MAGNIZON
GREEN ENERGY

USER MANUAL

MU6000RM3U/MU10KRM3U

True on-line double conversion technology

Rack & tower convertible UPS

Safety notes

Operating safety

1. Read safety notes carefully and thoroughly before operation ensure correctly use and save this manual properly.
2. Pay attention to alarm table on the UPS and operating according to it.
3. Avoid installing the UPS in location under direct sunlight, running water, or excessive humidity.
4. Do not install the device in the environment where close to heating facilities such as space heaters or furnaces.
5. Place the UPS in a room with good ventilation and safe distance. Refer to manual to perform installation.
6. Cleaning with dry stuff, do not use liquid or spray detergent.
7. In the event of fire alarm occurring in the vicinity, please use dry power fire extinguishers. The use of liquid fire extinguishing agents may causes electric shock.

Electric safety

1. Verify that cabling and battery cable polarity are correct and earth connection well before switching on the UPS.
2. Before moving or re-wiring the UPS, please disconnect the mains source and make sure the UPS is completely shut down. Or else, the output terminal may carry live voltage, thus presenting electric shock risk.
3. Please use the attached devices and attachments specified by the company.

Battery safety

1. High ambient temperature shortens the battery lifetimes, so the battery should be replaced periodically to ensure normal UPS operation and for adequate autonomy time.
2. Service of battery should be performed or supervised by personnel knowledgeable of battery.
3. In replacement of battery, please use the same number and type of battery.
4. A battery can present a risk of electrical shock and high short circuit current. The following precaution should be observed when working on batteries:
   A. Remove watches, rings, or other metal object from the hands; B. Use tools with insulated handles;
   C. Wear rubber gloves and boots; D. Do not lay tools or metal parts on top of batteries;
   E. Disconnect the load before operate the terminal of battery.
5. Do not open or mutilate the battery. It may cause an electrolyte leakage that is toxic and harmful to the skin and eyes. If electrolyte comes into contact with the skin, wash the affected area with plenty of clean water immediately and go to the hospital for a check.
6. Do not make the positive and negative terminals of the battery short circuit; otherwise it may cause electric shock or fire.

Maintenance

1. The operating environment and storage method are two main factors affecting the lifetime and reliability of the UPS. Hence, it is advisable not use the device in the following environments:
   A. Where the temperature and relative humidity are outside the specifications (temperature: 0℃～40℃, relative humidity: 20%～90%);
   B. Where vibrations or shocks are existed;
   C. Dust, corrosive agents or salts or inflammable gas are present.
2. If the UPS will remain idle for a long period, it must be stored in a dry environment. The storage temperature should range between－25℃～＋55℃(without battery). Make the ambient temperature over 0℃ and keep a period of time before power on the UPS.

Content

1. Introduction

Description of Commonly Used Symbols

Some or all of the following symbols may be used in this manual and may appear in your application process. Therefore, all users should read the form carefully and thoroughly.

Symbol & Description	
Symbol	**Description**
	Caution, danger
	Danger electric shock
	Alternating current (AC)
	Direct current (DC)
	Protective ground
	Recycle
	Do not dispose with ordinary trash

2. Product description

The Magnizon MU series UPS is an uninterruptible power supply incorporating double-converter technology. Supporting rack/tower structure, high power density saving space. It provides perfect protection specifically for strict load.

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

Designed with the proven on-line, double conversion architecture, this series of UPS offers the greatest degree of availability in power protection and provides continuous, high-quality AC power to connect strict load, especially for the basic equipments in some areas as: finance, communications, government, traffic, manufacture, education and so on.

2.1 System type and configuration

According to the different configurations of the parts of the battery in the machine, MU series UPS can be divided into two categories: standard type and long backup time type; According to different power points, it divided into: 6KVA and 10KVA.

Table 2.1-1 Magnizon UPS types and configurations

Type	UPS Model	Battery Pack Model	Remarks
6KVA	MU6000RM3U	BP192V9RM3U	with 1A internal charger, 3U battery pack built with 16 batteries
10KVA	MU10KRM3U	BP192V9RM3U	with 1A internal charger, 3U battery pack built with 16 batteries

