



**100% PURE SINE WAVE WITH CHARGER**

# USER'S MANUAL POWER INVERTER

Appliances -----



PC



TV



Light



Electric fan

4200-000010-00A1

## Introduction

Thank you for purchasing the Inverter/UPS. Properly used, this product will give you many years of reliable service. The Inverter/UPS is an electronic product that has been designed to take low DC voltage power from batteries and convert it to standard AC power like the current you have at home. The Inverter/UPS is a DC-to-AC Inverter with auto mains-to-battery transfer and integrated charging system, and powers connected appliances from either AC power or DC battery source, serving as an extended run UPS. When AC cable is connected to a wall socket, utility power goes to connected equipment(s) and/or charges the battery set via charging system. In UPS mode, the Inverter/UPS series automatically converts battery energy into AC power for backing up the connected devices.

## Important Safety Information

Before installing Inverter/UPS, please read the following information carefully and save this manual for further reference. Disregard of these safety notes may endanger life or health, as well as the function of the equipment and will render the warranty invalid. Special attention must be paid to the CAUTION and WARNING statements in this manual.

### CAUTIONS

- For domestic use only.
- This product should be kept out of the reach of children.
- Reverse connecting the batteries (battery +to inverter/UPS-instead of battery+to inverter/UPS+) will render the warranty void. To reduce risk of injury, charge ONLY lead-acid type rechargeable batteries. Other types of batteries may cause damage and injury.
- Do not use this product if damaged or a fault is detected-switch off power immediately.
- Do not expose the Inverter/UPS to rain, use it near water or in damp or wet conditions. If water or liquid seeps into product, turn off the power at the household electrical distribution board immediately and remove from wall socket. Inverter/UPS is designed for indoor installation only.
- NEVER charge a frozen battery.
- DO NOT obstruct the ventilation openings.
- Never insert or remove an electric plug with wet hands.
- Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel. The sum of the earth leakage current of the Inverter/UPS and the connected equipment should not exceed 3.5mA.
- Risk of explosion if battery is incorrectly connected or replaced.
- Please take care opening packaging to prevent cuts.
- Once opened please dispose of this packaging responsibly.

### WARNING

1. Provide adequate ventilation from the battery compartment. The battery enclosure should be designed to prevent accumulation and concentration of hydrogen gas at the top of the compartment.
2. Input/output AC wiring and battery cables must be rated for 75°C or higher. Using cables diameter, please refer to appendix A, according to different models. The inner diameter of the copper ring terminal which is used to connect battery cables to Inverter/UPS battery DC terminals should be no less than 6mm.
3. For battery installation and maintenance: read the battery manufacturer' S installation and maintenance instructions prior to operating.
4. If/when connecting the battery to inverter/UPS, the last connection made should be onto the inverter/UPS not the battery. In some cases there might be a large spark, this is normal.

### Personal Precautions

1. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
2. Avoid touching eyes while working near batteries.
3. NEVER smoke or allow a spark or flame in the near vicinity of a battery.
4. Remove personal metal items such as rings, bracelets, necklaces, and watches while working with batteries. Batteries can produce short circuit current high enough to make metal melt, and can cause severe burns.
5. If a remote or automatic generator start system is used, disable the automatic starting circuit or disconnect the generator to prevent an accident during servicing.

### Tips to Improve Lead Acid Battery Lifespan

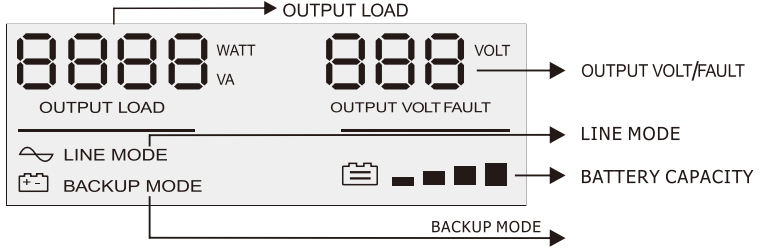
- Do keep batteries fully charged when not in use.
- Don't leave batteries in a discharged state for any length of time.
- Don't charge batteries too fast: Only use 20A setting on inverter if you have added more batteries or if you need the batteries to occasionally charge faster.
- Don't discharge batteries too fast: Try to minimise the number of devices powered by your inverter or add more batteries.
- Don't discharge batteries too deeply: Try to minimise the number of devices powered by your inverter or add more batteries.
- Do place batteries in a cool location where possible.

### Features

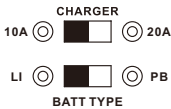
- Super efficient, DC to AC conversion, maximising run time.
- Input voltage range selection option.
- Fully automatic start operation.
- High frequency technology.
- Compact size and light weight.
- Provides critical overload protection.
- Eco-friendly and non-polluting (green device).
- Advanced technology optimizes battery life.

## LCD Display Specifications

By pressing the power switch the Inverter works in normal mode, including ON/OFF, Charging mode and fault mode. When LCD starts to work it will display all information for 3 seconds.



<p>Inverter Mode</p>	<p>Line Mode</p>
<p>DC overvoltage fault</p>	<p>Over load fault</p>
<p>DC low voltage</p>	<p>Over Temperature</p>
<p>Output low voltage</p>	<p>Output over voltage</p>

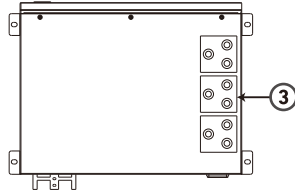
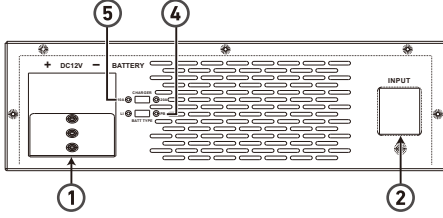


if user change the switches, the LCD will display the setting for few seconds like below for indication.  
 Li Battery : Default is 4 series LiFePO4 battery  
 Pb Battery : Sealed Lead--Acid or Gelled Lead-Acid.

