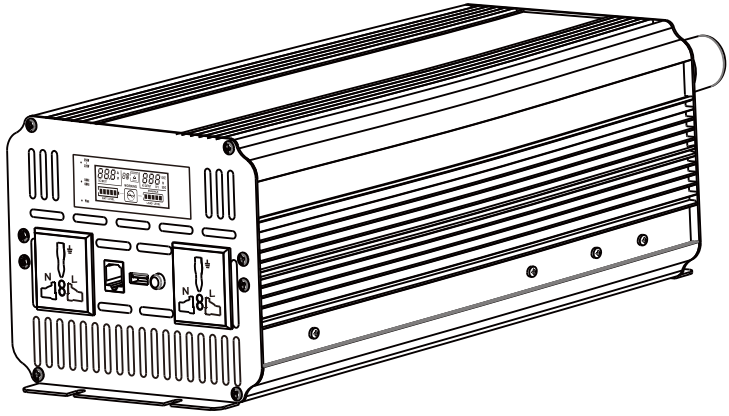
BP Series Pure sine Wave Inverter

User Manual



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1、ABOUT THIS MANUAL

1.1 Purpose

In order to ensure reliable and better service, please pay special attention to the warnings and warning instructions in this manual before installation and use. There are cautious statement reminder for certain conditions of use and practices that may lead to damage to this product or personal injury. Please read all the tips before using this inverter.

Please read this manual carefully for proper use. Especially the details of the "Safety Instructions" before use for safe usage. After reading the user manual, please keep it properly for future reference.

1.2 Scope

This manual is intended to help you to use the product properly and does not represent any description of the hardware or software configuration of product. For the configuration, please refer to the contract related to the product (if any) or consult the sellers. The pictures in this manual are for reference only, if any individual picture does not match the actual product, please refer to the actual product.

2. SAFETY INSTRUCTIONS

Warning: Please read carefully warnings may cause personal injury as below

- **The machine has overload protection, which can prevent overload;**
- **To prevent fire, do not cover or block the ventilation holes. Do not use this product in zero clearance or non-ventilated areas as it may cause overheating. Please be careful when the surface temperature is too high;**
- **To avoid causing harm to you and others, please be sure to follow the safety precautions we have listed as below.**

Flammable gas: there may be sparks when connecting load equipment, please be sure that there is no flammable gas in the surrounding area before connecting. And please keep good ventilation;

Prohibit parallel connection with mains electricity: output in parallel with mains electricity will damage the inverter and cause risk of electric shock;

Prohibit minors from using: can not be used by minors. This product has high voltage output and may lead to risk of electric shock

Do not disassemble or modify this product without authorization: unauthorized disassembly or modification of this product may lead to safety accidents such as failure, fire or electric shock;

No stick objects touch: do not place sticks or metal objects at the socket. This may cause electric shock and product damage by touching internal parts;

Do not touch with wet hands: do not touch the body and plug with wet hands, it may cause electric shock and personal safety;

Keep away from flames and high temperature area: fire and explosion of this product and battery can occur when operating in flame and high temperature area.

No falling and colliding: falling and colliding the product will cause damage and other safety hazards;

Medical equipment banned: this product has not been tested and cannot be used in medical equipment;

Please ground wire: for electricity safety, please ground wire or it may cause safety accidents;

Moisture-proof and waterproof: please pay attention to moisture-proof and waterproof. This product may cause short circuits, fires, and electric shock accidents due to moisture or water ingress;

Complete insert: please insert the load device plug into the power socket of this product fully. If the plug cannot be fully inserted, it may cause electric shock, overheating, and even fire accidents. Do not use damaged plugs, power sockets and power cords.

3. Product overview

Thank you very much for choosing products from our company, and thank you for your trust and support. At present, our products have received unanimous praise from customers at home and abroad. We sincerely hope that this product can meet your needs, and we also look forward to your comments on the performance and functions about the product. We will continue to improve the quality of the product. Should there be any abnormal situations during use, please contact us immediately, and we will provide you the fastest service to meet your satisfaction as possible.

The BP series inverter is the pure sine wave inverter, which is a brand-new power solution developed by our company for complex power request based on users' higher demands for efficiency and flexibility in the digital era. he user-friendly design, innovation and stylish elements of the BP series inverters enable us a seamless experience due to complex application loads and a safe, reliable, plug-and-play solution.

