USER'S MANUAL

Online UPS

1KR(S)~10KR(S)

Please download the software "PowerManagerII V1.0".
Oversea:https://bit.ly/2PyyLg6

Scan QR code for manual

Appliances

PC POS Printer Type scanner Surveillance

4200-040015-01A1

INDEX

ABOUT THIS MANUAL

Purpose

Please comply with all warnings and operating instructions in this manual and on the unit strictly. Save this manual properly.Do not operate this unit before reading through all safety information and operating instructions carefully

Scope

This manual provides safety and installation guidelines as well as information on tools and wiring. The following cases are not within the scope of warranty:

(1)Out of warranty.
(2)Series number was changed or lost.
(3)Battery capacity was declined or external damaged.
(4)UPS was damaged caused of transport shift, remissness, ectexternal factor.
(5)UPS was damaged caused of irresistible natural disasters.
(6)Not in accordance with the electrical power supply conditions or operate environment caused damage.

Introduction

This series of UPS is an online sine wave advanced equipment system, which can provide reliable and high-quality AC power for your precision equipment. It has a wide range of applications, from computers, communication systems to industrial automatic control equipment. Design, power backup UPS, which continuously adjusts the input voltage and power supply. When the mains power is interrupted, it will provide backup power from the backup battery without time. , UPS will be converted to a good state, powered by the mains. If the overload condition is excluded, the UPS will automatically switch back to the inverter power supply state.

This manual applies to the following series of products, including:

- 1KR: Standard model with built-in batteries
- 1KRS: Long backup time model with external batteries
- 2KR: Standard model with built-in batteries
- 2KRS: Long backup time model with external batteries

-3KR: Standard model with built-in batteries
-3KRS: Long backup time model with external batteries
-6KRS: Long backup time model with external batteries

- 10KRS: Long backup time model with external batteries

1.1 Symbol description

Symbols and meaning	
Symbols	meaning
	Notice
	Danger
	AC power
	DC power
	Protective grounding conductor
	Protect the connecting conductor
	cycle
	Do not place it with other objects
	overload
	battery
	Power on/off

Chapter 1 Brief Introduction

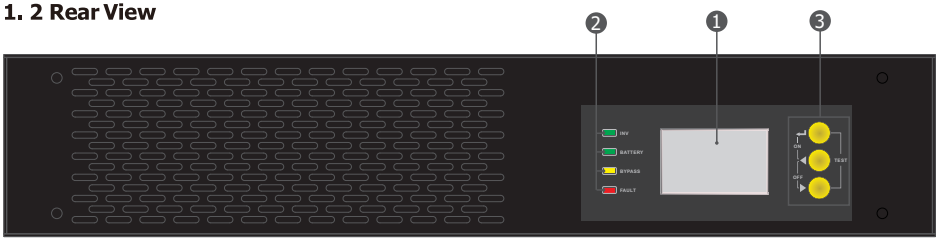
1. 1 System and model description

This Online Series is an uninterruptible power supply incorporating double-conversion technology. It provides perfect protection specifically for computer equipment,Communication Systems to computerized instruments.

The double-conversion principle eliminates all mains power disturbances. A rectifierconverts the alternating current from the utility power 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 is constantly powering the loads.

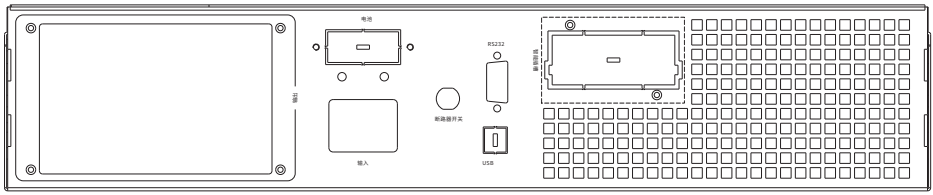
Computers and Peripherals are thus powered entirely by the UPS. In the event of power failure, the maintenance-free batteries power the inverter.

1. 2 Rear View

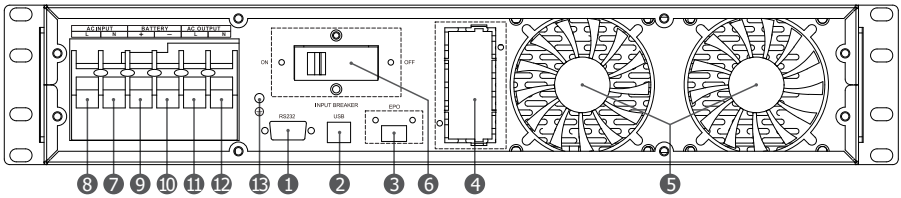


1. LCD display　　2. LED indicator　　3. Function buttons

1.3　1~3KR machine back panel diagram



1.4　6~10KR machine back panel diagram



1 RS232 communication port
2 USB communication port
3 EPO port
4 Intelligent Slot
5 Fan
6 Input Switch
7 AC Input N
8 AC Input L
9 Battery +
10 Battery -
11 AC Output L
12 AC Output N
13 Ground

