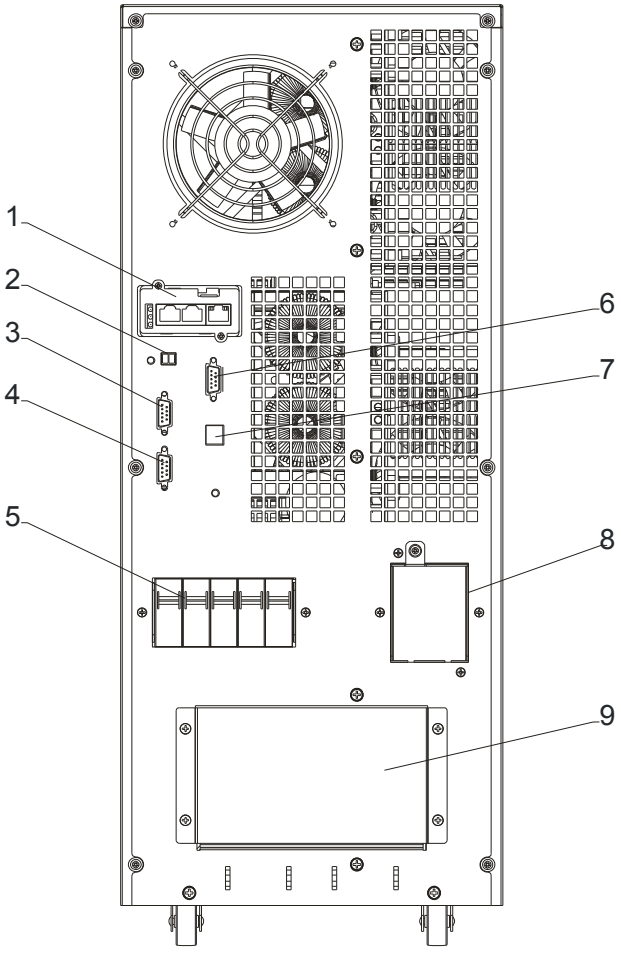
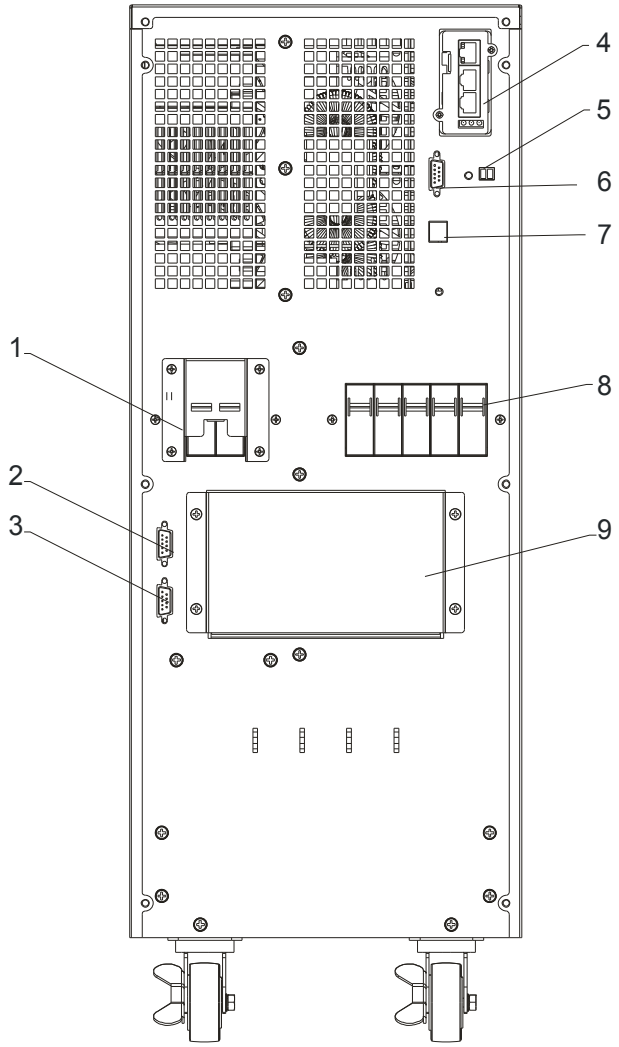


Fig.1-5 2a 10/ Del 15/20 k (H) Instruction rear

1) Intelligent slot
2) EPO
3) 1 parallel port
4) Parallel port 2
5) Input Output switch
6) COM
7) USB
8) Maintenance bypass switch (covered)
9) Terminals (indoor)

1.5.2.2 10k(S) back panel



2b Fig.1-5 10K (S) Education back

1) Bypass switch maintenance
2) 1 parallel port
3) Parallel port 2
4) Intelligent slot
5) EPO
6) COM
7) USB
8) Entrance & production switch
9) Terminals (indoor)

2. Installation

2.1 Unpack control

1) Do not place the UPS when moving out of the box.
2) Check the appearance to see if the UPS is damaged in transittion, Do not turn on the UPS any damaged isfind and contact your dealer.
3) Check the accessories according to the packing list and contact your dealer if any missing parts.

Procedure 2.2 Installation

2.2.1 Installation

*Put the UPS level place near the equipment.
*Maintain the UPS least 20 cm from the wall or equipment or other objects. Do not block the vents of the UPS located in the front panel and the the lower part, so as to maintain ventilation in good condition & avoid internal components buzz.
*Keep the UPS away from high temperature, water, flammable gas, cOrrosive gas, Dust, direct sunlight is Things explosive
*Do not place the outdoor UPS.
* 3P 125A/ 400V switch is required at the entrance and the battery and 2P 125A/ 400V output is required.
* PDU is needed to connect the output of the UPS in order to weaken the affection between loads
* To secure the UPS, please lock the wheels moving the sheet on each wheel.
* Load RCD as computer science, linear load and small inductive load can be connected to the UPS. Please contact seller if you need additional types of loads to be connected with.
* For safety of users and equipment, please betake power configuration correct.