The BP series inverter is a power supply device that converts direct current (storage battery, solar battery, wind turbine etc.) into alternating current. This series of inverters can be used at home, outdoor, car, boat and other environments. The inverter is with a wired control display panel, which can check the working status information of the inverter and turn on/off the inverter power supply as well. The inverter function can be set by the display control buttons on the inverter to meet the requests from different users.

The product are with the following characteristics

1. Pure sine wave inverter;
2. Set the output voltage and frequency by button(BBP1000, BBP1500 Without this feature);
3. Enhanced function can be set by button(BBP1000, BBP1500 Without this feature);
4. Compatible with mains electricity voltage, high conversion efficiency and rich interfaces;
5. Perfect protection circuit provides high temperature protection, high voltage protection, low voltage protection, short circuit protection, overload protection and other protections to prevent damage to your inverter;
6. The soft start circuit has the function of gradually increasing the output voltage in the start-up process to eliminate the function failure of cold start and the function of reducing the output voltage instantly and quick recovery to reduce the overload in start-up..

DC to AC


Pure sine wave output

LCD function display

USB charging output


Car Power supply

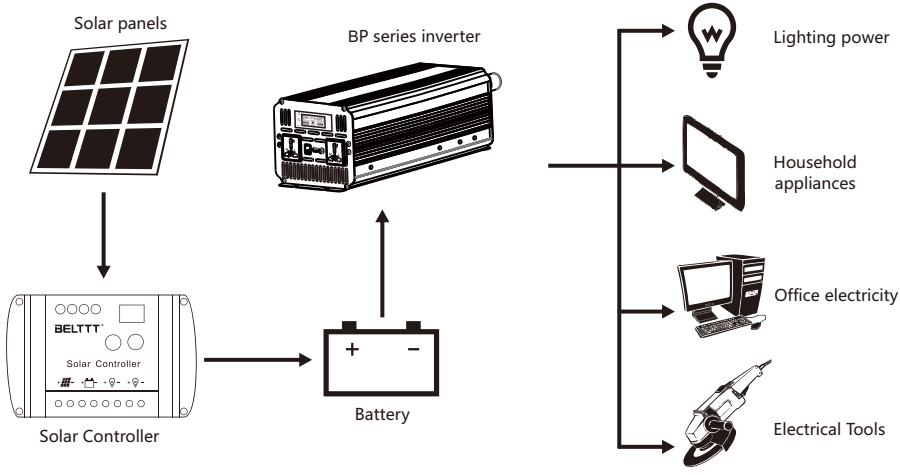

Solar/home power supply


Ship equipment power supply

4. Inverter application

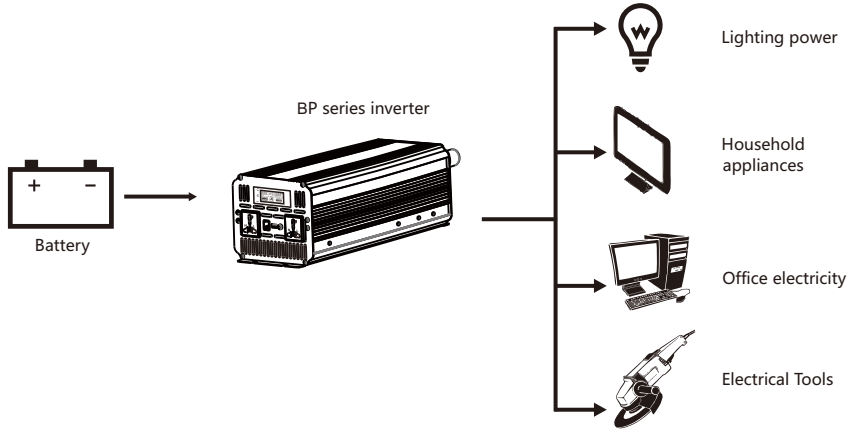
The BP series inverter can be used as the core component of off grid solar power generation equipment, or can also be configured as independent power supply system. The figure as blow shows the basic application of the inverter

Solar off-grid power generation system configuration diagram



Inverter, solar controller solar panel, battery can form a set of solar off-grid power generation systems.

