

# Low Frequency Pure Sine Wave Inverter

Operatinal Manual



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## I .Operating Instruction

### 1-1. Open-package inspection

- 1). After opening the package, please check the attached parts and components, including operation manual and checking whether the inverter is in good condition?  
If found any inverter broken or components missing, do not turn on the machine , feedback to the carrier or supplier.

#### **Note:**

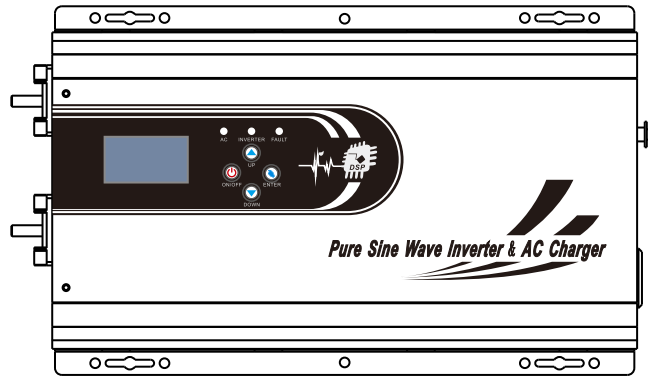
- 1). Please keep the box and packing materials in case the use in future.
  - 2). The product is very heavy (check attachment as reference), please be careful to carry.
- ### 1-2. Installation notice:
- 1). The products should be well-ventilated, away from water and the corrosive and combustible gases.
  - 2). Do not set it in a corner, ensure the bottom of the front panel, the rear panel fan outlet and the side of the machine are well-ventilated.
  - 3). The environment temperature should remain 0 — 40 °C.
  - 4). If the machine operates under low temperature environment, it would cause water condense, only in a absolute dry condition can the machine would work normal, otherwise there will be a electric shock.
  - 5). Install the inverter near the mains input socket or nearby the switch, to draw out plugs then cut off mains supply once there is an emergency.

#### **Attention:**

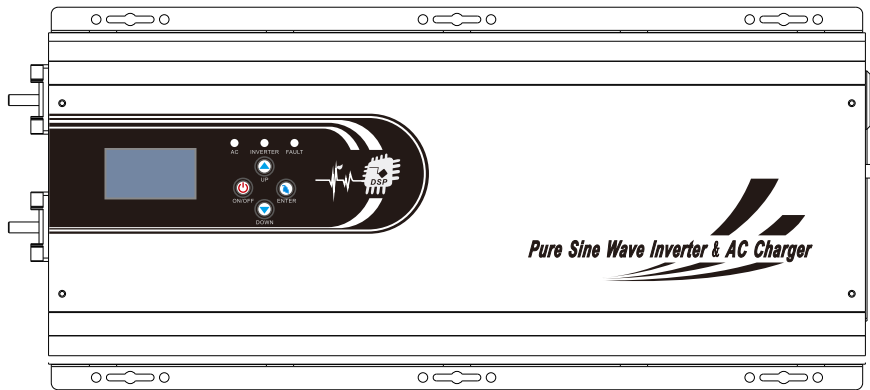
- 1). Load should be turned off before connecting to inverter and turned on one by one after connecting completed.
- 2). The inverter should be connected to a socket with a corresponding current protection.
- 3). All power sockets should link with ground protection.
- 4). No matter input power cable inserts to mains socket or not, the inverter will also continue outputing possibly, turning off the inverter can not guarantee there is no current inside the machine. In order to make sure to cut off the output of inverter, you should turn off all the switches then turn off the main supply.
- 5). To load inductive appliances such as electromotor, displayer and laser printer, inverter capacity should be twice as loading machine's rated power at least.

