MEDALPOWER

1KVA,2KVA,3KVA

Online UPS

MP-OU1K#2B9T
MP-OU2K#4B9T
MP-OU3K#6B7T

www.medal-power.com

Table of Contents

1. Important Safety Warning

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

1-1. Transportation

G) Please transport the UPS system only in the original package to protect against shock and impact.

1-2. Preparation

G) Condensation may occur if the UPS system is moved directly from cold to warm environment. The UPS system must be absolutely dry before being installed. Please allow at least two hours for the UPS system to acclimate the environment.

@ Do not install the UPS system near water or in moist environments.

@ Do not install the UPS system where it would be exposed to direct sunlight or near heater.

© Do not block ventilation holes in the UPS housing.

1-3. Installation

G) Do not connect appliances or devices which would overload the UPS system (e.g. laser printers) to the UPS output sockets.

@ Place cables in such a way that no one can step on or trip over them.

@ Do not connect domestic appliances such as hair dryers to UPS output sockets.

© The UPS can be operated by any individuals with no previous experience.

® Connect the UPS system only to an earth shockproof outlet which must be easily accessible and close to the UPS system.

® Please use only VOE-tested, CE-marked mains cable (e.g. the mains cable of your computer) to connect the UPS system to the building wiring outlet (shockproof outlet).

(J) Please use only VOE-tested, CE-marked power cables to connect the loads to the UPS system.

® When installing the equipment, it should ensure that the sum of the leakage current of the UPS and the connected devices does not exceed 3.5mA.

1-4. Operation

G) Do not disconnect the mains cable on the UPS system or the building wiring outlet (shockproof socket outlet) during operations since this would cancel the protective earthing of the UPS system and of all connected loads.

@ The UPS system features its own, internal current source (batteries). The UPS output sockets or output terminals block may be electrically live even if the UPS system is not connected to the building wiring outlet.

@ In order to fully disconnect the UPS system, first press the OFF/Enter button to disconnect the mains.

© Prevent no fluids or other foreign objects from inside of the UPS system.

1-5. Maintenance, service and faults

G) The UPS system operates with hazardous voltages. Repairs may be carried out only by qualified maintenance personnel.

@ **Caution** - risk of electric shock. Even after the unit is disconnected from the mains (building wiring outlet), components inside the UPS system are still connected to the battery and electrically live and dangerous.

@ Before carrying out any kind of service and/or maintenance, disconnect the batteries and verify that no current is present and no hazardous voltage exists in the terminals of high capability capac -itor such as BUS-capacitors.

© Only persons are adequately familiar with batteries and with the required precautionary measures may replace batteries and supervise operations. Unauthorized persons must be kept well away from the batteries.

® **Caution** - risk of electric shock. The battery circuit is not isolated from the input voltage. Hazardous voltages may occur between the battery terminals and the ground. Before touching, please verify that no voltage is present!

® Batteries may cause electric shock and have a high short-circuit current. Please take the precautionary measures specified below and any other measures necessary when working with batteries:

- remove wristwatches, rings and other metal objects
- use only tools with insulated grips and handles.

(J) When changing batteries, install the same number and same type of batteries.

® Do not attempt to dispose of batteries by burning them. This could cause battery explosion.

® Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes. It may be toxic.

@)Please replace the fuse only with the same type and amperage in order to avoid fire hazards.

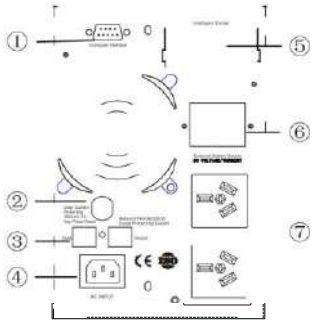
®Do not dismantle the UPS system.

1. Installation and configuration

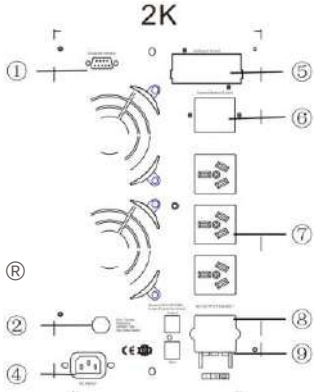
Note: Before installation, please check the contents of the package to confirm that there is no suspected damage or damage. Please collect the original packaging materials for future use.

