OLTEANP

User Manual

POWER INVERTERS
PURE SINE WAVE INVERTER

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Important Safety Instructions

General Safety Information

- Installation and wiring must comply with the Local and National Electric Codes (NEC)and must be done by a certified technician.
- Read all of the instructions and cautions in the manual before beginning the installation.
- There are no serviceable parts for this inverter. Do NOT disassemble or attempt to repair the inverter.
- Make sure all connections going into and from the inverter are tight. There may be sparks when making connections, therefore, make sure there are not flammable materials or gases near installation.

Inverter Safety

- The inverters are suitable for 12V battery banks or 24V battery banks; Please choose correct voltage inverters and battery!
- Always make sure inverter is in OFF position and disconnect all AC and DC connecting when working on any circuit associated with the inverter.
- Never connect the AC output of the unit directly to an Electrical Breaker Panel/ Load Centre which is also fed from the utility power / generator.
- When connecting battery terminals, ensure the polarity of the battery connections is correct. Incorrect polarity may cause permanent damage to the unit.
- Be careful when touching bare terminals of capacitors as they may retain high lethal voltages even after power is removed.

Battery Safety

- Do NOT let the positive (+) and negative (-) terminals of the battery touch each other.
- Use only sealed lead-acid, flooded, lithium battery, ryor gel batteries which must be deep cycle.
- Explosive battery gases may be present while charging. Be certain there is enough ventilation to release the gases.
- Be careful when working with large lead acid batteries. Wear eye protection and have fresh water available in case there is contact with the battery acid.
- Over-charging and excessive gas precipitation may damage the battery plates and activate material shedding on them. Too high of an equalizing charge or too long of one may cause damage. Please carefully review the specific requirements of the battery used in the system.

Installation Safety

- The unit should be installed in a well-ventilated, cool, and dry environment. Make sure the fans of the unit and the ventilation holes are not blocked.
- Do not expose the unit to rain, moisture, snow, or liquids of any type.

Key Features

- Robust and sleek design
- Clean power for safe operation of sensitive electronics
- Easy-to-read LCD screen display and LED indicator light
- Multiple protection features (LVD, HVD, AC Overload and Over Temperature)
- Pure sine wave - more stable power conversion and output
- AC output and 5V/3.1A USB port
- Remote controller
- Excellent Surge Rating : 2x the Power Rating

Pure Sine Wave

- The OLTEANP Power Inverters output a pure sine wave similar to the waveform of the grid power. In a pure sine wave, the voltage rises and falls in a smooth fashion with very low harmonic distortion and cleaner utility-like power.

- This gives users stable enough power to operate tools, fans, lights, computers, and other electronics without any interference. Pure sine wave inverters are in many cases more efficient, allowing users to use less energy and allow for more device capability. The main advantage to pure sine wave inverters is that they are used to operate sensitive electronic devices that require a high quality waveform with little harmonic distortion. Almost any electronic device could be powered using a pure sine wave inverter.

Multiple Protection

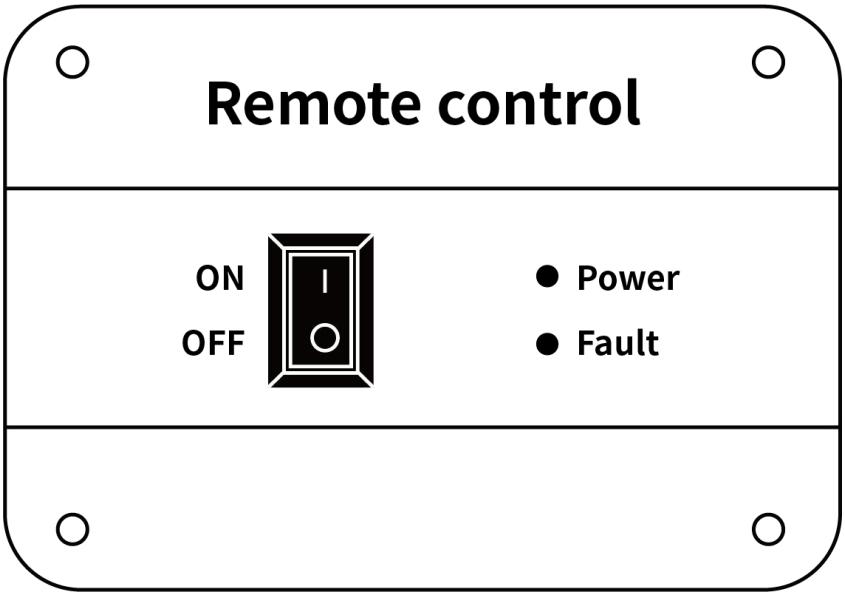
LCD screen content, LED indicators and alarm sound for input under/over voltage protection, input overload/short-circuit protection, device over temperature protection. Smart cooling fan system in temperature control allow the device to run smoother, cooler, and quieter.