1.5 Product specification and performance

General specification

Model		1KR	1KRS	2KR	2KRS	3KR	3KRS
Rate Power	1.0	1KVA/1KW		2KVA/2KW		3KVA/3KW	
INPUT							
Input connection type		L+N+PE					
rated input voltage		208/220/230/240VAC					
voltage range		110-300VAC					
frequency rage		50/60+HZ (default) ,±10HZ (can be set)					
Input power factor		M0.99					
Input THD		≤3% linear load , ≤5% Non-linear load （PF=0.7)					
OUTPUT							
output connection type		L+N+PE					
output voltage		208/220/230/240VAC					
output accuracy		±1%					
output frequency		Mains mode:same as AC frequency, battery mode : 50/60HZ+-0.1%					
output THD		≤1% linear load，≤ 3% Non-linear load （PF=0.7)					
output power factor		1					
Transfer time		AC mode switch to battery mode :0ms, mains inverter mode switch to bypass mode : 4ms					
Overload Capacity		AC mode : 30min@102%-110%Load 10min@110%~130%Load 30s@130%~150%Load 200ms@>150%Load		Battery Mode : 1min@102%-110%Load 10s@110%~130%Load 3s@130%~150%Load 200ms@>150%Load			
Overall Efficiency							
mains mode(full load)		94.5%@220VAC		95.5%@220VAC		95.5%@220VAC	
Battery mode (full load)		89.5%@36DC		91.5%@72DC		91.5%@96DC	
Battery mode (full load)		89.5%@24VDC		91.5%@48DC		91.5%@72DC	
Charger							
Battery type		Lead Acid Battery					
Number of batteries		7Ah x 2	36V	7Ah x 4	72V	7Ah x 6	96V
Battery Current		1KR-3KR:1.0 (default) · 1-2A (can be set) External battery pack :1KRS-3KRS:5.0(default),1-12A (can be set)					
Charging Mode		Two-stage/three-stage charging					
Operating environment							
Operating environment temperature		0~40°C					
Operating environment humidity		20%~95% (No condensation)					
Storage temperature		-15~60°C (Battery : 0~40°C)					
Altitude		The altitude should not exceed 1000m, derating above1000m · up to 4000m (max) , refer IEC62040					
Noise		<45dB（A）					
Interface							
Interface Type		Expandable SNMP card/USB/dry contact card/EPO interface /maintenance bypass interface					
Standards and certifications							
EN/IEC 61000, EN/IEC 62040.GB/T 7260.GB/T4943.YD/T1095, TLC ,etc							

Model		6KR|6KRS	10KR|10KRS
Rate Power	1.0	6KVA/6KW	10KVA/10KW
	0.9	6KVA/5.4KW	10KVA/9KW
INPUT			
Input connection type		L+N+PE	
rated input voltage		208/220/230/240VAC	
voltage range		110-300VAC	
Frequency range		50/60+HZ (default)，±10HZ (can be set)	
Input power factor		M0.99	
Input THD		≤ 5%linear load, ≤ 8% Non-linear load (PF=0.7）	
output			
Output connection type		L+N+PE	
output voltage		208/220/230/240VAC	
output accuracy		±1%	
output frequency		Mains mode:same as AC frequency, battery mode : 50/60HZ+-0.1%	
output THD		≤ 2% linear load，≤ 5% Non-linear load（PF=0.7）	
output power factor		0.9/1	
Transfer time		Oms. ECO mode switch to battery mode :2ms	
Overload Capacity		Mains Mode : 30min@102%~110%Load 10min@110%~130%Load 30s@130%~150%Load 200ms@>150%Load	Battery Mode : 1min@102%~110%Load 10s@110%~130%Load 3s@130%~150%Load 200ms@>150%Load
Overall Efficiency			
Mains mode (full load)		Highest efficiency 95.5% , full load efficiency 95%	
Battery mode (full load)		Highest efficiency 95.3% , full load efficiency94.8% (20pcs of batteries)	
Charger			
Battery type		Lead Acid Battery	
Number of batteries		16/18/20PCS optional，default 16 pcs	
Battery Current		1~12A adjustable(PF=0.8. 1~8A adjustable),Standard model with built-in batteries default is 1A	
Charging mode		Two-stage/three-stage charging	
Operating Environment			
Operating environment temperature		0~40°C	
Operating environment humidity		20%~95% (No Condensation)	
Storage temperature		-15~60°C (Battery :0~40°C)	
Altitude		The altitude should not exceed 1000m, derating above1000m，up to 4000m (max) , refer IEC62040	
Noise		<45dB（A）	
Interface			
Interface Type		Rs232,expandable SNMP card /USB/ dry contact card /EPO interface / maintenance bypass interface	
Standards and Certifications			
EN/IEC 61000, EN/IEC 62040.GB/T 7260.GB/T4943.YD/T1095, TLC, etc			

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
Temperature	100%	95%	91%	86%	82%	78%	74%

1.6 Standards

* Safety	
IEC/EN 62040-1	
* EMI	
onducted Emission.....:IEC/EN 62040-2	Category C3
Radiated Emission.....:IEC/EN 62040-2	Category C3
*EMS	
ESD.....:IEC/EN 61000-4-2	Level 4
RS.....:IEC/EN 61000-4-3	Level 3
EFT.....:IEC/EN 61000-4-4	Level 4
SURGE.....:IEC/EN 61000-4-5	Level 4
CS.....:IEC/EN 61000-4-6	Level 3
Powa--frequency Magnetic field.....:IEC/EN 61000-4-8	Level 4
Low Frequency Signals.....:IEC/EN 61000-2-2	
Warning: This is a product for commercial and industrial application in the second environment-installation restrictions or additional measures may be needed to prevent disturbances.	

Chapter 2 Installation

2. 1 Unpacking and inspection

1) Unpack the packaging and check the package contents. The shipping package contains:

- UPS
- User manual
- Communication cable

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 any damage or lacking of some parts.
3) 2 Input and output power cords and protective earth ground installation

2.2 Notes for installation

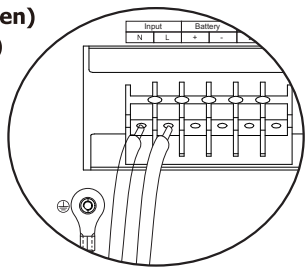
1) The UPS must be installed in a location with good ventilation far away from water. inflammable gas and corrosive agents.
2) Ensure the air vents on the front and rear of the UPS are not blocked. Allow at least 0. 5m of space on each side.
3) Condensation to water may occur if the UPS is unpacked in 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.