2-1.Rear panel picture

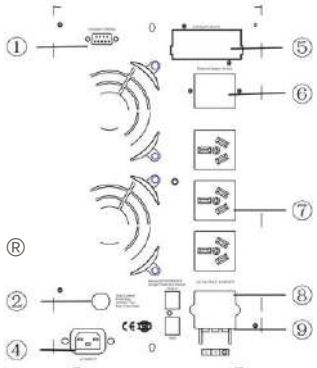
1K



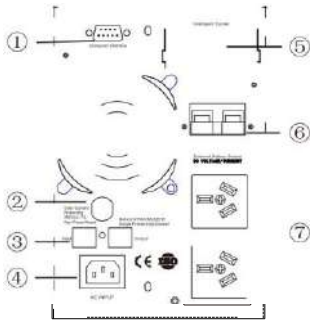
2K



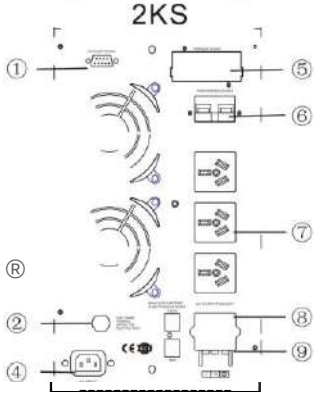
3K



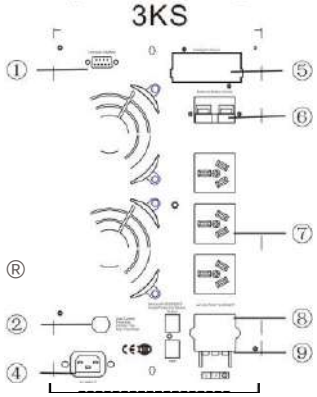
1KS



2KS

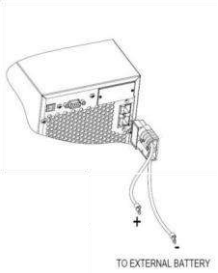


3KS



1. Computer Interface
2. Circuit breaker
3. Network/FAX/MODEM Surge protection socket
4. Input socket
5. Smart socket
6. External battery socket
7. Output socket
8. Terminal block cover
9. Terminal block

2-2. Set the UPS If the vertical machine is a long-extension model, please connect the external battery according to the figure below. When the horizontal machine is a long-extension machine, connect the external battery in the same way.



Step 1: The socket that the UPS system can connect to the UPS system must be a two-pole, three-wire grounded socket, and avoid using extension cords. It is recommended to use the power cord that comes with the accessory.

Step 2: UPS output connection

- For socket-type outputs, simply connect devices to the outlets.
- For terminal-type input or outputs, please follow below steps for the wiring configuration:

a) Remove the small cover of the terminal block

b) Suggest using AWG14 (i.e. 2.1mm^2) power cords.

c) Upon completion of the wiring configuration, please check whether the wires are securely affixed.

d) Put the small cover back to the rear panel.

Step 3: Communication connection

Communication ports:

RS-232 Smart slot

To allow for unattended UPS shutdown/start-up and status monitoring, connect the communication cable one end to the RS-232/USB port and the other to the communication port of your PC. With the monitoring software installed, you can schedule UPS shutdown/start-up and monitor UPS status through PC.
This UPS system is equipped with an intelligent slot to support the installation of SNMP card. Install SNMP and you will get more advanced communication functions and multiple monitoring options.

Step 4: Turn on the UPS

Press the ON/Mute button on the front panel for two seconds to power on the UPS.
Note: The battery charges fully during the first five hours of normal operation. Do not expect full battery run capability during this initial charge period.

