

Three-phase UPS uninterruptible power supply operating instruction

Low frequency online 10-600KVA

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Brief introduction

Direction for use

- 1、UG33 series UPS is a highly stable UPS specially designed for users in IT, aerospace, radio and television, communications, power, banking, taxation and other industries using the latest technologies such as DSP, DDC, MCU and so on.
- 2、In people's living environment, UPS may cause radio interference, if found this situation, users need to take appropriate measures. For example, when a radio or television set is disturbed by placing it too close to this UPS, it should be distanced from the interfered object.
- 3、When installing a UPS, please read this instruction manual carefully.

Matters need attention

- 1、If the UPS does not have a "grounded" system connected, it cannot operate. First, connect the ground wire of the main input power supply to the TERMINAL BLOCK marked "G" in the UPS.
- 2、The UPS will still have voltage when the input, battery and output switches are disconnected, and non-professional technicians will move or open the front door of the UPS, which will cause harm to the UPS and the operator.
- 3、When a fuse needs to be replaced, a fuse of the same model size should be used.
- 4、UPS special batteries should be replaced by professional and technical personnel, the replaced batteries must be sent to the recycling agency for disposal, waste batteries are determined to be "toxic waste" according to the law.
- 5、Special battery for the UPS is automatically discharged, and the chemical energy of the battery is automatically depleted. For the above reasons, the battery must be recharged every three months, requiring the ambient temperature around about 25 degrees Celsius, and if the temperature reaches about 30 degrees Celsius, the battery must be charged every two months. Simply start the UPS while charging and run for at least 24 hours under normal operating conditions.
- 6、Please install in strict accordance with the installation requirements of the instruction manual.

Installation and connection of UPS

Installation environment

Make sure to install in the following indoor environment.

- 1、No dust
- 2、Indoor temperatures should be appropriate

UPS can operate in an indoor environment of 0 degrees Celsius to 40 degrees Celsius, but the operating temperature should be higher than 0 degrees Celsius, the ideal operating temperature is 25 degrees Celsius, and the installation environment needs to have a good heat dissipation system.

(1) Natural ventilation system;

Use only in low heat and large spaces.

(2) Anthropogenic ventilation system;

When the enclosure temperature (TA) is higher than the peripheral temperature (TE), an air conditioner needs to be installed. When the temperature of the two is closer, the capacity of the exhaust system will increase accordingly, and the following equation can be used to calculate the airflow;

$$Q \text{ (m}^3\text{/h)} = 3.1 + P_{\text{diss}} \text{ (kcal)} / (t_a - t_e) \text{ (c)}$$

All installed equipment emits heat P_{diss} in Kcal, which allows energy loss by increasing P_{diss} by 10%.

Inspection before installation

When opening the package and removing the UPS, check whether the UPS is damaged during transportation, open the front door, and check that all the switches are disconnected and whether the relevant accessories and information inside the UPS are complete.

Installation location

Ensure that the following environments are in place

- 1、The distance between the back of the UPS and the wall or any object \cong 40cm;
- 2、No objects should be placed on top of the UPS;
- 3、Sufficient installation and maintenance space must be prepared directly in front of and above the UPS;
- 4、The battery cabinet must be placed on the right side of the UPS, and enough space is reserved for battery installation and maintenance;
- 5、The power cord must be drawn in from the bottom or back of the UPS.

Connect

Before the UPS is not connected to the main input power and load devices, all switches should be disconnected.

Note: First connect the ground wire of the main input power supply to the terminal block with "G", if there is no connection to the "ground" system, the UPS cannot operate.

Installation and connection of UPS

1、* Parallel system connection

(1) System connection (UPS with parallel operation function, this clause applies): see Figure 1

- a. After opening the chassis, there is a parallel interconnection cable in the machine spare parts bag, and after removing, check whether the corresponding terminals are connected with a multimeter. Ensure that all the terminals of the corresponding label are well connected;
- b. Open the UPS outer package to see a square hole in the back or front of the UPS cabinet with two 25-pin sockets (See Figure 1). Pass the parallel interconnect cable through the terminal slot, and insert the plugs at both ends of the parallel interconnect into one of the square holes above the two UPS cabinets, and tighten the screws on both sides of the plug with a small screwdriver;
- c. For the multi-machine parallel connection system, use another parallel interconnection line, operate according to step b, and reliably connect each parallel interconnection line;
- d. The other plug of the parallel interconnect cable is inserted into another UPS in the terminal slot, and according to step b, the parallel interconnect cable is reliably connected between the two UPS through the parallel machine socket;
- e. The terminal blocks marked "Parallel Terminals" on the terminal blocks of all UPS that need to be run in parallel are reliably connected with 6mm² wires. Pay special attention to the fact that the cable must use crimp terminals;
- f. After connecting the parallel terminals, check it with a multimeter to confirm that it has been reliably connected and correct;
chassis of the parallel inter nection busbar are in good contact, and the contact resistance should be ensured to be less than 0.4Ω;
- h. Use 6mm² wires to reliably connect the terminals marked "G" on the UPS terminal block, note that the 6mm² connection must use crimp terminals;
- i. The terminal blocks marked "G" on the terminal blocks of all UPS should be connected to the earth, and the ground resistance must be less than 0.4Ω.

Warning: It is strictly forbidden to make the UPS parallel running when the parallel interconnect cable is not reliably connected between the two UPS. Otherwise, the UPS will be damaged.

Installation and connection of UPS

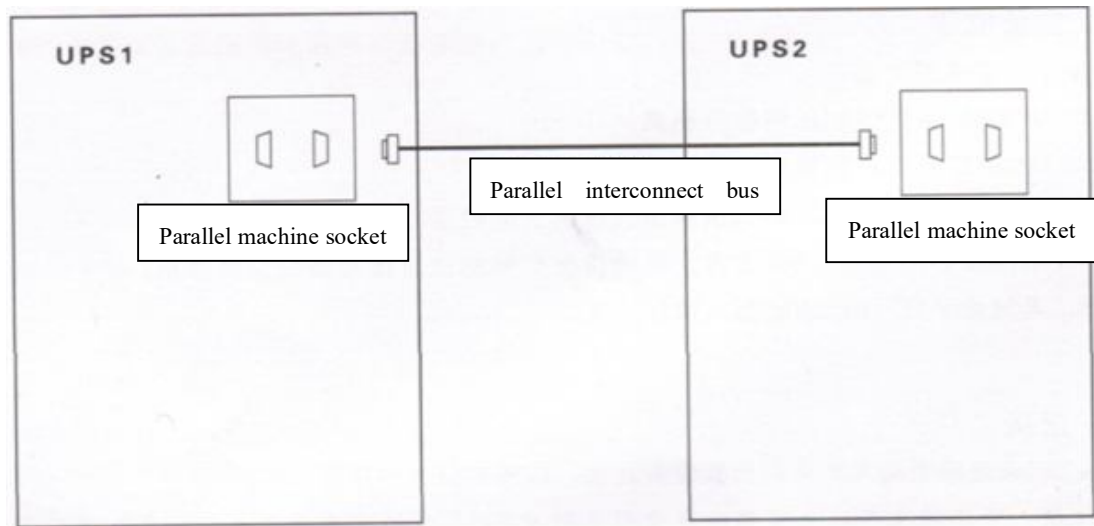


Figure 1

(2) The parallel system is connected to the load

In order to facilitate the operation of the parallel UPS, the UPS that needs to be run by the parallel machine is connected according to the method of Figure 2.