## II. Outlook drawing of inverter

### 1. 1000W/2000W/3000W Series

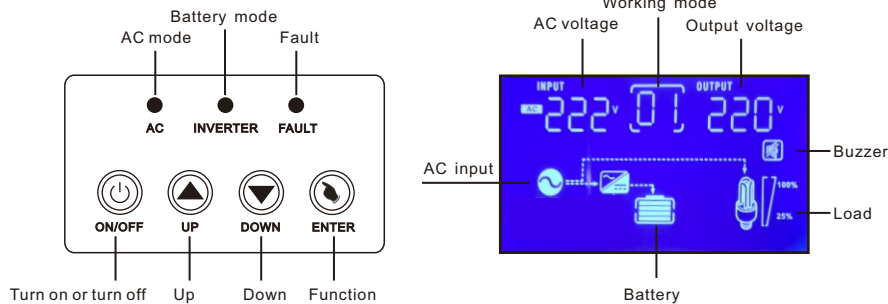


### 2. 4000W/5000W/6000W Series



## III. Description of front board

### Meaning of indicate lamp&button



## IV. Function setting and meaning of the button

**ON/OFF Button:** 3 sec. → ON 3 sec. → OFF

**Press this button to display the data below:**

Output voltage , Battery capacity ,  
Output frequency , Load capacity .

**Function Button :**

5 sec. → setting(P0),

→ (P1 Working mode, P2 Battery type choose, P3 Charging current adjust, P4) →OK  
or press two times can back to the main interface.

**Model P1:** → (01,02,03) first 01: AC 02:Auto 03: Battery →OK

**01 Normal Mode** - AC input priority to supply the load and batteries, battery supply the loads without AC input.

**02 Saving Mode** - AC input advanced to supply the load and the battery, battery supply the loads without AC input. But the load must >5% of the inverter capacity. otherwise the machine will continue to startup and shutdown.

**03 Battery Mode** - Battery priority to supply the load, when battery is low of power or voltage, will automatically switch to AC mains supply, when the battery full of charge, automatically transfer to the battery supply.

**Model P2:** → Type →OK

**Battery type**

**Charging current**

(24V\*2;48V\*4;96V\*8;108V\*9;120V\*10)

GEL U. S. A.	13. 7V
A. G . M. 1	13. 4V
A. G . M. 2	13. 7V
Sealed Lead Acid	13. 6V
Gel European	13. 8V
Open Lead Acid	13. 8V
Calcium (Open)	13. 6V
De sulphation cycle	14. 5V

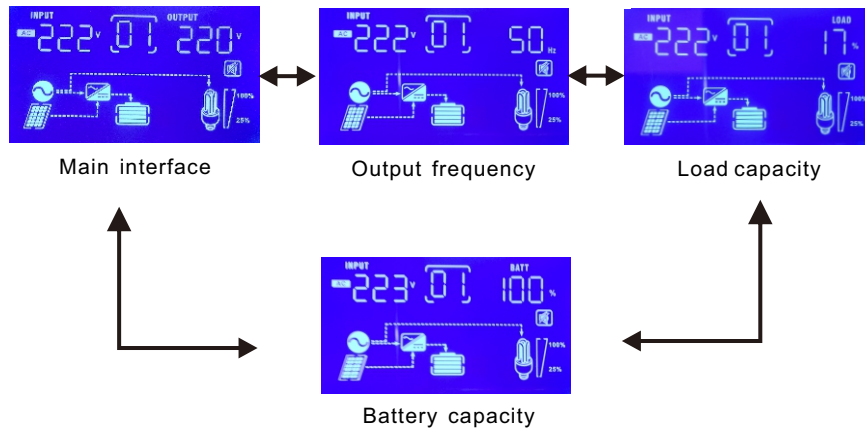
**Model P3:** → 0-15A →OK

**Note:** (The Max. charging current is 15A, from 0% to 100%)

**Model P4:** → or →OK

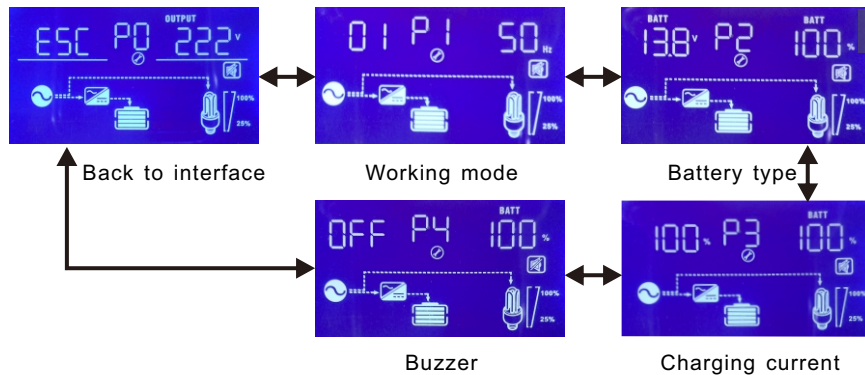
**Note:** Restart the inverter after each setting.

