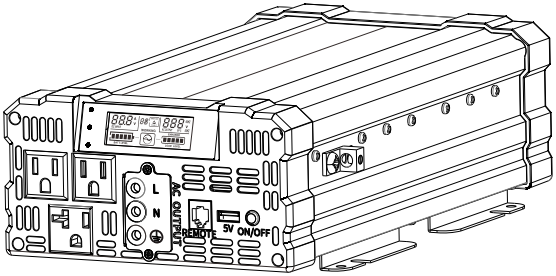
BELTTT®

BAP Series Pure Sine Wave Inverter

USER MANUAL



Ver:004

Table of contents

1. About This Manual

1.1 Purpose

To ensure reliable service to you, the inverter must be installed and used properly. Please read the installation and operating instructions before installation and use. Please pay special attention to the warnings and warning instructions in this manual. Cautionary statements are made about certain usage conditions and practices that may cause damage to the inverter. Clear warnings are given about certain usage conditions and practices that may cause personal injury. Please read all instructions before using the inverter.

Please read this instruction manual carefully to facilitate correct use. Especially before use, please remember to read the details of "Safety Precautions" to ensure safe use. After reading the instruction manual, please keep it together with the warranty certificate for future reference.

2. Safety Instructions

(These safety precautions must be read and memorized)

In order to avoid injury to you and others, the following safety precautions are listed and must be observed. Please refer to the instructions for the meanings of the various symbols.

WARNING:

Please read carefully, as the following may result in personal injury.

Flammable Gas

- Ensure that no flammable gases are present, as sparks may occur, before connecting the battery.
- Avoid storing them in areas where flammable gases may accumulate.

No parallel with Grid

Do not connect the output in parallel with the grid, as may damage the inverter and even cause an electric shock.

Not for use by minors

The inverter produces high voltage, creating a risk of electric shock.

No disassembly

Unauthorized disassembling or modifying of the inverter may lead to safety incidents such as equipment failure, fire, or electrical shock.

No rods or other metal

Do not put rods or metal in the openings or jacks of the inverter. This may cause electric shock and harm the inverter's internal parts.

Avoid wet hands

No touch inverter with wet hands, a risk in electric shock and personal safety.

Keep out of fire and hot places

Operation in fire and hot places can lead to fire and explosion.

No wrestling

Dropping or hitting the inverter can cause harm and create safety risks.

Installation

Have to evaluate the battery and cables before install.

Please ground the wire

For the safety of electricity, please ground the wire or it may lead to safety accidents.

Waterproof and damp proof

Please pay attention to moisture and waterproof, the inverter may cause short circuit, fire and electric shock.

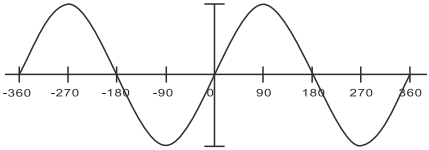
Please insert fully

Insert the plug of the load completely into the output of the inverter. Failure to insert the plug fully may result in electric shock and overheating, or even a fire accident. Do not use damaged plugs, power sockets, power cords.

3. Operation

3.1 Performance Introduction

An inverter is a power supply that converts direct current (batteries, solar cells, wind turbines, etc.) into alternating current. Because of the high frequency inverter used in power conversion technology, ferrite transformer to replace the old bulky silicon steel transformer. This is why the inverter of our company is lighter weight and less bulky than other inverters that have similar rated power. While inverting mode, inverter will output pure sine wave which is really same as public power supply. If the power of the appliances is not exceed the power of the inverter it can drive those basically.