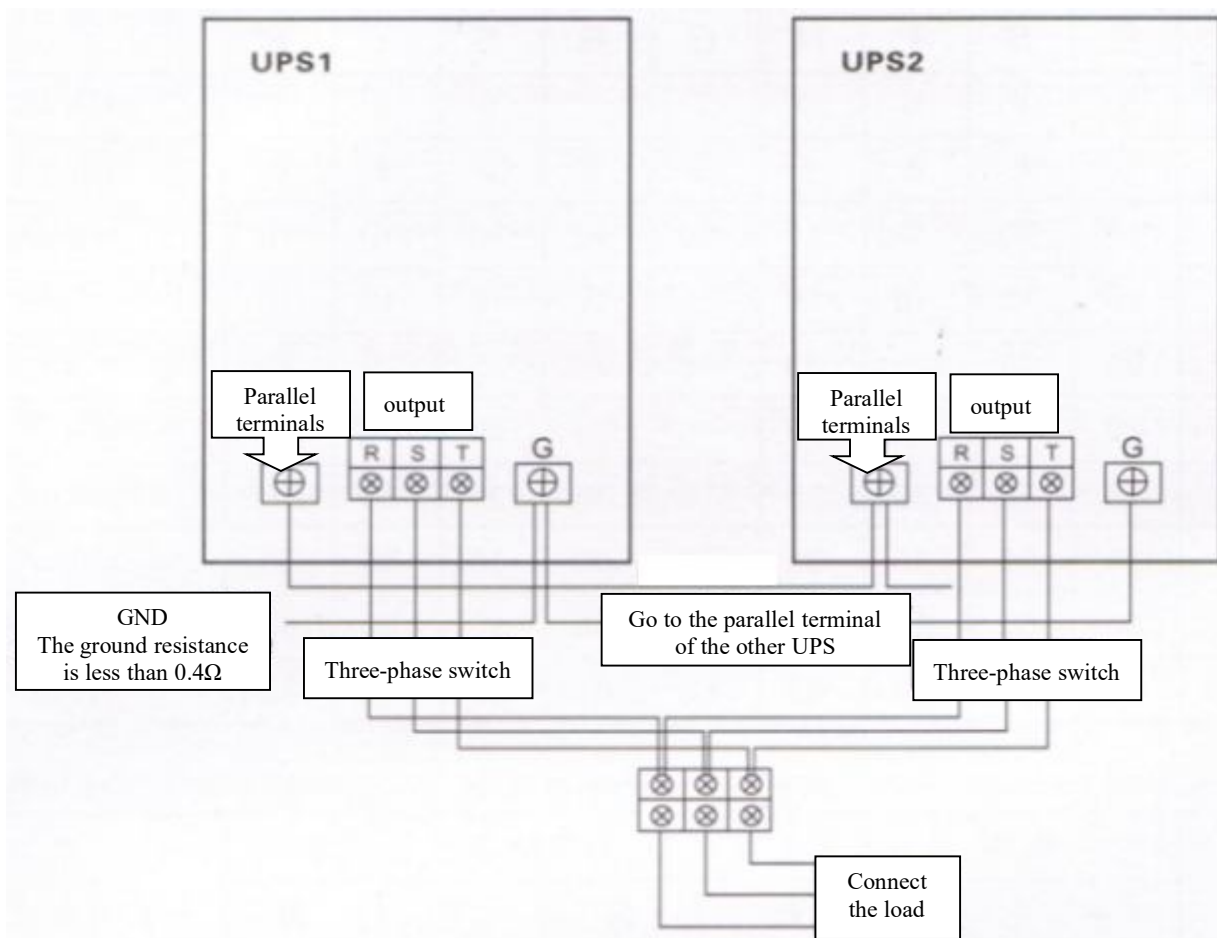


Figure 2

Installation and connection of UPS

2、10~60KVA UPS Three-phase output system

(1) Circuit breaker function, see Figure 3

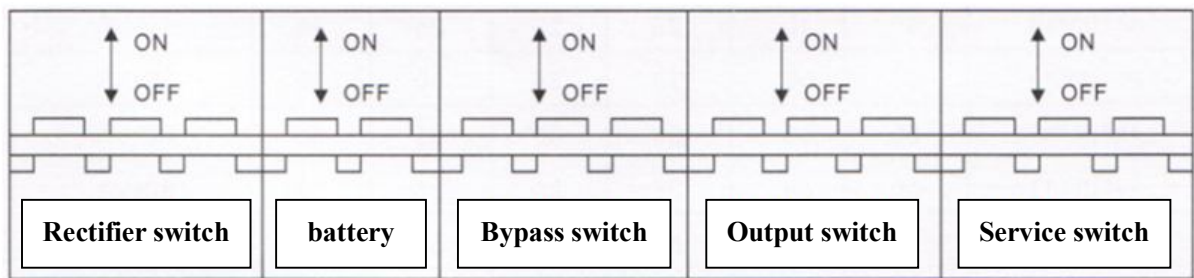


Figure 3

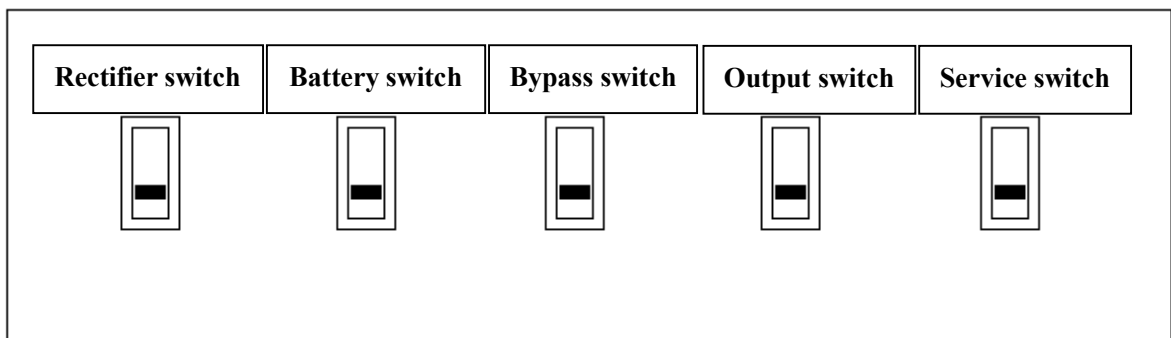
(2) Terminal block rows: See Figure 4

GND		Rectifier input				Battery		Bypass input				Output				GND
G	N	R	S	T	+	-	R	S	T	N	R	S	T	N	G	

Figure 4

3、80~200KVA UPS Three-phase output system

(1) Circuit breaker function



80~200KVA Switch function

(2) Terminal blocks

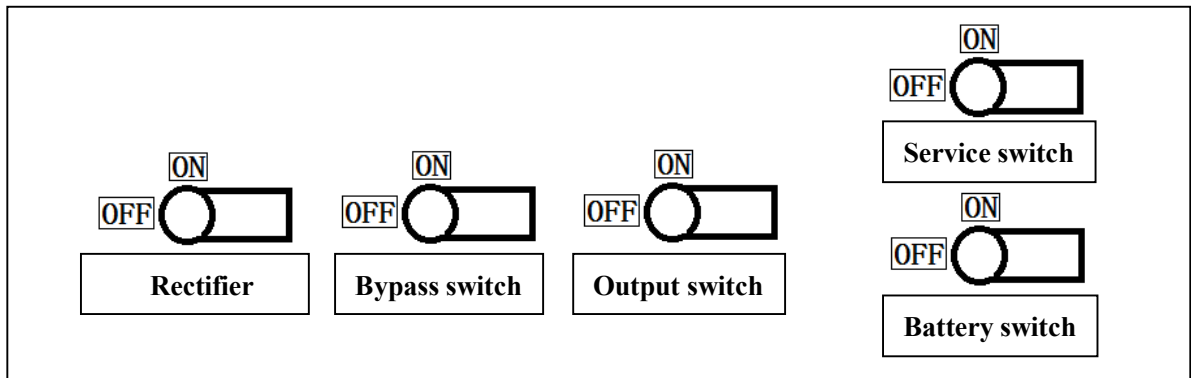
GND		Rectifier input				Battery		AC output				GND
G	N	R	S	T	+	-	R	S	T	N	G	

80~160KVA Switch function

Installation and connection of UPS

4、250~300KVA UPS Three-phase output system

(1) Circuit breaker name



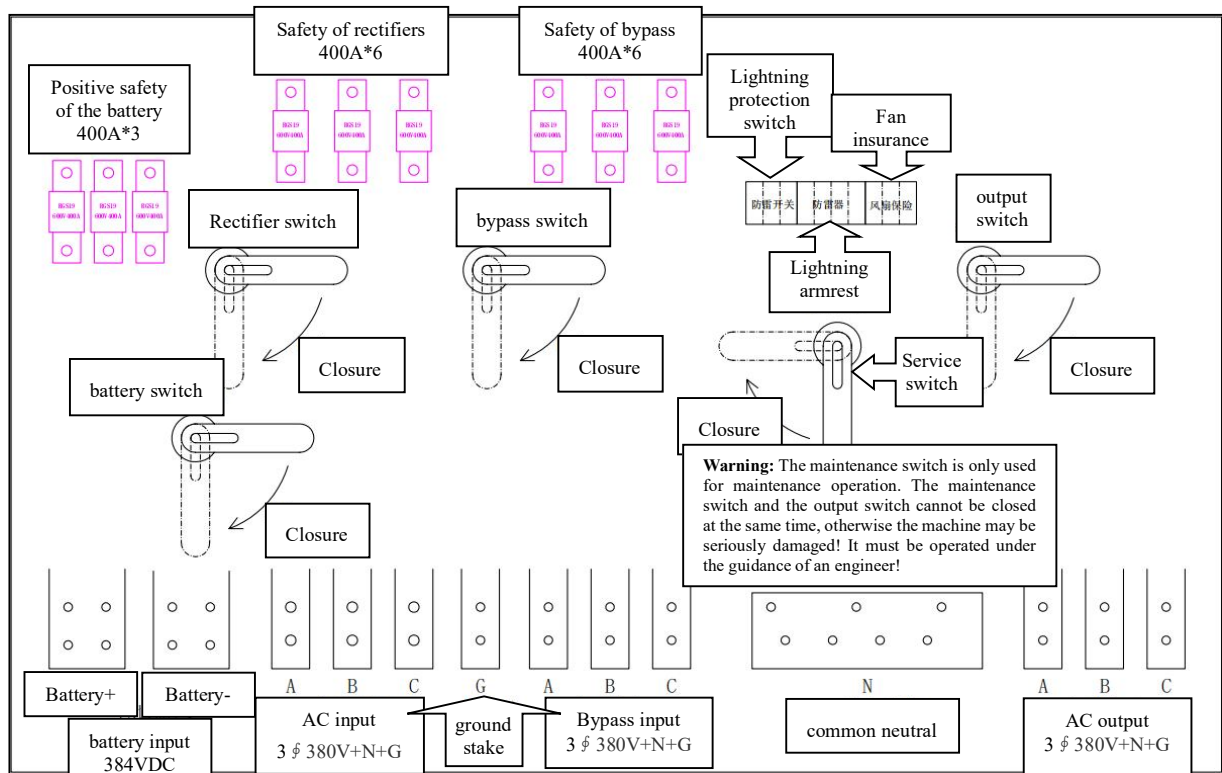
250~300KVA Switch function

(2) Connection terminal block

Battery				AC input			Bypass input				AC output				GND
+	+	-	-	R	S	T	N	R	S	T	R	S	T	N	G