Inverter independent power supply configuration diagram

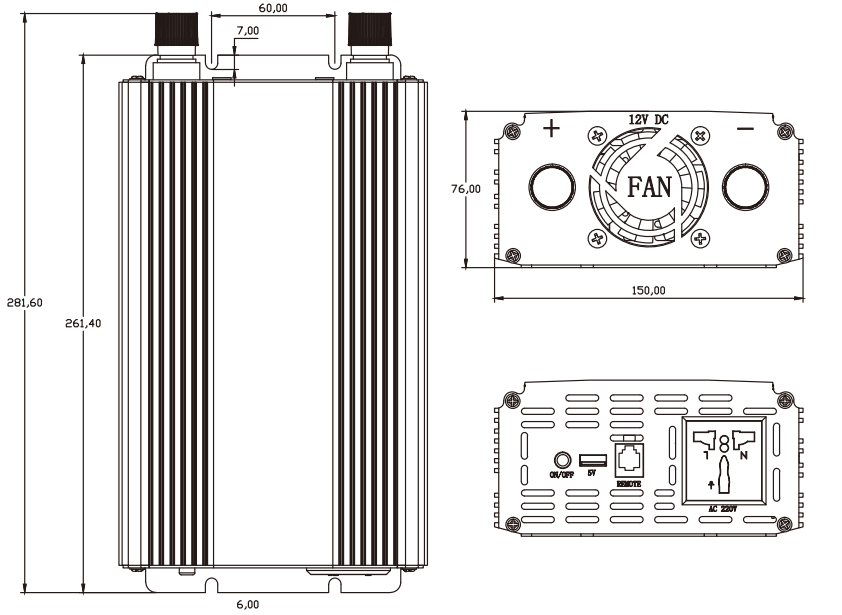


The inverter and battery can form an independent power supply system, and the loaded equipment and use time is based on the output power of the inverter and battery capacity. The inverter can not charge the battery. If you need to charge the battery, please purchase a charger separately.

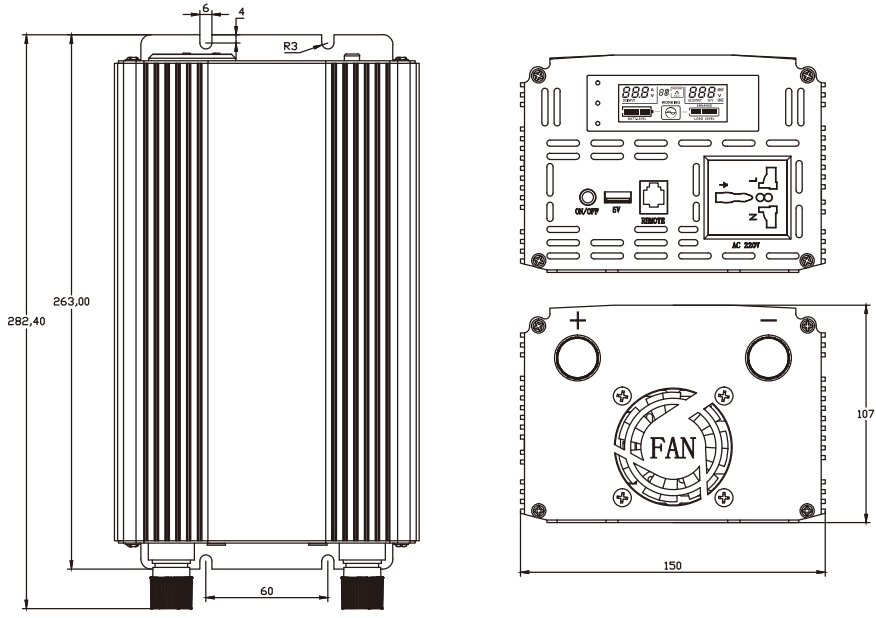
5. Product appearance

5.1 Product size

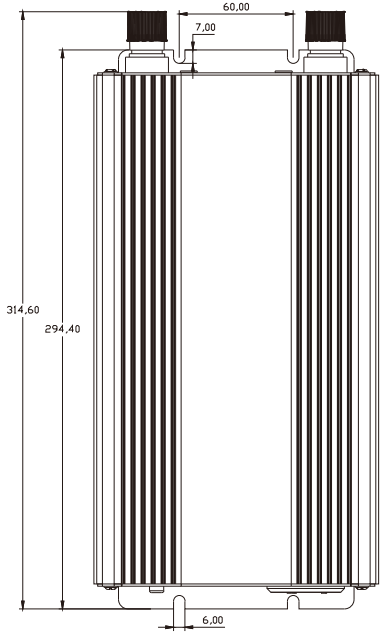
BBP1000 Inverter size (mm)