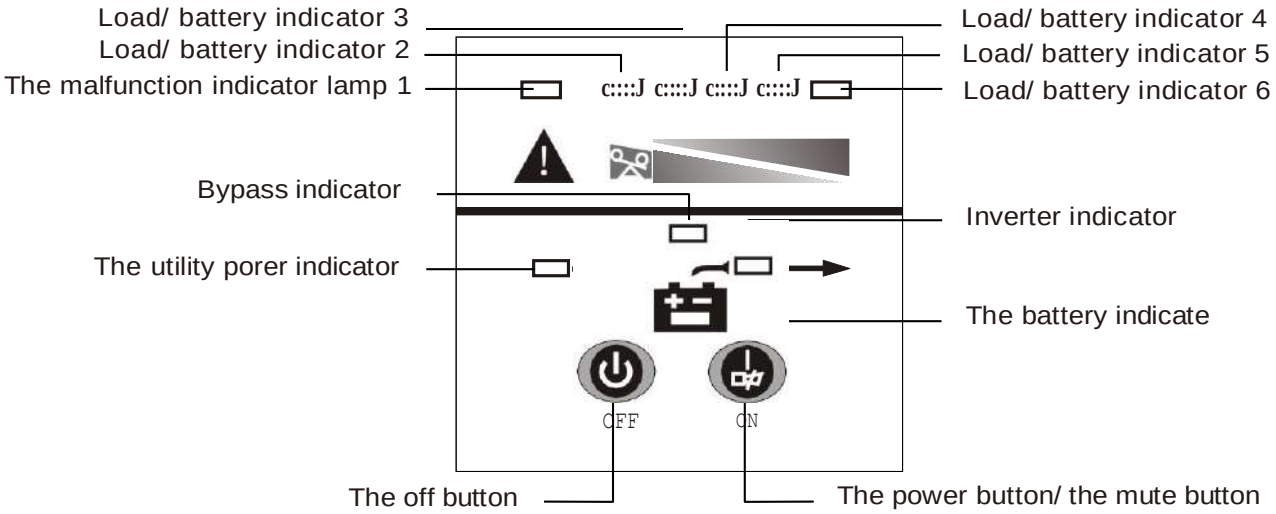
3. Operating instructions

3-1.Button operation

Button	Features
ON/Mute button	◥ Turn on the UPS: Press and hold ON/Mute button for at least 2 seconds to turn on the UPS. ◥ Mute the alarm: When the UPS is on battery mode, press and hold this button for at least 5 seconds to disable or enable the alarm system. But it's not applied to the situations when warnings or errors occur. ◥ Up: Press this button to display previous selection in UPS setting mode.
OFF/Enter button	◥ Turn off the UPS: Press and hold this button at least 2 seconds to turn off the UPS. UPS will be in standby mode under power normal or transfer to Bypass mode if the Bypass enable setting by pressing this button. ◥ Confirm selection: Press this button to confirm selection in UPS setting mode.
Function button	◥ Setting mode: When the UPS is in standby mode or bypass mode, press the function button for 10 seconds to enter the UPS setting mode. ◥ Next selection: In UPS setting mode, the function button is used to select the next option.

3-2.LED panel

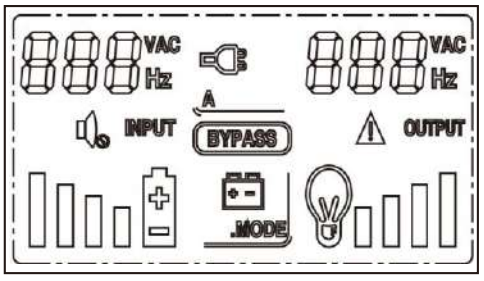
The meaning of each indicator is shown in the following figure (from top to bottom)



Some icons on the panel display

- **Power switch: Press and hold the** "" switch on the front panel for 1 second to start the machine; press and hold the" " switch on the front panel for 1 second to shut down.
- Bypass indicator light is on, indicating that the load power source is directly supplied by the mains through the bypass.
- When the inverter indicator is on, it means that the UPS output power is output to the load through the inverter.
- When the battery indicator light is on, it means that the UPS output power is output to the load through the battery through the inverter.
- **When the fault indicator is on,** it **indicates that the UPS has abnormal conditions.**
- Load indicator light (battery capacity indicator light): This light is a bar display, indicating the load size (battery capacity) percentage.

3-3.LCD panel



LCD Monitor	Features
888 VAC Hz	Display power input and output voltage and frequency
INPUT	Display power input
@ ITT	Display UPS output
Lh	Show UPS failure
DD□	Display battery capacity
□DD	Show load capacity
	Display UPS in battery mode
	Display UPS in mains mode
	Display UPS in silent mode

3-4.Buzzer warning sound

Battery mode	1 beep every 6 seconds
Low battery capacity	1 beep per second
Output overload	2 calls per second
UPS error	1 beep per second
Bypass mode	1 call every 120 seconds

3-5.LCD setting mode

Step 1: Press the Function button in the mains standby state, the buzzer will beep immediately, immediately, keep pressing the Function button for 10 seconds, the left side of the LCD will start to flash when entering the setting mode. The left is the setting item, and the right is the value of the current setting.

Step 2: OFF button is the confirmation button, used to switch the current setting items.

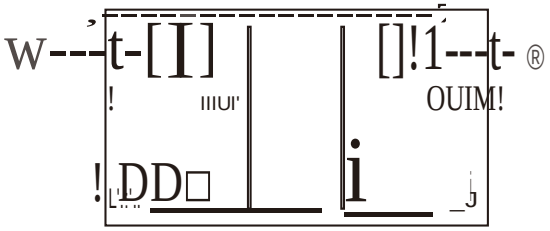
The ON button is the previous selection button.

SELECT button is the next selection button.

Step 3: If you want to save all the currently set parameters, adjust to item 21 and change the current value to YES. Then adjust to 23, change the current value to YES, you can save the settings and exit.