250~300KVA Terminal block

5、400~600KVA UPS Three-phase output system



Installation and connection of UPS

Input/output line diameter comparison table: see Table 1

Wire cross-sectional area	Rectifier input					Output				Type
	R	S	T	N	G	R	S	T	N	
sez (mm ²)	6	6	6	6	6	4	4	4	4	10KVA
sez (mm ²)	6	6	6	6	6	6	6	6	6	15KVA
sez (mm ²)	10	10	10	10	10	10	10	10	10	20KVA
sez (mm ²)	16	16	16	16	10	10	10	10	10	30KVA
sez (mm ²)	25	25	25	25	10	16	16	16	16	40KVA
sez (mm ²)	30	30	30	30	16	25	25	25	25	50KVA
sez (mm ²)	35	35	35	35	16	25	25	25	25	60KVA
sez (mm ²)	35	35	35	35	16	35	35	35	35	80KVA
sez (mm ²)	50	50	50	50	16	50	50	50	50	100KVA
sez (mm ²)	70	70	70	70	25	70	70	70	70	120KVA
sez (mm ²)	95	95	95	95	25	95	95	95	95	160KVA
sez (mm ²)	120	120	120	120	35	120	120	120	120	200KVA
sez (mm ²)	150	150	150	150	50	150	150	150	150	250KVA
sez (mm ²)	185	185	185	185	70	185	185	185	185	300KVA
sez (mm ²)	240	240	240	240	95	240	240	240	240	400KVA
sez (mm ²)	150*2	150*2	150*2	150*2	95	150*2	150*2	150*2	150*2	500KVA
sez (mm ²)	185*2	185*2	185*2	185*2	95	185*2	185*2	185*2	185*2	600KVA

Wire cross-sectional area	Battery		Bypass input				Type
	+	-	R	S	T	N	
sez (mm ²)	6	6	4	4	4	4	10KVA
sez (mm ²)	10	10	6	6	6	6	15KVA
sez (mm ²)	10	10	10	10	10	10	20KVA
sez (mm ²)	16	16	10	10	10	10	30KVA
sez (mm ²)	25	25	16	16	16	16	40KVA
sez (mm ²)	25	25	25	25	25	25	50KVA
sez (mm ²)	35	35	25	25	25	25	60KVA
sez (mm ²)	50	50	35	35	35	35	80KVA
sez (mm ²)	70	70	50	50	50	50	100KVA
sez (mm ²)	95	95	70	70	70	70	120KVA
sez (mm ²)	125	125	95	95	95	95	160KVA
sez (mm ²)	150	150	120	120	120	120	200KVA
sez (mm ²)	95*2	95*2	150	150	150	150	250KVA
sez (mm ²)	125*2	125*2	185	185	185	185	300KVA
sez (mm ²)	150*2	150*2	240	240	240	240	400KVA
sez (mm ²)	185*2	185*2	150*2	150*2	150*2	150*2	500KVA
sez (mm ²)	240*2	240*2	185*2	185*2	185*2	185*2	600KVA

Table 1

Installation and connection of UPS

1、Wiring checks

When all input/output wires are connected, the following should be checked:

- (1) Check whether the phase sequence of the input line is correct;
- (2) Check whether the polarity of the battery input line is correct;
- (3) Check that the input/output lines are properly connected to the terminal blocks of the UPS.

2、* Parallel system wiring check

(For UPS for parallel operation)

- (1) Check whether the ground wires of the UPS that need to be operated together have been reliably connected together;
- (2) Check whether the ground wire of the UPS that needs to be paralleled has been reliably connected to the earth, and the grounding resistance is less than 0.4Ω ;
- (3) Check whether the R phase of the load output line of the UPS that needs to be run by the machine is reliably connected together;
- (4) Check whether the load output line S phase of the UPS that needs to be operated by the parallel machine is reliably connected together;
- (5) Check whether the load output line T phase of the UPS that needs to be run together is reliably connected together;
- (6) Check whether the wire diameter connecting the load wire meets the requirements;
- (7) Check whether all parallel interconnect lines have been reliably connected.

Warn:

1. When the parallel terminal is not reliably connected, it is strictly forbidden to run the UPS parallel machine.
2. All the output terminals (R, S, T) of the UPS that need to be paralleled are connected according to the parallel method (that is, all the R phases, S phases, and T phases are connected together accordingly). Otherwise, it is strictly forbidden to run ups in parallel.
3. In the case that the UPS or parallel interconnection cable that is not running in parallel is not reliably connected between the UPS that need to be run by the parallel machine, it is strictly forbidden to run the UPS parallel machine.

Operation procedure of UPS

The operation steps for stand-alone boot

(These Terms apply only to UPS running on a single machine, and UPS running on a parallel machine do not apply to this level of startup). When all UPS connections are complete, follow these procedures to turn on UPS:

1. After determining that the voltage of each phase is normal, close the rectifier input switch and the UPS rectifier will turn on. If the rectifier input switch is closed for 10 seconds, the LCD panel is still not displayed, and the machine alarm indicates that the input line is connected in the wrong phase sequence; At this time, the rectifier input switch and the total input power supply should be disconnected, the input line should be checked, the position of the R and S input lines should be reversed, the total input power supply and the rectifier input switch should be reclosed, the LCD panel display, the input phase sequence should be correct, and the inverter would be turned on normally after waiting for about 20s self-test;
2. After the UPS inverter is turned on normally, close the battery switch;
3. Close the bypass input switch;
4. Closed output switch.

Note: The service switch must be in the open state under normal operation of the UPS, if it is in the closed state, the input power supply will be directly powered to the load through the service switch. For example, it is necessary to close the maintenance switch during maintenance, so as to achieve the purpose of continuous power maintenance.

Parallel system boot operation steps

(This article only applies to UPS running concurrently, stand-alone UPS does not apply to this startup program). When all the UPS wiring is completed and all the wiring is carefully checked that all the wiring is correct, turn on the UPS and run the system in strict accordance with the following procedures:

1. After determining that the input voltage of each phase is normal, close the rectifier input switch and turn on the rectifier of the UPS power supply. If the rectifier input switch is closed, and the LCD panel is not displayed, the rectifier is not turned on, that is, the input lines are charged incorrectly, and the total input power supply and the rectifier input switch should be disconnected at this time, and any two should be exchanged. After determining (R, S, T) the phase sequence of the input line is correct, and then reclosing the total input power supply and rectifier input switch, the LCD panel displays, the input phase sequence connection is correct, wait for about 20s after self-test, the inverter opens normally;
2. After the UPS inverter is turned on normally, the battery switch can be closed;
3. Open another OR several other UPS that need to be run in parallel according to the order of steps 1 and 2;
4. After confirming that each UPS has been turned on normally, measure the output voltage of each UPS, and if the output voltage is normal, close all bypass input switches;
5. Then measure the output voltage of each UPS with a multimeter to confirm that the output voltage of each UPS is normal;
6. Measure the output voltage difference between the corresponding phases of each UPS with a multimeter, and the output voltage difference between all UPS that need to be combined (UR-R', Us-s', UT-T') should be less than 10V. If the voltage difference is less than 10V, it means that each UPS has been synchronized, and each UPS can be run

Operation procedure of UPS

in parallel. Otherwise, parallel operation is not allowed, and the reasons for the out-of-sync should be carefully checked;

7. Close the output switch, after running for several minutes, close the total load switch.

Warn:

1. When each UPS is not synchronized, it is strictly forbidden for the UPS to run in parallel.
2. When the UPS is running normally, it is strictly forbidden to close the repair opening and closing, otherwise it will damage the UPS.
3. When the UPS is in parallel operation, it is strictly forbidden to forcibly disconnect the input rectifier switch, battery switch, bypass switch and output load of one (or more) UPS.

Normal shutdown steps

(Note: These terms apply to ups for both parallel and stand-alone operations)

1. First disconnect the output load switch of each UPS running in parallel;
2. Disconnect the bypass input switch of each UPS running concurrently;
3. Disconnect the battery switch of each UPS running concurrently;
4. Disconnect the rectifier input switch of each UPS running concurrently;
5. Disconnect the total input power switch.

Warn:

1. It must be carried out in strict accordance with the order of the above operation steps.
2. The above steps must be carried out continuously until all switches are turned off.

Emergency shutdown steps

(Note: These Terms apply only to UPS that run concurrently)

In the event of an unexpected failure, the parallel machine runs ups by following these steps to shut down the system:

1. Disconnect the total load switch;
2. Disconnect the output load switch of each UPS running in parallel;
3. Disconnect the bypass switch of each UPS running in parallel;
4. Disconnect the total input power supply of each UPS running concurrently;
5. Disconnect the battery switch of each UPS.

