



# User Manual



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# 1 Safety Information

- Please charge the product for more than 8 hours before using.
- When the battery has been discharged or the storage period has been more than 3 months, the battery shall be charged for more than 8 hours in time, so as to ensure it is fully-charged and prevent it from being damaged.
- This product is specially designed and sized for specific medical fridges. It is not recommended for life supporting system and other specific major equipments;
- Keep a distance of at least 50 cm from the display during installation of the product.
- It's normal for the surface temperature of the cabinet may rise to 50°C during use of the product.
- Do not overload the product.
- Do not open the cabinet of the UPS due to hazard of electrical shock, Contact your local service center if maintenance or repair is needed.
- UPS inner short circuit will cause electric shock or fire danger. Do not put any liquid vessel on the UPS.
- Cut off the power supply rapidly if the UPS work abnormal, and contact your local dealer.
- Make sure not to keep or use the product in following environment.
  - No good air circulation
  - Place having flammable gas or corrosive material or lots of dust
  - Place under abnormal high or low temperature (above 40°C or below 0°C), or high humidity (above 90%)
  - Place where there is direct sunlight or near the heating appliance
  - Place where there is violent vibration
  - Outdoor
- Do not use liquid extinguisher if there is a fire, a dry powder extinguisher is recommended.
- Place the UPS near the mains source so that can cut off utility power without any delay in case of emergency.
- When the UPS is to be moved or reconnected, ensure that the AC input power supply is cut off and the UPS is completely turned off, otherwise the output end may be electrified and result in electric shock.
- The battery life is shortened as the ambient temperature rises. Periodic battery replacement can ensure UPS working properly and enough backup time.
- The maintenance shall only be carried out by professionals.



## Warning

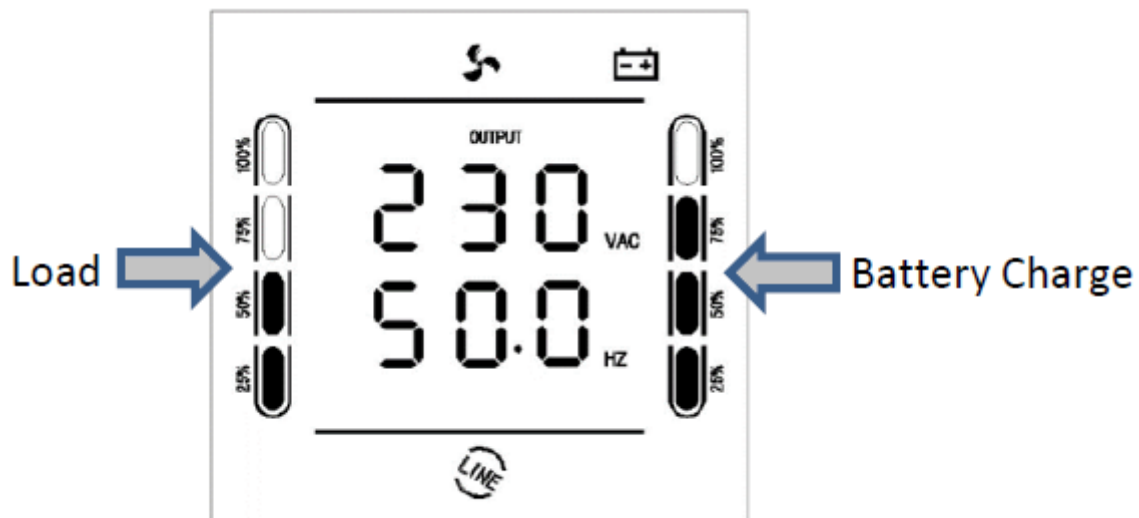
- The equipment must be grounded when utility power is connected.
- Please be sure to operate the product according to the user manual.
- UPS should be used at an altitude below 1,000 m.

