



100% PURE SINE WAVE WITH CHARGER

# USER'S MANUAL POWER INVERTER

1200VA/2400VA

Scan QR code for manual



Appliances



PC



TV



Light



Electric fan

4200-000255-04A1

# Important Safety Information

Before installing Inverter, 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. Special attention must be paid to the CAUTION and WARNING statements in this manual.

## **CAUTION**

1. To reduce risk of injury, charge ONLY lead-acid type rechargeable batteries. Other types of batteries may cause damage and injury.
2. DO NOT operate the Inverter if it has been dropped or damaged in any way.
3. DO NOT expose Inverter to rain, snow or liquids of any type. Inverter is designed for indoor installation only.
4. NEVER charge a frozen battery.
5. DO NOT obstruct the ventilation openings.
6. Risk of electric shock Heat-sinks are live. Disconnect the AC sources and the DC source from this unit before servicing.
7. Risk of electric shock. This unit receives power from more than one source. Disconnect the AC sources and the DC source from this unit before servicing.
8. Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.
9. The sum of the leakage current of the INVERTER and the connected equipment should not exceed 3.5mA.
10. Risk of explosion if battery is incorrectly connected or replaced.

## **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 70°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 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.

## **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 accident during servicing.

Thanks for purchasing the Inverter. Properly used, this product will give you many years of reliable service.

The Inverter series is an electronic product that has been designed and built to take low DC voltage power from batteries and convert it to standard AC power like the current you have at home.

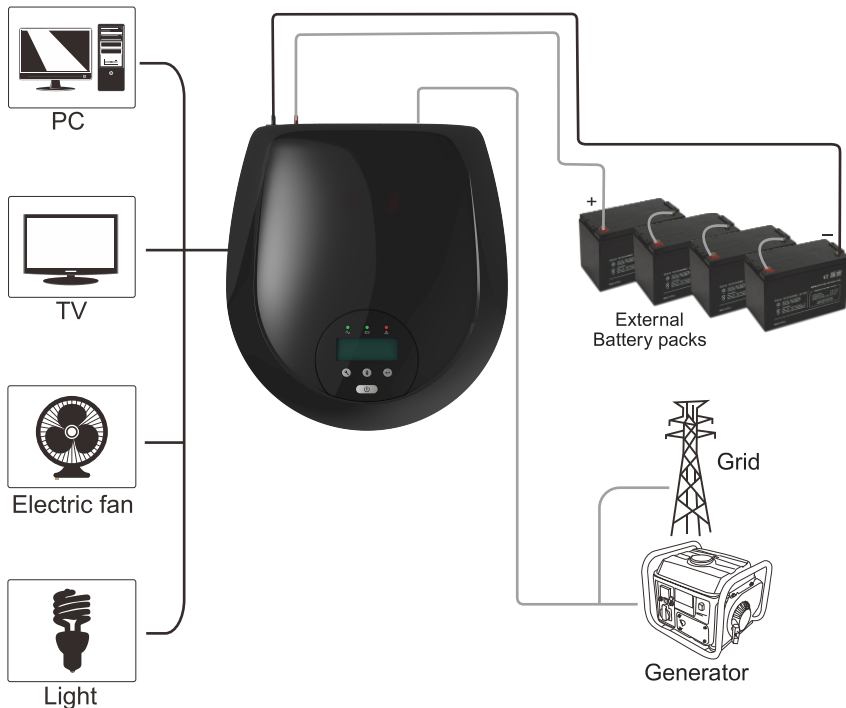
The Inverter series is a DC-to-AC with auto line-to-battery transfer and integrated charging system,

It powers from AC power and DC source, serving as an extended run Inverter. 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 Inverter mode, It automatically converts battery energy into AC power for backing up the connected devices.

## Features:

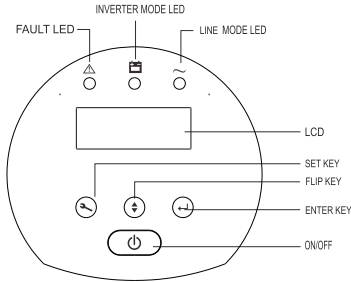
- Modified sine wave inverter
- 10A/20A charge current ranges via LCD setting
- Double layers PCB board.
- Body with light strip and backlight display
- Configurable input voltage ranges 90-280VAC/170-270VAC) via LCD setting
- Display the working time
- Auto restart while AC recovery
- Overload & short-circuit protection, Battery reverse polarity protection, Deep discharge protection
- Advanced technology optimizes battery life
- Automatic line-to-battery switchover
- Intelligent 3-stage charger control for efficient charging and preventing overcharge
- Battery cable 12AWG\*2 80cm