2.3 Installation

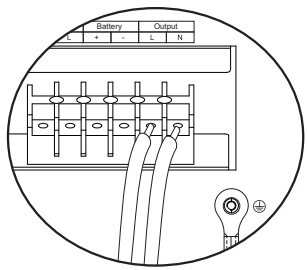
Installation and wiring must be performed in accordance with the local electric code and the following instructions by professional personnel.
For safety, please cut off the mains power switch before installation. The battery breaker also needs to be cut off if it is a long backup time model("S"model)
1) Open the terminal block cover located on the rear panel of the UPS (please refers to the appearance diagram)

2) For 6KRS UPS, it is recommended to select the UL 1015 10AWG(6mm^2)wire or the other insulated wire which complies with AWG Standard for the UPS input and output wirings.
3) For 10KRS UPS, it is recommended to select the UL 1015 8AWG (10mm^2) wire or the 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.
4) 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.
5)For 6KRS UPS, please connect the input protective earth terminal to the safe position and connect the output protective earth terminal to the position protected by the load with the green and yellow wire UL 1015 10AWG(6mm^2)
6) For 10KRS UPS, please connect the input protective earth terminal to the safe position and connect the output protective earth terminal to the position protected by the load with the green and yellow wire UL 1015 8AWG(10mm^2)
7) 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.
8) After having completed the installation, make sure the wiring is correct.
9) Please install the leak current protective breaker at the output power distribution panel of the UPS if necessary.
10) 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.
11) 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.
12) Suggest charging the batteries for 8 hours before use. After connection, turn the bypass breaker in the "ON" position, the UPS will charge the batteries automatically. Do not charge, you can also use the UPS immediately without charging the batteries first, but the backup time may e less than the standard value.
13) 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 calulating the capacity of the IPS, as its start-up power consumption is too big when it is started.

⏚→**Ground (yellow-green)**
L→LINE (brown or black)
N→Neutral (blue)



AC Intput



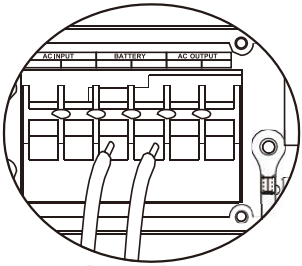
AC Output

2.4 Operating procedure for connecting the long backup time model UPS with the external battery

1. The nominal DC voltage of external battery pack is 192VDC, Each battery consists of 16 pieces of 12V free batteries in series. To achieve longer back time, it is possible to connect multi-battery pack(S), 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 external battery socket of the UPS, the other end of the external battery cable is made of two open wires with ring terminals to connect with the external battery pack(S). The battery connecting procedure should be complied with strictly. Otherwise you may encounter the hazardous of electric shock.

1) A DC breaker must be connected between the battery pack and the UPS. The capability of breaker must be not less than the data specified in the general specification list.

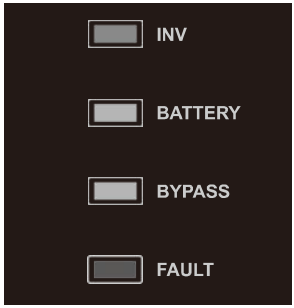
2) Set the battery pack breaker in "OFF" position and connect the 20 pieces of batteries in series. **You must connect the external battery cable to the battery first for if you connect the cable to the UPS first, you may encounter the hazardous of electric shock. The positive pole of the battery is connected to the 10KRS in parallel with blue and brown wires. the negative pole of the battery is connected to the 10KRS in parallel with black and white wires; the green and yellow ribbon wire is connected to the ground of the battery abinet.** It is easy to operate the equipment, with no previous training. You just need to read through this user manual and operate according to the instructions in it.



Battery Intput

Chapter 3 Display

3.1 LED indicator function



Indicator Lamp	name	Description
INV	Inverter lamp (Green)	On: UPS is working in inverter-on mode (such as: Utility mode, battery mode, battery self-test mode, ECO mode) Off: UPS is working in non-inverter mode
BATTERY	Battery Lamp (Yellow)	On: UPS is working in battery/battery self-test mode Off: UPS is working in non-battery mode and non-battery self-test mode Flashing: low battery warning
BYPASS	Bypass Lamp (Yellow)	On: UPS is working in bypass mode or ECO mode Off: UPS is working in non-bypass mode and non-ECO mode Flashing: UPS is working in standby mode, frequency conversion is not turned on and bypass is abnormal
FAULT	Warning Lamp (Red)	On: UPS failure Off: UPS is normal Flashing: UPS alarm

Lights indicate UPS working status

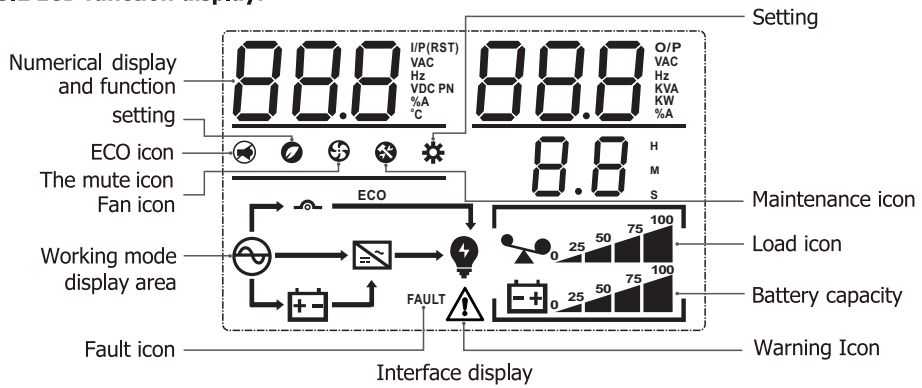
Buzzer alarm	description
Changming	Failure mode
Chirp once a second	Battery mode lower voltage
Beep every two minutes	overload
	Convert off
Chirp once in four second	others