Remote Controller with LED Indicator Light

The remote control allows you to observe and control from a distance with LED indicator light. The equipment comes with long cable of remote controller, which can be installed in RVs and homes according to user needs.

Remote Control

This OLTEANP power inverter comes with remote controller with LED indicator light, you can power the inverter on or off. The LCD screen of inverter will display the input voltage, output voltage, trouble code. You can keep track of device issues through LED indicator light of remote controller.



Wire length: about 4.5M(14.76ft)

NOTE:

1.**Alarm** - The "Fault" light(red led light) does not light on; inverter release intermittent buzzing sounds, which means battery is low-voltage, at this time this inverter still provides output.

2.**Shutdown** - Inverter release continuous buzzing sounds, the red led light of remote controller will light on, the inverter will shutdown immediately. No AC output. Which means your inverter report troubles, you need to check your battery, cable and inverter.

3**.For the low voltage shutdown** - If the input voltage above 12.5V, the inverter will restart automatically.

4.**For the high voltage shutdown** - If the input voltage below the 14V, the inverter will restart automatically.
5.**For the other troubles** - You need to turn on the switch manually to restart the inverter.

Identification of Parts (AC Side)

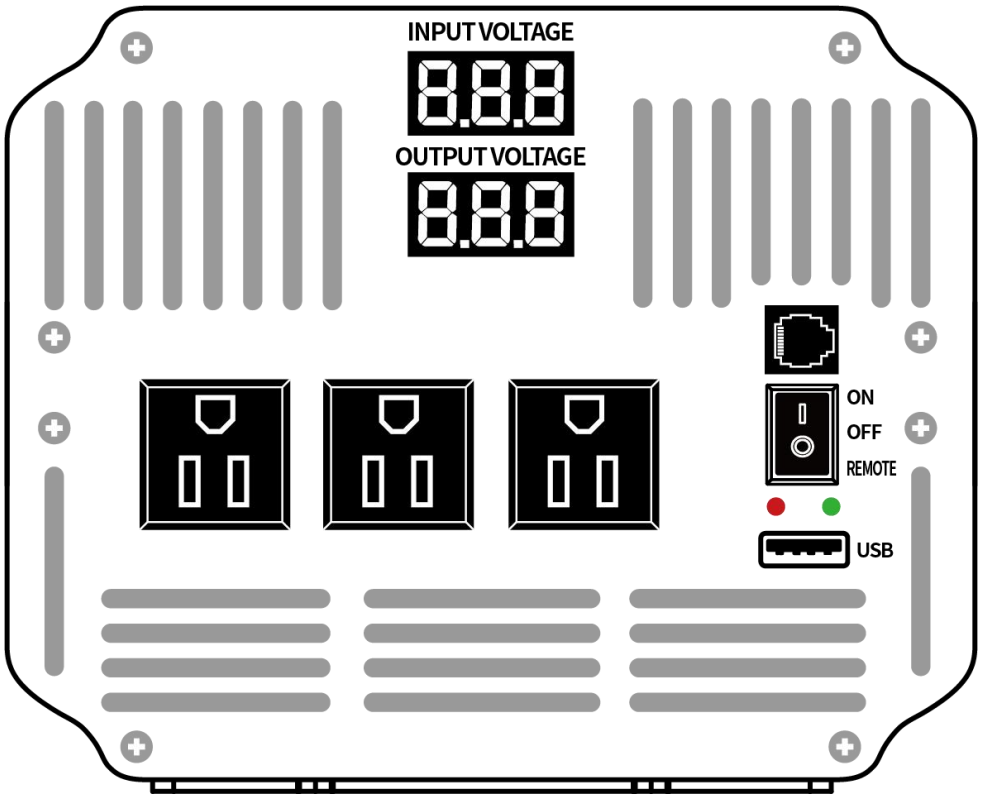


Figure1: 3000w inverter

1. **LCD Display Screen** — Display input voltage and output voltage, when the inverter meet any troubles, the LCD screen will show the trouble code.

2. **AC Outlets** — 120V AC±10%, the totally output does not exceed the inverter rated power.

3. **USB Power Port** — 5 volts / 3.1A for fast charging tablets, smartphones, and other small electronic devices. Faster charging than most of inverters.

4. **ON/OFF Switch** — Controls output.

5. **Power LED (Green)** — When this green LED is lit, the inverter is operating normally.

6. **Fault LED (Red)** — The red indicator turns on as the inverter shuts down due to overheating, overload, under voltage, or over voltage.

7. **Remote Switch Connection** — Insert wired remote switch to the connection port.