2.2 The appearance of UPS

2.2.1 Appearance of the whole machine

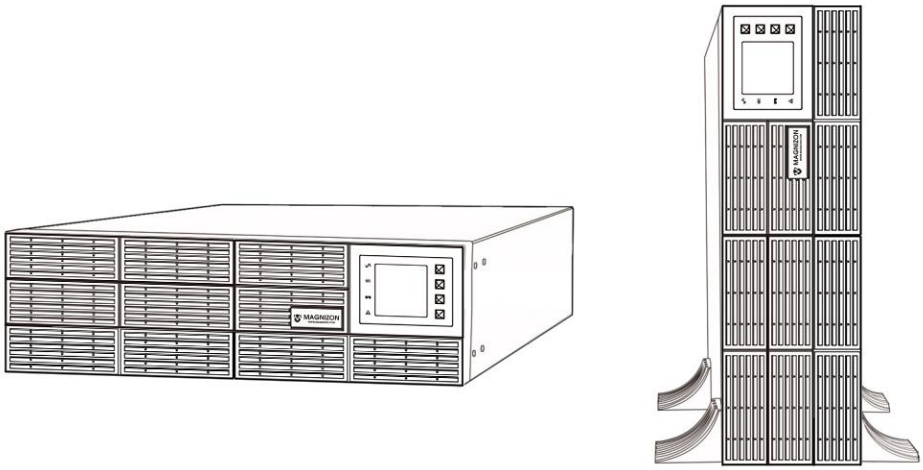


Figure 2.2-1 The machine appearance drawing

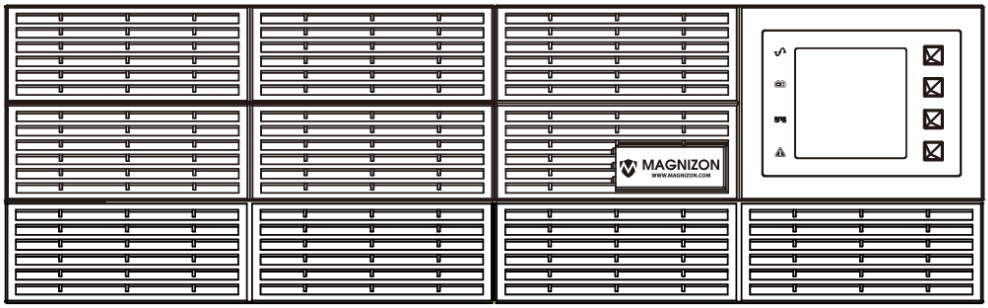


Figure 2.2-2 The front panel of MU6000/10KRM3U

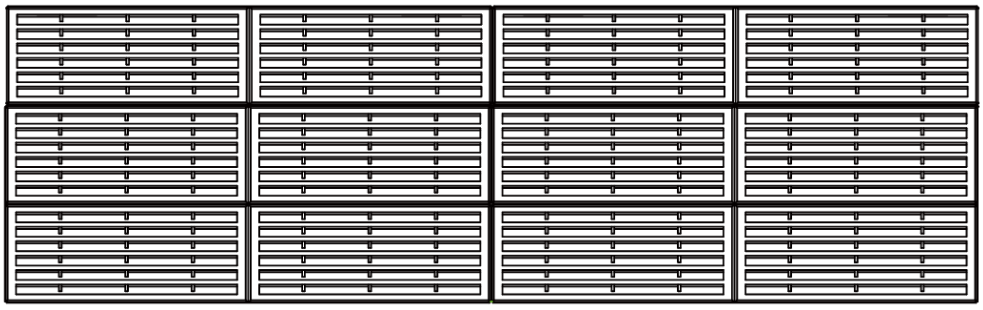


Figure 2.2-3 The front panel of 3U battery pack

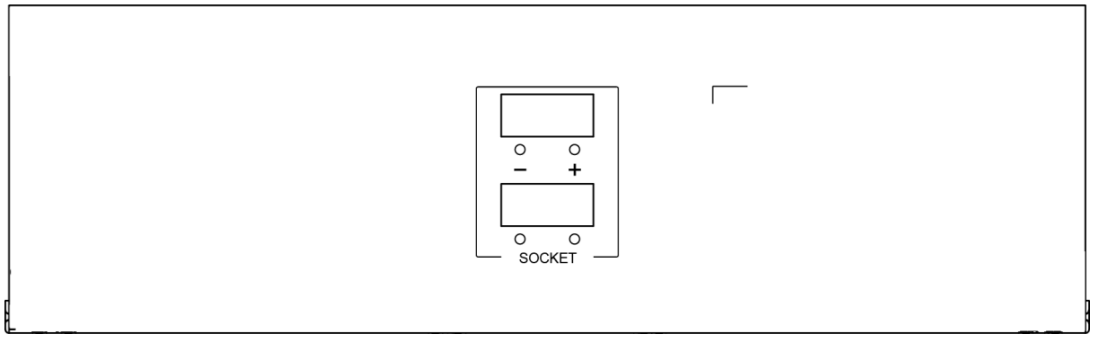


Figure 2.2-4 The rear panel of 3U battery pack

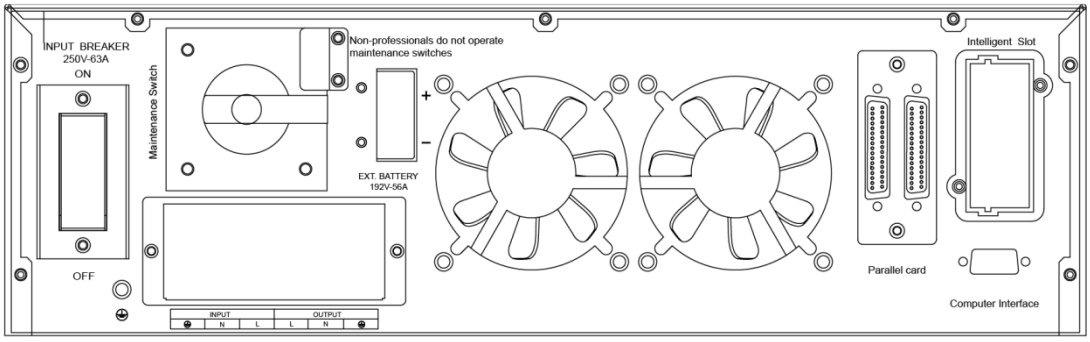


Figure 2.2-5 The rear panel of MU6000RM3U

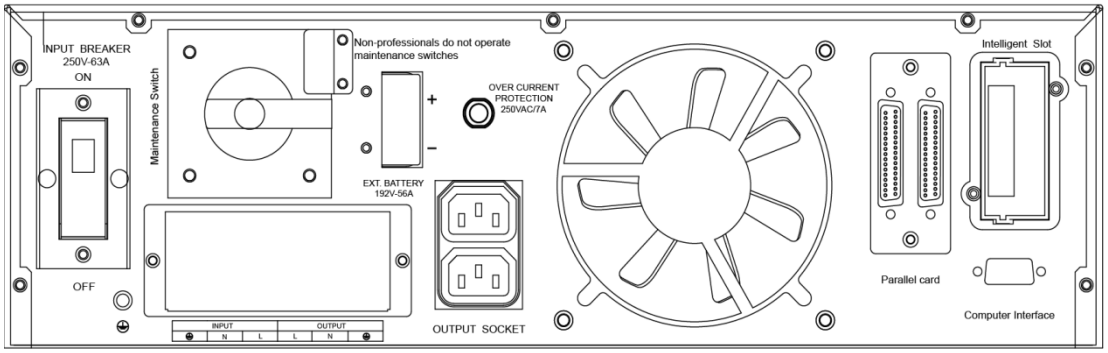


Figure 2.2-6 The rear panel of MU10KRM3U

3. Installation

3.1 Unpacking inspection

3.1.1 Open the UPS packaging and take it out, visually examine the unit for transit damage.

3.1.2 Check against the accessory list that the accessories of the UPS are present (table 3.1-1).

3.1.3 If the UPS arrives damaged, or there is any missing accessory, please contact the distributor immediately.

Table 3.1-1 UPS shipping accessories list

model	Accessory	quantity	Unit
standard	user manual	1	PCS
	QC certificate	1	PCS
	Product after sales service guarantee	1	PCS
	CD	1	PCS

3.2 Installation Notes

3.2.1 When locating the UPS, make sure there is no hazardous objects around the UPS and that the installation environment meets the specifications.

3.2.2 The UPS should not be titled. The air inlet port at the front panel and the outlet port on the rear panel and two side panels should not be blocked so as to ensure good ventilation.

3.2.3 In case if the UPS is unpacked, installed and used at very low temperatures, condensations of water drops may appear. It is necessary to wait until the UPS fully dried inside out before proceeding to installation and use. Otherwise, they may be a risk of electric shock.

3.2.4 Place the UPS near the utility power source outlet which supplies power to the UPS. In any emergency, switch off the main input socket, cut off the battery voltage input. All power sockets must be connected with ground protection.

⚠ Dangerous: For safety, please cut off the mains power switch before installation, the battery breaker also need to be cut off it .

⚠ Note: Installation and wiring must be performed in accordance with the local electric code and the following instructions by professional people.

3.3 Wiring Table

⚠Note：The diameter of connection wire depend on rated power of UPS.