1. Main interface data:



Note: Inverter without the data of the solar panels.

2. Function setting interface:



V. Connection way of input & output

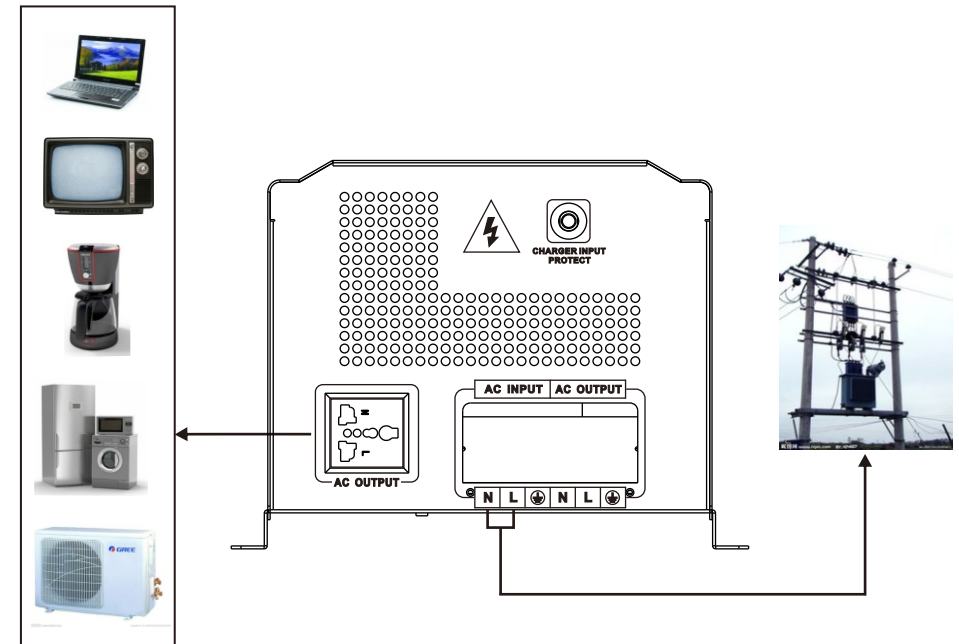
Connect with AC input and load output by connecting terminal, load output can connect both by terminal blocks and output plug.

Note: Output plug only can connect with each load less than 1500W.