NUM	Mode	ligth display				Sounds
		Working	Battery	Bypass	Malfunction	
1	**Convert mode/VFD mode**					
	No alarm	•				none
	alarm	•			★	hirp once in four second
2	**Battery mode**					
	None	•	•		★	hirp once in four second
	Low voltage alarm	•	★		★	Chirp once a second
3	**Self detect mode/ On working mode**	★	★	★	★	hirp once in four second
4	**Bypass mode**					
	No fault alarm			•		One beep every 2 min
	alarm			•	★	hirp once in four second
5	**Economic operation mode**					
	No fault alarm	•		•		none
	Alarm	•		•	★	hirp once in four second
6	**Failure mode**				•	Long beep

• The indicator light is on

★ Light flashes

3.2 LCD function display:



Interface display

LCD display can be divided into: icon display, numerical display and function setting area, work mode display area.

- The load and battery graphics indicate the load and battery capacity. Each square represents 25% of the capacity. The load icon will flash when the UPS is overloaded.
- The battery icon flash when the battery capacity is too low or not connected.
- The fan icon shows the working status of the fan. Normally, the fan icon will light up; when the fan alarms, the icon flash.
- The buzzer icon shows whether the buzzer muted or not. Under normal circumstances, the icon not displayed; press the mute key combination(↵+◀) in battery and fault mode or set MUTE ON in software any mode, UPS enters the mute state. The buzzer icon will be displayed.
- When the maintenance switch is turned on, icon light up, In other cases, the icon is not displayed.
- When the ECO function is enabled, icon light up, In other cases, the icon is not displayed.
- When entering the setting menu, icon light up, In other cases, the icon is not displayed.
- The fault icon only displayed in fault mode.

Numerical display and function setting area:

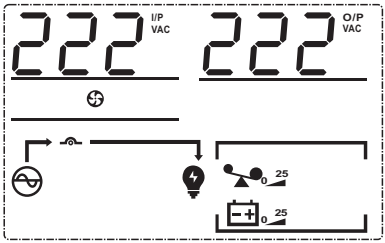
- Non-function setting mode, this area displays UPS related info; In normal mode, it displays output info, when you do left and right bottom (◀or▶)setting it will show input voltage and frequency, output voltage and frequency, battery voltage and capacity, battery cell number, load, internal temperature, software version and other related information . The failure mode displays the failure code.
- Function setting page, bottom setting output voltage (OPU), expert mode (EP), low battery s hutdown point (EOd), battery cells (PCS), emergency shutdown. (EPO)

3.3 LCD display :

Normally, there are eight pages in the display page. Press the query key ◀or▶ lwit in 0.1 to 2 seconds to flip the display page and display information such as input, battery, output, load, software version, temperature, etc. If there is an alarm, a page of alarm information will be displayed. If the UPS fails, the fault code page will be displayed by default. The main page defaults to display fault or alarm information. When the UPS has no fault or alarm, the main page defaults to display output voltage and frequency information.

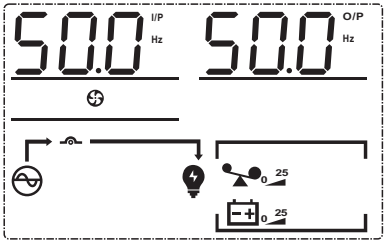
Press the right query key ▶ for more than 2 seconds, the LCD enters the polling mode display: the display page will be turned automatically every 2S, and long press again▶will exit the polling mode.

Display page 1 (main display page): Display UPS input and output voltage.



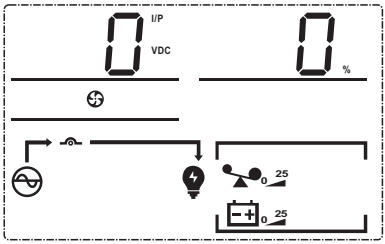
Page 1

Display page 2: Display UPS input and output frequency.



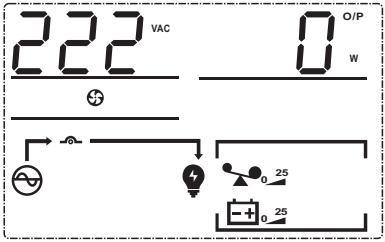
Page 2

Display page 3: Battery information, display battery voltage and battery capacity.



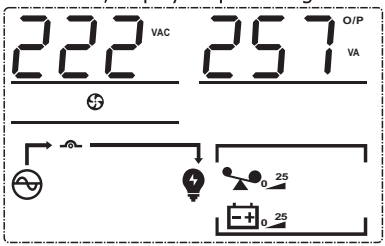
Page 3

Display page 4: Output information, display output voltage and active power.



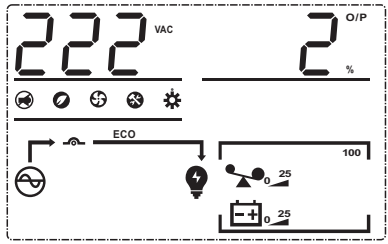
Page 4

Display page 5: Output information, display output voltage and apparent power.