Model		MU6000RM3U	MU10KRM3U
INPUT	L	10AWG（6mm2）	8AWG（10mm2）
	N	10AWG（6mm2）	8AWG（10mm2）
	G	10AWG（6mm2）	8AWG（10mm2）
BAT	+	10AWG（6mm2）	8AWG（10mm2）
	-	10AWG（6mm2）	8AWG（10mm2）
	G	10AWG（6mm2）	8AWG（10mm2）

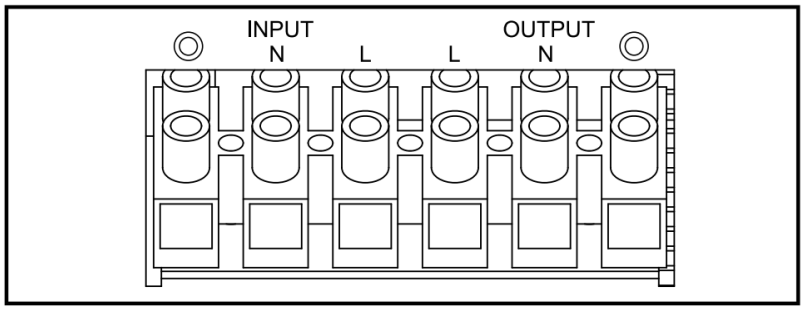
OUTPUT	L	10AWG（6mm2）	8AWG（10mm2）
	N	10AWG（6mm2）	8AWG（10mm2）
	G	10AWG（6mm2）	8AWG（10mm2）

Figure 3.3-1 Connection method of input for MU6000/10KRM3U

3.4 UPS Connection

⚠ Dangerous: The rated current of mains breaker installed by user must bigger than input current of UPS, or the mains breaker may be damaged.

1. Select proper wire according to wiring table.
2. Open the terminal block cover on the back panel of UPS.
3. Connect the input and output wires to the corresponding input and output terminals.



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

3.5 Operation Procedure of External Battery Pack for UPS

The nominal DC voltage of external battery pack is 192VDC. Each battery pack consists of 16 pieces of 12V maintenance free batteries in series. To achieve longer backup time, it is possible to connect multi-battery packs, but the principle of “same voltage, same type” should be strictly followed.

The procedure of battery connection and installation is very important; the procedure of installing battery bank should be complied with strictly. Otherwise you may encounter the hazardous of electric shock. Please comply with below procedure.

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

16 pieces batteries 192VDC

Model	MU6000RM3U	MU10KRM3U

BAT Voltage	192VDC	192VDC
BAT Current	34A. max	56A. max

2. Set the battery pack breaker in “OFF” position and connect the 16 pieces of batteries in series, select proper battery wire to connect batteries and UPS.

⚠Dangerous: You must connect the external battery cable to the battery first, if you connect the cable to the UPS first, you may encounter the hazardous of electric shock.

3. To complete the connection by connecting the external battery cable with corresponding terminal on terminal block of the UPS. Do not attempt to connect any load to the UPS now. You should connect the input power wire to the right position first. And then set the breaker of the battery pack in the “ON” position. After that, set the mains input protective breaker in the “ON” position. The UPS begins to charge the battery packs at the time.

⚠Note: The battery protective earth ground of UPS is case ground on the right of terminal block of UPS, The symbol is ⏚.

3.6 Connect to Computer interface

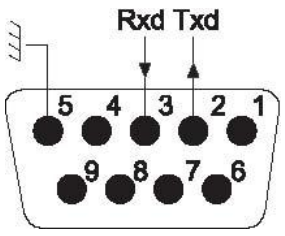
Computer interface: The type of signals, serial command (RS232), is provided by the UPS to communicate with a host computer, User can use WinPower software to monitor the UPS through the port.

1. Connect the RS232 communication cable to serial command port of computer.
2. Connect the RS232 communication cable to serial command port of UPS.

The pin position of computer interface of UPS show as below：

Baud rate: 2400 bps
Data length: 8 bits
End bit: 1 bit
Check bit: none

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



3.7 Parallel Card (Selectable Accessory)

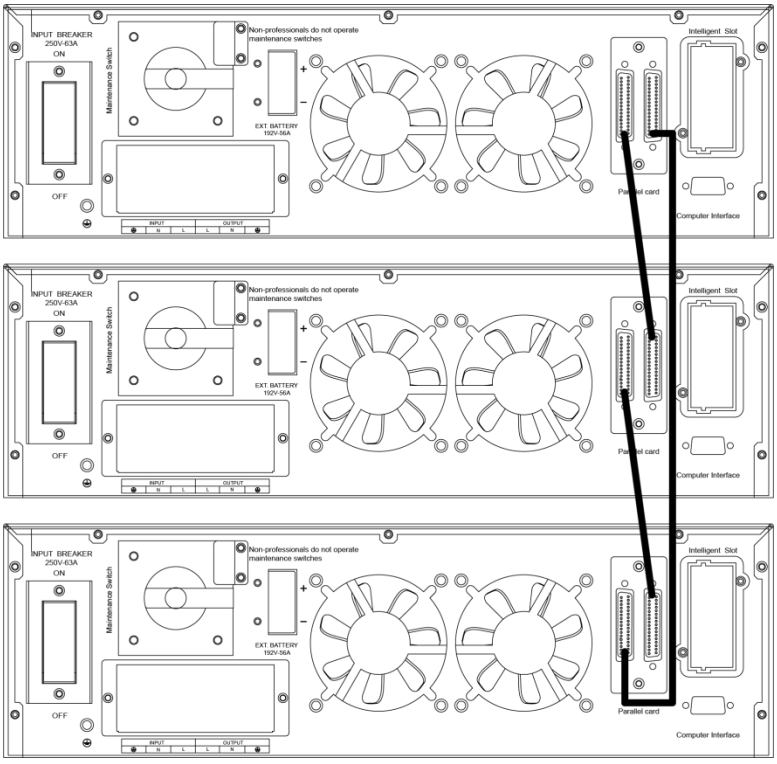
3.7.1 Brief introduction of the redundancy

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

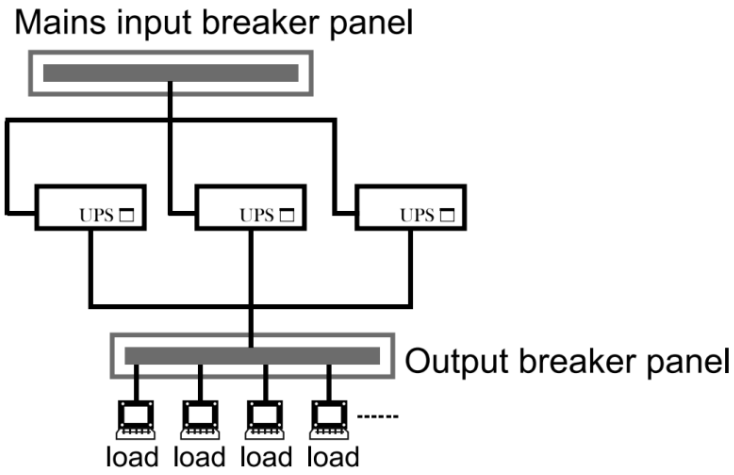
3.7.2 Parallel installation

Parallel function is a selectable function, user can buy parallel function component (consist of parallel card and parallel cable) then install by professional service person, the maximum parallel quantity is 3 pieces, N UPS should be supplied by N battery packs respectively,

1) Take down the parallel cover, connect the parallel cable: Parallel card is the communication interface between UPSs in parallel, connect parallel cable between UPSs in parallel through parallel card.