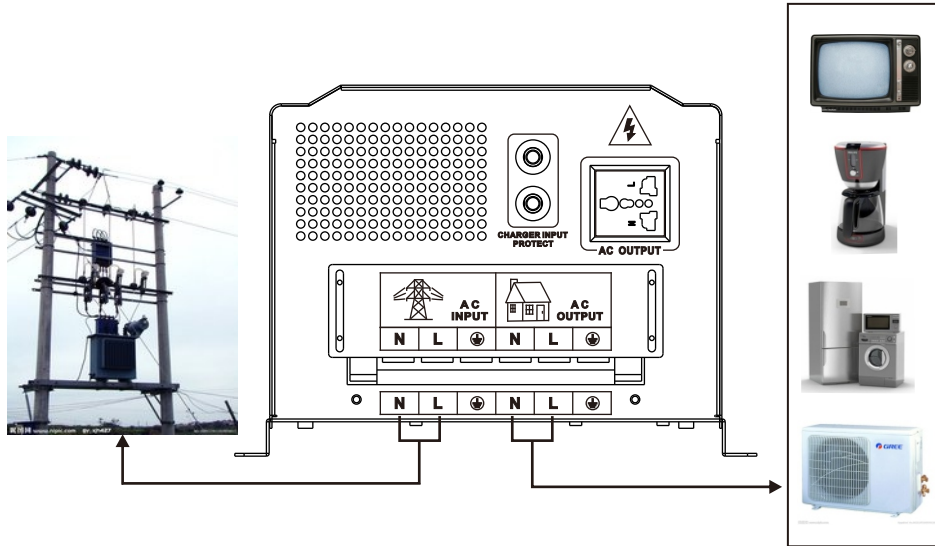
Back panel illustration

DC ⊖	Battery negative polarity connection
DC ⊕	Battery positive polarity connection
AC INPUT	AC input connection
AC OUTPUT	Universal socket output pr connection terminal output
USE ONLY WITH 250V FUSE	AC input and output over current protection
BATTERY ON/OFF	Switch on/off the battery
AC INPUT ON/OFF	Switch on/off the AC input