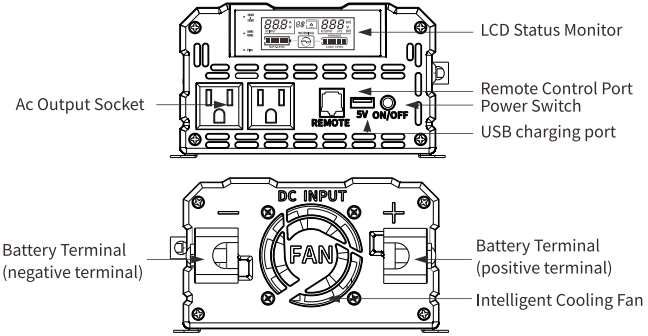
Pure sine wave

3.2 Product Overview

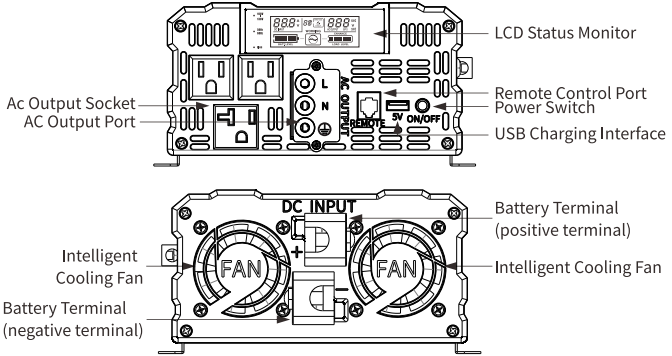
- AC output 100v-130v via LCD setting
- 50HZ/60HZ via LCD setting
- Enhanced power via LCD setting
- Remote + cable 6 Meter with lcd display (optional)
- AC output socket+Wiring output
- Match for all kinds of battery
- Fault code via LCD

3.3 Inverter Appearance and Function Introduction

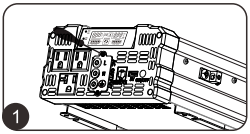
BAP800A/BAP1000A/BAP1200A/BAP1500A/
BAP800B/BAP1000B/BAP1200B/BAP1500B Front and rear panels



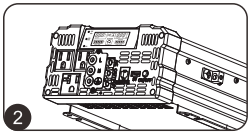
BAP2000A/BAP2500A/BAP3000A/
BAP2000B/BAP2500B/BAP3000B Front and rear panels



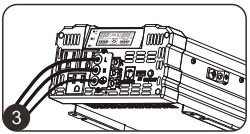
3.4 AC Output Port Wiring Diagram



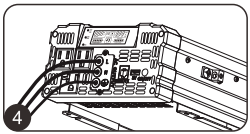
Remove srews of temerina of AC output.



Unplug the Ac port to expose the side wiring holes.

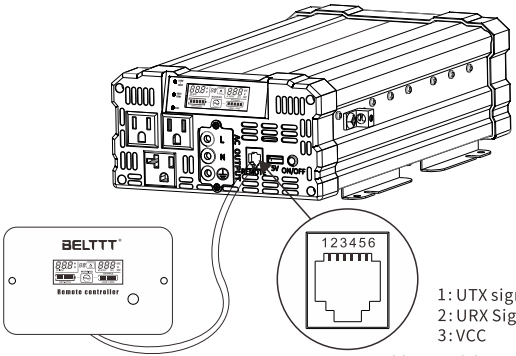


Second plug the three-bit terminal wires into the corresponding wiring holes on the front. Finally lock wires with ascrewdriver.



After inserting the cable, use screwdriver to tighten the baffle screws.

3.5 Diagram of Connecting the Remote Control Panel



1: UTX signal 4: VIC
2: URX Signal 5: GND
3: VCC 6: +12V

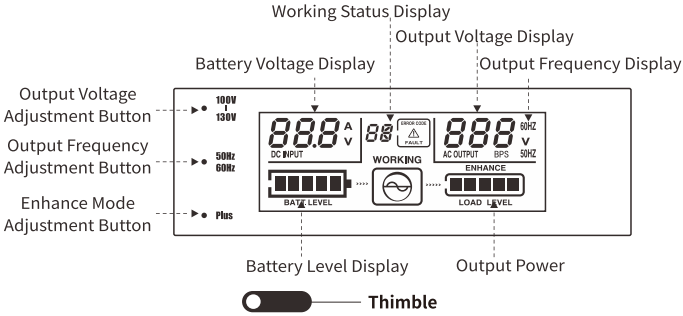
Note: Add a switch between pin3&pin4, can be used to control the inverter on/off.