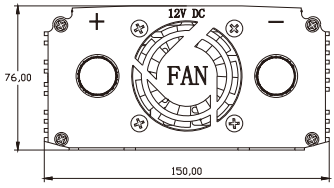


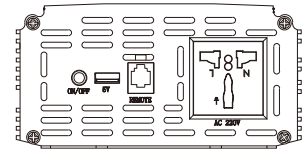
BBP1000(LCD) Inverter size (mm)



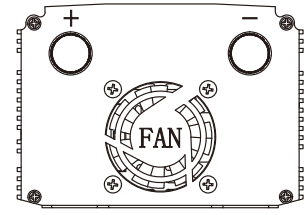
BBP1000 Inverter size (mm)

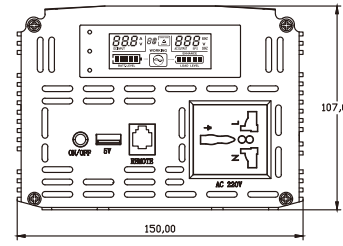




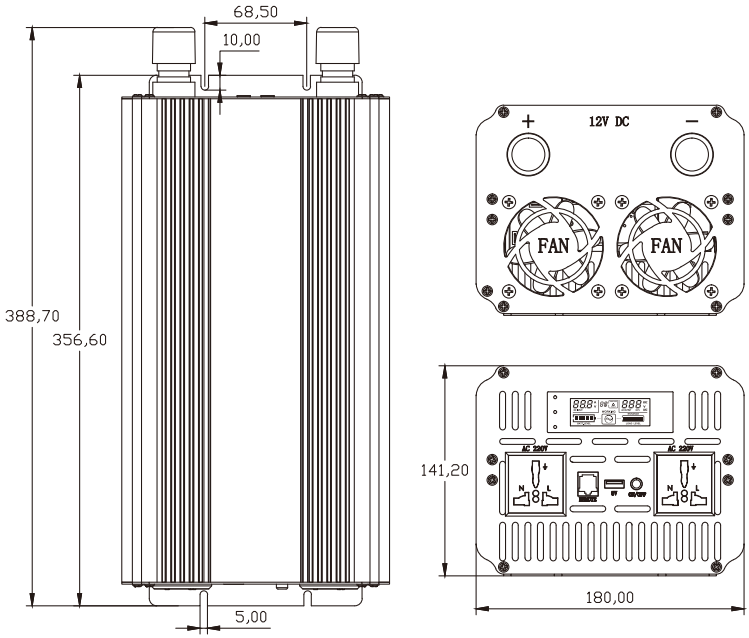


BBP1500(LCD) Inverter size (mm)

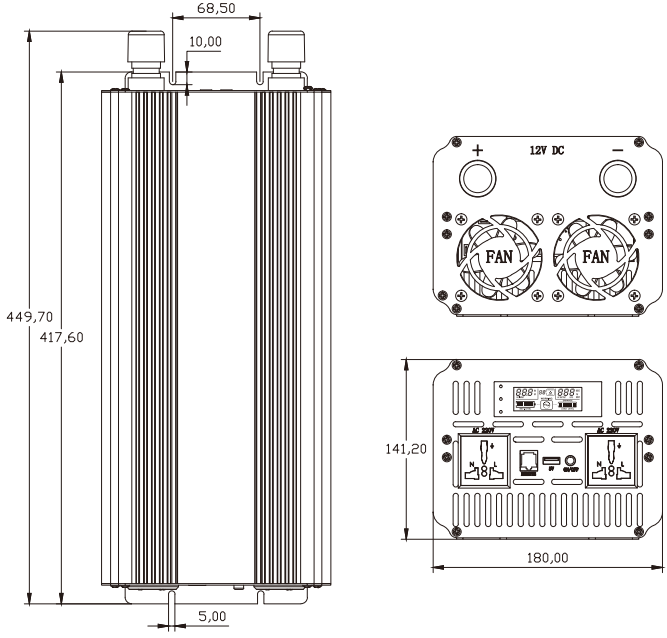




BBP2000 Inverter size (mm)