Warning: This must be done in strict accordance with the sequence of the above steps.

One UPS is working, and the heat is incorporated into the operation steps of another UPS

(Note: These Terms apply only to UPS that run concurrently)

1. Check the rectifier switch, battery switch, bypass switch, output switch of a UPS that has been running, they should all be closed;
2. Close the rectifier input switch to make the rectifier of the UPS work normally;
3. Close the battery switch;
4. Close the bypass input switch;

Operation procedure of UPS

5. Wait about 5 minutes or so, measure the voltage difference between the output voltage of the UPS and the L-R phase of the mains voltage, the voltage difference should be less than 30V (rms value);
6. First, the end of the UPS parallel interconnection line is reliably connected with the socket of the newly opened UPS host; Then the other end of the parallel interconnection line is reliably connected to the socket of the parallel interconnection line on the UPS cabinet that was originally in the running state, and it should be carried out smoothly during the connection process, and try to connect successfully once to avoid repeated twisting;
7. After being convinced that the parallel interconnect line has been reliably connected with the two UPS, measure the voltage difference between the output voltage L-L of the two UPS, if one is running under load, the voltage difference should be less than 10V, if each UPS is in the state of no-load operation, the differential pressure is less than 5V;
8. Close the output load switch of the newly started UPS.

Note: The boot process for a newly hotly merged UPS with multiple UPS already running in parallel also follows the above steps.

Warning: 1. Must strictly follow the order of the above operation steps when the line;

2. It is strictly forbidden to make the UPS parallel operation without the connection line and the parallel terminal being reliably connected.

When there is a faulty UPS in the parallel operation state, the operation step to close the UPS

(Note: These Terms apply only to UPS that run concurrently)

1. Be sure that the bypass switch of each UPS is in a closed state;
2. Disconnect the output load switch of the faulty machine;
3. Pull the parallel interconnection cable of the faulty machine away from the socket;
4. Disconnect the bypass switch, rectifier switch and battery switch of the faulty machine.

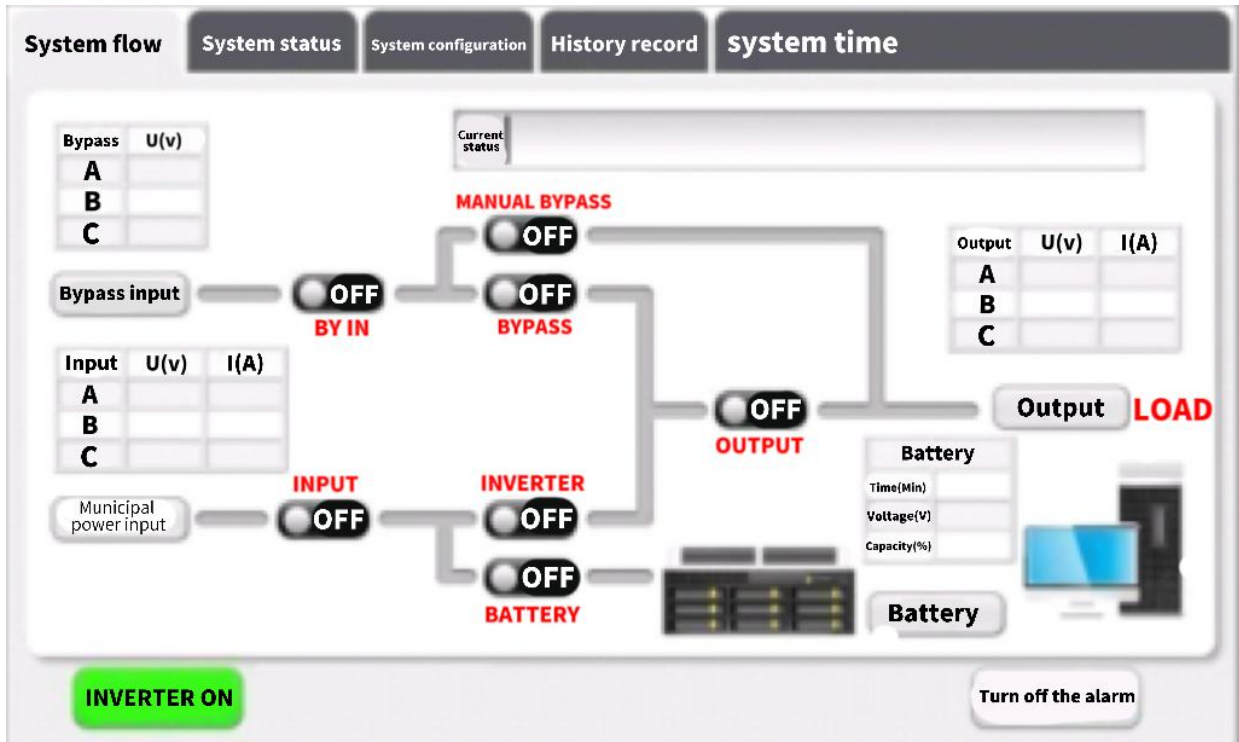
Warning: 1. It must be carried out in strict accordance with the order of the above operation steps;

2. It is strictly forbidden to break the interconnection line of the ups in the normal working state of the UPS;
3. It is strictly forbidden to make the UPS power supply work in parallel when all the UPS interconnection lines that need to be connected to the machine are not fully and reliably connected;
4. In the state of no mains input and battery discharge operation, if a CERTAIN UPS is in parallel operation, due to the low battery discharge voltage, the battery switch of the machine is strictly prohibited when the undervoltage protection alarm is advanced.

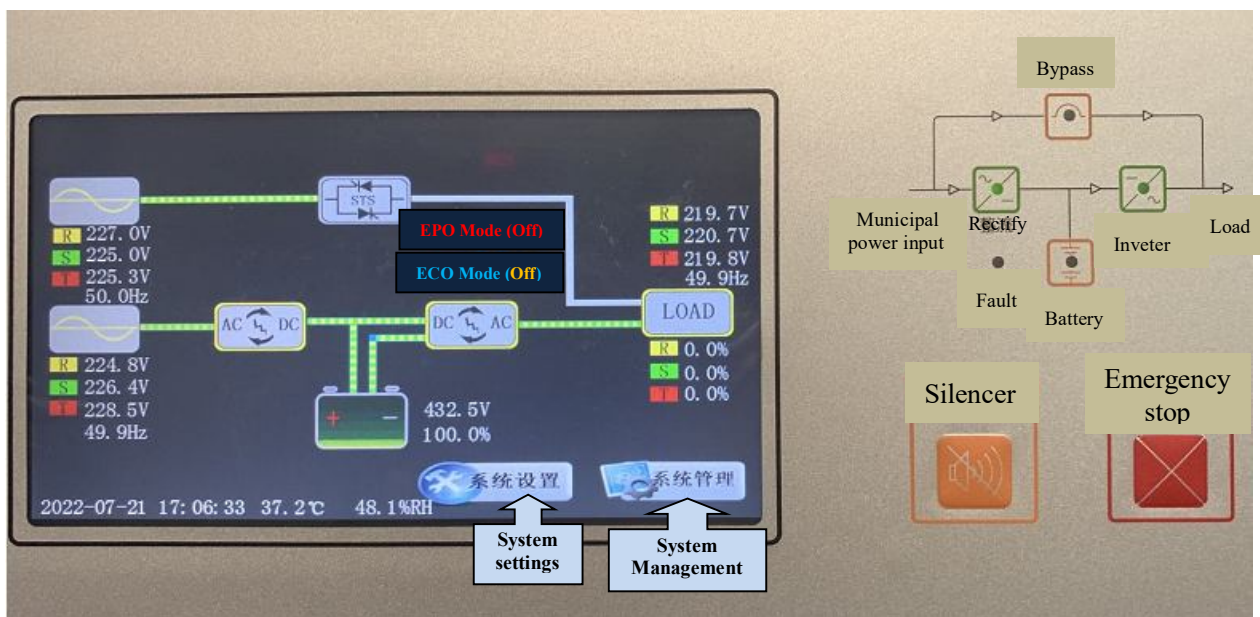
Operational testing

When the UPS is turned on normally, the power supply process is: mains input - INVERTER - OUTPUT - output;

Operation procedure of UPS



10-200K Operator panel



300-600K Operator panel

How UPS works

Normal operation

When the main input power supply is normal, the UPS is normally powered (at this time, the rectified input, output, bypass input, and battery switch are all closed). The connected load is powered by the inverter, and the DC power supply of the inverter is provided by the main input power supply through the rectifier, while the rectifier also charges the battery, and the green LED (IN, OUT) indicators on the control panel are lit. See Figure 5.