## Basic System Architecture



# Operation & Installation

## Front Panel Controls and LED/LCD Indicators



### Fault reference code

Fault Event	Code	Illustration
Fan is locked	7	When fault, Beeping continuously, Red light on, no inverter output & displaying fault code in LCD screen.
DC Over Voltage > 15.5V	6	
Overload	1	
Short circuit	0	

### Operation & Display

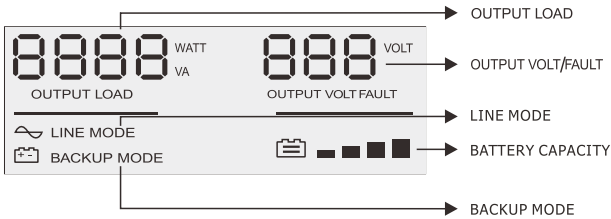
Mode	LED	LCD display
Inverter	Yellow light on	Display Output power, output voltage, battery Icon on.
Line	Green light on	Display Output power, output voltage, Line Icon on.
Fault	Red light on	Fault code
Set Key		Press it & hold a while, Enter into setup menu, select different parameters by pressing flip key, AC input voltage range, current 10A/20A, LED ON/OFF.
Flip Key		Display "W" inverter mode time, line mode time, total work time.
Enter Key		Confirming Ok or exit by press enter key.
Display work time		Normal
Charger		Battery capacity Icon flickers.

#### Remark:


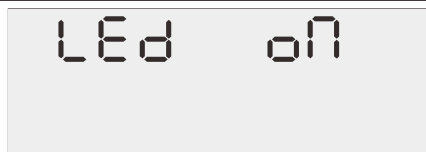
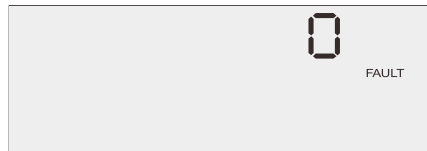
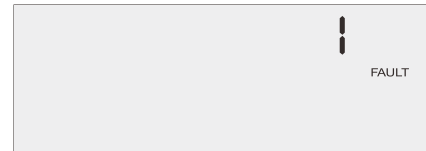
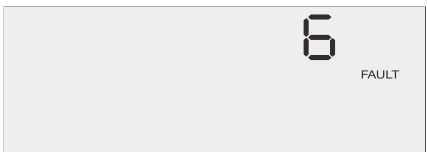
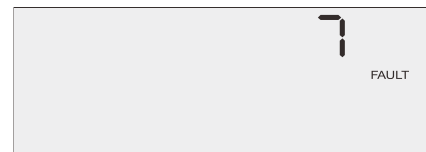
1. By pressing flip key, it displays circulation menus. By pressing Enter key, it will exit & be back to default page.
2. By pressing Settings key, it also displays circulation menus. User can reset parameters in pages order. It will automatically save EEPROM after resetting. By pressing ENTER key, it will exit from setup menus.

# LCD Display Specification

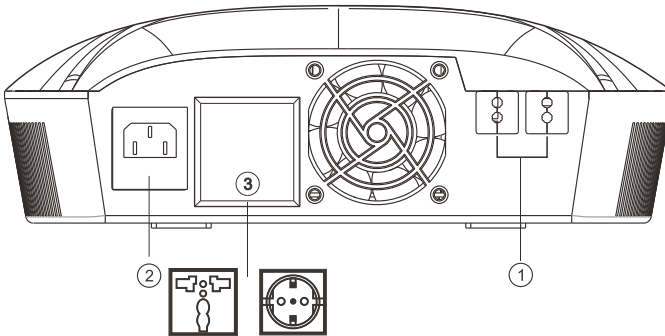
When press the power switch lightly,the inverter works in normal mode.Including in off charging mode and fault mode.When LCD start to work, it will display all information for 3S.