If you do not want to save the current setting parameters, 21 item should be No, adjust to 23 item, and change the current value to YES.

3-6.UPS settings

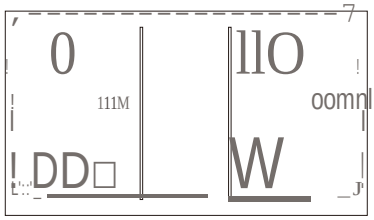


UPS setting interface

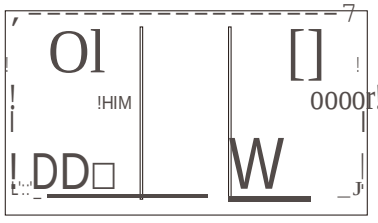
1: The value represents the option number that can be set

2: The parameter value that can be set by each option

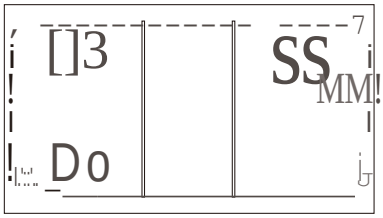
- 01: Output voltage setting

Panel displays	Settings
	01: Output voltage setting 200 indicates that the output voltage is 200Vac 208 indicates that the output voltage is 208Vac 220 indicates that the output voltage is 220Vac 230 indicates that the output voltage is 230Vac 240 indicates that the output voltage is 240Vac

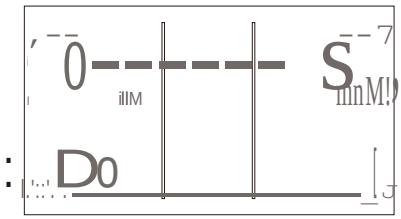
- 02:Output frequency setting

Panel displays	Settings
	02: Output frequency setting. Set the output frequency in battery mode 50: Indicates that the output frequency is 50Hz 60: Indicates that the output frequency is 60Hz

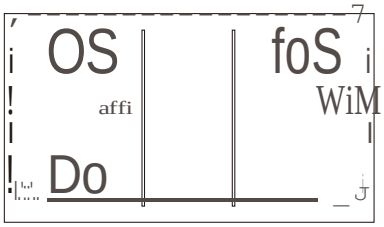
- 03: 50Hz high retreat frequency setting

Panel displays	Settings
	03: When the output is set to 50Hz, the mains high retreat frequency is set in the range of 55Hz-60Hz

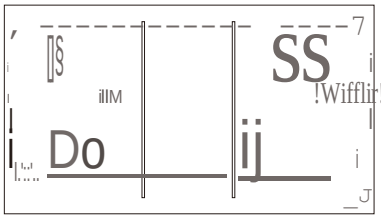
- 04: 50Hz low retreat frequency setting

Panel displays	Settings
	04: When the output is set to 50Hz, the mains low retreat frequency is set in the range of 40Hz-45Hz.

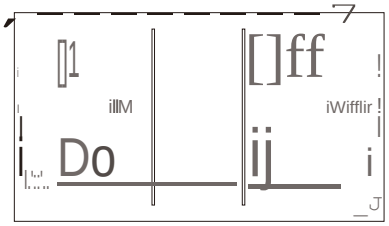
- 05: 60Hz high retreat frequency setting

Panel displays	Settings
	05: When the output is set to 60Hz, the mains high retreat frequency is set in the range of 65Hz-70Hz.

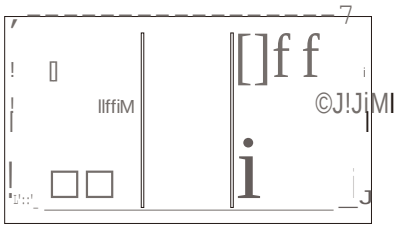
- 06: 60Hz low retreat frequency setting

Panel displays	Settings
	06: When the output is set to 60Hz, the mains low retreat frequency is set in the range of 50Hz-55Hz.