# 2 Product Overview

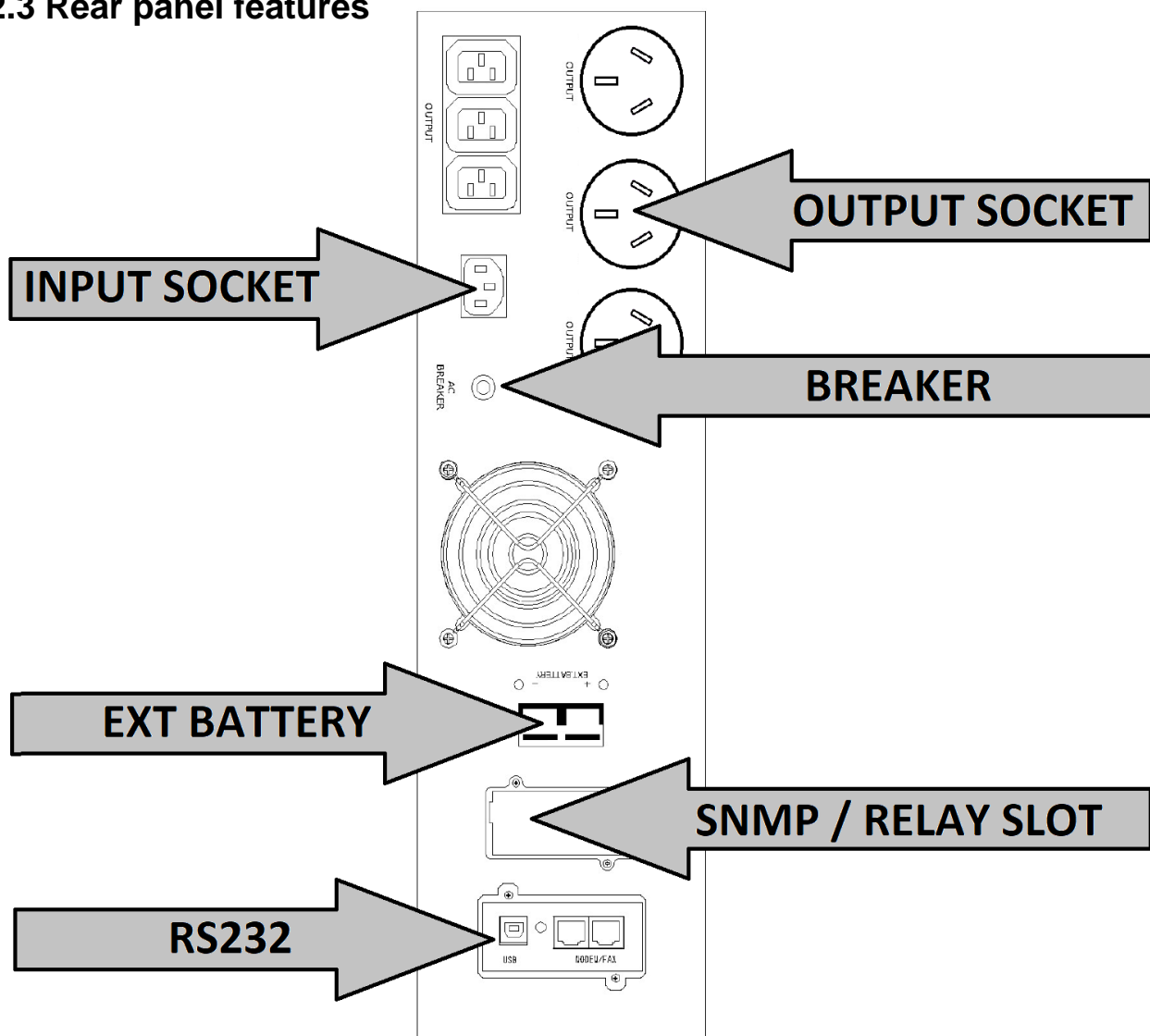
## 2.1 Specifications

Specifications	
Model	
<b>Medi-X</b>	2kVA/1.6kW
Input	
AC Voltage	175 - 290Vac 10A AUS Plug
Frequency	45 - 55 Hz
Output	
Battery Mode Voltage	220V, 230V, 240VAC LCD selectable
Frequency	50/60 Hz + / - 0.3Hz
Wave form	Pure Sine Wave
Harmonic Distortion	≤ 5% (Linear Load)
Transfer time	≤ 10ms
Eco Mode	Standard
Efficiency	
AC Mode	Max 98%
Battery Mode	Max 85% (Linear Load)
Battery	
DC Voltage	36V
Quantity and type	3 x 12V Sealed maintenance free lead acid batteries
Typical Recharge Time	8 hours recover to 90% capacity
Battery Low Shutdown Point	Single battery 10.2Vdc (Default), 9.6-11.5Vdc adjustable
Protection	
Full Protection	Overload, Short circuit protection, Battery overcharge and discharge protection
Alarm	
Battery Mode	Beeps every 5 seconds, silent after 60 seconds
Battery Low	Beeps every 0.16 second
Overload	Beeps every 2 seconds
Comms & Management	
Ports	USB and RJ45 standard
Optional	Relay / SNMP
Hot Swappable Battery	Yes
Characteristics	
Audible Noise	≤ 50 dB at 1 Metre
Temperature	0-40°C
Humidity	10-90% RH (non-condensing)

## 2.2 Front panel features



## 2.3 Rear panel features



## 3 Installation

### 3.1 Unpacking inspection

- Open the UPS package and inspect the contents upon receipt. The accessories attached to the UPS contains a power cord, a user manual, communication cable, CD-ROM, a battery connection cable and 2 pairs stabilizer brackets.