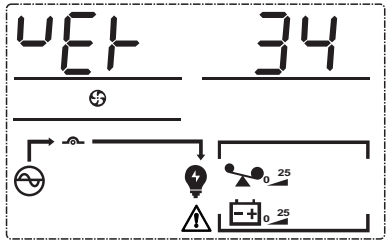
Page 5

Display page 6: Output information, display output voltage and load percentage.



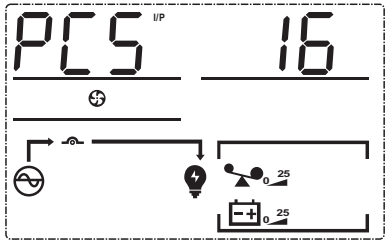
Page 6

Display page 7: Software version, display the UPS system software version. (software version VER 34)



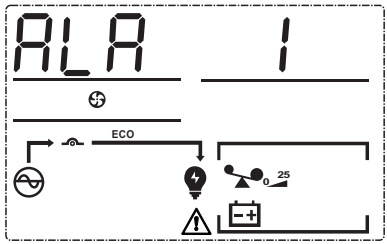
Page 7

Display page 8: battery information, displays the number of battery packs.



page 8

Alarm display page 9: Alarm information is displayed,(The icon shows battery failed to receive alarm, ALA is the abbreviation of ALARM, and the alarm icon at the bottom flashes to indicate alarm; 1 is the alarm code). Please refer to Failure and Alarm Instructions for detailed alarm information.



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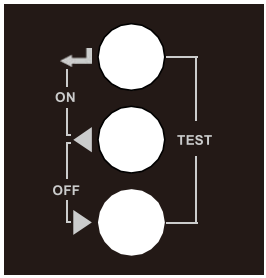
Chapter 4 Operation and operating mode

Operation



Power on/off

Please refer to this manual for switch operation

The steps to turn on

When the battery or utility power meets the requirements, it can be turned on.

Utility power-on

When the utility is connected and the LCD panel displays standby mode or bypass mode, press the power-on key combination(↵ + ◀) for more than 0.1 seconds to start the machine. The LED lights turn on and turn off by turn. After waiting for a period of time, the screen displays the utility mode that means the power-on is completed and enter the utility mode.

Battery power-on

access the normal battery, press the function setting/confirmation key (↵) more than 0.5 seconds, the display screen lights up, the panel shows standby mode, UPS establish the working power supply. press the boot combination key(↵ + ◀)at this time more than 0.1 seconds to execute the boot the LED lamp cycle is lit in turn, extinguished in turn, waiting for a period of time after the panel display battery mode indicates that the boot is completed, into battery mode.

Power-off steps

When working in power/battery/battery self-test/ ECO mode, press the shutdown unit key(◀ + ▶) for more than 0.1 seconds to perform shutdown. If the bypass is normal after shutdown operation, the panel display enters bypass mode; if the bypass is abnormal, the panel display standby mode enters standby mode and breaks output. Turn off in bypass mode and switch off the output.

Manual self-checking operation

When the UPS is in utility/ ECO mode and the battery voltage is greater than the low voltage alarm point, Press the self-check/mute combo(↵ + ◀) for more than 1 second and wait for 10 seconds, LED lights turn on and off in turn, The screen shows battery self-test mode, To test the battery, Automatic exit after self-examination, LED and LCD restore pre-test status.

Mute operation

when the UPS is working in battery/battery self-check/fault mode, press the self-check/mute combination key(↵ + ◀) for more than 1 second, the screen area displays the buzzer icon to eliminate the alarm sound at the same time, and then press the self-check/mute combination key for more than 1 second to restore the alarm sound and the screen area buzzer icon disappears. When the UPS is in any mode, you can set MUTE ON or OFF through the background software to mute/unmute the UPS .

Mperations in alarm state

When the UPS has an alarm sound and the LED fault light flashes, it indicates that the UPS works in the alarm state. You can check the reason or contact the supplier according to the alarm information.

Mperation in fault mode

When the UPS buzzer beeps and the LED fault light is on, it means that the UPS is working in fault mode. Please contact the supplier or the maintenance person to provide the fault alarm related information and assists in the troubleshooting.

Parameter query operation

Normally, there are eight pages in the display page. Press the query key r◀within▶ 0.1 to 2 seconds to flip the display page and display information such as input, battery, output, load, software version, temperature, etc. If there is an alarm, a page of alarm information will be displayed. If the UPS fails, the fault code page will be displayed by default. The main page defaults to display fault or alarm information. When the UPS has no fault or alarm, the main page defaults to display output voltage and frequency information.

Press the right query key ▶ for more than 2 seconds, the LCD enters the polling mode display: the display page will be turned automatically every 2S, and long press ▶ again will exit the polling mode.

Function setting operation

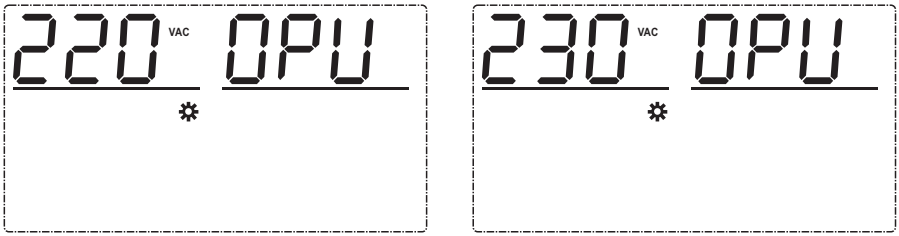
UPS function setting operation, setting operation in standby/bypass mode.