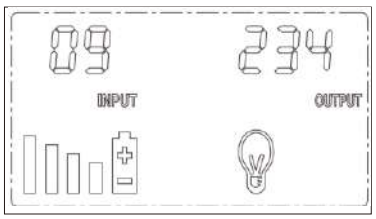
- 07: Constant frequency mode setting

Panel displays	Settings
	07: Constant frequency mode setting On: Enable constant frequency mode Off: Disable constant frequency mode

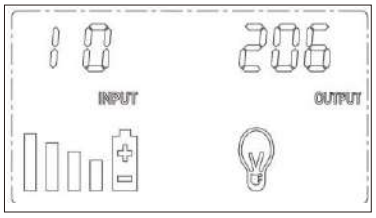
- 08: ECO mode setting

Panel displays	Settings
	08: ECO mode setting; set when the voltage reaches the required range of ECO mode, the output is in bypass mode. On: Enable ECO mode Off: Disable ECO mode

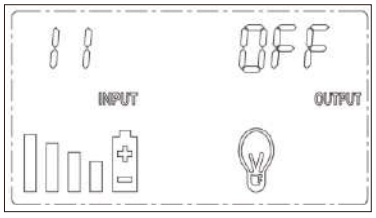
- 09: ECO mode low retreat voltage setting

Panel displays	Settings
	09: ECO high back voltage setting; set in ECO mode when the input voltage exceeds the set voltage range, the machine turns to inverter mode output. Adjustable within the voltage range 227V-244V

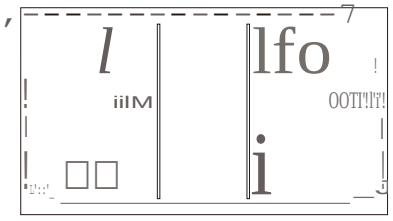
- 10: ECO mode low retreat voltage setting

Panel displays	Settings
	10: ECO mode high back voltage setting; set in ECO mode when the input voltage is lower than the set voltage range the machine will switch to inverter mode output. Adjustable voltage range 196V-213V

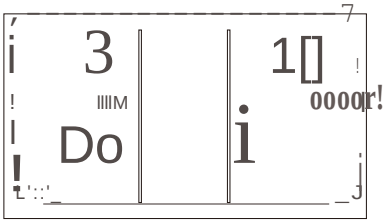
- 11: Bypass mode setting

Panel displays	Settings
	11: Bypass mode setting; enable or disable bypass mode On: Enable bypass mode Off: Disable bypass mode

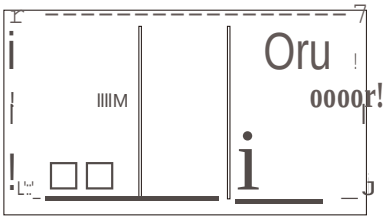
- 12: Bypass mode high retreat voltage setting

Panel displays	Settings
	12: The maximum input voltage setting range of the bypass mode is 230-264V

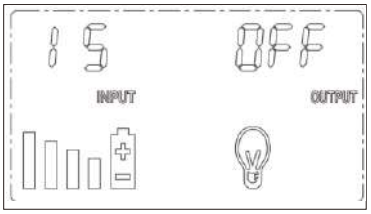
- 13: Minimum voltage setting in bypass mode

Panel displays	Settings
	13: The minimum input voltage setting range of the bypass mode is 170-220V

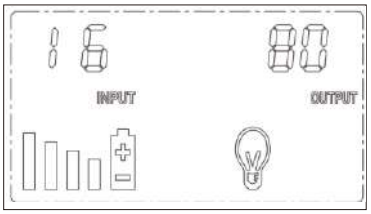
- 14:Fandetection setting

Panel displays	Settings
	14: Enable or disable fan detection setting On: Enable fan detection Off: Disable fan detection

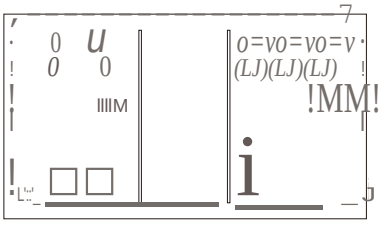
- 15:PFC mode setting

Panel displays	Settings
	15: Enable or disable PFC mode setting On: Enable PFC mode Off: Disable PFC mode

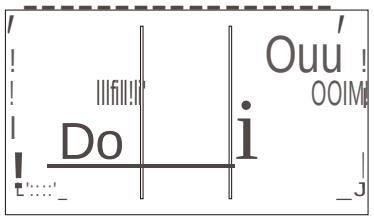
- 16: Output efficiency setting

Panel displays	Settings
	16: Output efficiency setting: 70: Indicates that the machine efficiency is 70% 80: Indicates that the machine efficiency is 80%

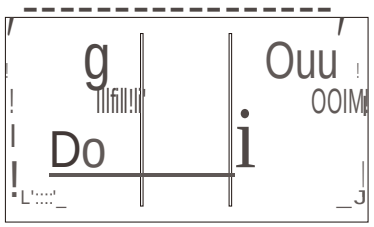
- 17: Battery mode discharge time setting

Panel displays	Settings
	17: Set the battery discharge time in battery mode, 0-999 is the discharge time. In minutes, 0 represents the maximum value, which means there is no discharge time limit