<p>LI battery , max charging current 20A</p>	<p>PB battery , max charging current 10A</p>
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<b>Alarm</b>	Low Battery Voltage Warning	Beeps every 2 seconds
	Overload Warning	Beeps every 0.5 second
	Fault	Beeps 1 minute


# Rear Panel and Output Description



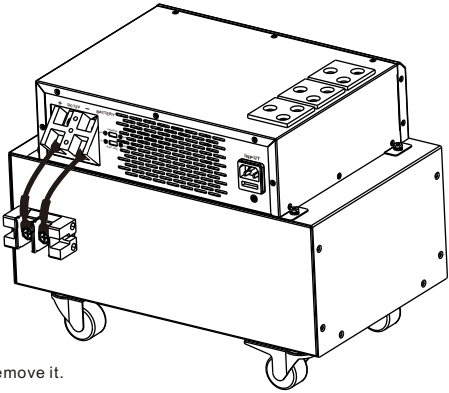
1. DC input connector (battery terminal).
2. AC input and 6.3A / 20mm fuse (12V for 600W/1000VA)  
AC input and 10A / 20mm fuse (24V for 1200W/2000VA)
3. Output receptacle.
4. Battery type selector: PB / LI battery adjustable.
5. Charge current selector: 10A/20A adjustable @12V  
7A/15A adjustable @24V

**A.** By using the CHARGER switch, User can select the max charging current set to 10A or 20A to fix different capacity battery.  
**B.** By using the BATT TYPE switch, User can select the battery type. Different type battery of the selection can auto set different battery charging mode and set different battery discharge protection.

**Every time, if user want to replace the battery, the AC input must be disconnected!!!!!! the Power switch must be OFF!!!!!! Otherwise the battery input reverse connect protection will invalid. Because the inverter built-in Li battery cut off charging activation function, if not do like above, the reverse relay will stay ON.**

 **Serious Warning !!!**

**Caution!**  
 Always connect the inverter/UPS first and then the battery. DO NOT place anything between battery cable ring terminals and battery terminals. The terminal stud/bolt is not designed to carry current. Apply Anti-oxidant paste to terminals after terminals have been torqued.



## Battery Connection

**Step 1** - Pinch the sides of the DC input cover to remove it.

**Step 2** - Follow battery polarity guide located near battery terminal. Place the battery cable ring terminal over Inverter/UPS battery terminal. Tighten the M5 nut. Do not place anything between the flat part of battery terminal and the battery cable ring terminal, since overheating may occur. (Connecting battery/ies incorrectly, the wrong way round will render the warranty invalid). See step 3 for correct battery connection polarity and voltage. BE CAREFUL that the red and black battery wires do not touch each other as this will cause a short! Then connect battery cables to UPS, There may be a spark the first time these are connected to the UPS.

**Step 3** - Connect battery cables to your batteries. The battery must be wired to match the units DC input voltage specifications (12V for 600W/1000VA and 24V for 1200W/2000VA ).

In addition, the batteries can be wired to provide additional run time. The various wiring configurations are as follows:

**Series Connection:**  
 Wiring batteries in "series" increases the total output voltage. This voltage MUST match the DC voltage requirements of the Inverter / UPS unit, or it may damage both the Inverter / UPS unit and/or the batteries.

**Parallel Connection:**  
 Wiring batteries in "parallel" increases the total run time that the batteries can operate AC loads. The more batteries connected in parallel the longer run time the loads can be powered from the Inverter / UPS unit.

**HINT:** No more than three batteries should be connected in series or parallel. Always use identical batteries (type and condition). Do not run inverter at max power if adding batteries for increased runtime.

**Series-Parallel Connection:**  
 "Series-parallel" configuration increases both the battery voltage (to match the DC requirements of Inverter / UPS) and run time for operating the AC loads.



## Troubleshooting

Problem	Possible Causes	Remedy
No LED display	Battery Weak	Re-charge battery
	Battery defective	Battery replacement
	Power switch is not pressed	Press and hold power switch
Mains normal but works in inverter mode	AC Input missing	Check AC input connection
	Input protector is effective	Have the input fuse checked/replaced by a qualified person
Alarm buzzer beeps continuously	Overload	Verify that the load matches the capability specified in the specs
	Wrong / looped 220AC connection	Ensure that 220VAC input plug is not plugged into 220VAC output socket
Back up time is shortened	Overload	Remove some non-critical load
	Battery voltage is too low	Charge battery for 8 hours or more

## Appendix A

Models	Input/output cables (gauge copper wire)	Battery cables (gauge copper wire)
1000VA / 12VDC	At least 16 AWG / 1.3mm <sup>2</sup>	At least 10 AWG x 2
2000VA / 24VDC	At least 16 AWG / 1.3mm <sup>2</sup>	At least 10 AWG x 2



**MUST**<sup>®</sup>

# GUARANTEECERTIFICATE

Serial No.: \_\_\_\_\_

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

**MUST**<sup>®</sup>

# GUARANTEECERTIFICATE

Serial No.: \_\_\_\_\_

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Address				Telephone No.	
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