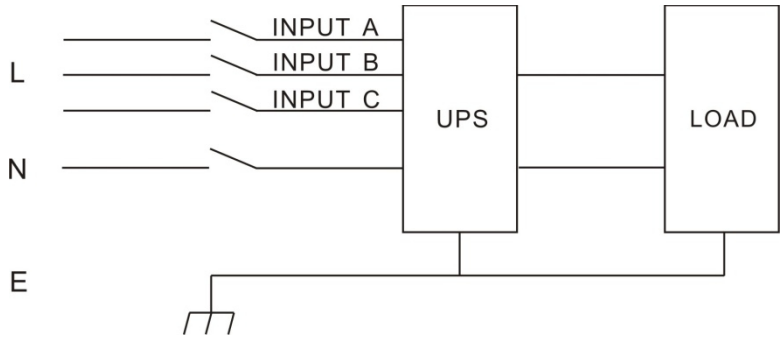


Fig.2-1 Power configuration correct

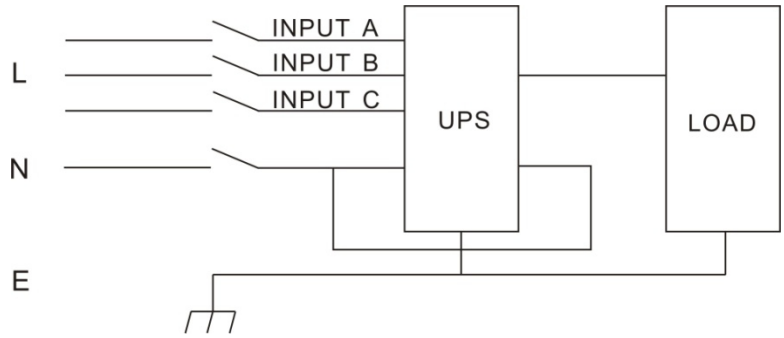


FIg.2-2 Power configuration wrong

2.2.2 Installation

2.2.2.1 External Battery Connection (to extendand only model)

1) Make sure the amount of battery meets the(16 to 20 pieces of 12V batteries in series).Measure the voltage of the battery bank after arrivaling free.

> **CAUCTION!**
> Do not mix batteries with different capacities and marks and do not mix old and new batteries, either.

2) The switch on the battery cabinets should be off.
3) Pull out the connection box and remove the terminal cover, use multimeter to make sure there is no voltage at the terminals of the battery UPS.
4) Connect battery with the positive pole, common pole and the negative pole to the battery connector (BAT +, Batn, BAT), not reverse battery connection.

> **CAUTION!**
> It is recommended to connect or replace the battery after the passage system shutdown; not reverse battery polarity when does the battery hot-swapping.

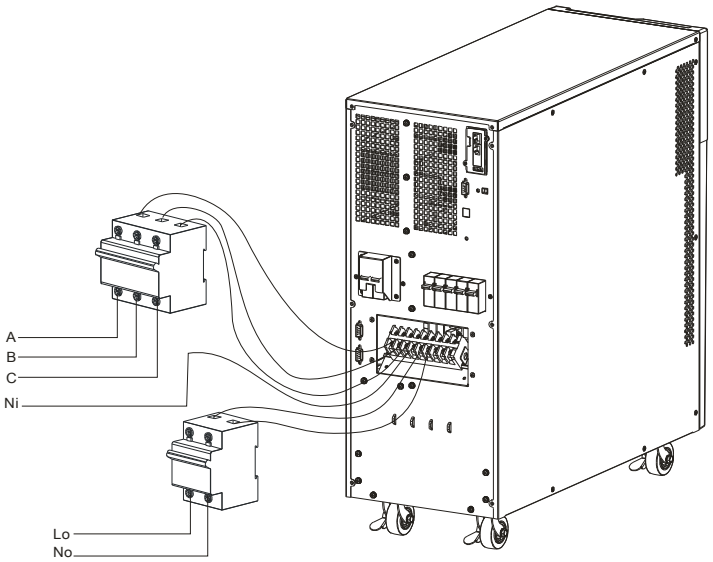


Fig.2-3a 10k(S) Connecting external battery

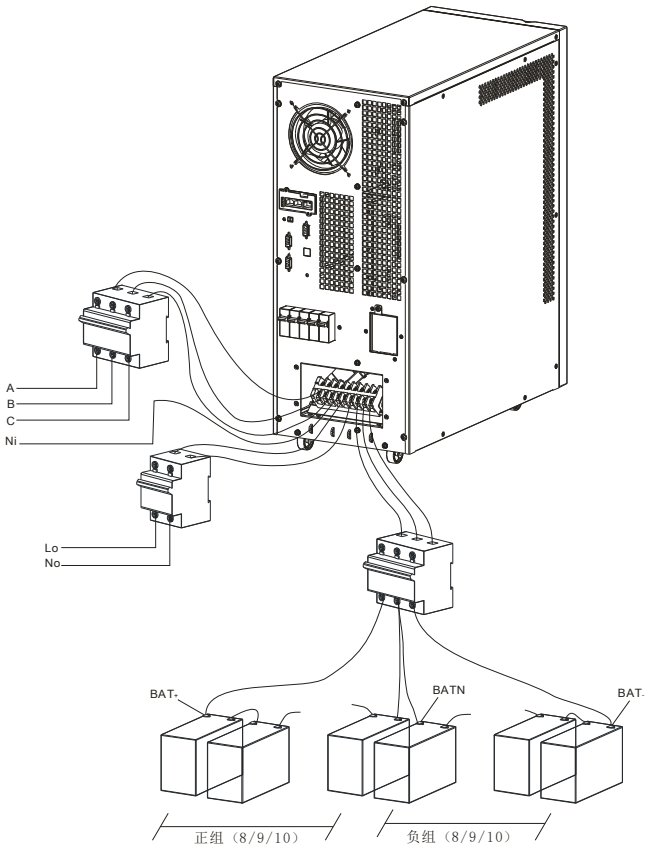


Fig.2-3b 10k /15k/ 20k(H) Connecting external battery

2.2.2.2 UPS input and output connection

8AWG minimum or 10 mm2copper wire cables for input / output and battery are needed for the high.