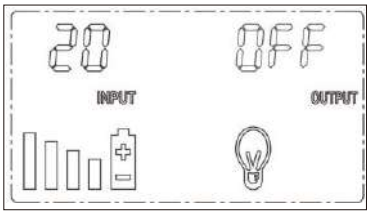
- 18: Buzz on DC mode

Panel displays	Settings
	18: Buzz on DC mode ON turnontheb1uzz OFF turn off the buzz

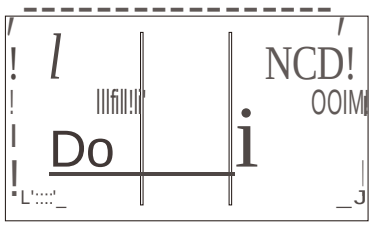
- 19: Buzz on bypass mode

Panel displays	Settings
	19: Buzz on bypass mode ON turn on the buzz OFF turn off the buzz

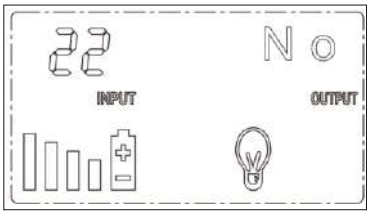
- 20: Output connected to isolation transformer

Panel displays	Settings
	20: Output connected to isolation transformer OFF turn off the function ON turn on the function

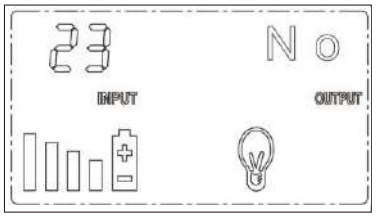
- 21: Save current settings

Panel displays	Settings
	21: Save current settings No: Do not save the current setting parameters Yes: Save the current setting parameters

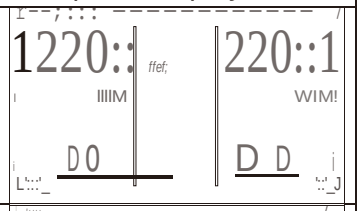
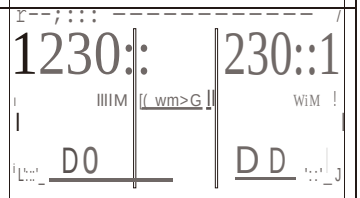
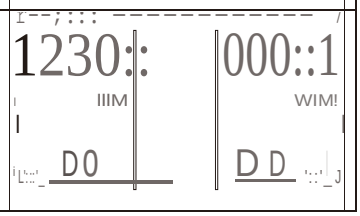
- 22: Restore factory mode settings

Panel displays	Settings
	22: Restore factory mode settings: No: Remain current set value Yes: Restore factory mode

- 23: Exit setting mode

Panel displays	Settings
	23: Exit setting mode No: Do not exit setting mode Yes: Exit setting mode

3-7.LCD operating mode description

Mode of operation	Explanation	LCD panel display content
Online mode	When the input voltage is turned on within the allowable range, the UPS works in the city power mode, which can provide a stable pure sinusoidal AC power output and charge the battery at the same time.	
Battery desert	When the input voltage is abnormal or there is a power outage, the UPS switches to battery mode, and at the same time the buzzer sounds once every 6 seconds.	
Bypass mode	When the UPS works in online mode and is overloaded if the input voltage is within the allowable range, the UPS will automatically enter the bypass mode. When the UPS is set to the standby bypass mode, the UPS automatically switches to the bypass mode when it is plugged into the mains, without turning on the power. When the UPS works in bypass mode, the buzzer will sound once every 120 seconds.	
Standby mode	When the UPS is plugged into the mains and is not turned on or set to standby bypass mode, the UPS works in standby mode, only charging the battery, and the UPS has no output.	

3-8.Fault shutdown display

cause of issue	LED display	LCD display
Inverter voltage is too high to shut down	1# 5#	FAL 104
BUS voltage is too high to shut down	1# 4#	FAL 101
BUS self-test failed shutdown	1# 4#	FAL 102
Overload shutdown	1# 2#	FAL 103
Over temperature shutdown	1# 6#	FAL 106
Inverter failed shutdown	1# 5#	FAL 105
Inverter synchronization signal is lost	1# 5#	FAL 115