<p><b>Inverter Mode</b></p>	<p><b>Line Mode</b></p>
<p><b>Total Work Time</b></p>	<p><b>Line Mode Time</b></p>
<p><b>Inverter Mode Time</b></p>	<p><b>Line Self-start Mode (LED off)</b></p>
<p><b>Set Line Voltage Narrow rage</b></p>	<p><b>Set Line Voltage Wide rage</b></p>
<p><b>Set Charge current 10A</b></p>	<p><b>Set Charge current 20A</b></p>

 <p>LED OFF</p>	 <p>LED ON</p>
 <p>Short circuit</p>	 <p>Over load fault</p>
 <p>DC overvoltage fault</p>	 <p>Fan block fault</p>

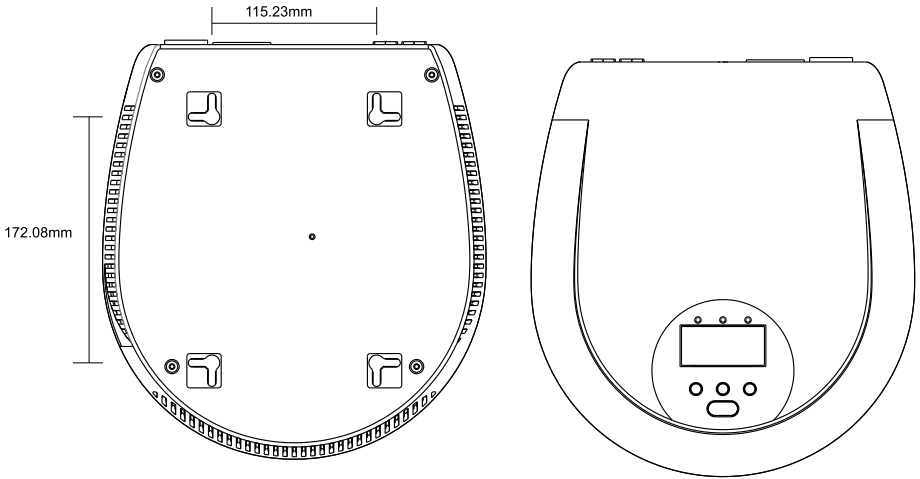
### Rear Panel & Output Description



1. DC Input Connector (Battery Terminal)
2. AC Input
3. Output Receptacle(s)

## Installation

NOTE: Before installation, please inspect the unit. Be sure that nothing inside the package is damaged.



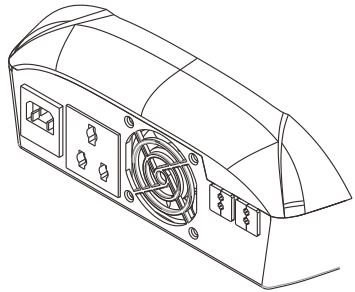
- A. Select '**Narrow**' setting for general electrical appliance such as tube light, energy saving lamp, TV, Juicer & mixer etc, but it is not suitable to meet high-power motor or inductive load, such as the fridge, air cooler, PC (having risk of rebooting) and so on. In this mode, the Inverter series operating voltage, in 'mains' mode, is within 170~280Vac with the same output voltage. The line sensitivity is higher.
- B. Select "**Wide**" setting to save energy. In this mode the operating range of voltage for the Inverter is 90-280Vac, hence the output voltage will be the same as the MAINS input voltage. The Inverter series unit in this mode has a lower sensitivity. You can connect and use only for some special load, such as lamp, fan.

## Battery Connection

**Step 1-** Pinch the bottom of DC input cover and Open it.

**Step 2-** Follow battery polarity guide located near battery terminal. Place the battery cable ring terminal over Inverter's 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.

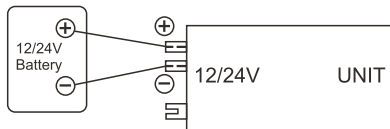
**Caution!** DO NOT place anything between battery cable ring terminals and battery terminals. The terminal stud is not designed to carry current. Apply Anti-oxidant paste to terminals after terminals have been torqued.