1) Turn off all switches before connecting cables.
2) Remove the terminal cover, see fig 2-4, and connect the cables correspondingly

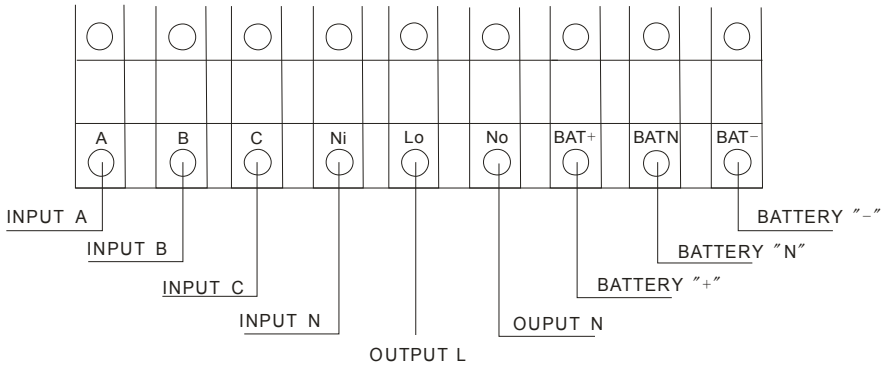


Fig. 24A 10k/ 15k/ 20k I / O connection terminals

CAUTION!
Terminators are required in order to ensure the connections are rigid
Do not invert the input L and N
Do not plug the UPS input to an AC wall outlet or get burned.

3) Connect the UPS output L, N, E to L, N, E load via a PDU. Tighten the screws and shelter terminals

CAUTION!
Please connect the output Earth well before going for other operations

2.2.2.3 Connecting communication cables UPS

1） USB provided cable accessories can be used to connect the UPS to the PC
2） Follow the steps below to install SNMP (if purchased):
   A. Remove the slot cover on the rear of the UPS SNMP and keep it for further use.
   B. Insert the SNMP card and tighten the screws
   C. Connect the UPS to the internet via cable network.
   D. Refer to the manual supplied SNMP to make SNMP setting.

2.3 Connecting the parallel system

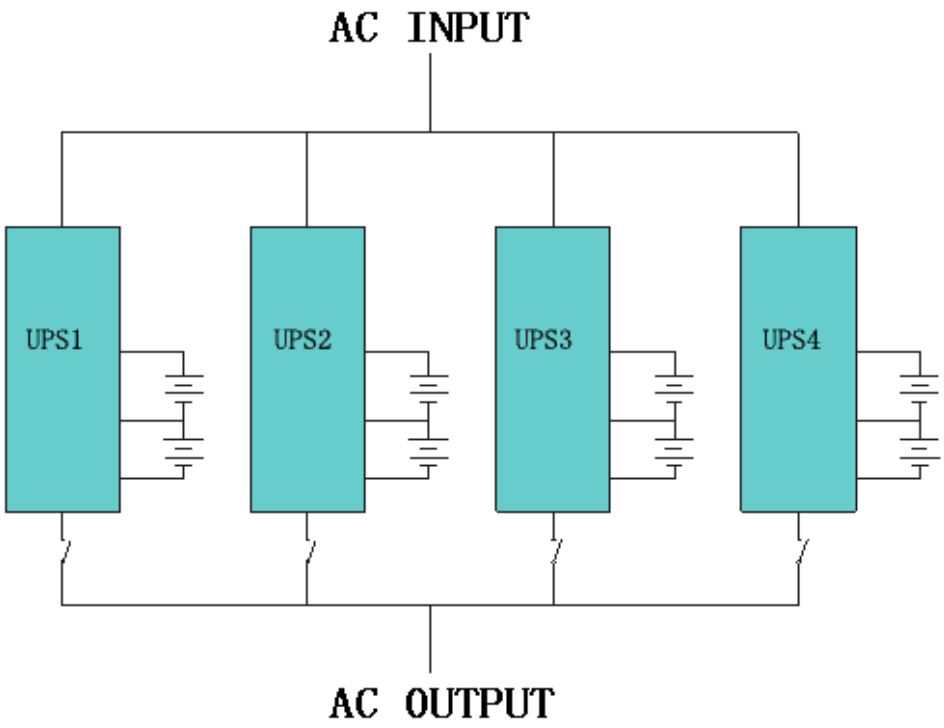


Fig.2-5 parallel system

Make sure that all switches are off and no output UPS output.

CAUTION!
Connect the A / B / C / N / L and well-E

Wire to the requirement:
For 10KVA UPS, or select 10AWG 6 mm² copper line I / O. The total length of the line is N *6 mm².
To 15KVA UPS, or select 8AWG 10 mm² copper line I / O. The total length of the line is N *10 mm².
For 20KVA UPS, or select 6AWG 16 mm² copper line I / O. The total length of the line is N *16 mm².
(N is equal to the number of parallel UPS.)

3. Operation

3.1 Working modes

The UPS has AC mode, bypass mode, battery mode and ECO mode

3.1.1 TheMode C

If the AC input and load capacity are in the normal range, the load is powered by an inverter output, the battery will be charged at the same time. Inverter indicators on the control panel LCD and AC will be lit (green).