The specific operations for entering and exiting the function setting page and function setting are as follows:

- Press the function setting button ↵ or more than 2 seconds to enter the function setting page, press the query button or◀about▶0.1 to 2 seconds to select the function, and after turning the page to the required function setting page, the corresponding function word flashes.
- Press the confirm button ↵ for 0.1 to 2 seconds to enter the setting page of the selected function. At this time, the word of the selected function is lit, and the value of the word of the selected function flashes. Press the query key or◀about▶ 0.1 to 2 seconds to select the value of the required function parameter.
- After turning the page to the function parameter you need to select, press the confirm button ↵ for 0.1 to 2 seconds, the function setting is completed, and the function parameter value is long on and no longer flashes.

Press the function setting button ↵ for more than 2 seconds to exit the function setting page and return to the main display page (you can also do nothing, and automatically jump back to the main display page after waiting for up to 30 seconds).

Output Voltage (OPU)



Output voltage setting page

- Press the function setting key for more than 2 seconds to enter the function setting page, press the query key or◀for▶0.1 to 2 seconds to select the function, after turning the page to the output voltage OPU setting page, the word OPU flashes.
- Press the confirm button ↵ for 0.1 to 2 seconds to enter the output voltage OPU setting page. At this time, the word OPU is on and the value flashes to the right of the word OPU. Press the query key or◀for▶0.1 to 2 seconds to select different output voltage values. The available voltage values are 208V, 220V, 230V, 240V. By default, the output voltage is 220V, and the settings made are saved in real time.

After turning the page to the desired output voltage value, press confirm buttonfor 0.1 to 2 seconds, the output voltage OPU setting is completed, at this time the value on the right of OPU is on and no longer flashing.

Press the function setting key↵or more than 2 seconds to exit the function setting page and return to the main display page (it will automatically jump back to the main display page after waiting for up to 20 seconds).

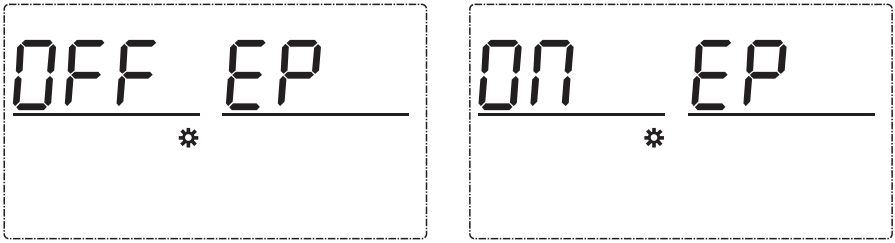
Caution:

When the output voltage is set to be 208V, the output needs to be derated to 90%.

Other function settings

EP Mode(EP)

If the EP mode is set to ON, you will enter the function setting page again, and there will be battery cells (PCS), emergency shutdown (EPO), charging current and other options for setting; if the EP mode is set to OFF, the function setting page has only some general function options .

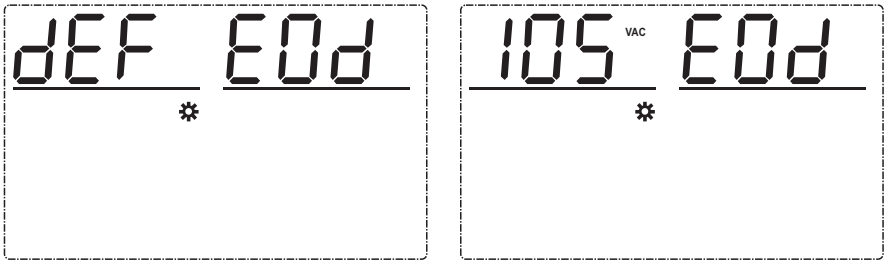


setting page in EP mode

Caution:

The EP mode is OFF by default, and the EP will return to OFF after powering on again.

Low battery shutdown point(EOD)

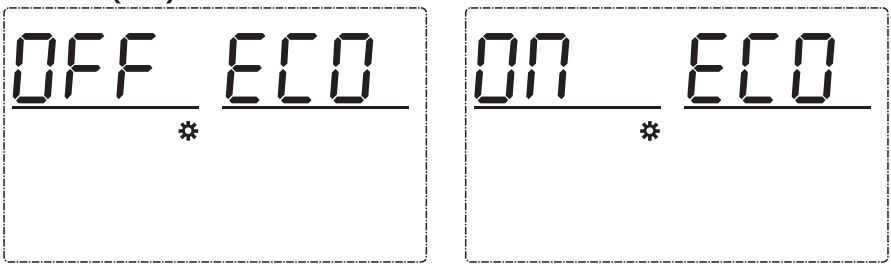


setting page in EOD

Remark:

The battery low-voltage shutdown points available selection are dEF, 9.8V, 9.9V, 10V, 10.2V, and 10.5V. By default, the battery low-voltage shutdown point is dEF (the battery low-voltage shutdown point varies with load, 10.5V@load<25%, 10.2V@25%<load<50%, 10V@load>50%).

ECO mode (ECO)



Economic Mode Settings Page

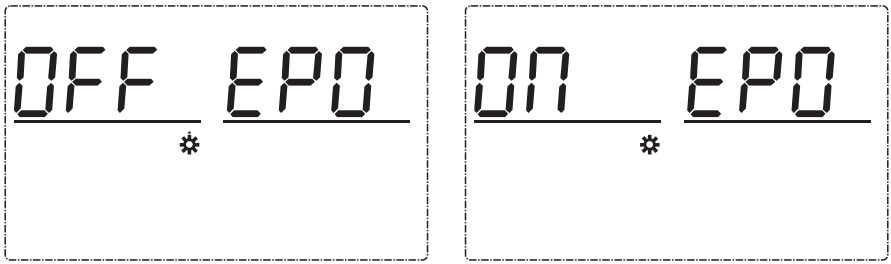
Description:

Economic mode is closed by default and can be turned on to improve system efficiency.