- Check if the unit is damaged during transport. Do not power on and notify the carrier and dealer if find damaged or parts missing.
- Verify this unit is the model you want to buy. Check the model name showed on the cover plate.

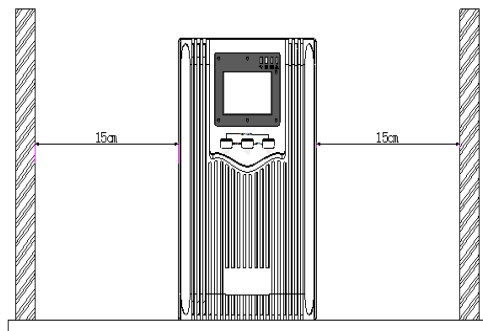
**Note:**

Keep the packaging box and packaging materials for future transport use. The equipment is heavy. Always handle it with care.

### 3.2 Installation information

#### 3.2.1 Safety precautions

- The UPS installation environment must be in good ventilation. A minimum clearance of 150mm at the sides and top must be maintained. And Keep away from water, flammable gases and corrosive entities.



- The ambient temperature of UPS should be kept below 40 degrees Celcius.
- It is recommended to charge the battery for 8 hours before using it. The UPS will charge the battery automatically as long as the input utility power is connected to the host.
-

### 3.2.2 Installation

- Combine the connection extension part and RT foot to two brackets according to the following figure. Align the brackets at a proper distance and place them on a plane in parallel.

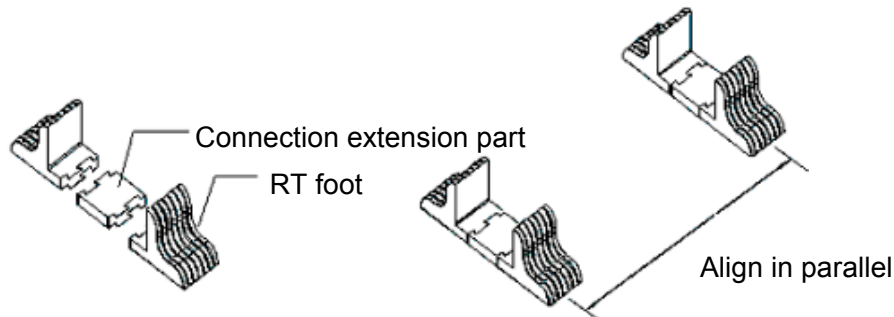
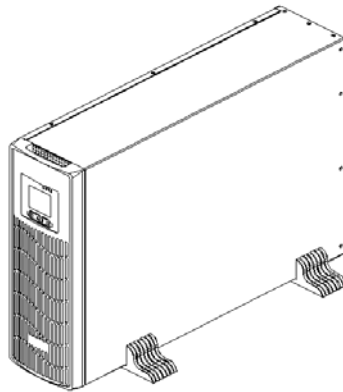


Fig. 3.2.4.2 Assembly diagram of foot pieces

- Make the UPS stand up on the two brackets. Do not turn the UPS upside down.



