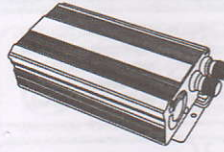


## Power inverter user's instructions

To ensure a reliable service for you, the user must install and use it properly. Please read instructions before install and use. Please pay special attention to warnings and warning statements. To make cautious statements for certain using condition and operation which will damage the inverter, to make clear warnings for certain using condition and operation which will result in any personal injury or property loss. The user must read all the instructions before using.



In order to use the machine properly, please read the users instructions carefully,. Especially when using it, please remember read "the Safety Cautions" at first to ensure safety using. After reading, please keep the users instructions and the warranty card for reference in the future.

## The Safety Cautions

Must read it and remember the safety cautions!



To avoid personal and others injury, the users must abide by the safety cautions as listed here, please refer to the implication of various marks as below.

■ Ignore and misunderstand the marks will result in two conditions.


**Warning!** The mark implication is "likely result in personal injury".

**Attention!** The mark implication is "likely result in property loss".


■ Be Sure To Keep The Content Classification And To Distinguish The Instructions By Marks As Followings:


	The Mark Means Forbidden
	The Mark Means Mandatory

**⚠ WARNING**


 It will create sparks when connecting the battery, so please ensure that no flammable gas before connecting. Battery charging and discharge will produce flammable gas, please put it at a well-ventilated, do not put it on a place with flammable gas.

FLAMMABLE GAS!

 When insert and pull out the power plug of load equipment, the inverter should be closed. May damage electrical equipment or inverter!

 Do not disassemble or modify the inverter. Disassemble or modify the inverter, it may cause a malfunction or fire, Electric shock.


PROHIBIT DISASSEMBLE!

 Do not wet the body. Doing so may result in fire due to short circuit and electric shock.


PROHIBIT WET!

 Do not place rod or other metal objects at vent or other opening. This may be reach inside parts and cause electric shock or injury.


FORBIDDEN!

 Do not damage outlet socket or electrical wire. (Do not cut, modify, close to heating objects, excessive curl, twist and pull wires, or place heavy objects on the electrical wire or outlet.)

FORBIDDEN!

 When using this machine, please do not bundle the wires. Use of a damaged cord may result in electric shock, short circuit or fire.

FORBIDDEN!

 The plug is fully inserted into the load equipment power outlet. If not fully inserted into the socket, may result in electric shock and overheating, even cause fires. ● Never use a damaged plug or loose power outlet.


 Do not touch plug with wet hands. This may cause an electric shock.

PROHIBITING WET HANDS!


 Do not allow combustible or volatile substances floating into the machine.

AWAY FROM THE FLAMES! DOING SO MAY CAUSE A FIRE ACCIDENT.


**⚠ WARNING**


 Use inverter in ground loop power system. If there is an output terminal connected with the ground, it will make the inverter and the ground short circuit damage. E.g.: use in the car, there is a inverter outlet terminal voltage on the body.

FORBIDDEN!


 Using in ground loop power system, do not let the load and ground come into a loop type. Cause overload protection circuit failure or increase overload protection power.

FORBIDDEN!


 FORBIDDEN! DON'T CONNECT THE OUTPUT 220V OF INVERTER WITH ON GRID 220V.

 Do not install the inverter in high temperature, high humidity working environment.

FORBIDDEN!

 The inverter may cause electric leakage, and cause electric shock or fire.

FORBIDDEN!

 The inverter used in medical equipment untested.

FORBIDDEN!

Medical Equipment

## ATTENTION:

1. When installing and connecting cables should use the appropriate cables, such as 220V output cable is too long or wire cross-sectional area is too small, it will generate a lot of power loss in the cable, it will show a small power and low voltage at the load end
2. If battery and inverter connection cable is not standardized, the cable is too long, cross-sectional area is too small, poor joint connecting, it will cause a lot of power loss. It shows insufficient output power, low battery voltage, short working hours, or even alarm and stop working when starting machine. The cable should have water resistance function, dielectric strength should meet environmental requirements.