1. 1000W / 2000W / 3000W series wiring

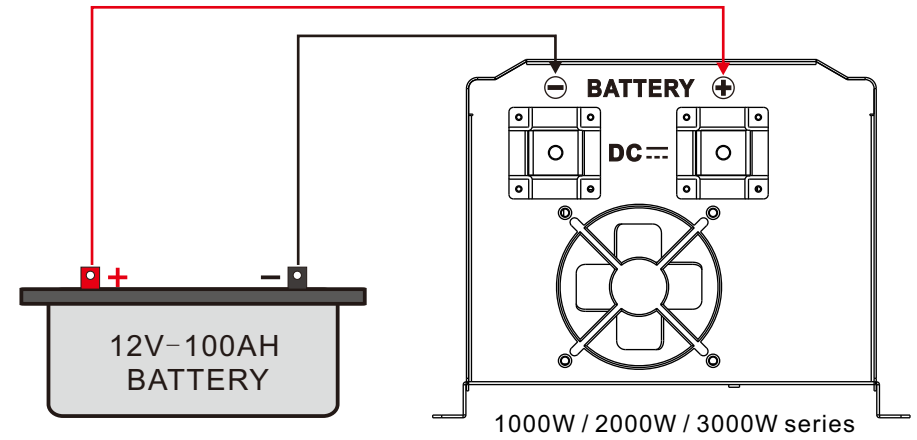


## 2. 4000W/5000W/6000W series wiring

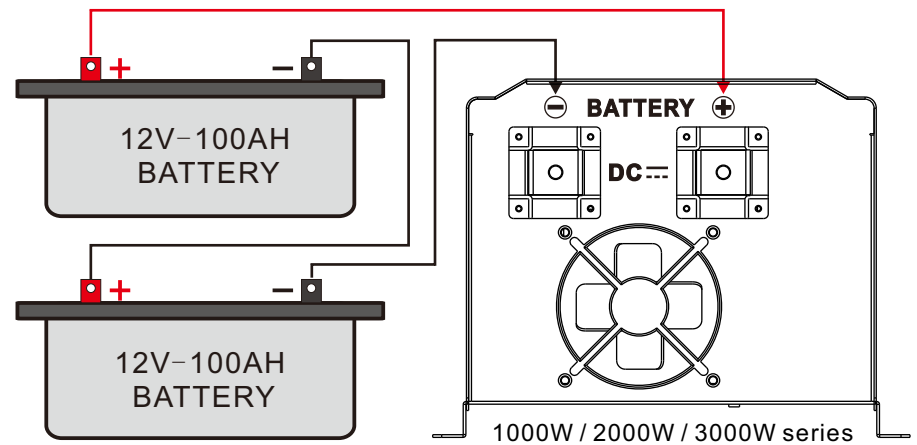


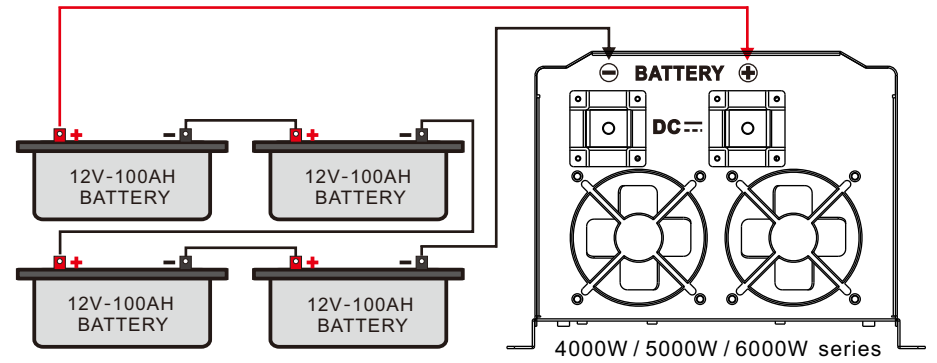
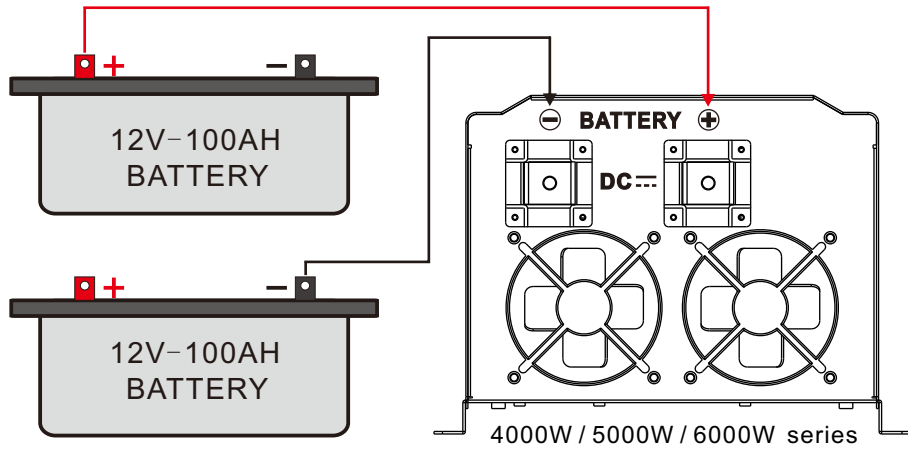
## VI. Battery wiring diagram:

### 1. 12V series battery wiring



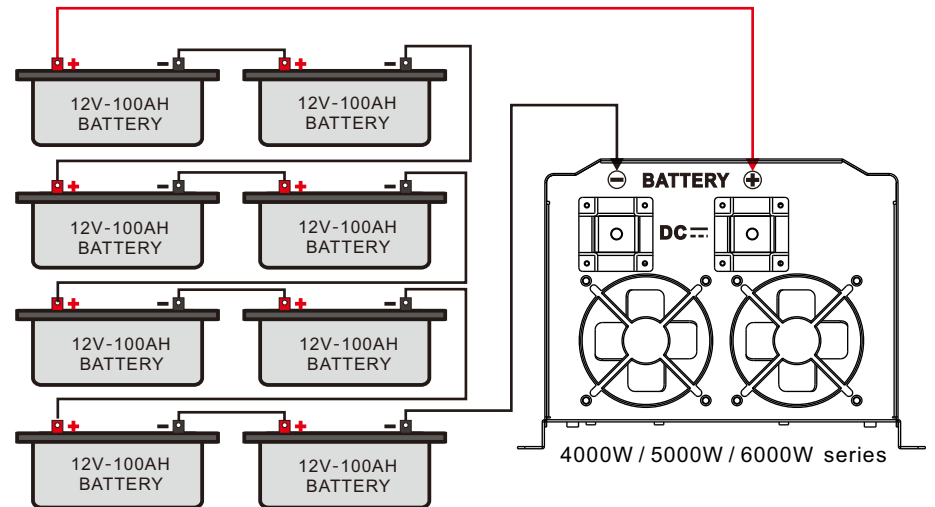
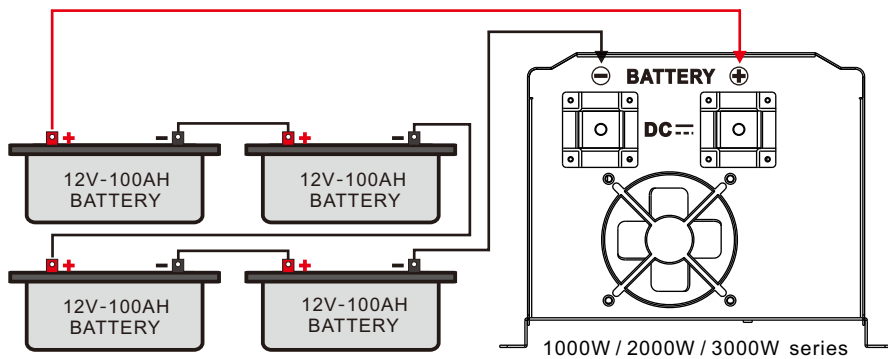
### 2. 24V series battery wiring