2) Connect the output wires of each UPS to an output breaker panel, then connect from output breaker panel to load.



⚠Note: The requirement of the output wiring is as following:
When the distance between the UPSs in parallel and the breaker panel is less than 20 meters, the difference between the wires of input & output of the UPSs is required to be less than 20%;
When the distance between the UPSs in parallel and the breaker panel is greater than 20 meters, the difference between the wires of input & output of the UPSs is required to be less than 10%.

3) UPS in parallel wiring diagram shows as below, the wiring of every UPS should comply with wiring requirement of UPS in standalone.
4) Every UPS should be supplied by alone battery pack respectively.

3.7.3 Merit representation of UPS in parallel

It can improve the reliability of power system through redundant structure. Two UPS in same capacity afford same load, when one UPS is fault another UPS can afford the load alone. It is so called 1/2 redundant, fault UPS can be repaired respectively, every UPS of professional rev has maintenance bypass switch built-in.

3.7.4 Operation introduction

1) To perform the general operation, follow the stand-alone operating requirement;
2) Startup: Startup in line mode: Just press ON/OFF button of one UPS long after turn on mains input protective breaker of all UPS, The units transfer to INV mode simultaneously as they start up sequentially in utility power mode; Startup in battery mode: press ON/OFF key of every UPS shortly, the power supply of UPS will be available, then press ON/OFF button of one UPS long, all other UPS will startup simultaneously, all UPSs operate in battery mode.

3) Shutdown: Press ON/OFF button of one UPS longer than 4S (2 beep), the units shut down sequentially in INV mode. When the last one completes the shutdown action, each unit will shut down the inverter simultaneously and transfer to bypass mode; Press ON/OFF button of one UPS longer than 1S and less than 4S, then the UPS will shut down alone.

⚠Note: Pressing ON/OFF button long represent longer than 1S, pressing ON/OFF key shortly represent less than 0.5S.

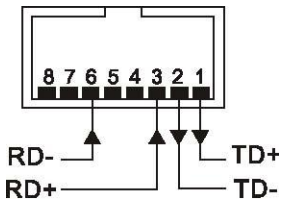
3.8 Installation of Intelligent Card

Intelligent card is located at intelligent slot of back panel, It doesn't need shutdown UPS when instal intelligent card.

1. Remove the cover board of intelligent slot.
2. Insert intelligent card into intelligent slot.
3. Install intelligent card with screw.

- **SNMP Card (Selectable Accessory)**

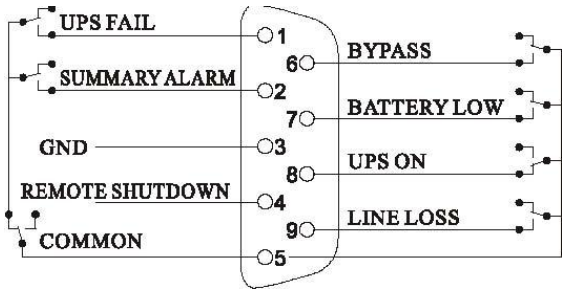
Intelligent card is located at intelligent slot of back panel of UPS provide data allowed by SNMP.



- **AS400 Card (Selectable Accessory)**

Installing AS400 card in intelligent slot can achieve monitor function through AS400 system, pin introduction of AS400 card used as power supply monitor management show as below:

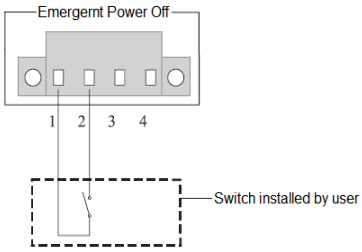
PIN	meaning
PIN1	ON: UPS fail
PIN2	ON: Summary alarm
PIN3	Ground
PIN4	Remote Shutdown
PIN5	Common
PIN6	On: Bypass
PIN7	On: Battery Low
PIN8	On: UPS On; Off: Bypass
PIN9	On: Line Loss



3.9 EPO (Selectable Accessory)

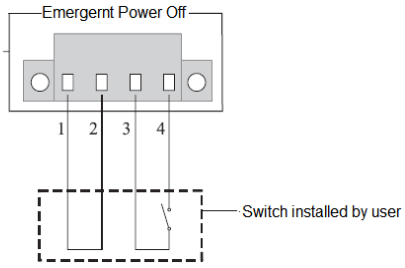
EPO(Emergent Power Off), EPO appears in green terminal located at back panel of UPS, user can shut down UPS through EPO in emergency. There are two connection methods showing as below:

①、



UPS power off urgently when pin1 and pin2 are on

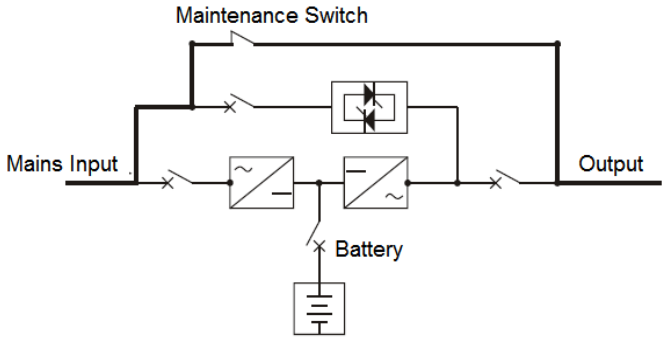
②、

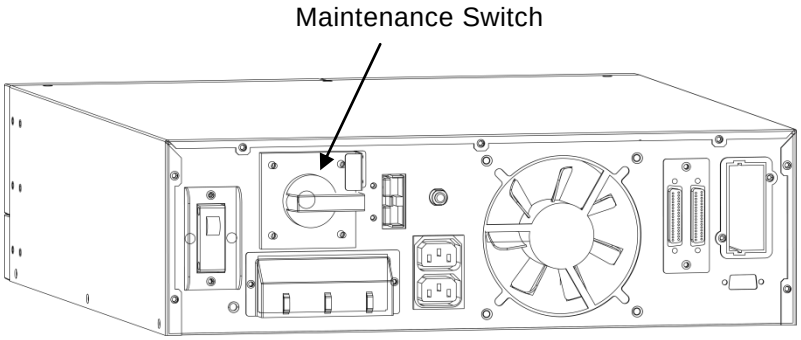


Short pin1 and pin2, UPS power off urgently when pin3 and pin4 are off

3.10 Maintenance Switch

User can maintain UPS through maintaining switch, the diagram shows as below, most components of UPS is electriferous in line mode, battery mode and bypass mode, user can separate mains from UPS through maintenance switch.