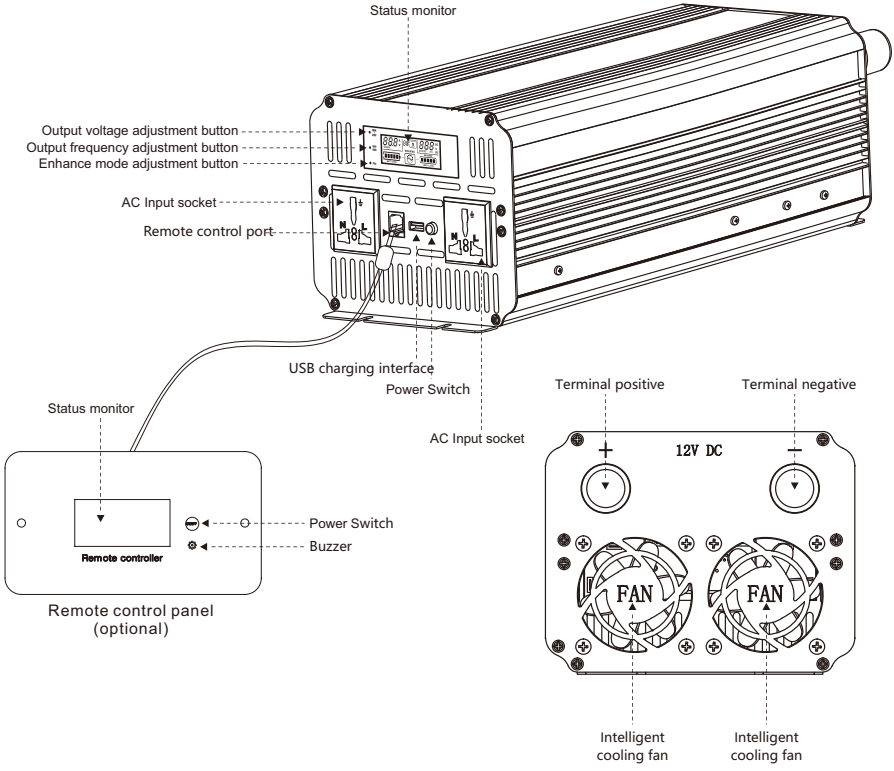
BBP3000 Inverter size (mm)



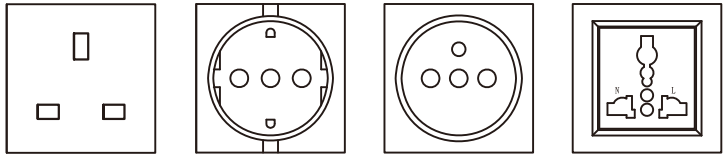
5.1 Appearance and function introduction

* The status monitor and remote control function are suitable for BBP1000 (LCD), BBK1000 (LCD), BBP2000, and BBP3000 models only.

* Remote control panel is optional.



Note: the appearance may be different from different models, please refer to the actual product

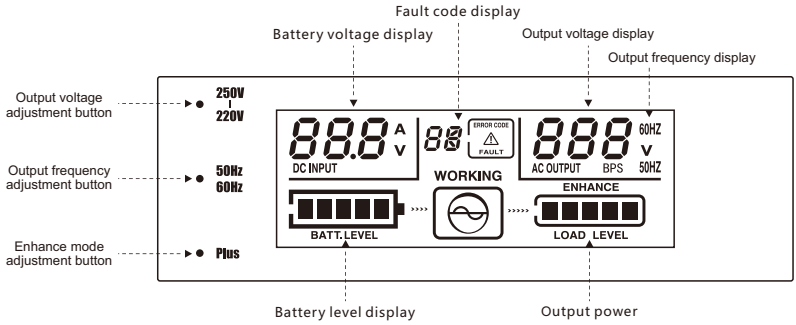


Note: the AC socket may be different from different countries and regions, please refer to the actual product

6. Display and buttons

6.1Display and buttons

This function is available for BBP1000 (LCD), BBK1000 (LCD), BBP2000, and BBP3000 models only



6.2 Buttons function introduction

1. Press and hold the "**220V-250V"** button for 5 seconds with the thimble to enter the output voltage setting. The output voltage can be set 220-250Vac, increasing by 5Vac every time. It will be saved automatically for 3 seconds, default 230Vac;

2. Press and hold the **"50Hz 60Hz"** button for 5 seconds with the thimble to enter the output frequency setting. The output frequency can be set 50/60Hz, which is automatically saved in 3 seconds, default 50Hz;

3. Press and hold the "Plus" button for 5 seconds with the thimble to enter the mode setting. NORMAL and ENHANCE mode can be set, saved in 3 seconds automatically, default ENHANCE mode.