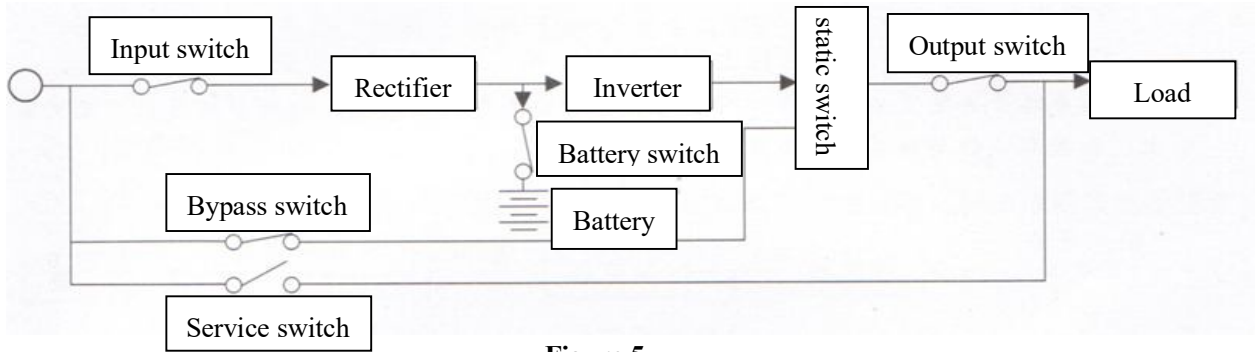


Figure 5

Battery running

When the main input power is disconnected, the load is automatically powered by the battery (at this time the rectifier input, output, bypass input, and battery switch are closed). Or when the main input supply voltage is too high or too low, the UPS will automatically switch to battery power in this case.

Note: Since the load power is related to the discharge time, the battery will also reduce the efficiency due to low temperature, high temperature or damage. We can disconnect part of the load to extend the power supply time. When the input power is powered off, the alarm also rings intermittently, and the green LED (OUT, BATT) indicators on the control panel are on. When the battery is discharged to an end-of-duration PRE-ALARM voltage close to the battery, the alarm frequency increases and the green LED (IN) indicator on the control panel flashes, at which point it is best to end all work in progress. When the main input power continues to lose power, the battery is exhausted and the UPS stops powering. When the main power supply is restored, the UPS will automatically power it. At the same time, the UPS will automatically charge the battery. See Figure 6

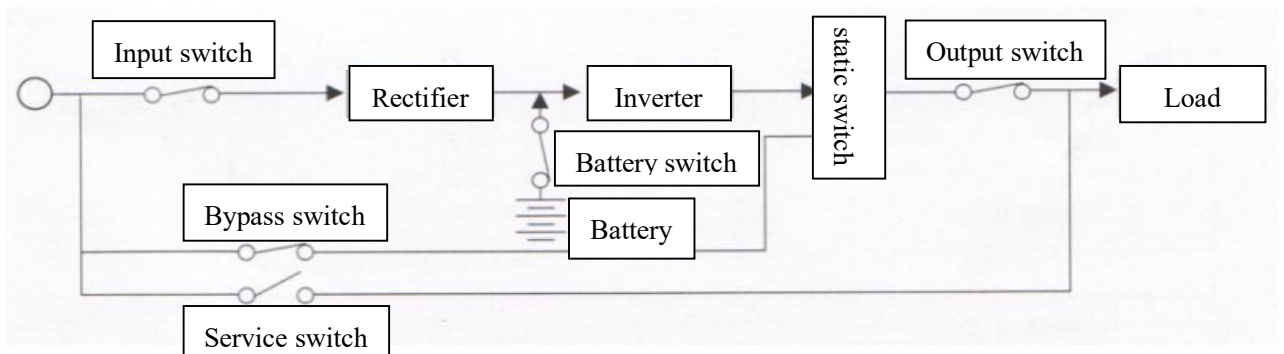


Figure 6

Static bypass switch operation

UPS is in any of the following situations:

1. Convert bypass commands (manual and automatic);
2. Output overload (overload);
3. Fault. In this case, the yellow LED (BY) on the control panel is lit. See Figure 7

How UPS works

Note: Static bypass switching devices must be synchronized and can automatically and manually control zero-time transitions from protective loads (inverter outputs) to unprotected loads (bypass outputs).

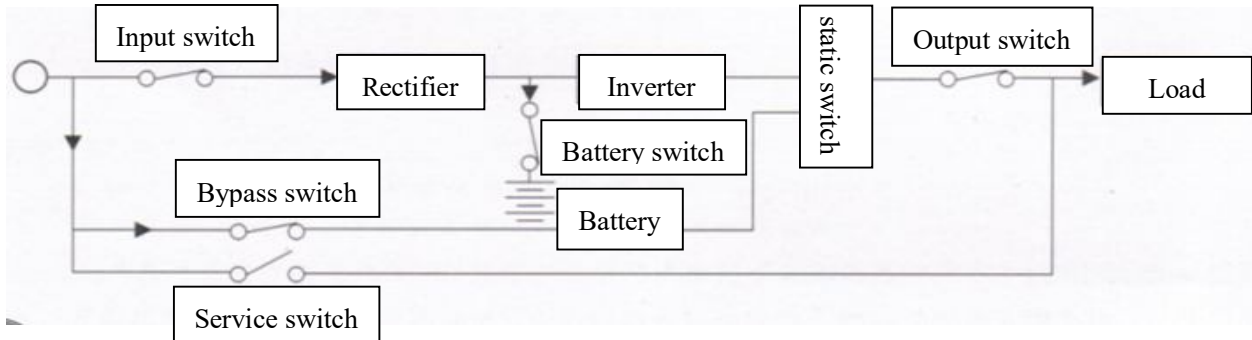


Figure 7

Repair operation

When the UPS is repaired, it is necessary to provide uninterrupted power supply to the load. When the service switch is closed, the control panel is not displayed, and the load is powered by the service switch. At this time, any external interference will affect the power supply of the load (in this case the battery is no longer available). See Figure 8

Note: Non-automatic switch (manual operation) maintenance use, if the maintenance switch closed and other switches off, you can safely repair the UPS components, the external system is normally powered, the UPS internal line components are not powered (after proper treatment), the voltage only appears in the switch part. Non-professional and technical personnel shall not dispatch maintenance switches.

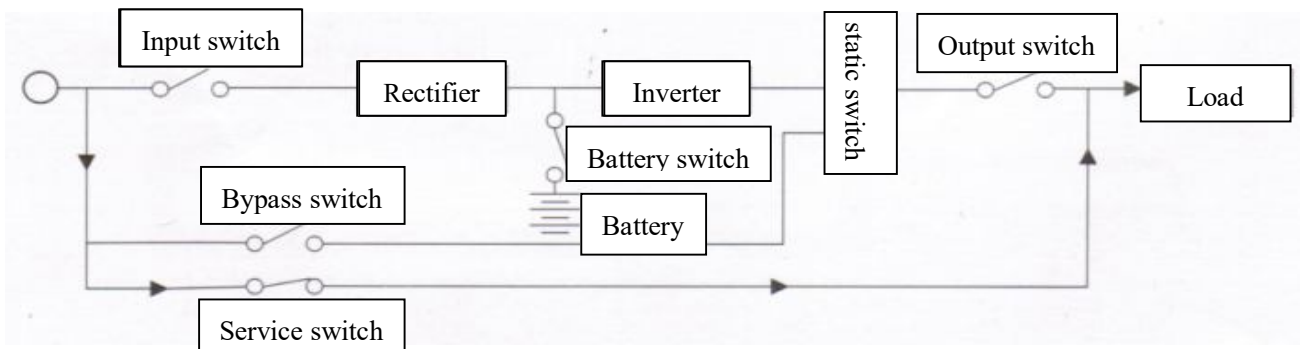


Figure 8

Central processing unit

Control the health of the entire UPS.

Battery

Provide backup power for UPS, and select batteries of different capacities according to the backup time of different models of UPS.

Inverter

The inverter is the output part, the rectifier DC voltage or battery DC voltage converted into a stable sine wave AC voltage, under normal circumstances, the UPS output part is powered by the inverter.

Reverse on the shun close turn bypass

Under normal operating conditions, if the UPS executes the inverter shutdown command, the load is powered by a static bypass switch. At this point, if the main input power fails and the output is zero, the load will not work.

How UPS works

In an emergency, if the UPS receives the "Inverter Off" command, then the UPS will stop working completely.

When the primary input power returns to normal, no action is required and the UPS returns to normal operation.

Note: UPS machine maintenance should be carried out by professional and technical personnel, the input in the machine, battery switch in the case of disconnection have voltage, non-professional technical personnel to upS fault maintenance, not only will damage the UPS, but also will cause harm to maintenance personnel.

Maintenance and maintenance of the UPS

Regular maintenance

The battery and fans need to be checked regularly in the UPS:

1. The fan needs to be checked regularly and vacuumed;
2. Battery: Any battery replacement should be carried out by professional and technical personnel, the replaced battery must be sent to the recycling agency for disposal, and the waste battery is designated as "toxic waste" according to the law. Battery life is determined by the operating temperature and the number of charging and discharging cycles, and at 20 degrees Celsius, the average battery life is about 3-5 years. If the ambient temperature is higher than 30 degrees Celsius, battery life will be halved. The capacity of the battery will rise after several charges and discharges, then remain stable, and finally decline after hundreds of charge and discharge cycles.

Battery care

Battery maintenance should be carried out according to the following requirements:

1. Keep the ambient temperature at 20 to 25 degrees Celsius;
2. In the first month, it is best to do 2 to 3 cycles of charging and discharging;
3. After the first month, discharge and charge once every 3 months.

Adapt the right working environment

Adjustable items: battery alarm setting, automatic shutdown, bypass voltage range, bypass frequency.