### Applicable products for examples:

Apply to light bulbs, fluorescent lamps, electric cooker, electric iron, desktop computers, laptop, computer display, fax machines, printers, LCD TV, television, fan, DVD, cell phone chargers, equipment.

### Not applicable to products for examples:

You can not use refrigerators, motors, drilling, power amplifier, hi-fi, induction cooker, subwoofer and other iron core transformer power supply electrical equipment.

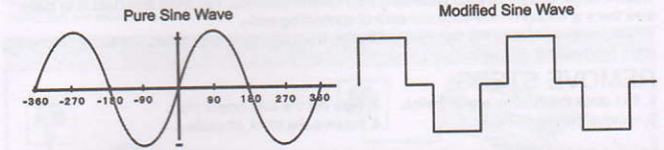
## PERFORMANCE INTRODUCTION AND THE USING ENVIRONMENT

The inverter is a kind of power equipment, it converts DC voltage (batteries, solar cells, wind turbines, etc.) into AC voltage. As we use of high-frequency inverter power conversion technology, to replace the old bulky silicon steel sheet transformer with ferrite transformer, which is why our inverter is lighter and smaller than other similar inverters. When the inverter working in inverting mode, the output wave is modified sine wave. It is a practical wave that's similar to sine wave waveform. This waveform is the most suitable for linear load and an electronic device using a switching power supply, such as a light bulbs, electric cookers, energy saving lamps. Also applies to the inductive load, such as transformers, motors, etc.

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The effective value of voltage modified sine wave inverter output is 220 v, which is the same as the standard household power. Most of ac voltmeter (digital and die) is sensitive average value of waveform, but not valid value. The calibration setted Under the RMS voltage -used M measure pure sine wave. If measured the output voltage of inverter with them, There will be appear the voltage will be lower 20-30 v. in order to measure accurate, please use the valid value voltmeter as well as can be A9.

FIGURE 1: CORRECTION OF MODIFIED SINE WAVE AND PURE SINE WAVE



## USING ENVIRONMENT

In order to achieve the best effect, please put the inverter onto surfacing -floor, car floor, or other solid surface, fixed the inverter power supply, the Work site shall meet the following criteria:

1. Dry, the inverter should not contact with water or other liquid, keep the inverter from moisture or water.
2. A cool environment, the temperature would be 0 °C (no condensation) to 40 °C. Don't put the inverter in heating vents or other production thermal equipment. As far as possible, keep the inverter not direct sunlight.
3. No objects around the ventilation to keep free flow. When inverter is working, don't put anything on the inverter, the fan is used for cooling.
4. For safety, please don't use the inverter near the inflammable material or the accumulation of flammable gas.

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5.As Battery, not only need 39.5 v to 56 v dc voltage, but also sufficient electric current when load operating .The source should be a fully charged, lead-acid battery. rough estimate the load current ,should use the load power divided by 40 to estimate.

Such as:

A ac load power is 100 w , then the power supply must be  $100/40=2.5A$ .

When a larger current needed,paralleling with several batteries. The most important is to make sure there is enough cross-sectional area of connecting cable.

This manual can't list all the battery combination type. Battery charging and Capability belong to other professional category.

#### REMOVE STEPS:

- 1, first close the inverter power switch.
- 2, wipe out the load power plug.
- 3, remove the red dc cable.
- 4, remove the black dc cable.

! Note: the wiring diagram as a basic reference only, please contact with professional technical person to the actual installation.

Inverter can use one or more battery. It is best to use 150 ah or a larger battery capacity.

! Note: These operations may be need to connect with the battery, before connection,please make sure there is no flammable gas around.

Using inverter cable equipped ( not include the high power mode cable), connect the inverter with battery ,Red cable connected to the inverter input terminal and the positive electrode of the battery;black cable connected to the inverter input terminal and the cathode of the battery. Please make sure all the connections are stable and reliable.