#### 4. 96V series battery wiring

#### 3. 48V series battery wiring



## VII. Care and maintenance

- 1). This series of products seldom need to be fix. The standard model battery is like a adjusting tap. Low maintenance, ensuring better life only by charging often. When connecting to mains supply, no matter whether the inverter is on or not, it still keeps charging for battery, and provides over charge, over discharge protection.
- 2). If there has been long time no using the inverter, it would be better to charge on after four to six months.
- 3). The normal working life of battery is 3 or 5 years, if it doesn't work, please change as early as possible by professionals.
- 4). Don't change the single battery , changing the battery should according to the suppliers instructions.
- 5). In normal, the battery should discharge then recharge after working each four or six months , start to charge and finish discharge, standard charging time should be more than 12 hours.
- 6). In high temperature area, the battery should be charged and discharged every 2 months and the standard charging time is more than 12 hours.

### Note:

- 1). Before changing battery, must turn off inverter and disconnect the mains supply.
- 2). Remove metal object like ring, watch etc.
- 3). Please don't put the metal objects on the battery.
- 4). It is a normal phenomenon that the wire will appear a small spark when connecting to the inverter, but it will not does harm to the people or the inverter.
- 5). Be attention to do not reverse connecting between the positive pole and the negative pole.

### If connected to the generator, the following steps should be required.

- 1).To start the generator till it runs steadily, then connect the generator output to the inverter input terminal. And turn on the inverter step by step according to the operating instruction. After the inverter starts, connect the load one by one to the inverter.
- 2).Please select the inverter capacity two or three times over than the capacity of the generator.

## VIII. Convenient method of maintenance & fixing :

Fault	Cause	Solution
No city power input	Recoverable fuse popup	Press fuse back
Terminal heating	Fault or loose connection	Fasten again
Switch off with loads	Battery no energy or overload	Charge battery or reduce loads
Switch on failure	Fault connection with city power or battery	Check connection with battery or connect again
Alarm when switch on	Battery no energy or overload	Charge battery or reduce loads
Buzzer scream 2 secs every 1 sec stop	Over temperature alarm (85 alarm-90 shut down)	Check if fan heat dissipation hole jammed
Fan twirls sometimes fast as well as slowly	Fan twirls fast when inside temperature reaches 45 degree, twirls slowly when 42 degree	Normal phenomenon, fan is under intelligent control

## IX. Technical Data

Model	GSI-152	GSI-202	GSI-302	GSI-402	GSI-502	GSI-602			
Rated capacity	1000W	2000W	3000W	4000W	5000W	6000W			
Input	Voltage	(170-265)VAC							
	Frequency	45-65Hz							
Output	Voltage	AC220V±2%(Battery mode)							
	Frequency	50/60Hz±1%(Battery mode)							
Output wave form	Pure sine wave								
Efficiency	>87%								
Battery	Optional								
Battery rated voltage	12/24/48VDC			24/48/96VDC					
MaxAC charging current	0--35A(Optional) (96V Max. 15A)								
Protection	Overload, short circuit, battery high and low voltage and AC input high and low voltage protection								
Transform	Interactive								
Overload	110%~120% turn to bypass after 30secs, 160% maintain 300ms and then shut down								
Communication	RS-232								
Environment	Temperature	-20--+75℃							
	Humidity	10%-90%							
Product Size L*W*H(mm)	475*270*205mm		640*270*205mm						
Weight(N. W.) (kg)	12kg	15.3kg	16.8kg	24kg	26.5kg	31.5kg			

Above parameter revision change without notification.