Thimble

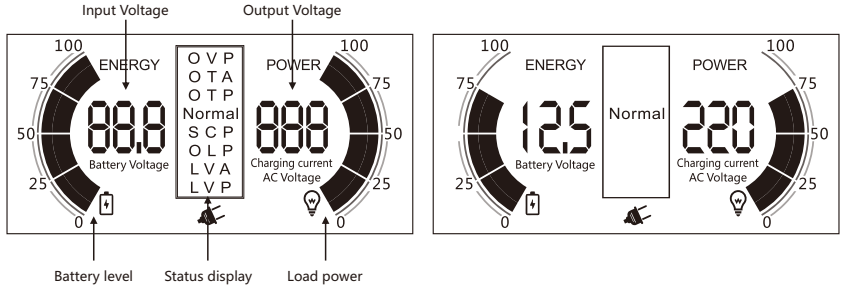
Thimble as gift for BBP1000(LCD)、BBK1500(LCD)、BBP2000、BBP3000 Models with

6.3 Faults and troubleshooting

Error code	Malfunction	Fault description	Method of exclusion
E01	Battery Low Voltage Protection	The battery voltage is too low and the inverter automatically turns off the output.	Check if the battery cable is loose or check if the battery capacity is too small
E02	Battery High Voltage Protection	The battery voltage is too high and the inverter automatically turns off the output.	Check the battery voltage or determine if there is an external charger connection that causes the voltage to be too high
E03	Inverter Output Short-circuit Protection	Inverter output short circuit, inverter automatically closes output	Check if the AC output cable is shorted.Disconnect or reduce the electrical load and turn the inverter back on
E04	Inverter Over Temperature Protection	The internal temperature of the machine is too high and the inverter automatically turns off the output.	Check if the ventilation of the machine is good and the working environment temperature is too high.Wait for the machine to automatically cool down and automatically restore the output.
E05	Inverter Overload Protection	The inverter output is overloaded and the inverter automatically turns off the output.	Check if the power load is too large, disconnect or reduce the power load, and turn the inverter back on.
E06	Battery Low Voltage Alarm	Low battery voltage, machine alarm	Turn off the load and charge the battery
E07	Inverter Over Temperature Alarm	The internal temperature of the machine is too high, close to the limit of the machine	Reduce the electrical load and check if the machine is well ventilated and the ambient temperature is too high.

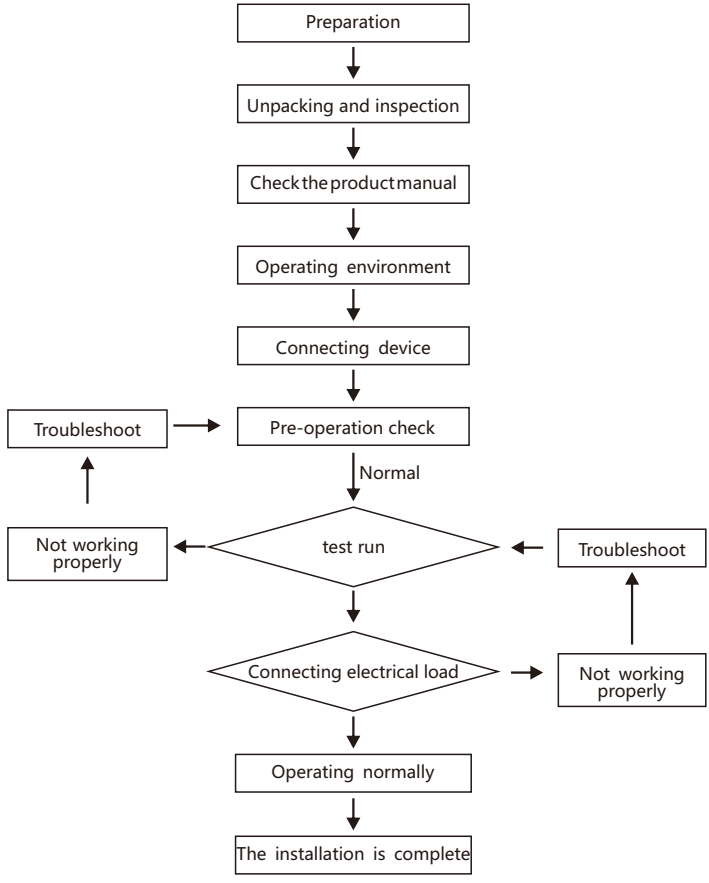
6.4 Wired remote controller panel

*This function is optional and requests to be used with the remote controller panel. It is suitable for BBP1000 (LCD), BBK1000 (LCD), BBP2000, and BBP3000 models only



7. Product installation

7.1 Product installation flow



7.2 Unpacking and inspection

When open the package, please check if package is damaged. If there is any obvious deformation on the device, please contact the supplier immediately; Please check the label of the device to confirm whether its model, input power, input voltage, and output voltage meet the requirements of your purchase. You can confirm according to the appearance structure and model description in the manual. If any missing parts or damages in transportation, please contact our after-sales department in time. Please keep the packaging materials for future transportation use.