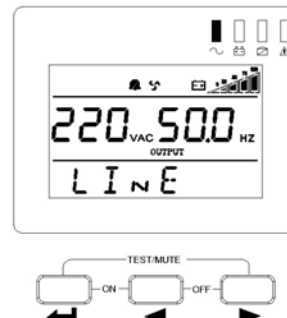
- Connect the fridge plug into the output socket of the UPS.
- Connect the battery pack(s), if supplied, with the cable(s) supplied.
- If applicable, switch on circuit breaker(s) on the battery pack(s).
- Connect the power cord supplied into the utility power socket and into the input connection of the UPS.
- Once the utility power is switch on, the UPS will automatically start and begin a self test. After approximately 15 seconds the UPS should switch to inverter and the only the green LED should be on.

## 4 Operation










### 4.1 Buttons operation



SRT Panel buttons

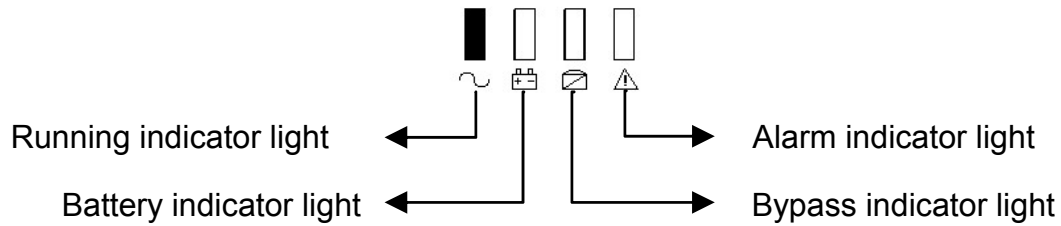


Tower panel buttons

Button	Use	Function
 + 	<b>Power ON</b> button	Press and hold two buttons at the same time more than 3 seconds, the UPS is turned on.
 + 	<b>Power OFF</b> button	Press and hold two buttons at the same time more than 3 seconds, the UPS is turned off.
 + 	<b>Mute</b> button	In battery mode, press the button for 0.5 seconds, the UPS become silent (no longer giving alarm )
	<b>Test</b> button	In the condition of mains power, press two buttons at the same time for 0.5 seconds, test the battery discharging for 15 seconds.
	<b>Confirmation</b> button	<ul style="list-style-type: none"> <li>Press and hold the button for 5 seconds to enter setting interface.</li> <li>Press and hold the button for 3 seconds to exit from setting interface and not save the data.</li> <li>On setting interface, press the button for 0.5 seconds, confirm to turn the page ( display next setting)</li> <li>On setting interface, turn page to save/ exit interface, select “Yes” and press the button for 0.5 seconds, save the data and exit from the setting mode. If select “NO” and press the button for 0.5 seconds, go on confirming to turn the page ( display next setting)</li> <li>In non-setting mode, continuously press the button (0.5 seconds) twice, LCD display contents rotates.</li> </ul>
	<b>Diminishing</b> selection button	<ul style="list-style-type: none"> <li>In non-setting mode, press the button for 0.5 seconds, display page turning (page up)</li> <li>In setting mode, press the button for 0.5 seconds, parameters diminish and cycle.</li> </ul>
	<b>Increasing</b> selection button	<ul style="list-style-type: none"> <li>In non-setting mode, press the button for 0.5 seconds, display page turning (page down). Press and hold the button for 2 seconds to enter auto-flip state, press and hold the button again for 2 seconds to exit from auto-flip state.</li> <li>In setting mode, press the button for 0.5 seconds, parameters increase and cycle.</li> </ul>