Improper connection may cause overheating,damage of terminal and cable ear. At the same time will shorten the battery life. Switch the inverter module to "ON", if your battery is full charger, the POWER LED turn green ,if turn red, that is inverter protection, find the ways to solve it before using, (check whether the battery voltage is too high or too Low, the output of the inverter is overload or short circuit).

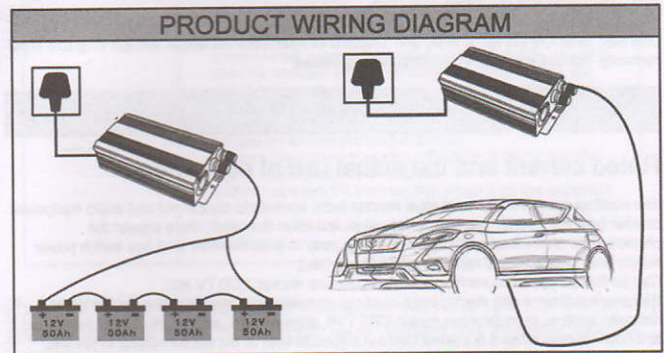
⚠ 48 v inverter power source can be a 48v battery pack, or four 12 v battery in series to increase electric voltage.

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⚠ Before plug in all of your electric equipment, ensure that all set is closed.

Open the inverter mode switch , the LED under the POWER turn green , then you can open the equipment one by one, if the device not be overload, the inverter can normal work now. If LED turn red , it is overload. reduce the load , restart and to work normally.

Emergency use:When small power inverter power supply to an old TV set, Large current appeared in the degaussing circuit work when it is started, launch two or three times in a row, make the TV work.



Installation steps: refer to the above connection diagram

1. first close the power switch of inverter .
- 2.connect the battery Cathode and inverter black terminal with black dc cable
- 3.connect the battery anode and inverter red terminal with red dc cable

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- 4, plug the power plug of electrical equipment onto the inverter output socket.
- 5, open the inverter power switch then can be used.

### CHARACTERISTICS ( INVERTER MODEL)

This inverter has advanced anti-interference technology, fully functional protection circuit and soft -start circuit, Convenient mode of operation .  
 . The protection circuit is automated, including overheating protection, battery protection, short circuit protection and grounding protection.  
 . The soft start circuit could gradually improve the output voltage at start-up, to eliminate the cold start failure, At the same time, with functions of instantaneous output voltage drop and rapid recovery. Reduce the load on instantaneous overload.

### OPERATING TIPS

#### Rated current and the actual use of equipment

The nominal current or power of most electric tools, household appliances and audio equipment smaller than the inverter nominal power range, but when they start, there appear the phenomenon of overload protection. Inverter is easy to drive resistive load and switch power supply load . Because the resistive load is linear load, Can be loaded operation, such as electric stove, rice cooker, LCD TV ect.  
 Some av equipment and electric tools need bigger level power than resistive load to Work normally, such as asynchronous motor, CRT TVS, compressors, pumps, etc. There must need 2 to 6 times current when it is started. Can run a specific load or not will be subject to the test.

**Note:** continuous frequent opening and closing inverter may cause damage.

## COMMON PROBLEMS

Electric tools and micro Wave furnace can't start	Carefully read each information accurately determine the input power of tools. Make sure the output power could run enough the tools and microwave, please mind electricity Dynamic tools may need 2 to 6 times power
Television interference	The interference of TV signal by inverter is very small. However, in some cases, some of the interference is still visible, especially when the television emission is weak. Please try to follow the way as below to deal with: 1. away inverter from the television antenna as far as possible or extended television antenna cable. 2. Adjust the inverter placement direction. 3. Ensure the antenna intensity for TV signal is strong enough .Use quality shielding antenna cable. 4. When you watch TV, don't run high power electrical equipment or tools. 5. Some of old TV set can't completely disappear the interference.