CAUTION!

Please note below if the input power of the UPS is providing by a generator.

1) Do not switch the the loads before starting the UPS. After the UPS status and started worked constantly, turn the loads one by one. Suggest that total capacity of loads should be less than 30% of the capacity of the generator.

2) It is suggested that the rating of the generator should be 1.5 to 2 times the capacity of the UPS.

3.1.2 Bypass

When connected to AC power and the UPS has not been activated, or the UPS is overloadedand after ignition the UPS, will go into bypass mode. The Loads will be powered by AC, the battery will be charged, and the Bypass indicator on the LCD control panel will (yellow).But,if the bypass is beyond the reach normal or absent, the UPS will not bypass is no power Sara supplied to the loads.

3.1.3 Battery way

In AC mode, if the AC is absent or outside the normal range, the rectifier and the charger will stop working, the loads will be powered by battery banks of that energy goes through the inverter circuit. The Inverter'S and the battery'S indicators LCD on the control panel will (green) and The alarm beep each 2 seconds.

In battery mode, if the voltage of the battery decreases and reaches the set value, the system will alert low battery voltage, beep per second and the LCD will alarm battery, too much.

WARNING!

Charge the batteries for at least 8 hours, when the UPS is used at the first time, as the battery It has self-discharge characteristics even if the UPS is fully charged by the manufacturer before shipment.

3.1.4 ECO mode

In AC mode, the UPS can be set to operate in ECO mode if the load It requires rigorous purity and power can be sustained in bypass mode normally. If the AC is over the normal range, the UPS will transfer back to inverter mode. The efficiency for the UPS in ECO mode is much higher.

3.2 Panel display, the operation and management

The operation is simple, players only need to read the manual and follow the operating instructions listed in this manual, without any specific training.

3.2.1 Start and shut down the UPS

- **Put in action**

1,Turn on the UPS in line mode
Once AC power cord is connected, the UPS will start automatically and the LCD display will be illuminated on the UPS. You can view the data and parameters set on the LCD and LED display that shows the status of the UPS.
2,Turn on the UPS in battery mode
Press "On" on the front panel to start the UPS and in the meantime, the LCD lights. You can view the data and parameters set on the LCD and the LED display will show the last UPS UPS status.

- **Disable operation**

1,Turn off the UPS in line mode(without batteries)
① Press and hold the OFF button for 2 seconds to turn off the inverter and the UPS is in bypass mode now; on the contrary, you can press and hold the OFF button for 2 seconds to change on return to inverter mode.
② To stop (disable) the UPS completely, you must switch off the input.

2,Turn off the UPS with battery connection
① Press and hold the OFF button for 2 seconds to turn off the UPS.
② After UPS is turned off, all LED and LCD will be extinguished and there is no exit.

Notes: When the UPS is turned off from the inverter mode, it will discharge DC bus and then shut down completely; therefore, sometimes, it takes several seconds more.

3.2.2 Display Faceplate

- **Faceplate display illumination**

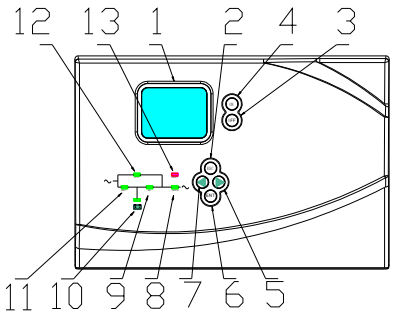


Fig.3.2.2a Overview of the operation panel of the UPS

1. LCD Board
2. ESC
3. Off
4. The button
5. right or down
6. Insert
7. left or upwards
8. Output Indicator
9. Indicator Inverter
10. Battery Indicator
11. (AC) Indicator
12. Bypass indicator
13. Fault indicator

- **LCD Display**

1,Definition LED indicator

1) Fault indicator(red):"On " indicates when afailure checked; "Off" means no fault checked.
2) Indicator(Green):"On" means AC is normal, "Off" means AC is not present, isFlashing means voltage is beyond the normal range
3) Indicator Inverter(Green):"On" means when the load is powered by the inverter, "Off" means when not working is Flashing means that is in overload condition.
4) Bypass indicator(Green):"On" means when the UPS is in bypass mode,"Aboutff" does not mean in modeto bypass Flashing means when the input is outside the normal range
5) Battery Indicator(Green):On:when the UPS is in battery mode, Aboutff Not in Battery way;Bcolleague:when the battery voltage is low or the battery is not connected
6) Output Indicator(Green):On:when it came out, Off: No output.

2,Contents of the LCD

1) Running parameters

Input voltage / frequency, output voltage / frequency / power, temperamentature inside the UPS, battery remaining capacity, the battery charge / fully charged, the battery voltage.

2) Alarm information (priority from high to low)

It provides shutting down, auxiliary power failure, short circuit, failure of it, rectifier fault, overtemperature, overload, battery charger failure, battery failure, low battery capacity, ready to close is failure output.

3) Setting parameters

Menu setting, floating / increasing setting, adjusting the capacity of the battery, ID parallel UPS charge, level output voltage / frequency / calibration.

3） Increasing the charge voltage 2.30 to 2.35V per cell, floating charge voltage 2.20 to 2.29V per cell

4） Battery setting capabilities include Ah every beatrY units, amount of the battery (8 to 10) * 2, the number parallel group, alarm value of low battery voltage (EOD).