Description of technical parameters

Rectifier technical parameters

Nominal capacity (KVA)	10	15	20	30	40	50	60	80	100	120	160	200	250	300	400	500	600
Input maximum current	25	33	40	55	71	86	102	133	164	195	266	334	420	492	656	840	984
Working principle	On-line power supply, static bypass switch (uninterrupted switching), double conversion technology, complete isolation of output power																
Phase number	Three phase + N																
Nominal Voltage	380VAC±20%																
Nominal frequency	50Hz±10%,60Hz±10%																
Current harmonic distortion	<5% (12 pulses, option below 400K)																
soft start	0~100% 5sec																
Output voltage	432VDC																
Recharging current	5-10A(adjustable)				5-20A(adjustable)				10A~30A(adjustable)				20A~60A(adjustable)				

Battery

Nominal capacity (KVA)	10	15	20	30	40	50	60	80	100	120	160	200	250	300	400	500	600
Maximum discharge current (A)	28	42	56	85	113	141	169	225	282	338	451	564	705	846	1028	1285	1542
Quantity unit	12V*32 Knots Or 2V*192 Knots																
Nominal battery voltage	384VDC																
float voltage	432VDC																
Discharge cut-off voltage	345VDC																

Inverter

Standard capacity (KVA)	10	15	20	30	40	50	60	80	100	120	160	200	250	300	400	500	600
Rated power(KW) COSΦ=0.8	8	12	16	24	32	40	48	64	80	96	128	160	200	240	320	400	480
Phase number	Three phase + N																
Nominal Voltage	3/1:220VAC±1%; 3/3:380VAC±1%																
Nominal frequency	50Hz±0.5%,60Hz±0.5%(Battery powered)																
Frequency Stability 1	<±0.5% (Battery mode)																
Crest factor	3: 1																
Output waveform	Sine wave																
Total harmonic distortion	Linear load<3%; Nonlinear load<5%																
Dynamic load voltage	<±4% (Jump from 0 to 100%)																
Instant recovery time	<10ms																
Balanced load voltage	<±1%;<±5%(Unbalanced load voltage)																

Overload capacity	125% 10min,150% 1min																	
Inverter efficiency	94	94	95	95	96	96	96	96	96	96	96	96	96	96	96	96	96	96

Description of technical parameters

Bypass

Nominal capacity (KVA)	10	15	20	30	40	50	60	80	100	120	160	200	250	300	400	500	600
Phase number	Three phase + N																
Nominal Voltage	380VAC±15%																
Nominal frequency	50Hz±5%,60Hz±5%																
Inverter/Bypass (transfer time)	0ms(Overload)																

System

Model MZT3	10	15	20	30	40	50	60	80	100	120	160	200	250	300	400	500	600	
Overall efficiency	>94%																	
Communication interface	Rs232/485, SNMP (Options)																	
Operating temperature	0~40°C																	
Relative temperature (non-condensing)	30%~95%																	
Running height	<1000 meters (power decreases by 1% for every additional 100 meters, up to 4000 meters)																	
Cooling method	forced ventilation																	
Noise (dB)	48~60			55				65				80						
Box color	Left front door black, other ice gray (GY09)																	
Input cable	bottom/back																	
Maintenance surface	front/top/side										front/back							
Dimensions	Width (mm)	350			450				600			1000		1200		1400 (6P)		
	Deep (mm)	700			850				800			800		900		1000		
	High (mm)	900			1230				1400			1680		1850		1900		
Weight (KG)	177	208	215	277	290	310	350	510	570	720	820	960	1350	1450	1750	1950	2850	
Input device	Terminal block																	
Output device	Terminal block																	

Alarm-level screen operating instructions

10-200K system

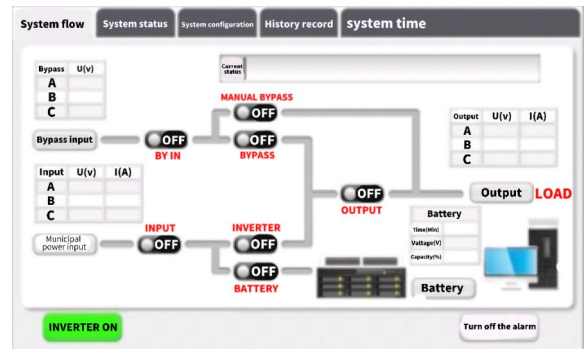
Start interface

After the machine is powered on, the panel will start, and the company name and contact number will be displayed as shown in the figure. Press the lower right corner to enter the monitoring main interface "system flow" as shown in the figure:

The main interface display includes: work flow chart, input and output parameters, current alarm status and other information.



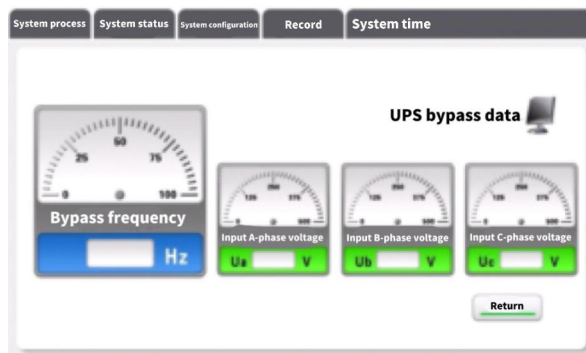
Splash screen



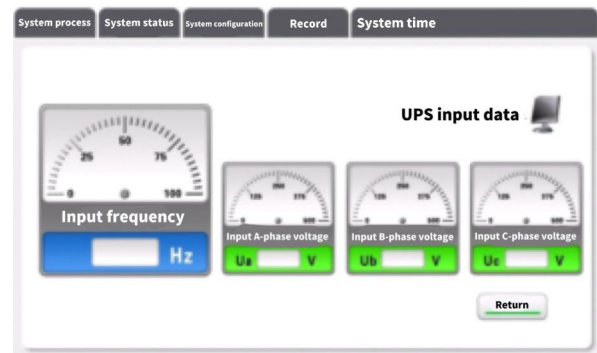
Monitoring main interface

Function Description

1. Click "Bypass Input" on the main interface to display detailed parameters such as machine bypass input voltage, the interface is as shown in the figure; press "Return" at the bottom right to return to the main interface.
2. On the main interface, click "Mains Input" to display detailed parameters such as the mains input voltage of the machine, as shown in the interface; press "Return" at the bottom right to return to the main interface.

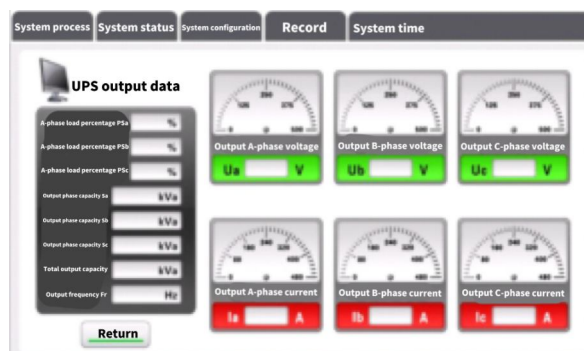


Bypass input parameters



Mains input parameters

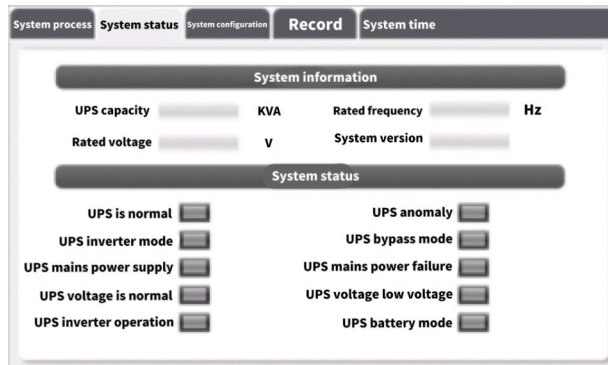
3. Click "Output" on the main interface to display detailed parameters such as machine output voltage and current, as shown in the interface; press "Return" in the lower right to return to the main interface.