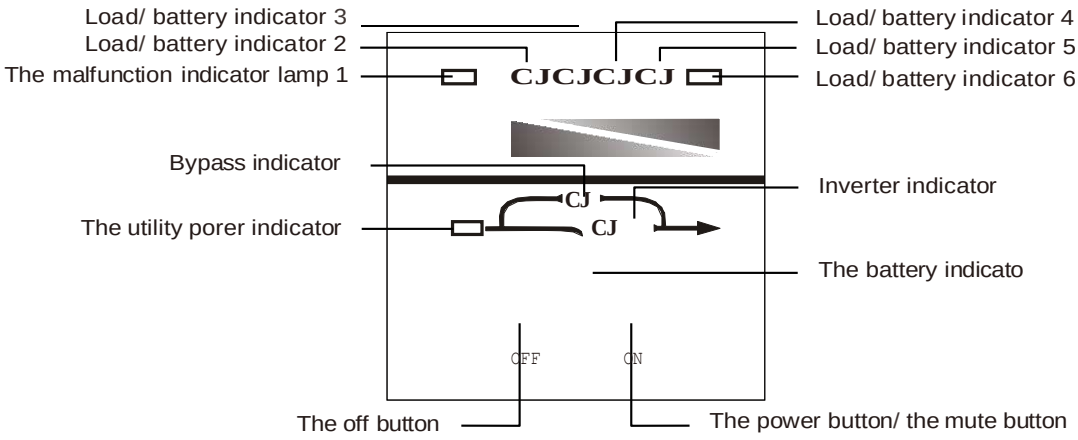
3-9.Alarm display

Cause of alarm	LED display	LCD display
overload		ALA 043
Wind test failed	1# 2# 6#	ALA 126
Inverter voltage is too high		ALA 012
Battery voltage is too low		ALA 028
Battery voltage is too high	1# 3#	ALA 027
EEPROM error		ALA 099
Temperature is too high		**ALA** 041
Charging board failure		ALA 090
Discharge time is about to arrive		ALA 033
Power-on battery self-test failed		**ALA** 029
Repeated overload		ALA 044
Input zero fire wire is reversed	9# flashes	

4.Troubleshooting

- The following information prompts some phenomena that the user will encounter when there is a problem with this series of UPS. Use this information to determine whether the fault is caused by external factors and how to correct it.

* The fault indicator light is on, indicating that the UPS has detected a fault; The buzzer sounds, prompting the UPS to pay attention;
* Several load/ battery indicators will light up to help the operator make a diagnosis. The panel indicator serial number is shown in the figure:



Some icons on the panel display

Abnormal situation processing table

malfunction	Reasons	Solutions
1 # fault indicator and 6 # The light is on, the buzzer sounds long	UPS shut down due to internal overheating	Ensure that the UPS is not overloaded, the vents are not blocked, and the indoor temperature is not too high. Wait 10 minutes for the UPS to cool down, and then restart. If it fails, please contact your supplier
1 # fault indicator and 5 # The light is on, the buzzer sounds long	UPS output short circuit or UPS cause Internal fault shutdown	Turn off the UPS and remove all loads, confirm that the load has no fault or internal short circuit, and restart. If it fails, please contact your supplier
1# fault indicator and 4# Lights on, UPS beeps	UPS shut down due to internal failure	Please contact the supplier for repair
1# fault indicator and 3# Lights on, UPS beeps	UPS overcharge protection action	The UPS charger is malfunction, please contact the supplier for repair
Mains indicator flashes	Mains voltage or frequency exceeds	At this time, the UPS is working in battery mode, save the data and close the application to ensure that the utility power is within the input voltage or frequency range allowed by the UPS
	The mains zero and live wires are connected reversely, and UPS beeps every two minutes	Reconnect the mains neutral line to connect correctly
1# fault indicator and 2# Lights on, UPS beeps	Battery mode UPS overload or load equipment failure	Check the load and remove non-critical equipment and recalculate the load power and reduce the number of loads connected to the UPS Check whether the load equipment is faulty
Battery light flashes	The battery voltage is too low or the battery is not connected	Check the UPS battery and connect the battery. If the battery is damaged, replace the battery quickly
1 # The fault light is on.the battery light is flashing,and the buzzer calls once per second	UPS charging failure	Please contact the supplier for repair
Mains is normal, UPS is not connected to mains	UPS input circuit breaker is open	Manually reset the circuit breaker
Short battery discharge time	Insufficient battery charge	Keep the UPS connected to the utility power for more than three hours, and let the battery recharge
	UPS overload	Check the load and remove non-critical equipment
	Battery aging capacity decreases	To replace the battery, please contact the dealer to obtain the battery and its components
After the power button is pressed, the UPS cannot start	The time to press the power button is too short.	Press the power button for more than one second to start the UPS
	The UPS is not connected to the battery or the battery voltage is low and starts with load	Connect the UPS battery, if the battery voltage is low, turn off and then turn it on again
	UPS internal failure	Please contact the supplier for repair

When you contact the maintenance personnel, please provide the following information

* UPS model (MODEL NO.),machine batch number (SERIAL NO.)
* Date the problem occurred
* Complete problem description (including panel indicator display, sound, power condition, load capacity, if long-acting machine also needs to provide battery equipment)

5. Storage and Maintenance

Operation

The UPS system contains no user-serviceable parts. If the battery service life (3~5 years at 25°C ambient temperature) has been exceeded, the batteries must be replaced. In this case, please contact your dealer.