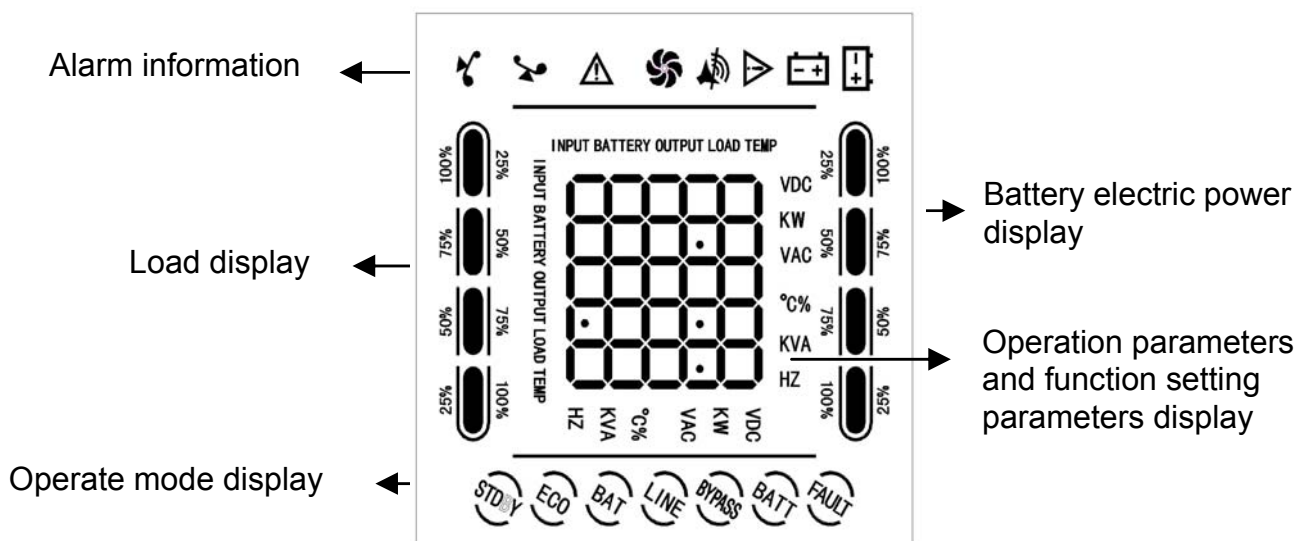


## 4.2 LED Indicator light








Icon	Use	Description
	Running indicator light	When the green light is illuminated, it indicates that the UPS is operating in mains mode or inverter mode.
	Battery indicator light	When the red light is illuminated, it indicates that the UPS is operating in inverter mode.
	Bypass indicator light	When the yellow light is illuminated, it indicates that the UPS is operating in bypass mode or setting mode.
	Alarm indicator light	when the red light flashes, it indicates the UPS failure (battery fault, mains fault)

## 4.3 LCD display interface



## LCD icon function description

Icon	Use	Description
	Overload indication	The load icon flashes when there is overload on UPS.
	Alarm indication	The icon flashes when the system emits an audible alarm
	Fan	Display the operating status of fans. The fan icon rotates when the fan works, the fan icon is illuminated when the fan stops working.
	Alarm display	The icon flashes when the system is abnormal, emitting an audible alarm.
	Battery indicator	The icon flashes when the battery fails.

Operation Mode	Display Text	Description
Mains mode	line	In mains mode, supply stable power to the load through voltage regulator, meanwhile inverter charges the battery.
Battery mode	batt	The UPS will switch to battery mode from mains mode when the mains supply is abnormal, and continue supplying stable power to the load.
Standby mode	Pow dn	<ul style="list-style-type: none"> <li>Under normal condition of mains supply, turn off the UPS by manual, the output is in accordance with the input within the scope of bypass, not through voltage regulation circuit.</li> <li>Start up DC auto-start function in the settings, the battery is overdischarged, the inverter is shut down, the system displays standby status.</li> </ul>
Failure mode	FAULT	The system accesses to failure mode if it detects fault, meanwhile it displays fault information.



## 4.4 UPS On/Off operation

### 4.4.1 Turn on the UPS

- **Startup with utility power**

After connecting to utility power, UPS will start up and begin self-test automatically (by bypass output) and enter normal working state in 15 seconds. When UPS working indicator (green light) is illuminated and bypass indicator goes out, the user can turn on the medical fridge.

- **Startup with battery**

When powered by the battery (without utility power): Press Power ON button ( + ) on the front panel for 3 seconds, the UPS should start up the inverter for normal power supply output, at this moment, UPS working indicator (green light) is illuminated, inverter indicator is illuminated and fault indicator flashes.

## 4.4.2 Turn off the UPS

- **Shutdown with utility power**

Press Power OFF button ( ◀ + ▶ ) on the front panel for 3 seconds, the UPS should enter standby mode. The bypass indicator (yellow light) is illuminated, and cut off the utility power input, the UPS is turned off.