7.3 Working Environment

In order to ensure the performance and the lifespan of the device, it is necessary to select the installation location of this inverter to avoid the conditions as below:

1. This device should be installed indoors with well ventilation;

2. Avoid using in the environment of direct sunlight, exposure, rain, high humidity, corrosive gas and mechanical shock;

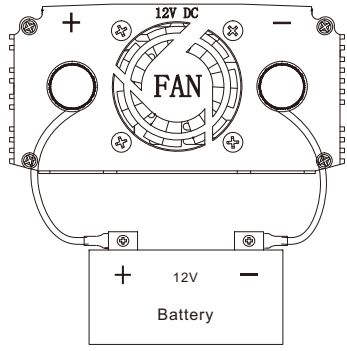
3.The working temperature is -20~40 ℃ and humidity is 10-90% RH, without condensation. Storage temperature is -20-60 ℃ and humidity is 10-95% RH;

4. Packaging drop test follows IATA standards。

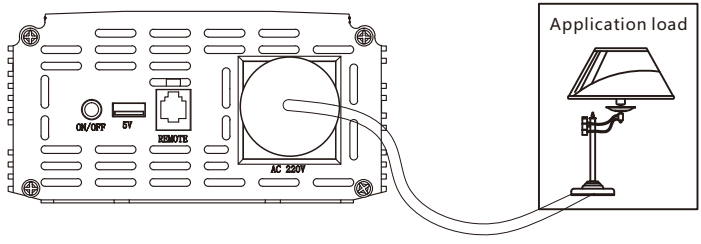
7.4 Device Connection

Connection diagram

Inverter connected to livestock battery



Inverter connection application load



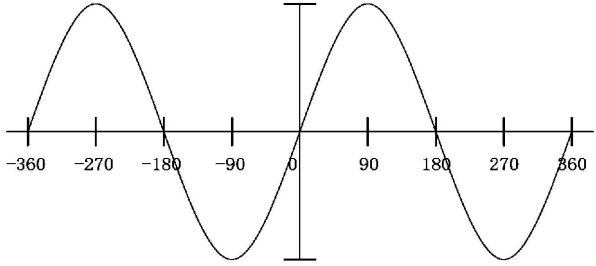
8. **Product Parameter**

Model		BBP1000	BBP1500	BBP1000 (LCD)	BBP1500 (LCD)	BBP2000	BBP3000
Output	Rated Power	1000W	1500W	1000W	1500W	2000W	3000W
	Peak Power	2000W	3000W	2000W	3000W	4000W	6000W
	AC Voltage	220~250Vac (Adjustable)					
	Frequency	50Hz / 60Hz (Adjustable)					
	Waveform	Pure Sine Wave					
Input	Battery Voltage	12Vdc					
	Voltage Range	9.5V～15.5Vdc					
	DC Current	85.2A	132.6A	85.2	132.6A	189.4A	287.4A
	No-load Loss	≤1	≤1.4A	≤1	≤1.4A	≤1.7A	≤2.3A
	Shutdown Mode Static Current	≤10mA					
	Fans Working Mode	Temperature control mode：fans run when transformer temperature is 50±5℃ and stop running when temperature is 45±5℃ Power control mode：fans run when load power is 300±50W and stops running when power is 200±50W					
	Max Efficiency	91%					
Battery Input Protection	Fuse	45A*3	45A*4	45A*3	45A*4	45A*6	45A*9
	Battery Low Voltage Alarm	10.5Vdc Buzzer alarm：Beep @ 0.5 Hz		10.5Vdc Buzzer alarm：Beep @ 0.5 Hz，code 06 on LCD			
	Battery Low Voltage Alarm Recovery	11Vdc					
	Battery Low Voltage Protection	9.5Vdc turn off the inverter ourput, buzzer alarm：Beep @ 1 Hz，indicator in red, automatic shutdown if not recovery in 10 seconds		9.5Vdc turn off the inverter ourput, buzzer alarm：Beep @ 1 Hz，indicator in red, automatic shutdown if not recovery in 10 seconds, code 01 on LCD, automatic shutdown if not recovery in 10 seconds			
	Battery Low Voltage Protection Recovery	12Vdc indicator in green					
	Battery High Voltage Protection	15.5Vdc turn off the inverter ourput, buzzer alarm：Beep @ 1 Hz，indicator in red, automatic shutdown if not recovery in 10 seconds		15.5Vdc turn off the inverter ourput, buzzer alarm：Beep @ 1 Hz，indicator in red, automatic shutdown if not recovery in 10 seconds, code 02 on LCD, automatic shutdown if not recovery in 10 seconds			
	Battery High Voltage Protection Recovery	15Vdc indicator in green					
Output Protection	High Temperature Protection	Turn off the inverter ourput, buzzer alarm：Beep @ 0.5 Hz ，LED indicator in red.		Turn off the inverter ourput, buzzer alarm： Beep @ 0.5 Hz ，LED indicator in red， code 02 on LCD.			
	High Temperature Protection Recovery	Inverter recovers output automatically after temperature reduction					
	Output Short Circuit	Lock after 3 triggers in 10 seconds, turn off the inverter ourput, buzzer alarm：Beep @ 1 Hz，indicator in red, automatic shutdown in 10 seconds. Turn on the device to recover output after removing the short circuit.		Lock after 3 triggers in 10 seconds, turn off the inverter ourput, buzzer alarm：Beep @ 1 Hz， Code 03 on LCD. automatic shutdown in 10 seconds. Turn on the device to recover output after removing the short circuit			