**△ Note:** under normal circumstances the fuse will not be fused, unless there is a serious circuit fault. When the inverter failure occurs, please don't try to repair by yourself, contact professional technical person to process, Otherwise there will be a risk of electric shock, the machine is with high pressure.

## MAIN TECHNICAL PARAMETERS

Rated Power		300W		500W		1000W		
Continue Output Power		300W		500W		1000W		
Input Section	DC input voltage	12V	24V	12V	24V	12V	24V	
	DC operating voltage	10.5-15V	21-30V	10.5-15V	21-30V	10.5-15V	21-30V	
	DC Low-voltage Protection	9-10.5V	19.5-21V	9-10.5V	19.5-21V	9-10.5V	19.5-21V	
	DC under-voltage alarm	9.5-11V	19.5-21V	9.5-11V	19.5-21V	9.5-11V	19.5-21V	
	DC over-voltage Protection	≥15V	≥29V	≥15V	≥29V	≥15V	≥29V	
	Fuse	40A×1	20A×2	10A×3	10A×2	40A×3	20A×3	
	Static Current	≤0.5A	≤0.5A	≤0.5A	≤0.5A	≤1A	≤1A	
The product input Parameters								
Output Section	Output Wave	Modified Sine Wave		Modified Sine Wave		Modified Sine Wave		
	Output Voltage	110+5%	220+5%	110+5%	220+5%	110+5%	220+5%	
	Output Frequency	60HZ±1%	50HZ±1%	60HZ±1%	50HZ±1%	60HZ±1%	50HZ±1%	
	The product input Parameters							
	Transfer efficiency	≥90%		≥90%		≥90%		
	Over-load protection	300W—400W		500W—600W		1000W—1200W		
	Short Circuit Protection	Yes		Yes		Yes		
Work temperature	-10℃—+50℃		-10℃—+50℃		-10℃—+50℃			
Temperature protection	+60℃—+70℃		+60℃—+70℃		+60℃—+70℃			
Green LED Index	Green LED light(Working)							
Red LED Index	Red LED light( Fault protection)							

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## MAIN TECHNICAL PARAMETERS

Rated Power		300W		500W		1000W		
Continue Output Power		300W		500W		1000W		
Input Section	DC input voltage	48V	60V	48V	60V	48V	60V	
	DC operating voltage	40V-60V	50V-76V	40V-60V	50V-76V	40V-60V	50V-76V	
	DC Low-voltage Protection	39V-40V	49V-50V	39V-40V	49V-50V	39V-40V	49V-50V	
	DC under-voltage alarm	39V-40V	49V-50V	39V-40V	49V-50V	39V-40V	49V-50V	
	DC over-voltage Protection	≥50V	≥76V	≥60V	≥76V	≥60V	≥76V	
	Fuse	7.5A	5A	10A×2	7.5A×2	10A×4	7.5A×4	
	Static Current	≤0.2A	≤0.15A	≤0.2A	≤0.15A	≤0.4A	≤0.35A	
The product input Parameters								
Output Section	Output Wave	Modified Sine Wave		Modified Sine Wave		Modified Sine Wave		
	Output Voltage	110+5%	220+5%	110+5%	220+5%	110+5%	220+5%	
	Output Frequency	60HZ±1%	50HZ±1%	60HZ±1%	50HZ±1%	60HZ±1%	50HZ±1%	
	The product input Parameters							
	Transfer efficiency	≥90%		≥90%		≥90%		
	Over-load protection	300W—400W		500W—600W		1000W—1200W		
	Short Circuit Protection	Yes		Yes		Yes		
Work temperature	-10℃—+50℃		-10℃—+50℃		-10℃—+50℃			
Temperature protection	+60℃—+70℃		+60℃—+70℃		+60℃—+70℃			
Green LED Index	Green LED light(Working)							
Red LED Index	Red LED light( Fault protection)							

The inverter accessories including

Instruction book × 1 pc AC connector × 1 pc Warranty card × 1 pc

⚠ Warning: non-professional technician, don't open the shell of inverter.

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