5） Setting Parallel

6） UPS Setting ID

7） LBS setting (On / Off, Master / Slave)

a) Button DEFINItion

Button	DefinItion
ON	Turn on the drive by pressing for 1s when the UPS is off
OFF	Turn off the inverter output by pressing for 1s when the UPS is on, load is powered by bypass outlet if the bypass is normal
ENT	Confirm the operation
ESC	cancel and go toprevious menu
◄	Turn to another menu or parameter
►	Turn to another menu or parameter

5) UPS Mesessays Reference Table

Provide clarificationnation	**Content**
Initialization	CurState: Init
No export	No-Out
A bypass	Bypass
Rectifier work	Mains
Battery way	Battery
Battery analysis	Analysis

Beginning	Starting
ECO mode	CurState: ECO
EPO mode	CurState: EPO
UPS keeping	CurState: M-Byp
UPS fault	CurState: Fault
Battery float charge	Battery Office
Boost Battery Charge	Battery Thrust
Inverter on / off	Invter ON/ OFF Invter
Master of UPS	Inver Master
Maintenance switch closed or open	SWMB ON / OFF SWMB

3.2.3 Education display

1) The main interface below comes out when it is connected to the power system or the cold start.See Fig1

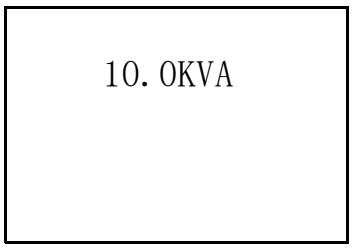


Fig.1: Main interface

2) Print ESC / ◄ or ► Button, will change the interface of basic state, see below Fig2

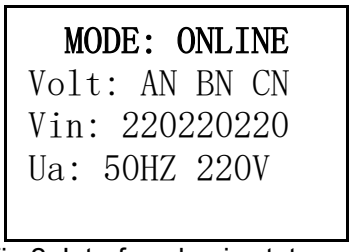


Fig.2: Interface basic state

3) Press the button ENT button, it will change to the main menu, see Fig3,

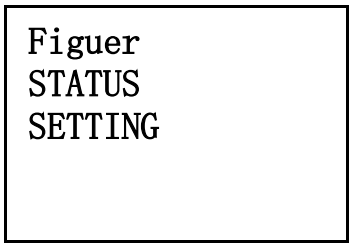
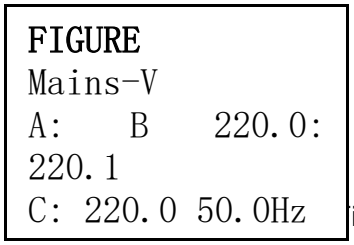
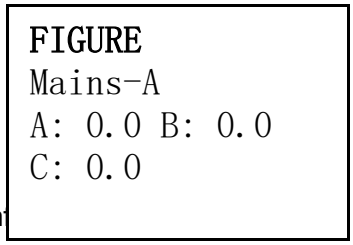


Fig.3: Main menu

4) The arrow icon on the display will come out when you press the ENT, and data information, status information, the setting information can be selected by pressing the right or the left arrow key, and checking the details by pressing
5) Select and confirm the information data be viewand in details. It contains details AC input / output, inverter, battery, bus, parallel temperature. See Fig 4 to 13 below.



ig.5 In



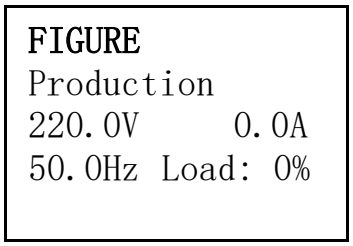


Fig.6:Release Info

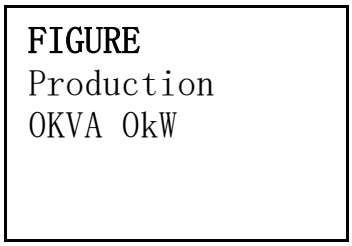


Fig.7:Release Info

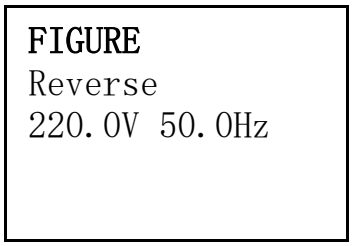


Fig.8:Inverter Information

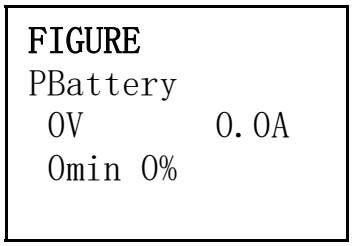


Fig.8:Battery Information

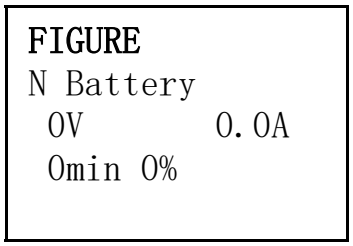


Fig.10 Battery Info

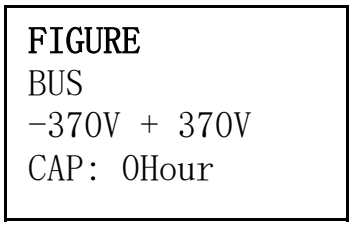


Fig.11:Info Bus

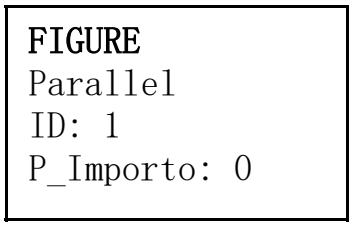


Fig.12: Parallel Information

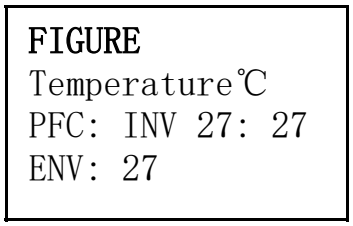
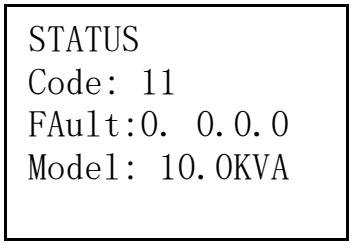