Shutdown with battery

Press Power OFF button ( ◀ + ▶ ) on the front panel for 3 seconds, the UPS is turned off.

### Note:

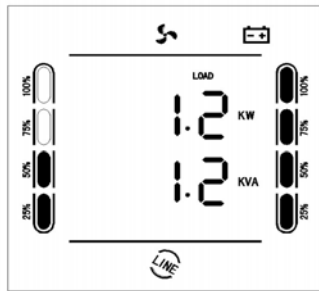
- When turn on the UPS, firstly start up the UPS and then start up the computer and other loads; when turn off the UPS, firstly turn off the computer and other loads and then turn off the UPS.
- Once mains power fails, UPS is switched to battery power supply. Please save datas for PC and make emergency treatment for other loads in time.
- If UPS is not used for more than 7 days, please refer to steps to shutdown with utility power to turn off the UPS.
- If UPS has not been used for more than 3 months, please refer to steps to startup with utility power, charge the UPS for more than 12 hours to keep the battery fully charged and extend the battery life.

## 4.5 Parameter query operation

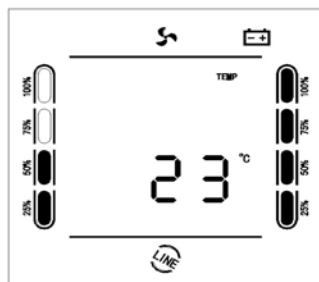
- Press the query button ◀ or ▶ to check output, loads, temperature, input and battery information in turn.
  - In non-setting mode, press the button ▶ for 2 seconds to enter the state of automatic page up/down, and re-press the button for 2 seconds to exit the state of automatic page up/down.
- Output: Display UPS output voltage and output frequency.



- Load: Display WATT and VA values of the connected load, depending on load type and load capacity, as shown below.



- Temperature: Display the temperature inside the cabinet.



- Input: Display the input voltage and input frequency.



- Battery: Display the battery voltage and battery capacity, as shown below:






## 5 Troubleshooting

### 5.1 Fault messages

No.	Fault	LCD Display	Corrective Action
1	Output short circuit	SHORT	Check if there is a short circuit on the load.
2	Output high voltage	OUT H	Inverter is abnormal, contact the supplier.
3	Output low voltage	OUT L	Inverter is abnormal, contact the supplier.
4	Output overload	LOAD	Check the load. Reduce load on system.
5	Input relay failure	RELAY	The inverter is abnormal, contact the supplier.
6	MOS fet overcurrent	MOSC	Check if there is overload or short circuit on the load. Contact the supplier if there is no abnormal situation.
7	MOS fet overtemperature	MOST	Reduce load. If the problem still exists, contact the supplier.
8	MOS fet temperature probe is disconnected	SENSOR	The inverter is abnormal, contact the supplier.
9	Transformer over temperature	TRANT	Reduce load. If the problem still exists, contact the supplier.
10	Inverter high voltage	INV H	The inverter is abnormal, contact the supplier.
11	Inverter low voltage	INV L	The inverter is abnormal, contact the supplier.
12	Inverter soft start fault	SOFT	Check if the cable connection between transformer and power board is correct. Contact the supplier if there is no abnormal situation.
13	BUS high voltage (the battery voltage is overcharged when charging the batteries)	BUS H	The inverter is abnormal, contact the supplier.
14	Charging overcurrent	CHARGE	The inverter is abnormal, contact the supplier.
15	Battery overvoltage	BATH	Check if the battery voltage is too high.
16	Low-voltage battery cut-off	EOD	Check if the batteries complete discharging or batteries are damaged. Contact the supplier if there is no abnormal situation.

## 5.2 Common faults and processing

Carry out the self checking according to the following methods in case of abnormal conditions. If the problem still exists, please contact the dealer or supplier.