	Over-load ENHANCE Mode	无	无	Load 1000±100W	Load 1500±100W	Load 2500±200W	Load 3500±200W
		Keep increasing the power until the output voltage is lower than 160Va for 10 seconds, turn off the inverter output, automatic shutdown in 10 seconds, Turn on the device to recover output after reducing the loads Buzzer alarm：Beep @ 1 Hz，LED indicator in red， code 05 on LCD					
	Over-load Normal Mode	Load 1000±100W	Load 1500±100W	Load 1000±100W	Load 1500±100W	Load 2500±200W	Load 3500±200W
		Keep increasing the power until the output voltage is lower than 180Va for 10 seconds, turn off the inverter output, automatic shutdown in 10 seconds, Turn on the device to recover output after reducing the loads Buzzer alarm：Beep @ 1 Hz，LED indicator in red					
USB	Output Voltage	5Vdc					
	Output Current	2.1A					
Environment	Working Temperature/Huminity	0～40℃ / 10～90%RH					
	Storage Temperature/Huminity	-20℃～60℃，10～95%RH					
Others	N.W.	1.71KG	2.13 Kg	2.08kg	2.55kg	4kg	4.86kg
	Product Size L*W*H (mm)	281.6*150*76	314.6*150*107	282.4*150*107	315.4*150*107	388.7*180*141.2	449.7*180*141.2
All the diameters are measured under normal voltage 12Vdc in working temperature 25℃							

9. Others

9.1 Output Waveform

The BP series is an inverse sine wave inverter



Pure sine wave

9.2 Power and load

Pure sine waveform The nominal current or power of most electric tools, household appliances, and audiovisual devices is within the nominal power range of the inverter, but overload protection may trigger when starting. Inverters drive resistive loads or switching power loads easily. Because resistive loads are linear loads, they can work at full load, such as electric stove, rice cooker, LCD TV etc.

Some audio/video equipment and electric tools require a higher level of power than resistive loads to work properly, such as asynchronous motors, CRT TV, compressors, water pumps etc., requesting 2 to 6 times the working current to start. The ability to run a specific load is subject to testing.

9.3 FAQ

Electric device cannot be started

Please read the information of each electrical device carefully to confirm its usage power if the inverter output power is sufficient to operate electrical equipment. Some electric tools and microwave ovens may require 2-6 times of the starting power requirement.

TV interference

The inverter has little interference with TV signals. However, in some cases, some interference is still visible, especially when the TV signal is weak.

Please try to solve as follows:

1. Keep the inverter away from the TV antenna or extend the TV antenna cable as far as possible
2. Adjust the placement direction of the inverter
3. Ensure that the signal strength provided by the antenna to the TV is strong enough, and use high-quality antenna cables with good shielding effect。
4. When you watch TV, do not run high-power electrical equipment or tools。
5. The interference caused by some old TVs can not completely disappear。

Warming

***Do not open the inverter housing if not professional**
***Continuously turning on/off the inverter frequently may cause damage.**

The images, diagrams, and content in this manual are for reference only. Please refer to the actual product. Any content is subject to change without notice.