3.10.1 Operation introduction

1. UPS adjust to maintenance bypass mode

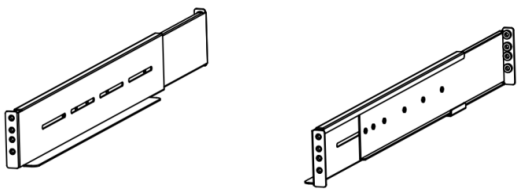
Make the UPS in bypass mode and confirm that there is no abnormality in the bypass output (in the AC mode or battery mode, do not directly operate the maintenance switch); remove the maintenance switch fixing piece, adjust the maintenance switch to the Bypass file, disconnect the mains input is open, confirming that the load terminal is normal, that is, the UPS is in maintenance bypass mode.

2. Maintenance bypass mode returns to normal mode

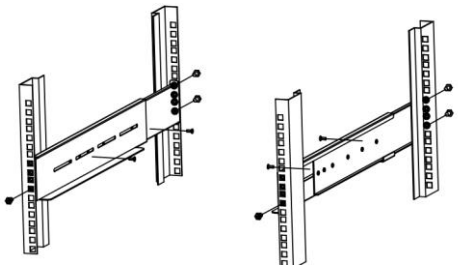
Close the mains input switch, confirm that the UPS is in Bypass mode, adjust the maintenance switch to the UPS file, use the fixed piece to lock the maintenance switch, and confirm that the output is not abnormal; when the UPS is turned on, the UPS returns to the normal mode.

3.11 Rail kits installation (Selectable Accessory)

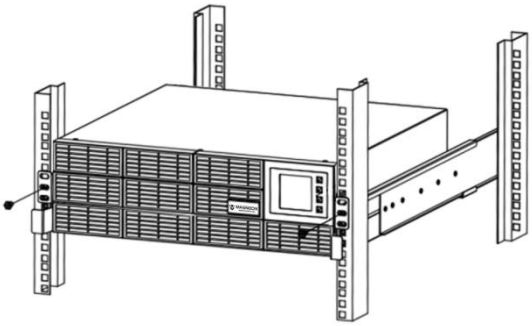
1. Take out the rail kits and pay attention to distinguishing the left and right rail kits, as shown below:



2. Fasten the rail kits to the cabinet, as shown below:

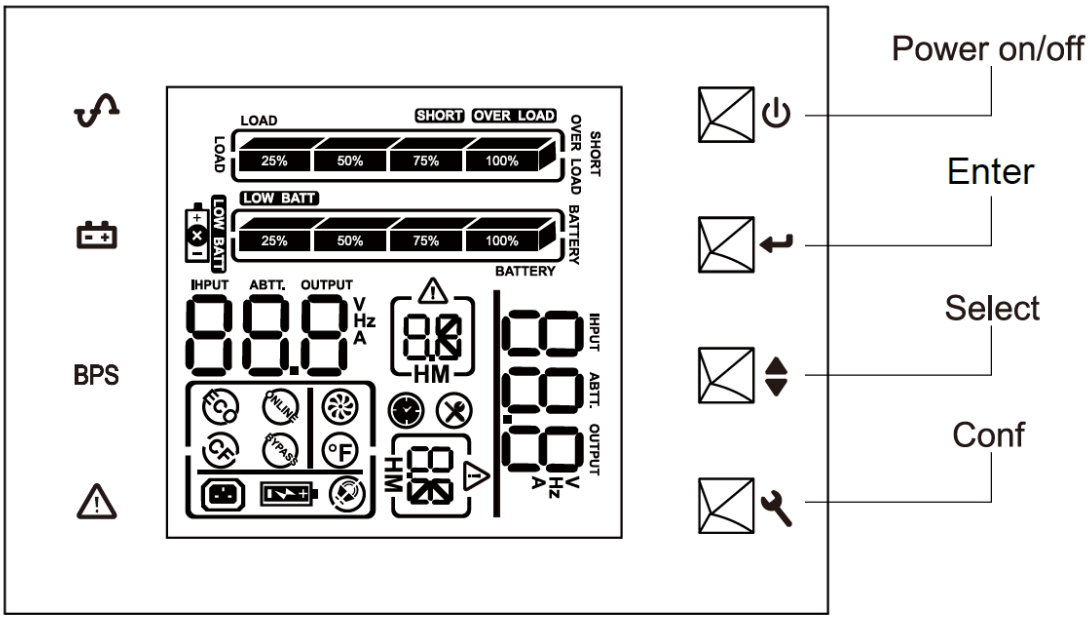


3. Unit mounting fixing, as shown below:



4. Operation

4.1 Introduction of Display Panel



Note: The function button of "Enter" only eliminate battery mode alarm, The elimination of other UPS fault alarms is invalid.

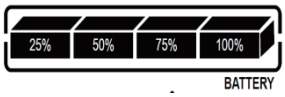
4.2 Button Description

Button Name	Function
Power on/off	Press it and hold over 2s, UPS will start. And press it and hold over 2s again, UPS will shut down.
Enter	Press it 1s, UPS will work in mute mode. And press it and hold over 2s, UPS will test batteries automatically at AC mode；when UPS parameter adjust mode, press down and hold over 1S, to confirm and save parameters.
Select	Press it 1s ,View UPS parameters(Input voltage/ frequency, output voltage/ frequency, battery voltage); When UPS is in Settings mode, Press it 1s to select the parameters.
Conf	Press it and hold over 2s, UPS will be UPS setting mode, hold them over 1S, user can enter UPS parameter adjust mode(output voltage/ frequency, bypass, display angle).

4.3 LED display Description

LED display	Meaning
/Green	Line light, UPS AC input normal or it in AC mode
/Yellow	Battery light, UPS in battery mode
BPS/ Yellow	Bypass light, UPS in bypass mode
/Red	Fault light，UPS at fault or on alarm

4.4 Panel Display & Meaning

Display Sign	Meaning
	Display load capacity, display 25%-50%-75%-100% load capacity.
	Means output short circuit
	Means Overload. When overload, it will alarm and flash every second.
	Display battery capacity, display 25%-50%-75%-100% battery capacity.
	Means battery voltage is low, when alarm it will flash every second.
	Display Input voltage/ frequency, output voltage/ frequency, battery voltage.

	When UPS failure this signal will display, and together with the corresponding code.
	Display when UPS in ECO mode
	Display when UPS in CF mode
	Display when UPS in battery mode or AC mode
	Display when UPS in bypass mode
	Display when UPS reports fan alarm, and together with the corresponding code.
	Display when UPS over temperature Fault, and together with the corresponding code.
	Display when UPS Connect the mains
	Means battery is being charged.
	Battery mode mute display, when mute mode, will show “/”.
	Display when UPS in Settings mode, adjust display angle 90° or 180° .
	Display when UPS in Settings mode.