Fig.13: Temperature Information

6) Select and confirm the status information can view the details, including the status information, alarm information, code, power is version. See Fig 14 15



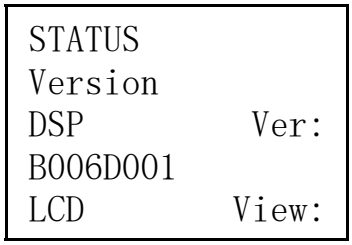
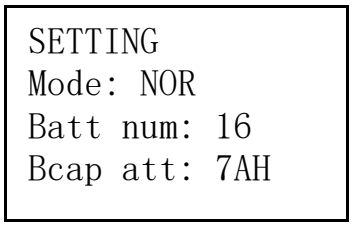


Fig.14: Main Menu Fig.15:main menu

7) Select and confirsetup menu, the setup information wmIll be Displayed on the screen, wHelloch includes user September, Sept. system, sets parallel, Sept. battery, review September See Fig 16 to 20



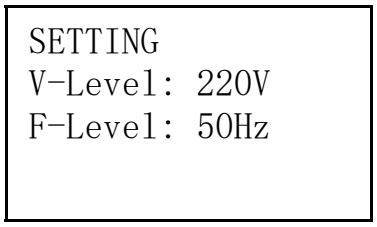
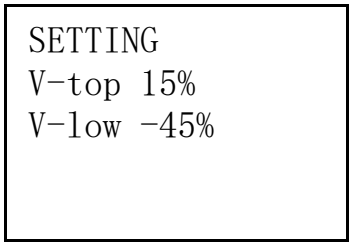


Fig.16: Setup menu Fig.17: Setup menu



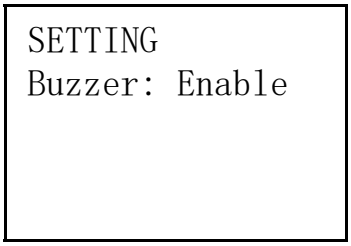


Fig.18: Environment menu Fig.19: Environment menu

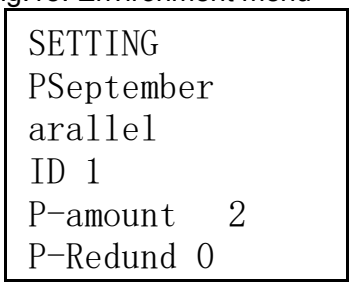


Fig.20: Setting Parallel

3.3 Working methods and transfer

Usually, the UPS must be set to operate in AC mode, so it will transfer to battery mode automatically without interruption when AC fails. When the UPS is

overloaded, it will transfer to bypass mode, with no interruptionion. When the inverter is defective or overtemperature checked inside the UPS, the UPS will transfer to bypass mode if the bypass is normal.

3.3.1 Transfer to bypass if the overload

When the load of the UPS is outside the normal range and lasts for the set time, it will transfer to bypass mode and will sound twice per second, then the load is powered directly from the AC. Please decrease the load immediately until the alarm is cleared. The UPS will start the inverter after 5 minutess. In order to protect the load and the UPS, is required for set your own prescription transferRing in bypass mode due to overload in one hour. If it exceedss the limitation set times, the UPS will keep in bypass mode.

3.3.2 Select normal battery

The UPS will switch to battery if the CA failed. The UPS will turn off automatically if batterIES are drained. When AC recovers, the UPS will start therenverter automatically.

3.3.3 Go to bypass mode due to overheating

The temperature inside the UPS can be elevated if the ambient temperature is high or ventilation is poor, so the UPS will go into bypass mode, fault indicator will be (red) the LCD will show that the internal temperature is high, long beeps come. If so, please take off the input power the UPS, move objects affecting ventilation away from the UPS any or increase the distance between the UPS the Wall. Wait until the UPS Temperature becomes normal then restart.

3.3.4 Output short circuit

When the UPS output is in short circuit, the UPS will cut output, fault indicator will be (red) the LCD display output in short, long beeps come. If so, disconnect the load in short circuit, Remove the UPS input power and wait for 10 minutes, the UPS will turn off automatically or press the button to turn off in after10s. Before restarting the UPS, make sure that the short-circuit has been resolved.

3.4 UPS monitoring

Please refer to the instructions UPS tracking software.

3.5 Display Messages / Records

This section lists the messages and warning that the UPS might display. Messages are listed in alphabetical order. This section is listed with each alarm message for

troubleshooting.

3.5.1 **Operating status and mode (s)**

item	Content Displayed	LED			
		Fault	Bypass	Battery	Inverter
1	Initialized	EXTINGUISH	EXTINGUISH	EXTINGUISH	EXTINGUISH
2	Standby Mode	EXTINGUISH	EXTINGUISH	X	EXTINGUISH
3	No Output	EXTINGUISH	EXTINGUISH	X	EXTINGUISH
4	Bypass Mode	EXTINGUISH	LIGHT	X	EXTINGUISH
5	Utility Mode	EXTINGUISH	EXTINGUISH	X	LIGHT
6	Battery Mode	EXTINGUISH	EXTINGUISH	LIGHT	EXTINGUISH
7	Battery Self-diagnostics	EXTINGUISH	EXTINGUISH	LIGHT	EXTINGUISH
8	Inverter is starting up	EXTINGUISH	X	X	EXTINGUISH
9	ECO Mode	EXTINGUISH	X	X	X
10	EPO Mode	LIGHT	EXTINGUISH	X	EXTINGUISH
11	Maintenance Bypass Mode	EXTINGUISH	EXTINGUISH	EXTINGUISH	EXTINGUISH
12	Fault Mode	LIGHT	X	X	X

Notes:"X" indicates that will be determined by other conditions.