Be sure to deliver the spent battery to a recycling facility or ship it to your dealer in the replacement battery packing material.

Storage

Before storing, charge the UPS 5 hours. Store the UPS covered and upright in a cool, dry location. During storage, recharge the battery in accordance with the following table:

Storage Temperature	Recharge Frequency	Charging Duration
-25°C - 40°C	Every 3 months	1-2 hours
40°c - 45°c	Every 2 months	1-2 hours

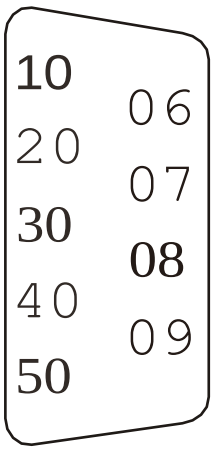
Appendix 1: Communication Interface Port

Computer Interface

The series UPS provides a standard DB9 outlet.

Every feet of the DB9 is shown as the following:

PIN	MEANING
1	EMPTY
2	SEND
3	RECEIVE
4	EMPTY
5	GND
6	EMPTY
7	EMPTY
8	EMPTY
9	WAKE



♦ computer interface

6 .Electrical specifications

Model		1K(S)	2K(S)	3K(S)
Capacity		1000VA/800W	2000VA/1600W	3000VA/2400W
Input				
Voltage range	Low Line Transfer	160VAC / 140VAC / 120VAC / 110VAC±5%(Ambient Temp<35°C) (based on load percentage 100%-80% / 80%-70% / 70-60% / 60%-0)		
	Low Line Comeback	175VAC / 155VAC / 135VAC / 125VAC±5%(Ambient Temp<35°C) (based on load percentage 100%-80% / 80%-70% / 70-60% / 60%-0)		
	High Line Transfer	300VAC±5%		
	High Line Comeback	290VAC±5%		
Frequency Range		40Hz-70Hz		
Phase		Single phase with ground		
Power specifications		0.99@220-230VAC(input voltage)		
Output				
Output electricity		200/208/220/230/240VAC		
Mains voltage range		± 1%(Batt.Mode)		
Frequency range (synchronization range)		47~53Hzor57~63Hz		
Frequency range(battery mode)		50Hz±0.25Hz or 60Hz±0.3Hz		
Overload		Ambient Temp<35°C: 105%-110%: UPS shuts down after 10 minutes at battery mode or transfer to bypass when the utility is nomal 110%-130%: UPS shuts down after 1 minute at battery mode or transfer to bypass when the utility is nomal >130%: UPS shuts down after 3 seconds at battery mode or transfer to bypass when the utility is nomal		
Peak current ratio		3:1		
Harmonic distortion		:;;33/o THD(linear load); :;;6%THD(non-linear load)		
Transfer time	AC Mode to Batt. Mode	Zero		
	Inverter to Bypass	4ms(Typical)		
Waveform (Batt.Mode)		Pure Sinewave		
Effectiveness				
Mains mode		88%	89%	90%
Battery mode		83%	87%	88%
Battery				
Standard Model	Battery model	12V/7AH	12V/7AH	12V/7AH
	Number of batteries	2	4	6
	Recharging current	1A		
	Charging voltage	27.3VDC±1%	54.7VDC±1%	82.0VDC±1%
Long-run Model	Battery model	12V/AH Depends on the buyer		
	Number of batteries	3	6	8
	Recharging current	SA	SA	SA
	Charging voltage	41.0VDC±1%	82.1VDC±1%	109.4VDC±1%
Exterior				
Standard Model Long-run Model	Dimensions D *W* H(mm)	352X145X213	450X192X335	
Environmental conditions				
Operating humidity		20-90%RH@0-40°C (non-condensing)		
Noise		Less than 50dBA@1 Meter		
Management				
Interlligent RS-232		Supports Windows® 2000/2003/XP/Vista/2008/7/8, Linux, Unix and MAC		
Optional SNMP		Power management from SNMP manager and web browser		

* The output power is derated to 80% in frequency conversion mode; when the output voltage is set to 200VAC or 208VAC, the output power will be derated to 80%

** Product specifications are subject to change without further notic

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