4.5 Operation mode

The operation mode of UPS can be divided into AC mode, Battery mode ,Bypass mode and Standby Mode

4.5.1 AC mode

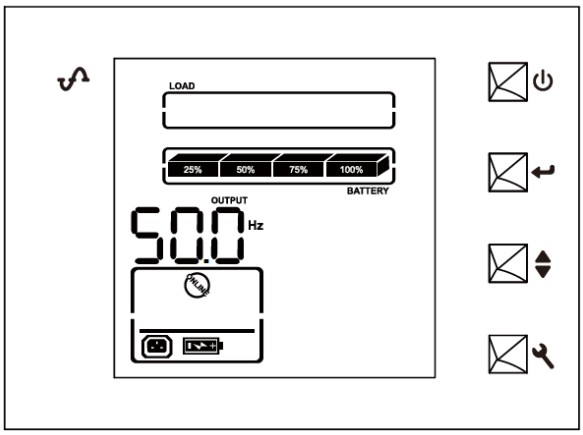


Figure 4.2-1 AC Mode

1. If the load is over 100%, the buzzer will beeps half a second, it reminds that the UPS take too

much load, please reduce some unnecessary load, and make sure that the load below 100%.

2. If the battery indicator light twinkles, means the battery voltage is too low, or the UPS disconnect with Battery, at this time, please check the battery´ connecting, and press the "↵" key to self diagnosis, Confirmed that the connection is good or not, it may be because of battery failure or aging, please refer to the Fault treatment table.

Note: *Connection to the power generator should be made according to the following steps:*

- *Activate the power generator. Wait until the operation is stable and connect generator output to the UPS input (please make sure UPS do not have load), and then according to start-up program, connected the loads to UPS one by one.*
- *It recommended that the capacity of the AC generator chosen should double that of the UPS*

4.5.2 Battery mode

1. In battery mode, The buzzer beeps once every 4 seconds, at this time press the "enter" key over 2 seconds, UPS will performs the function of silencing, buzzer no longer alarm, and then press the "enter" key over 2 seconds, the alarm recovery.

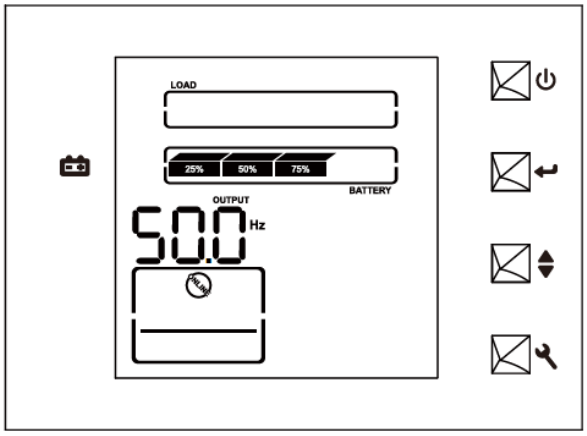


Figure 4.2-2 Battery Mode

2. When the battery capacity reduced, the number of battery capacity indicator will decrease. When the battery voltage drops to the warning potential (it can keep more than 1 minutes backup time) buzzer beeps one time every second. Prompt user battery capacity is insufficient, should remove some loads in time.

4.5.3 Bypass mode

Through the "▲▼" and "🔧" key, to make UPS work in bypass model. The LCD screen display as below, the screen display "BYPASS" , The load icon on the right side display will light up according to the load. UPS beeps every two minutes.

1. If the “BPS” indicator light twinkle, means that the voltage or frequency of AC input have
2.
3. exceeded the normal Range or the AC input zero lines reversed or not grounded.
2. When UPS works in bypass mode, if AC power cut off, it can not conversion to battery mode, the power for load is supplied by the AC input.

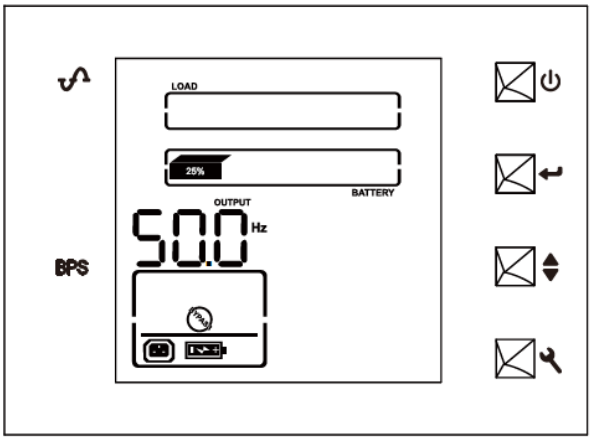


Figure 4.2-3 Bypass Mode

4.6 Operating instructions

4.6.1 The operation of boot and shutdown UPS

Note: The battery is fully charged before delivery. However, storage and Transportation will inevitably cause some charge loss. Therefore, it is Advisable to charge the battery for 10 hours before using it, so as to Ensure adequate battery autonomy.

1. The operation of boot UPS

The operation of boot UPS can divide into: boot with AC power and boot without AC power

1.1 Boot with AC power

Connect with AC input and battery to the UPS, press the " ⏻ " button over 1 second until the buzzer beeps, seconds later, the screen display output voltage or frequency, the UPS is in line mode. If the AC input is abnormal, the UPS will conversion to battery mode.

1.2 Boot without AC power

Only connect with battery, press the " ⏻ " button over 1 second until the buzzer beeps, seconds later the screen display output voltage or frequency, it will light up according to the battery´ capacity. UPS work in battery mode.

2. Shutdown operation

Shutdown operation can divide d into: in AC mode, in battery mode.

2.1 Shutdown in line mode

Long press the " ⏻ " button over 1 second, UPS will shut down. If the bypass opened, the LCD screen display "BYPASS", UPS work in bypass mode, UPS have output. If you want to cut off output, can cut off the input circuit breaker, after a few seconds, the LCD screen UPS will extinguish.

2.2 Shutdown in battery mode

Long press the " ⏻ " button over 1 second, UPS will shut down. The UPS will begin

self-inspect, UPS have no output, a few seconds later the LCD screen will extinguish.

4.6.2 Battery self check operation

When UPS is working, users can manually perform battery self-inspect to check the battery status, thereAre two methods to initiate the battery self-inspect:

1. Through the Confirm button

   In line mode, long press the " ⏻ " button over 2 seconds until the buzzer beeps , the battery self-inspect default duration for 10 seconds (user can set through the win-power). In the event of a battery fault during battery self-inspect, the UPS will conversion to line mode automatically.

2. Through the background monitoring software

   Users can also initiate battery self-inspect through the background monitoring software (Win-power).