Remote Control Panel (optional)

BAP series inverters support remote control panel connection, and the connecting cable can be up to 7 meters long. The inverter can be turned on and off through the remote control panel, and the working status of the inverter can be understood through the monitor of the remote controller.

The product panel is for reference only, please refer to the actual product.

3.6 LCD Status Monitor and Press Function Introduction



1. Use the thimble to press and hold the output voltage adjustment button (there are "100~130V" next to the button) for 5 seconds to enter the output voltage setting. The output voltage can be set to 100~130Vac . Each press increases 5Vac , automatically saved in 3 seconds, the default voltage depends on the sales area;

2. Use the thimble to press and hold the "50Hz-60Hz" button for 5 seconds to enter the output frequency setting. The output frequency can be set to 50/60Hz. It will be automatically saved in 3 seconds. The default frequency depends on the sales area;

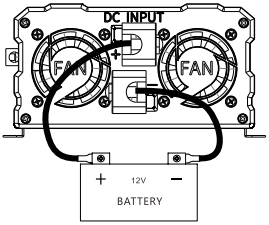
3. Use the thimble to press and hold the "Plus" button for 5 seconds to enter the mode setting. You can set the normal mode and ENHANCE (enhanced) mode. It will be automatically saved in 3 seconds and the default enhanced mode. Output voltage will be reduced to running higher power loads when on Enhanced Mode, recommended for emergency situations.

4. Installation

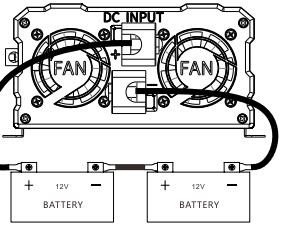
4.1 Installation and connection steps

1. Turn off the power switch of the inverter.
2. Connect the positive terminal of the battery to the red terminal of the inverter with the red DC cable.

3.Connect the negative terminal of the battery to the black terminal of the inverter with the black DC cable.
4. Plug the power supply of the load appliance into the output socket of the inverter.
5. Turn on the power switch of the inverter to use.

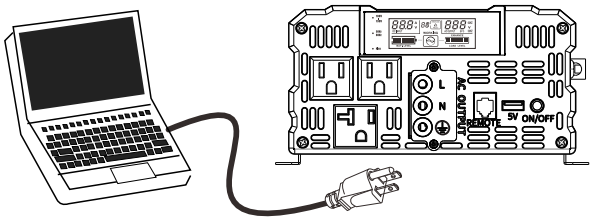


The 12V inverter
is connected to the battery



The 24V inverter
is connected to the battery

4.2 Inverter Connected to Electrical Load Equipment



Load equipment

4.3 Disassembly steps

1. First turn off the power switch of the inverter;
2. Pull out the power plug of the load.
3. Remove the red DC cable;
4. Remove the black DC cable.

5. Detailed Product Parameters

Model	BAP800A	BAP1000A	BAP1200A	BAP1500A	BAP2000A	BAP2500A	BAP3000A
Rated Power	800W	1000W	1200W	1500W	2000W	2500W	3000W
Peak Power	1600W	2000W	2400W	3000W	4000W	5000W	6000W
Voltage AC	Default 120Vac, 100-130Vac(Adjustable)						
Frequency	Default 60Hz, 50Hz/60Hz(Adjustable)						
Waveform	Pure Sine Wave						
Battery Voltage	12Vdc						
Voltage Range	9.5V~15.7Vdc						
DC Current	76.6A	97A	113.6A	134.1A	194.6A	234A	288.1A
No-load Loss	⩽0.8A		⩽1A		⩽1A	⩽1.6A	
Max Efficiency	91%		90%		93%		
Shutdown Mode Current	⩽1mA						
Fan Operation Mode	Temperature and Power Control Mode						
Protection Mode	9.5Vdc Battery Low Voltage Protection, 15.7Vdc Battery High Voltage Protection, Over Temperature Protection, Short Circuit Protection, Over Load Protection， Over load warning						
USB	5Vdc/2.1A						
Working Temperature Humidity	0~40°C /10~90%RH						
Net Weight	1.98kg		2.38kg		3.50kg	4.50kg	
Gross Weight	2.70kg		3.30kg		5.10kg	6.40kg	
Product Size L*W*H(mm)	280*158*90		310 *158*90		375*196*99	433*196*99	
Packing Size L*W*H(mm)	325*210*153		355*210*153		423*250*173	455*250*173	
All specifications are measured under normal voltage 12Vdc in ambient temperature of 25°C.							