Problem	Solution
The utility power is normal, while UPS cannot connect to it	<ul style="list-style-type: none"> <li>• Check whether the power cord is loose or not.</li> <li>• Check whether the over-current protector is out or not.</li> </ul>
The utility power is normal, while UPS cannot start normally. The failure indicator is normally on, “  ” icon is normally on, and LCD function display area displays OFF	<ul style="list-style-type: none"> <li>• Check whether the battery wire is connected or not.</li> <li>• Confirm whether the battery is damaged or not.</li> </ul>
In utility mode, the buzzer beeps continuously, “  ” icon flashes, and the UPS works in bypass mode after a while; in inverter mode, the buzzer beeps continuously, “  ” icon flashes, and the UPS is shut down automatically after a while	Output overload; check whether the condition of overload occurs in UPS load display or not. Reduce the load.
UPS can not be turned on after the “ON” button is pressed	<ul style="list-style-type: none"> <li>• The “ON” button is pressed too briefly. Press the “ON” button continuously for more than 3 seconds to start UPS.</li> <li>• Check whether the battery is connected.</li> <li>• UPS has internal failure. Please contact the supplier.</li> </ul>
The battery discharge time is too short	<ul style="list-style-type: none"> <li>• The battery has not been fully charged. Keep UPS connected to utility power persistently for more than 8 hours to charge the battery again.</li> <li>• UPS is overloaded. Check load capacity, and reduce the load.</li> <li>• The battery is aged and the capacity decreases. Replace the battery. Please contact the supplier to obtain the battery and components for replacement.</li> </ul>

## 6 Maintenance

The preventive maintenance of UPS system can ensure UPS reliability and long-term service. We recommend that the MediX is serviced every 12 months when operating in a dust free environment. Contact PSS on 1300 882 447 to discuss maintenance solutions.



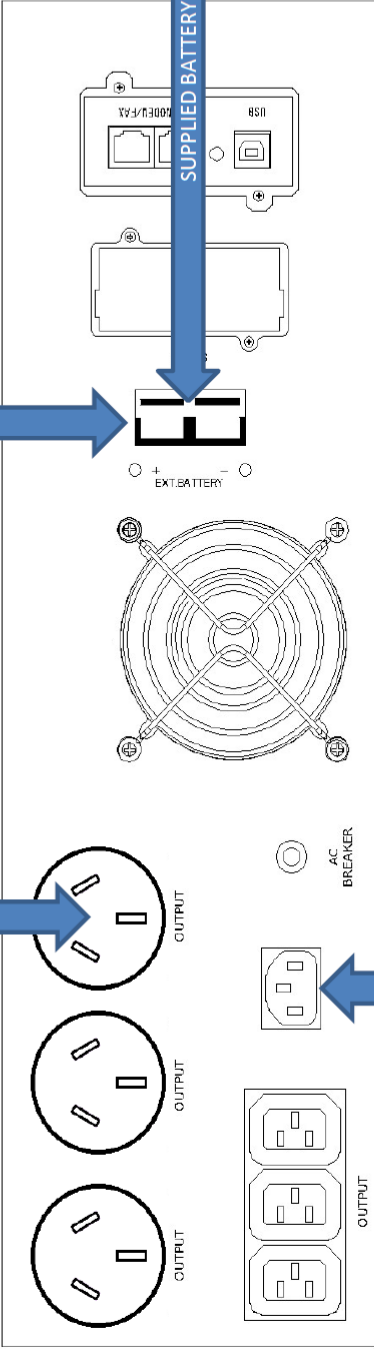
## 7 Quick Start



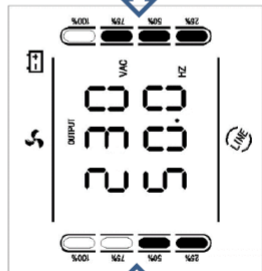
**Power Systems Solutions**

**QUICKSTART GUIDE**

- 1 Unpack UPS and battery pack(s) and inspect for damage.
- 2 Position UPS and battery pack(s) in a well-ventilated place and ensure the heat vents and fan peripherals of the chassis meet the ventilation conditions at a distance of 150mm or above. Keep away from water, combustible gases and corrosives.
- 3 Connect fridge plug to the output socket of UPS.
- 4 Connect the battery pack with supplied battery connection cables.
- 5 Turn on battery pack circuit breaker.
- 6 Connect the UPS input plug into UPS AC Input and plug into the 230V 10A AC power socket.
- 7 After connecting to AC power, the UPS will start up and begin a self-test automatically and enter a normal working state in 15 seconds. As the UPS working LED (green light) goes on and bypass LED goes off, the user



**Display - Normal Operation**



Percentage Load

Battery Charge

**PLEASE REFER TO USER MANUAL**