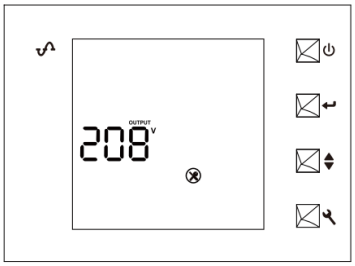
4.6.3 LCD display and alarm sound

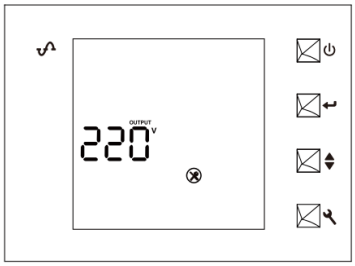
No	Operative mode		LCD screen display	Alarm
1	AC mode	Load < =5%	Battery capacity light in order, load indicator light	None
2		5% < Load < =25%	Battery capacity light in order, load indicator light	None
3		25% < Load < =50%	Battery capacity light in order, load indicator light	None
4		50% < Load < =75%	Battery capacity light in order, load indicator light	None
5		75% < Load <	Battery capacity light in order, load indicator light	None
7		Load > 100%	Battery capacity light in order, load indicator light 5 lattice twinkle,	1 beep/ 1 second
8	Battery mode	Load < =5%时	Battery capacity lights show the battery capacity, load indicator light lamp display none	1 beep/ 4 second
9		5% < Load < =25%	Battery capacity lights show the battery capacity, load indicator light 1 lattice bright	1 beep/ 4 second
10		25% < Load < =50%	Battery capacity lights show the battery capacity, load indicator light 2 lattice bright	1 beep/ 4 second
11		50% < Load < =75%	Battery capacity lights show the battery capacity, load indicator light 3 lattice bright	1 beep/ 4 second
12		75% < Load < =100%	Battery capacity lights show the battery capacity, load indicator light 4 lattice bright	1 beep/ 4 second
14		Load > 100%	Battery capacity light in order, load indicator light 4 lattice twinkle	2 beep/ 1 second
15		Battery low voltage	Battery capacity lights twinkle	2 beep/ 1
16	Bypass mode		Battery capacity light in order, Load capacity lamp displays the current load, the screen	1 beep/ 2 minutes
17	Bypass mode zero lines reverse connection		Battery capacity load capacity marquees, lights display the current load, the screen shows "	1 beep/ 2 minutes
18	Overload conversion to bypass in line mode		Battery capacity light in order, load indicator light 4 lattice twinkle, the screen shows " Fault code	Ring continually

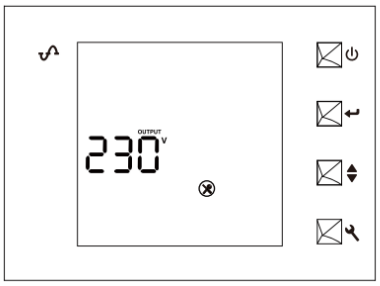
19	AC input abnormal	Battery capacity light in order, load indicator light display the current load	None
20	Overload in battery mode	Battery indicator light display the battery capacity, load indicator light 4 lattice twinkle, the	2 beep/ 1 second
21	Overload in battery mode, output cut off	Battery indicator light display the battery capacity, load indicator light 5 lattice twinkle, the	Continually buzzing
22	Over temperature	The screen display "Fault code 23"	Ring continually
23	Output short circuit	The screen display " Fault code 10",	Ring continually
24	Overcharge	The screen display "Fault 59,"	Ring continually

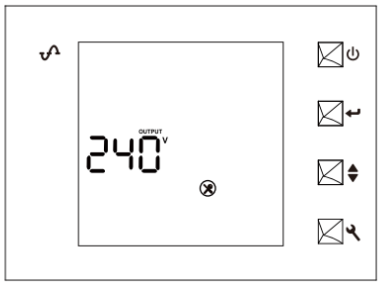
4.6.4 Parameter setting

1. In bypass mode, long press "🔧" button 2 seconds into the setup interface, gently press " ▲▼ " button to set output voltage (200/208/200/208/240)

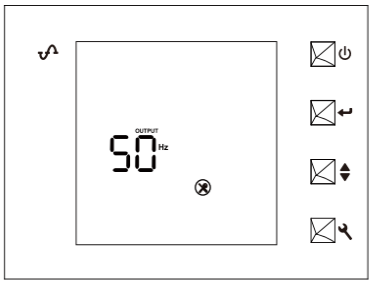


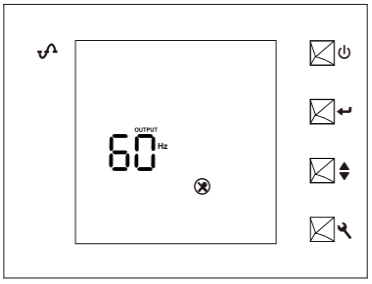


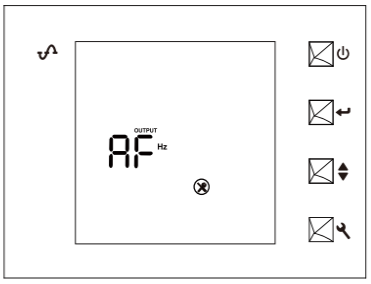




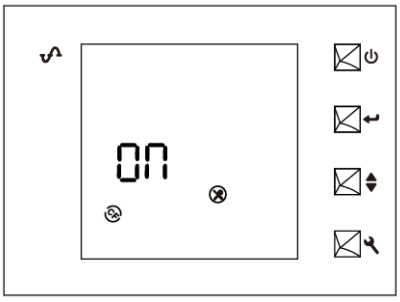
2. Then gently press "🔧" button to enter the next setup interface, gently press " ▲▼" button set output frequency (50/60/AF);

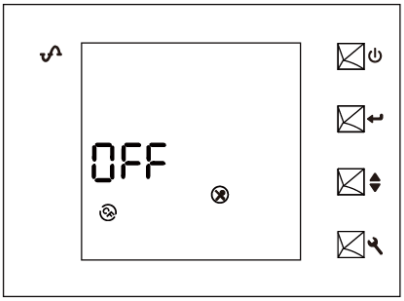




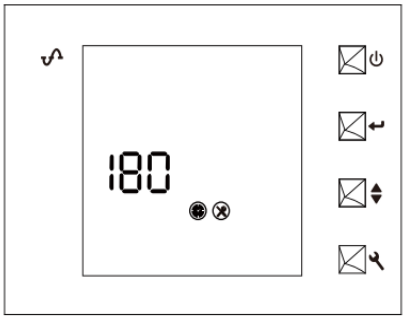


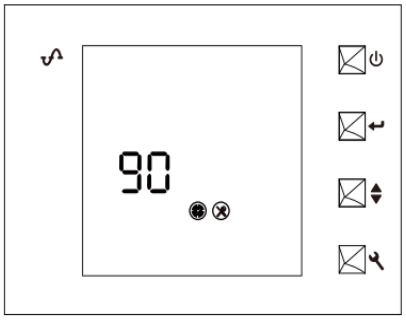
3.Then gently press "🔧" button to enter the next Setup interface, " ▲▼ " button set " LCD backlight control" function (ON/OFF);





4.Then gently press "🔧" button to enter the next Setup interface, "▲▼ " button set "DISPLAY ANGLE " function (180° / 90°); When the unit is tower, the display angle is 90 degrees.