Output parameters

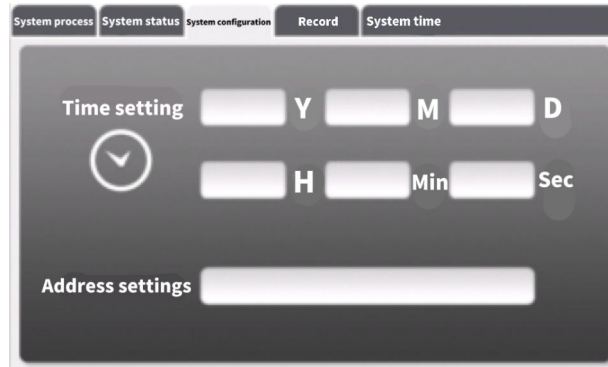
Alarm-level screen operating instructions

4. Description of other tabs, click the tab "System Status" at the top of the screen to display the basic parameters and working status indication of the current UPS, As shown in the figure:



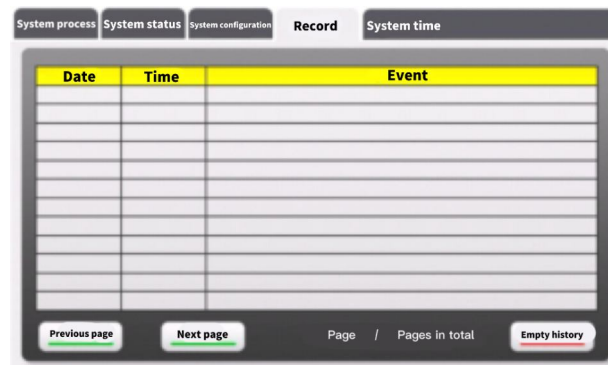
System status display

5. System configuration: Click the "System Configuration" tab at the top of the screen to set properties such as the current time and machine address, as shown in the figure:



System Configuration

6. History record: Click the tab "History" at the top of the screen to view the recent event records of the machine, you can press "Page key" to view earlier event records. In order to ensure that the latest records are not overwritten, the historical records can be cleared. In order to prevent commiseration, the clear password is set to "000000" as shown in the figure:



History record

1. Switch on and off operation instructions: When the UPS inverter is on, click the "INVERTER OFF" button on the main interface to turn off the inverter, and the load will be powered by the bypass; when the inverter is off, click the main interface. The "INVERTER ON" button can start the inverter. To prevent commiseration, the password for starting/closing the inverter is set to "000000"
2. Chinese and English conversion: click "English display" or "Chinese display" on the main screen to switch the language display;

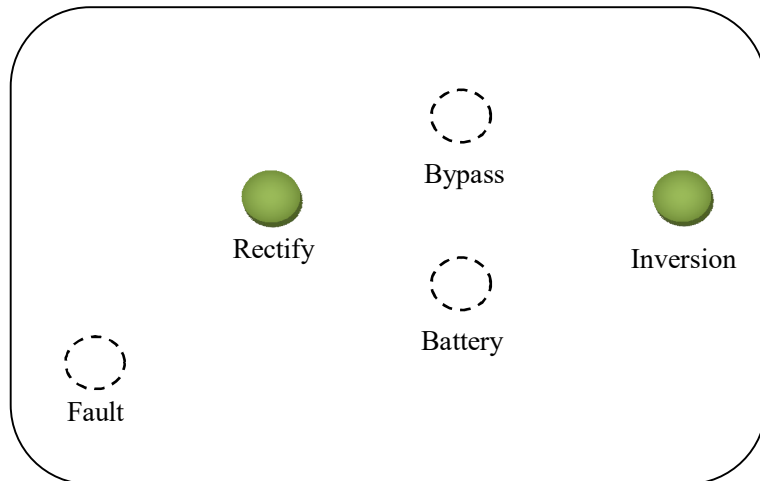
Alarm-level screen operating instructions

3. Silence: When the UPS has an alarm message, the machine panel will send out an alarm sound, click "Close the alarm sound" to close the current alarm.

300-600K system

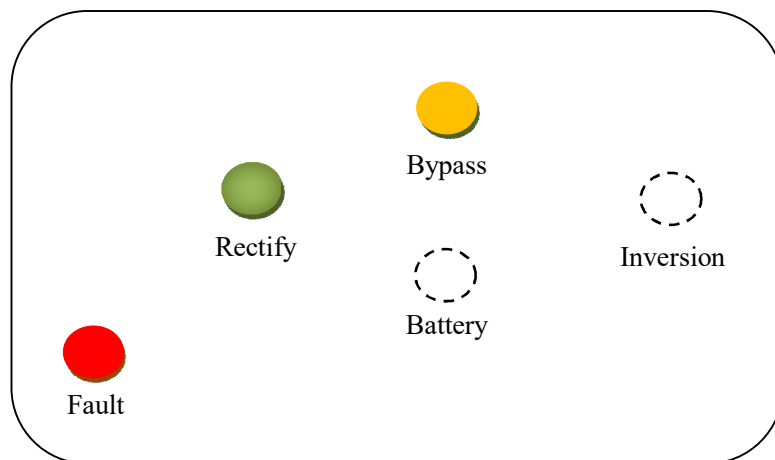
Panel light and alarm description

1. Normal state



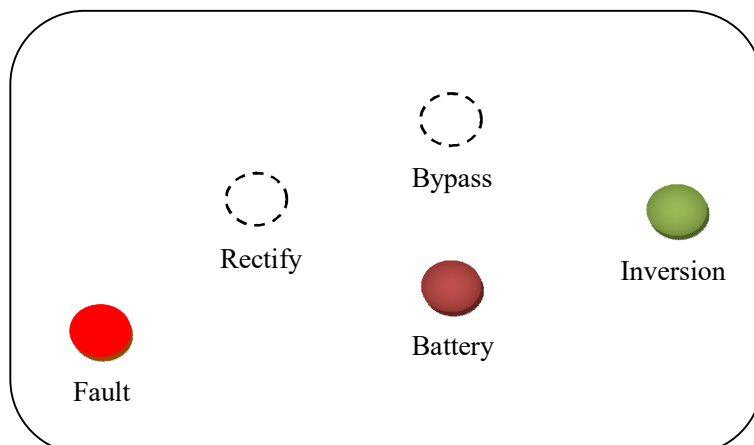
2. Bypass state

Alarm: a cycle of 4 seconds, two beeps continuously;



3. Battery status

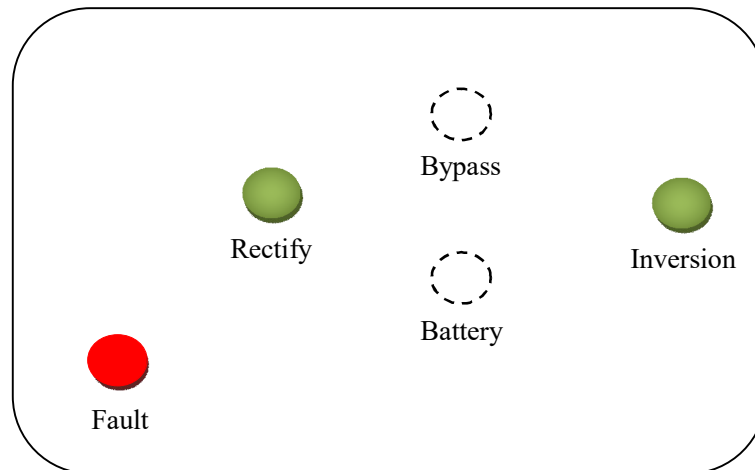
Alarm: a cycle of 4 seconds, two beeps continuously; when the battery voltage is lower than 370, a cycle of 1 second, two beeps continuously



Alarm-level screen operating instructions

4. Overload state

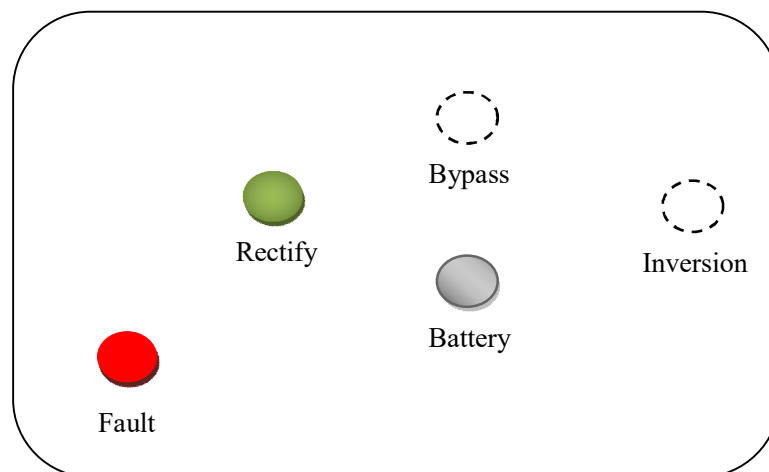
Alarm: long beep



5. Emergency shutdown

Alarm: a cycle of 4 seconds, two beeps continuously;

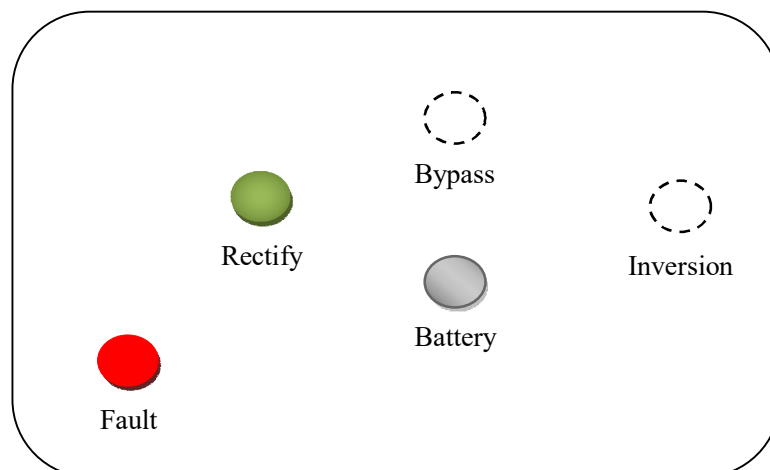
Battery light: if the battery is normal, the battery light will be on, otherwise it will not light



6. High impedance state

Alarm: a cycle of 4 seconds, two beeps continuously;