Battery Cable Connection

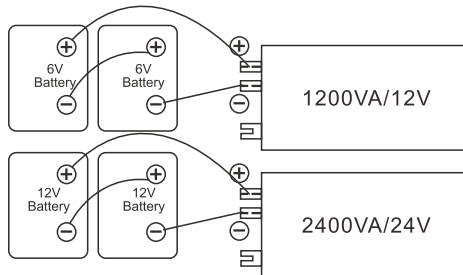
**Step 3- Connect battery cables to your batteries**

The battery must be wired to match the units DC input voltage specifications

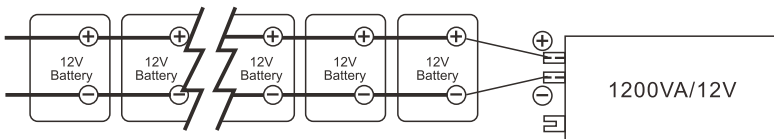


In addition, the batteries can be wired to provide additional run time. The various wiring configurations are as follows:

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

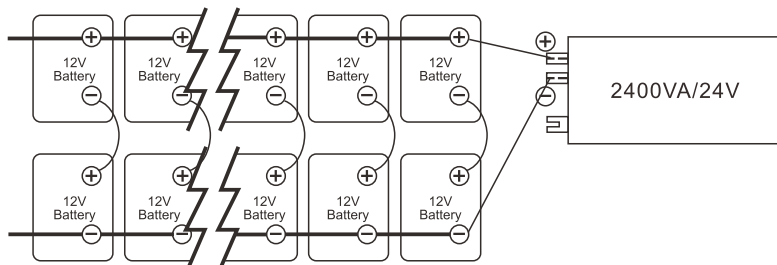


- **Parallel Connection:** Wiring batteries in “parallel” increases the total run time, the batteries can operate the AC loads. The more batteries connected in parallel the longer run time the loads can be powered from the inverter unit.





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



## SPECIFICATION

		EP11-1200VA PRO	EP11-2400VA PRO
<b>CAPACITY</b>		1200VA	2400VA
<b>AC INPUT</b>	Nominal Voltage	220/230/240VAC	
	Input Voltage Range	90~280VAC	
	Nominal Frequency	50/60Hz (Auto Detection)	
<b>Input Voltage Range Selector</b>	Narrow	170~280VAC	
	Wide	90~280VAC	
<b>INVERTER MODE OUTPUT</b>	Voltage	230VAC +10/-18%	
	Frequency	50/60Hz ±0.5Hz	
	Waveform	Modified Sine Wave Inverter	
	Efficiency (AC to AC)	> 95%	
	Efficiency (DC to AC)	> 80%	
<b>BATTERY</b>	Nominal Voltage	12VDC	24VDC
<b>CHARGER</b>	Boost Voltage	14.4+/-0.4V	28.8 ± 0.4V
	Float Voltage	13.7+/-0.2V	27.4 ± 0.4V
	Charging Current 10A ± 2A	10A ± 2A	
	Charging Current 20A ± 2A	20A ± 2A	
	Overcharging Protection	15.5V+/-0.4V	31 ± 0.8V
<b>TRANSFER</b>	Transfer Time	Typical 15-20ms, 40ms max	
<b>INDICATOR</b>	Line Mode	Green LED blinks or lights steadily	
	Battery Mode	Yellow LED lights	
	Overload/fault	Red LED blinks or lights steadily	
<b>AUDIBLE ALARM</b>	Low Battery Voltage in Battery Mode	Beeps every 2 seconds	
	Overload	Beeps every 2 seconds	
	Fault	Beeps continuously	

<b>ENVIRONMENT</b>	Temperature	0 ~ 40°C	
<b>PHYSICAL</b>	Dimension (mm) DXWXH	246x253x87	
	Net Weight (Kg)	2.3Kg	2.4Kg
<b>PROTECTIONS</b>	Deep Discharge, Overcharge, Short Circuit, Overload, Battery Short, Over Voltage, Under Voltage.		

## Troubleshooting

Problem	Possible Causes	Remedy
No LED display	1. Battery Weak.	1. Re-charge battery.
	2. Battery defective.	2. Battery replacement.
	3. Power switch is not pressed.	3. Press and hold power switch.
Mains normal but works in inverter mode	1. AC Input missing.	1. Check AC input connection.
Alarm buzzer beeps continuously	Overload.	1. Verify that the load matches the capability specified in the specs.
Back up time is shortened	Overload.	1. Remove some non-critical load.
	Battery voltage is too low.	2. Charge battery for 8 hours or more.

If any abnormal situations occur that are not listed above, please call service personnel immediately.

## Appendix A

Models	Input/output cables (gauge copper wire)	Battery cables (gauge copper wire)
1200VA/12VDC	At least 18AWG	At least 12AWG*2
2400VA/24VDC	At least 18AWG	At least 12AWG*2



**MUST**<sup>®</sup>

## GUARANTEE CERTIFICATE

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>

## GUARANTEE CERTIFICATE

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		