Note:

PF<1 of the machine, off by default, can not be set.

Emergency downtime (EPO)



Emergency Stop Settings page

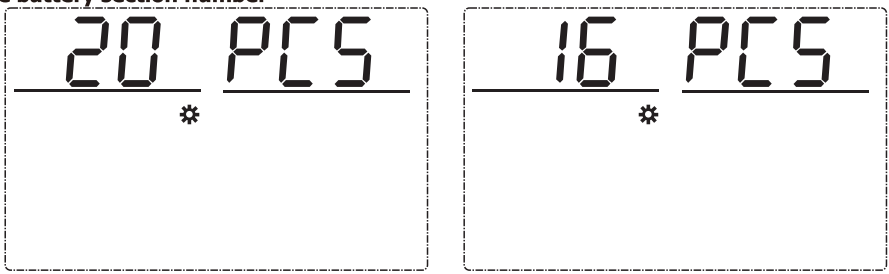
Description:

When EP is set to ON, the EPO option appears on the function setting page, and the emergency stop can be set. The emergency stop function is effective (OFF) when the EPO terminal is pulled out by default, and it can be changed to be effective (ON) when the EPO terminal is inserted.

Note:

Emergency shutdown output power down after EPO action.

The battery section number

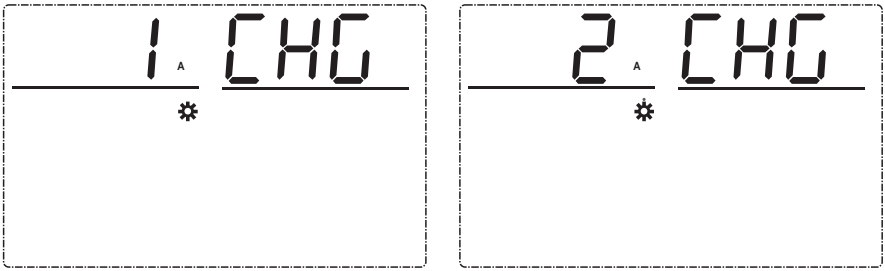


Battery number setting page

Remarks:

When EP is set to ON, the PCS option appears on the function setting page, enter the password page, and after entering the password (the general password is 135), the number of battery cells can be set. The battery cell number system defaults to 16 cells, and it can be set to other battery cell numbers 16/18/20.

Charging current(CHG)



Battery number setting page

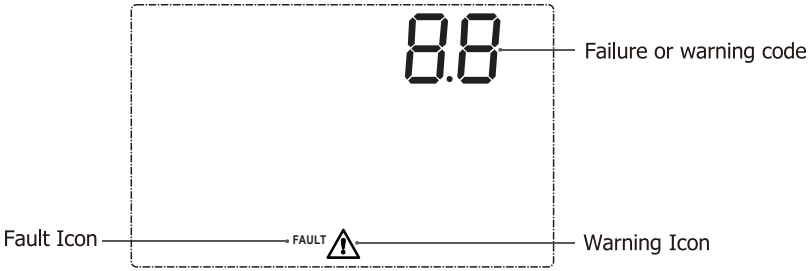
Remarks:

When EP is set to ON, the CHG option appears on the function setting page to set the charging current, 1-12A is optional, and the default is 1A;

Note:

When the UM1 command is sent to the standard machine, the charging current is 1A by default and cannot be modified.

Fault and Warning Instructions



Fault and alarm LCD display as shown in the picture above, the failure mode fault icon long bright, alarm status warning icon flashing, according to the fault information contact manufacturers to eliminate abnormal conditions.

Communication Port

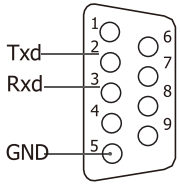
Intelligent slot

This series is equipped with on intelligent slot for Web power (optional accessory) to achieve remote management of the UPS through internet/intranet. Please contact your local distributor for further in formation.

RS232 interface

1) The following are the descriptions and pin asssignment of Rs232 DB-9 port: Baud rate: 2400bps
Data bit: 8 bit
Ending bit: 1 bit
Parity bit: None
Below is DB--9 pin assignment

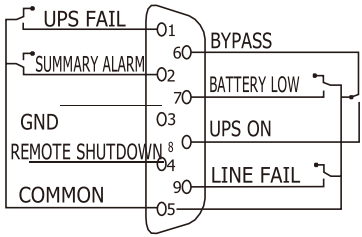
Pin number	Function description	I/0
3	Rx	input
2	Tx	output
5	Ground	GND



RS232 Inertface

Optional AS400 interface

This optional AS400 card provides dry contact
Following are the pin assignment and the descriptions of AS400 card:
PIN1: UPS failure (normally open, active close)
PIN2: summary alarm
PIN3: ground PIN4: Remote shutdown
PIN5: Common
PIN6: Bypass active(relay close)
PIN7: Battery low
PIN8: UPS On(relay close)
PIN9: Utility Power failure (normally open, active close)



AS400 Interface

Chapter 5 Notes for battery disposal

- This series UPS only requires minimal maintenance. The battery used for standard models are regulated sealed lead-acid maintenance free battery. These models require minimal repairs. The only requirement is to charge the UPS regularly in order to maximize the expected life. 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 last 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.

1) Before disposing of batteries, remove conductive jewelry such as necklace, wrist watches and rings.