3.5.2 **Thelarm information**

Voice	**UPS Alarm Warning**	**Hum**	**LED**
1	Rectifier Fault	Continuous beeping	Fault LED on
2	Inverter failure	Continuous beeping	Fault LED on
3	Inverter thyristor short	Continuous beeping	Fault LED on
4	Inverter Thyristor broken	Continuous beeping	Fault LED on
5	Bypass thyristor short	Continuous beeping	Fault LED on
6	Thyristor bypass broken	Continuous beeping	Fault LED on
7	Fuse broken (reserved)	Continuous beeping	Fault LED on

Voice	UPS Alarm Warning	Hum	LED
8	Failure relay parallel	Continuous beeping	Fault LED on
9	Fan fault	Continuous beeping	Fault LED on
10	Reserved	Continuous beeping	Fault LED on
11	Failure of auxiliary power supply	Continuous beeping	Fault LED on
12	Blame initialization	Continuous beeping	Fault LED on
13	Fault-P Battery Charger	Continuous beeping	Fault LED on
14	Fault-N Battery Charger	Continuous beeping	Fault LED on
15	DC bus overvoltage	Continuous beeping	Fault LED on
16	DC bus	Continuous beeping	Fault LED on
17	Imbalance DC bus	Continuous beeping	Fault LED on
18	Soft start failed	Continuous beeping	Fault LED on
19	Rectifier Overheating	Two times per second	Fault LED on
20	Inverter Overheating	Two times per second	Fault LED on
21	Input N loss	Two times per second	Fault LED on
22	Battery reverse	Two times per second	Fault LED on
23	Error connecting cable	Two times per second	Fault LED on
24	CAN Comm. Fault	Two times per second	Fault LED on
25	Parallel load sharing fault	Two times per second	Fault LED on
26	Battery overvoltage	Once per second	Fault LED flashing
27	Mains volt. reverse (reserved)	Once per second	Fault LED flashing
28	Bypass reverse (reserved)	Once per second	Fault LED flashing

Voice	UPS Alarm Warning	Hum	LED
29	Output short circuit	Once per second	Fault LED flashing
30	Rectifier overcurrent	Once per second	Fault LED flashing
31	Bypass Surge	Once per second	BPS LED flashing
32	Overload	Once per second	INV or flashing BPS
33	No battery	Once per second	BATTERY Flashing
34	Battery under tension	Once per second	BATTERY Flashing
35	Battery low pre-warning	Once per second	BATTERY Flashing
36	Internal communication error	Once per second	Bypass LED lights
37	DC component over the limit.	Once for 2 seconds	INV flashing
38	Overload Parallel	Once for 2 seconds	INV flashing
39	Mains volt. Abnormal	Once for 2 seconds	BATTERY LED on
40	Mains Freq. abnormal	Once for 2 seconds	BATTERY LED on
41	Bypass not available		BPS flashing
42	Bypass unable to trace		BPS flashing
43	Boot is invalid		

4. Specification

Product Performance

CAPACITY '		10kVA /9KW, 15kVA / 13.5KW, 20kVA / 18KW PF: 0.9
MODEL		10K(S / H)/ 15K(H)/ 20K(H)
INPUT AC	INPUT	3 Step 5 wires
	Power factor input	≥ 0.99
	rated voltage	220VAC / 230 / 240VAC (self-adaptation)
	Rated frequency	50Hz / 60Hz (adjustable)
	Voltage range	208~478V
	Frequency Range	45 ~55Hz(50 Hz); 55 ~65Hz(60 Hz)
	Voltage range Bypass	Max: 220V, + 25% (+ 10%, + 15%, + 20%, optional) 230V, + 20% (+ 10%, + 15% ,, optional) 240V, + 15% (+ 10%, optional)
		Low: -45% (- 20%, -30% ,, optional)
	Frequency range Bypass	± 1%, ± 2%, ± 4%, ± 5%, ± 10%
DC INPUT	Battery number	16/18/20 pieces
	Battery type	VRLA
	Model Charge	Boost charge or floating charge sensor
	Charging time	Boost charge up to 20 hours (max)
	Charging current (MAX.)	1A(S) /10A(H)
	Output Type	1 Phase 3 Wire
	Voltage regulation	± 1.0%
	Voltage distortion (THD)	less than 2% to 100% load liner
		less than 5% to 100% of the load non-liner
	Class of output voltage	220/230 / 240V ± 1%
	Frequency regulation	± 0.1% (single machine)
		± 0.25% (parallel operation)
	Frequency	50/60 ± 0.1Hz【Utility mode: A monitoring phase frequency,> ± 10% (± 1%, ± 2, ± 4%, ± 5%)】
		50 Hz / 60 Hz ± 0.1【Battery Mode】
	Track frequency	1Hz / s (single machine)
		0.5Hz / s (parallel operation)
	load capacity (Mains, drop a level in battery mode)	≤110%, Lasts 1 hour ≤125%, It lasts 10 minutes ≤150%, Lasts 1 minute > 150%, switch to bypass

AC OUTPUT	load capacity	> 95%, can not fed inverter
		Load for a long period in which rated output current lower than 125%
		Load capacity of the bypass is controlled by a bypass switch, intervention when the current of the circuit breaker operating.
	Crest Factor	3: 1
	Yield to AC	10K:≥90% 15K / 20K:≥92%
	Respond dynamically	5.0%
	Respond dynamically	40ms
	DC output voltage component	≤100mV
Transfer time	Between Normal and battery mode	0ms
	Between inverter and bypass	0ms (synchronous)
		<15ms (50Hz), <13.33ms (60Hz) (asynchronous)
Noise		<55dB (1m)
Display		LCD + LED
Security		Meeting with IEC62040-1 STANDARD
Input voltage Max		320Vac, 1 hour (static)
EMI		Run: IEC 62040-2
		Radiation: IEC 62040-2
		Harmony: IEC 62040-2
EMS		IEC 62040-2
MTBF		250,000 hours
Insulation resistance		> 2MΩ (500Vdc)
Intension isolation		2820Vdc, <3.5 mA, 1min
Wave		Meeting with IEC60664-1,1.2 / 50uS + 8 / 20US, capacity wave composite ≥ 6 kV / 3kA.
Protection		IP20