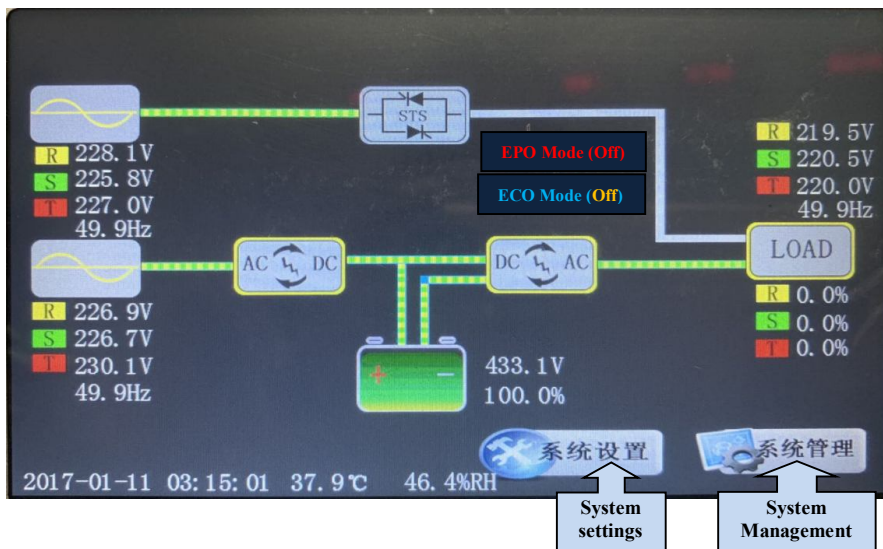
Battery light: if the battery is normal, the battery light will be on, otherwise it will not light



Alarm-level screen operating instructions

Display interface

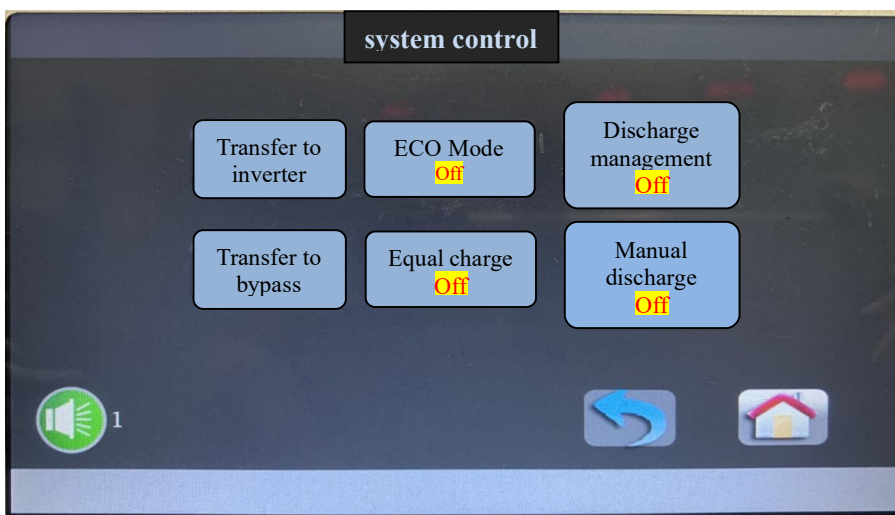
1. Standby interface: the screen will automatically turn off after 3 minutes of no operation, touch the screen to activate, the main interface is as follows:



2. System management interface: touch "System Management", the screen jumps to the following interface:



3. Touch "Control" to display the following menu:



Alarm-level screen operating instructions

Control menu description:

Transfer to inverter: When the current inverter is turned off, click "transfer to inverter", a password box will pop up on the panel, enter the password "1234", and then press "OK", the machine will start the inverter.




Transfer to bypass: When the current inverter is turned on, click "transfer to bypass", a password box will pop up on the panel, enter the password "1234", and then press "OK", the machine will turn off the inverter and switch to the bypass supply.

ECO mode: Click this button to turn on or off the ECO mode. After turning on the ECO mode, when the mains is within the range of 198-242, the machine will connect to the mains to supply power to the load. When the mains exceeds the set range, it will automatically Switch the load back to the inverter, with a 4ms switching time in between.

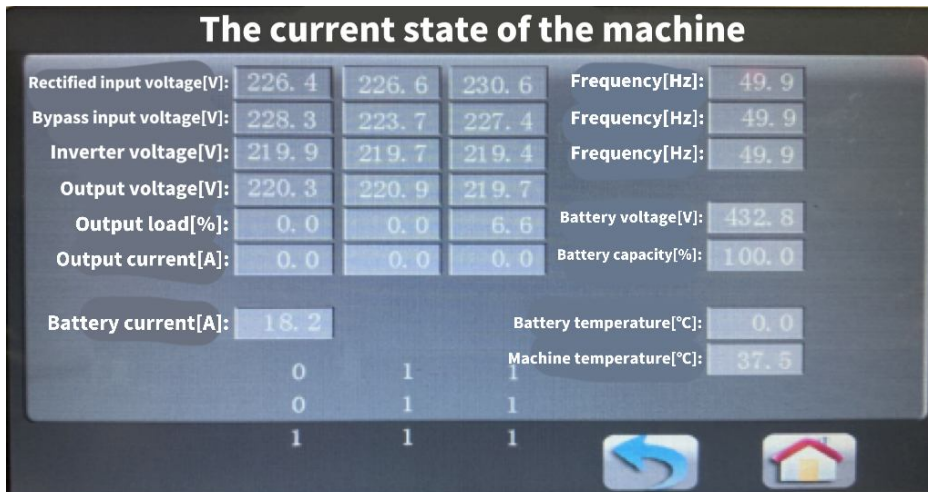
Discharge management, equalizing charge, and manual discharge are optional functions, which are not currently enabled.

4. Click "Event Log" on the "System Management" interface to switch to the following interface.



Description: Click  to return to the previous level; click  to clear the record, the password is "1234"; click  to turn the page to view more records;

5. On the "System Management" interface, click "Current Status" to switch to the following interface to display the real-time parameters of machine operation:




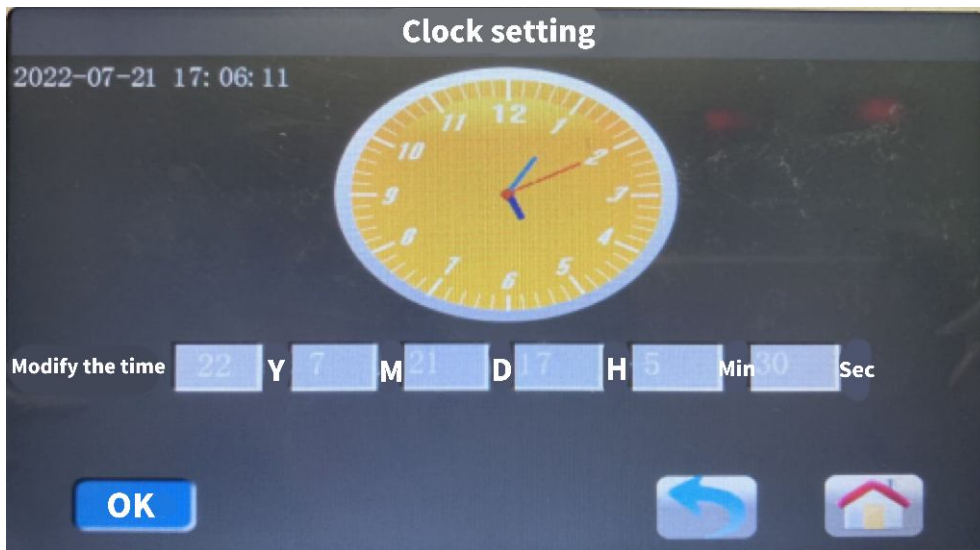
Alarm-level screen operating instructions

Control menu description

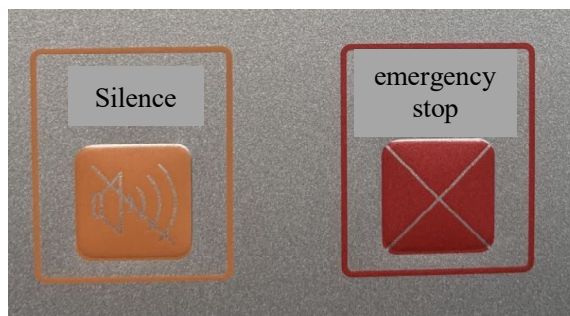
6. On the main interface, click "System Settings" to switch to the following interface. "Advanced Settings" is used for factory settings, changing the protection points of the machine, etc., you need to contact professional engineers for settings;



7. Click "Clock Settings" to modify the current correct time: After the modification is completed, press  to complete the modification;



8. Button description:



Note: The physical button "Silencer", when the machine has an alarm sound, press this button to mute the sound. If you want to open it, you can open it with the icon in the lower left corner of the "System Management" - "Control" menu.

Computer connection

We can connect a UPS to any computer and it automatically stores data to ensure that data is not lost due to UPS shutdown and battery exhaustion. But this operation will require specialized software. When requesting the use of this special software, please clearly indicate which computer operating system. Similarly, some special software can input all the data of the UPS into the computer.

— — — **This manual is subject to change without notice**