Model	BAP800B	BAP1000B	BAP1200B	BAP1500B	BAP2000B	BAP2500B	BAP3000B
Rated Power	800W	1000W	1200W	1500W	2000W	2500W	3000W
Peak Power	1600W	2000W	2400W	3000W	4000W	5000W	6000W
Voltage AC	Default 120Vac, 100-130Vac(Adjustable)						
Frequency	Default 60Hz, 50Hz/60Hz(Adjustable)						
Waveform	Pure Sine Wave						
Battery Voltage	24Vdc						
Voltage Range	19V~31Vdc						
DC Current	37A	46.34A	55.6A	70.62A	92.8A	114.5A	138.8A
No-load Loss	⩽0.4A		⩽0.8A		⩽0.7A	⩽0.9A	
Max Efficiency	92%		91.4%		93%	92%	
Shutdown Mode Current	⩽1mA						
Fan Operation Mode	Temperature and Power Control Mode						
Protection Mode	19Vdc Battery Low Voltage Protection, 31Vdc Battery High Voltage Protection, Over Temperature Protection, Short Circuit Protection, Over Load Protection， Over load warning						
USB	5Vdc/2.1A						
Working Temperature Humidity	0~40°C /10~90%RH						
Net Weight	1.98kg		2.38kg		3.50kg	4.45kg	
Gross Weight	2.70kg		3.30kg		5.10kg	6.35kg	
Product Size L*W*H(mm)	280*158*90		310 *158*90		375*196*99	433*196*99	
Packing Size L*W*H(mm)	325*210*153		355*210*153		423*250*173	455*250*173	
All specifications are measured under normal voltage 24Vdc in ambient temperature of 25°C.							

6. Work Status Display and Troubleshooting Methods

Display	Working Status Of Display	Status Description	Method of exclusion
ok	Normal	Normal operation	……
01	Battery Low Voltage Protection	Battery voltage is too low, the inverter automatically turns off the output.	Check for loose battery link cables or check for low battery capacity
02	Battery High Voltage Protection	Battery voltage is too high, the inverter automatically turns off the output.	Check the battery voltage or determine if there is an external charger connected that is causing the voltage to be too high
03	Output Short Circuit Protection	Inverter output short circuit, inverter automatically shut down output.	Check for shorted AC output link wires, Disconnect or reduce the electrical load and turn the inverter back on.
04	High Temperature Protection	The inverter automatically turns off the output if the internal temperature of the machine is too high.	Check if the machine is well ventilated and if the working environment temperature is too high, Wait for the machine to cool down and resume output automatically.
05	Overload Protection	Overloaded inverter output, inverter automatically shut down output.	Check if the power load is too large, disconnect or reduce the power load, turn on the inverter again.
06	Battery Low Voltage Alarm	Low battery voltage, machine alarm.	Turn off the load and charge the battery.
07	High Temperature Alarm	Machine internal temperature is high, close to the limit of the machine.	Reduce the electrical load, check if the machine is well ventilated and if the ambient temperature is too high.
08	Overload Warning	The load power over the rated power	Suggest to reduce the load
09	Output Overvoltage Protection	When the internal circuit is damaged and the output voltage is detected to be too high	If the machine restarts and cannot be ruled out, it can only be returned to the factory for repair
10	High Temperature Warning	High temperature inside the machine	1. Check if the fan is running normally 2. Suggest to reduce the load
CCb	Carrying Capacity Boost	Lower than normal output voltage	Reduced load

7. Others

7.1 Operating Environment

For best results, place the inverter on a flat surface such as the ground, car floor, or other solid surfaces. Allow the inverter power cord to be easily secured. The working place should meet the following criteria:

1, Keep dry do not let the inverter contact with water or other liquids, and make sure that the inverter away from moisture or water.