Dimensions and weight

Mechanical characteristics			
Rated power	kVA	10kVA(S)	10kVA/ 15kVA/ 20kVA(H)
Height	mm	655	616

Width	mm	250	250
Depth	mm	597	502
N.W.	kg	76	10kVA: 35, Del 15/20kVA:45
Color		Black	

5. Maintenance

Please follow 2.2.1 install the UPS

5.1 Fan Maintenance

Continuous working time of fans 20000 to 40000 hours. It will shorter as the temperature increases. Periodically check the fan, make sure there is wind blowing Out from it.

5.2 Battery maintenance

There are sealed maintenance free lead acid batteries inside thIt is standard models in the series. Battery life depends on the ambient temperature and deep discharge / charge, will shortenand if temperature rised or deep discharged. Periodic maintenance is required to keep the battery in good condition.

1) The temperature more correct operation from 15 to 25 degrees Celsius.
2) Avoid small discharge current. Do not let the UPS work in battery mode continuously for 24 hours.
3) Charge the battery for at least 12 hours every 3 months if it is free running. If the ambient temperature is high, charge it once every two months.
4) For extended backup models, periodically check and clean the battery connectors..

If the backup time has become much less than before, or is not the fault of the battery displayed the LCD, please contact the distributors to confirm whether the batteries I'm needand be replaced or not.

CAUTION:

★Before replacing the batteries, first turn off the UPS and breaker network. Remove the metal ornament, such as rings, watch and so on.
★When to replace the batteries, please use the screwdriver with insulating handle. Do not place tools or metal products on the battery.
★Do not reverse or short circuit between the anode and cathode of the battery.

5.3 Visual inspection

1) Clean the UPS regularly, especially of the intake and exhaust ventilation to keep the UPS in good condition. Use a vacuum cleaner to clean if necessary.
2) Check nothing is blocking the ventilation of the front, rear and side panel and the bottom panel.

5.4 verify the UPS status

1) Check to see if there is any defect checked, fault indicator is on or each alarm there.
2) Please find the cause, if the UPS operates in bypass mode.
3) If the UPS is operating in battery mode, make sure it is normal; on the contrary, Please discover root cause, such as failure of utility or self-control battery.

6. Troubleshooting

When the UPS is abnormal situation, refer to the table below for monitoring and troubleshooting before.

Please contact your dealer if the problems can not be solved with the troubleshooting below

No.	Description of the problem	Probable causes	Solution
1	No indication of the LCD, no auto-diagnostic	A missing input power B Input Low	Use multi-meter to measure the input to see if it is normal or not.
2	AC normal, but the indicator AC off, the UPS is in battery mode	Input switch off. B Input power connection problem	A Turn the input switch B Check the connection and re-do
3	No alarm but no output	Problem connecting output	Check the connection and re-do
4	The UPS does not start after pressing the On button	A button down ON time is inadequate B Overload	A Press and hold the button for 1s B Disconnect all loads and restart
5	AC indicator flashing	AC input is outside the normal range	Pay attention to the backup time if the UPS is in battery mode
6	Backup Time abnormal	TheBattery Not fully charged BBattery Bad	A charged battery for 8 hours when AC is normal, then check again the backup time B Contact distributor to replace the battery
7	Sound or abnormal odor	Failure inside UPS	turn off the UPS and contact immediately

Please provide the model of UPS, SN when you call the dealer for service.

Appendix I USB definition of the communication port

Definition Male Port:

Pin 1 VDC, Pin 2 D-
pin 3 D + Pin 4 GND

ApplicationUse Power Management UPSilon2000 software

Feature availables of USB

■State Power Monitor UPS

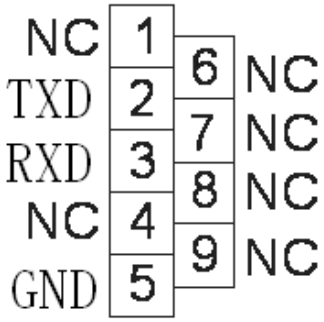
■ Monitor UPS alarm info

■ UPS operating parameters Monitor

■ Timing OFF / ON

Appendix II definition RS232 communication port

Defining Port Male:



Connection between PC RS232 port and RS232 port UPS:

PC port RS232	UPS RS232 port	
Pin 2	Pin 2	UPS sends,PC receive
Pin 3	Pin 3	PC send, receive UPS
Pin 5	Pin 5	Earth

Available function RS232:

- power status monitor UPS.
- Monitor UPS alarm information.
- Monitor UPS operation parameters.
- Timing off / on setting.

Data format of RS-232 communication:

Baud rate 2400bps ----------

Length Byte ---------- 8bit

---------- End bit 1 bit

No parity check --------

Appendix List III Shipping

Voice	Description	Quantity	Unit
1	UPS	1	September
2	<Manual UPS>	1	PC
3	Dryer	2(H1)	PC
4	Intelligent monitoring CD-ROM UPSILON2000	1	PC
5	Calibrate CD-ROM UPS service	1	PC
6	USB cable	1	PC

Appendix Ⅳ Options

VOICE	NAME	DESCRIPTION	OBSERVATION
1	Parallel board	Function optional parallel	
2	SNMP card	UPS remote monitoring the state of operation	
3	Dry Contact Card		