The above settings need to gently press "↵" to take effect.

6. When display the main interface, in AC mode, long press "↵" key over 2 seconds to do the battery self-check, in other modes, long press "↵" key over 2 seconds, forbid buzzer beep.
7. When buzzer ring continually in fault mode, display fault code.

5. Maintenance

5.1 Battery Maintenance

Battery is an important part to UPS system. The batteries life depends on the ambient temperature, charge and

Discharge times, use or deep discharge at high temperature will shorten the life of the batteries.

5.1.1 Standard built-in battery for sealed maintenance free lead-acid battery, when UPS connect to the AC input, whether boot or not, the UPS keeps charging the battery and provide over charge, over discharge protection function.

5.1.2 Keep the ambient temperature between 15℃ and 25℃.

5.1.3 If the UPS has not been used for a long period, charging is recommended at the intervals 3 month.

5.1.4 Under normal use, the battery should be charged and discharged every 4 to 6 months. Discharge to shutting down then charging for the UPS. In the regions of hot climates, the battery should be charged and discharged every 2 months. Moreover, the standard charging time should be not less than 10 hours.

5.1.5 Batteries should not be replaced individually. All batteries should be replaced at the same time following the instruction of the battery supplier.

5.1.6 Under normal conditions, the battery life lasts 3 to 5 years. In case if the battery is found not in good

Condition, earlier replacement should be made. The battery should only be replaced by qualified service\Personnel.

Note: 1. Before replacing the battery, the ups must be shut off and disconnect the AC input.
2. Metal objects such as rings and watches should be removed.
3. Use the screwdriver with insulated handle. Tools and other metal objects should Not be placed on the battery.
4. Short circuit or reverse connection between the positive and negative terminal Of the battery is strictly forbidden.

5.2 Checking UPS function

Every time when conducting field maintenance, please check the regular function of the UPS, including the following aspects:

5.2.1 Check the operation status of UPS

If the AC input is normal, the UPS should work in line mode; if the AC input is abnormal, the UPS should work in battery mode. In above cases, there should be no fault indication.

5.2.2 Check the transfer between the UPS operation modes

Disconnect the mains input to simulate a main failure, the UPS should transfer to the battery mode and operate normally; then recover the mains input, the UPS should transfer to line mode and operate normally.

5.2.3 Check LCD screen display of the UPS

During the check processes stated above, check that the LCD indication of the UPS agree with UPS operation mode.

6. Trouble shooting

When your UPS appear abnormal, please press the table to check and troubleshooting. If the problem persists, please contact our customer service center.

UPS abnormality can be divided into two cases. One is the warning of UPS, indicating abnormal conditions, which will not affect the output of UPS for the time being. The other is a UPS fault, which outputs an exception and needs to be handled immediately.

6.1 UPS Warning table

Warning code	Possible cause	Solution
7	LN site fail	Reconnect LN correctly.
10	Battery open	Check whether the battery connection is disconnected to ensure the battery circuit is normal.
11	Battery low	Check if the battery is damaged or charged.
12	Battery over charge	Check whether the battery voltage is normal and confirm the number of battery nodes.

15	Over load Warning	Check if the load is overloaded and remove the unimportant load.
16	Fan fail	Check whether the fan is rotating or changing.
18	Charger fail	Check whether the charging voltage is normal or replace the charging panel.

6.2 UPS trouble shooting table

Fault code	Possible cause	Solution
1	BUS soft start time out	please contact the supplier
2	BUS high volt Fault	please contact the supplier
3	BUS low volt Fault	please contact the supplier
5	BUS short fault	please contact the supplier
6	INV soft start time out	please contact the supplier
7	INV high volt Fault	please contact the supplier
8	INV low volt Fault	please contact the supplier
10	INV short	please contact the supplier
22	Over load Fault	UPS load is bigger than UPS rated power, after decrease load equipments quantity, UPS will work normally. If still can not solve, please contact the supplier .
23	Over temperature Fault	UPS work environment is very bad, poor ventilation, room temperature is very high. Turn off UPS and wait for 10minutes let UPS cool down then turn on UPS. If still can not solve, please contact the supplier.
29	Converter fault	please contact the supplier
55	NTC open.NTC	please contact the supplier
57	Battery open in battery mode	Check that the battery switch and the battery connection are normal. If still can not solve, please contact the supplier.
59	Battery over charge	Check that the battery voltage and the number of battery sections are normal. If still can not solve, please contact the supplier.
62	INV Cap Open Fault	please contact the supplier

When report UPS fault, please provide the following information:

- The machine model and machine serial No.
- The date of fault happened.
- The detail of fault(including the LCD screen display and buzzer beeps, input, load ,configuration of battery)

7. Product specifications and performance

7.1 Basic electrical performance

Model			MU6000RM3U	MU10KRM3U
			6000VA/5400W	10000VA/9000W
Input	Input mode		Single-phase grounding	
	Normal voltage		208/220/230/240VAC	
	Voltage range		120～275VAC	
	frequency		40Hz-70Hz	
	Power factor		0.99	
Output	Output mode		Single-phase grounding	
	Rated voltage		208/220/230/240VAC	
	Power factor		0.9	
	Voltage accuracy		±1%	
	Frequency	Line model	(50/60/RF±1%)Hz, Input frequency and the output frequency is consistent	
		Battery model		
	Overload capacity		Load < 105% work consistant;105% < load < 125% 1min;125% < load < 150% 30sec	
	Transfer time		0 ms	
	Current Crest Ratio		3:1	
Battery voltage			192V	
quantity			16*9AH	
Backup time (full)			> 4min	> 3min
Backup time (half full)			> 9min	> 7min
Charge Current(Max)			1AMP	
Charge Voltage(VDC)			2018.4±2VDC	
Battery charging time			7 hours to charge to 90%	

7.2 The size and weight

model	Length * width * height（mm）	The net weight（Kg）
MU6000RM3U	520*440*134	13.8
MU10000RM3U	520*440*134	14.5

7.3 Environment

Item	Normal range
Ambient temperature	0～40℃
Environment humidity	20%～90%（No condensation）
Altitude	Less than 1000 m not de-rating, greater than 1000 m for every 100 m de-rating 1% rise
Storage temperature	-15℃～45℃

8.0 Warranty

Under normal use, from the date of purchase the UPS products, we offer 2 years free warranty service：

The warranty on the strength of the dealer effective certificate:

- With card warranty.
- If the machine fails, please contact the dealer or the company customer service staff, the transportation charges shall be borne by the buyer
- The nationwide warranty.
- Online technical support.

The following situation is out of free warranty:

- Man-made fault.
- Out of warranty.
- The production sequence of changes, the loss of finished products.
- Damage or loss caused by the external force majeure..
- Disassembly or modifications to the unit with no authorization.
- Disobeying provisions of operating/using the unit.
- Battery over discharged or man-made damage.

Note：The above content is subject to change without notice and keeping the right Of final interpretation

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