2. Keep the inverter in a cool environment with a temperature between 0°C (non-condensing) and 40 °C. Do not place the inverter next to heating vents or other heat generating equipment. Keep the inverter out of direct sunlight as much as possible.

3. Keeping the surrounding area free from objects blocking it ensures the free flow of air. Do not put anything on the inverter while it is working. The inverter's fan is used to help dissipate heat.

4. Do not use the inverter near flammable materials or in places where flammable gases can gather.

5. The battery must not only provide the DC voltage required by the inverter, but must also provide enough current to run the load. The power source should be a fully charged, good battery. For a rough estimate of the current required by a load, divide the power of the load by10.

7.2 Nominal Current and Actual Equipment in use

The nominal current or power of most of power tools, household appliances and audio-visual equipment is within or much less than the nominal power of the inverter, but overload protection occurs when starting them. Inverter is the easiest to drive resistive loads and the hardest to start capacitive loads. It is because resistive loads are linear loads and can operate at full load. Such as electric stoves, rice cookers, LCD TVs etc.

Some audio-visual equipment and power tools require a greater power than resistive loads to work properly, asynchronous motors, CRT TVs, compressors, pumps etc.. Two to six times the operating current is required for startup. The ability to run the specific loads is subject to the use of the electrical equipments.

Caution

Except for the reverse connection of input positive and negative poles, the fuse will not blow out under normal circumstances, unless there is a serious circuit fault. When the inverter fails, please do not try to repair it by yourself, please contact professional technicians to deal with it, there is a high voltage inside the machine and there is a risk of electric shock.

Note: Normally, these fuses do not need to be installed. If the positive and negative terminals of the input wires are accidentally reversed, resulting in a damaged fuse, try replacing the damaged fuse with a spare one.

7.3 About Enhanced Mode

PLUS Mode we also call Enhancement Mode or CCB Mode.

Before introducing our Plus mode, let's introduce some knowledge. The same appliance, we input different voltage, his actual power is not the same. We input lower voltage and his actual power is lower. but it can insist on working. For example, an incandescent lamp with a rated voltage of 120V and a rated power of 200W, when inputting 120V,

the power of the incandescent lamp is 200W. When inputting a voltage of 100V, its actual power is only 138.9W, and you just feel that the light is dimmer. This is better than not having the bulb. Inputting less than the rated voltage won't damage the device, and it happens all the time with our power grids. Based on this phenomenon we developed the Enhanced Mode.

Our answers to the questions you may have are as follows

1. What is the specific difference between Plus mode and normal mode?

PLUS mode is when we actively step down the output voltage of the inverter in case of overload, so that the actual power of your appliance becomes smaller, and we can carry more loads, PLUS mode is when we step down the voltage as low as 80V, and the inverter protects itself when it is lower than 80V. Normal mode is where we just slightly reduce the output voltage in case of overload, we reduce the output voltage to 90V so that you can come and shut down your inverter.

2. Is there any advantage of Plus mode in terms of performance or system protection?

The advantage of the Plus mode is that you can use more loads without breaking the power supply and avoid the inconvenience of inverter protection.

3. In what situations is it recommended to use Plus mode instead of normal mode?

When you use a load greater than 1.2 times the rated power.

4. Does Plus mode affect the life of the battery or inverter in any way?

PLUS mode does not increase the input current, but reduces the output voltage. There is no damage to the battery. There is also no harm to the inverter itself. We added this feature on the premise of safety and reliability.

5. Are there additional settings that can be adjusted in Plus mode?

There is no need to make any settings in Plus mode.

If you have trouble understanding the instructions, or have any questions regarding its operation, please contact our friendly customer support team in the following ways.

Service E-mail: naservices@belttt.com
Official website: www.belttt.com
Amazon: www.amazon.com/belttt