2) 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.
3) Do not dispose of batteries or battery packs in a fire, they may explode.
4) Do not open or mutilate batteries, released electrolyte is highly poisonous harmful to the skin and eyes.
5) Do not short the positive and negative of the battery electrode, otherwise, it may result in electric shock or fire.
6) 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.
7) Even though the input breaker is disconnected, the components inside the UPS are still connected with the batteries, and there are potential hazardous voltage. 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.
8) Batteries contain hazardous voltage and current Battery maintenance such as the battery replacement must be carried out by qualified personnel who are knowledgeable about batteries. No other persons should handel the batteries.

Chapter 6 Trouble shooting

Trouble shooting

Fault Instructions

Fault: UPS is in trouble mode, LED red light is always on, LCD shows fault code.

Fault Code Table

Fault code		Related Action	Trigger condition	Recovery Condition	Fault alarm
1	Bus soft start fail	Switch to fault mode	Bus soft start,30s cannot reach 380V	Unrecoverable	Fault
2	Bus high	Switch to fault mode	Bus over 450V, lasting 5s	Unrecoverable	Fault
3	Bus low	Switch to fault mode	Bus above 200V, lasting 400ms	Unrecoverable	Fault
7	Over temperature	Switch to fault mode	PFC or INV temperature sensors above 85 °C	Unrecoverable	Fault
8	Battery Relay short	Switch to fault mode	Battery voltage over 310V, lasting 4s	Unrecoverable	Fault
9	Bus soft start relay fail	Switch to fault mode	The bus relay is still below 50V after 5s soft start	Unrecoverable	Fault
10	Bus short	Switch to fault mode	When working normally, the bus is below 180V in an instant	Unrecoverable	Fault
17	INV soft start fail	Switch to fault mode	The rated output voltage cannot be reached after 40s soft starting	Unrecoverable	Fault
18	INV over voltage	Switch to fault mode	The inverter voltage is above 276V,lasting 400ms	Unrecoverable	Fault
19	INV under voltage	Switch to fault mode	The inverter voltage is below 130V,lasting400ms	Unrecoverable	Fault

20	INV short	Switch to fault mode	Inverter voltage is less than 50V,current is greater than 20A, lasting 4s	Unrecoverable	Fault
26	Negative power	Switch to fault mode	Inverter power is less than -2400W for 20ms, or -800W for 120ms	Unrecoverable	Fault
33	INV relay fail	Switch to fault mode	When the inverter relay is closed, the difference between the inverter voltage and the output voltage exceeds 30V for 160ms	Unrecoverable	Fault
34	INV relay short	Switch to fault mode	When the bypass relay is closed, the inverter relay is disconnected and the inverter bridge is not working, the difference between the inverter voltage and the bypass voltage is less than 30V	Unrecoverable	Fault
35	Bypass relay fail	Switch to fault mode	When the bypass relay is closed, the difference between the bypass voltage and the output voltage exceeds 30V for 160ms	Unrecoverable	Fault
36	Bypass relay short	Switch to fault mode	When the bypass relay is off and the inverter relay is off, the difference between the output voltage and the bypass voltage is less than 30V for 160ms	Unrecoverable	Fault
37	Wrong wiring	Switch to fault mode	The bypass relay is off. When the inverter relay is off, the bypass voltage is less than 20V, but the output voltage is greater than 150V	Unrecoverable	Fault
39	Charger short	Switch to fault mode	The battery voltage is less than 50V and the charging current is greater than 4A	Unrecoverable	Fault
66	Overload fault	Switch to fault mode	Load exceeds specifications	Unrecoverable	Fault
67	Battery reverse	Switch to fault mode	The battery input is reversed;	Unrecoverable	Fault
73	No boot loader	Switch to fault mode	No bootloader	Unrecoverable	Fault

Alarm description

Alarm: The UPS does not enter the failure mode, the red LED flashes, and the LCD displays an alarm code.

Alarm code table

Fault code		Related Action	Trigger condition	Recovery Condition	Fault alarm
1	Battery open	Alert, battery not charging	Battery voltage is lower than 8V/section	Recoverable (10V/section)	Alert
2	Battery low	Alarm, battery test mode will return to mains mode	10.5~14V/section(2) Default 11.2V/section Custom settings: 10.5~14V/section(2)	Recoverable (operating point +0.2V/ section	Alert
8	Battery high	Recharge	When the battery is set to custom, the overvoltage point is constant voltagecharging voltage +0.4V/cell	When the battery is set to custom, the recovery point is constant voltage charging voltage -0.4V/ cell)	Alert
9	Charger fail	Alert	After 5 minutes of charging, the battery voltage is still less than 10V	Recoverable (battery voltage>10.5V)	Alert
10	Over temperature warning	Alert, battery not charging	PFC or INV temperature sensor is higher than 80℃	Recoverable (temperature sensor below 75℃)	Alert
12	Fan lock	Alert	No fan speed signal detected	Recoverable	Alert
13	Line fuse open	Alert	The difference between the mains voltage and the bypass voltage is greater than 100V	Recoverable	Alert
14	EEPROM fail	Alert	EEPROM read and write failed	Unrecoverable	Alert
21	Overload warning	Alert, battery not charging	Alert, battery not charging	Recoverable (load <97%)	Alert
23	EPO active	Alert, battery not charging		Recoverable	Alert
24	MBS active	Alert	Short circuit of CN4 terminal on control board	Recoverable	Alert

GUARANTEECERTIFICATE

Serial No.: _____

Customer`s Name				Contact Person	
Address				Telephone No.	
Product/Model:		Post Code		Fax No.	
Date of purchase			Expire Date		
Dealer Signature			Customer Signature		

GUARANTEECERTIFICATE

Serial No.: _____

Customer`s Name				Contact Person	
Address				Telephone No.	
Product/Model:		Post Code		Fax No.	
Date of purchase			Expire Date		
Dealer Signature			Customer Signature		