Identification of Parts (DC Side)

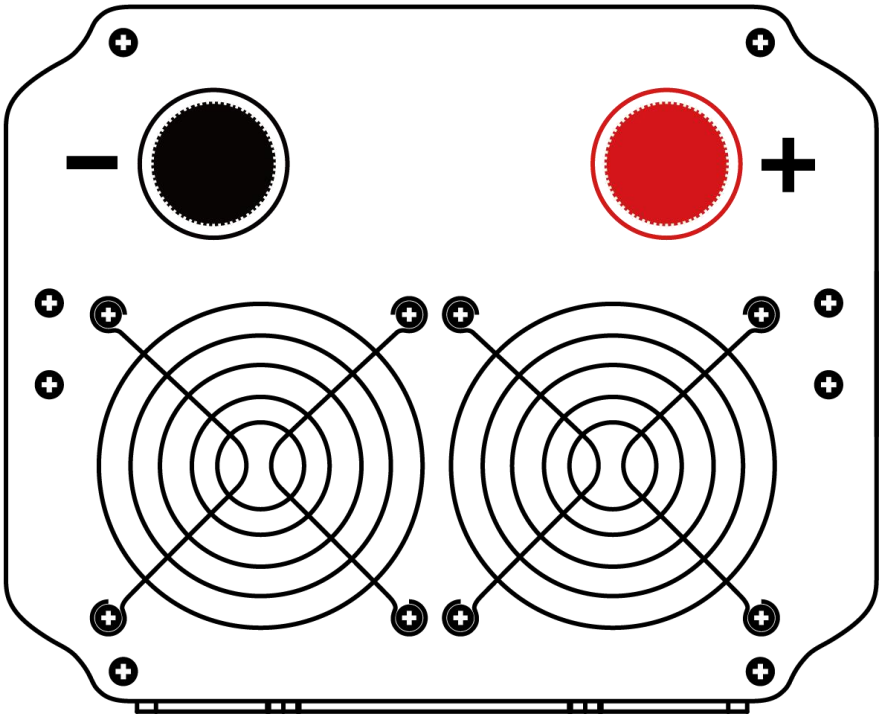


Figure2: 3000w inverter

KEY PARTS

1.Positive Terminal — Positive (+) DC Input (Red)
2.Cooling Fans — Thermally controlled
3.Negative Terminal — Negative (−) DC Input (Black)

NOTE:

The Smart Cooling Fan is Temperature Control.

1.When the inverter internal temperature >45℃ or the machine power efficiency >40%, the cooling fan will run automatically.

2.When the inverter internal temperature <42℃ or the power efficiency < 30%, the cooling fan will stop working automatically.

Specifications

Model	12v-1500W	12V-2000W	12V-3000W	24V-2000W
Input rated voltage	12V DC			24V DC
Input voltage Range	9.5-16V DC			19-32V DC
Output Voltage Range	120V AC±10%			
Continuous Power	1500W	2000W	3000W	2000W
Peak surge	3000W	4000W	6000W	4000W
Efficiency	> 90%			
Output Frequency	60Hz± 1Hz			
Output Waveform	Pure sine wave			
Total Harmonic Distortion (THD)	≤3%@Linear load			
No-load Current	1±0.2A			1±0.3A
Low Voltage Alarm	10±0.5V			20±1V
Low Voltage Shutdown	9.5±0.5V			19±1V
Low Voltage Auto Reset	12.5±0.5V			25±1V
High Voltage Shutdown	16±0.5V			32±1V
High Voltage Auto Reset	14±0.5V			28±1V
Overload Shutdown to Auto Recover Time	5s			
Short Circuit Shutdown to Auto Recover Time	10S			
USB Output	5V/3.1A			
Cooling Fan	Thermally controlled			
AC Output Sockets	2	2	3	2

Inverter Troubleshooting

Indicator	Potential Issue	Troubleshoot
Alarm beeps	Intermittent buzzing means low voltage alarm	Keep input voltage above 12.5V
	Three consecutive beeps means the inverter will shutdown automatically, then no ac output	Adjust the battery voltage according to the fault code of the LCD display content
Fault LED Lit, inverter shut down and alarm on	Input voltage is below 10V	Keep input voltage above 10V
	Input voltage is above 16V	Keep input voltage below 16V
	Inverter overheats	Allow inverter to cool down
		Check for adequate ventilation
		Reduce the load on inverter
	Operating equipment draws too much power	Use a higher wattage inverter or use a lower powered device
	Inverter is short circuited	Disconnect the inverter and turn off the ON/OFF switch to reset
Trouble code	**LO:** low voltage shutdown	Keep input voltage above 10V
	HI: high voltage shutdown	Keep input voltage below 16V
	OL:overload or short circuit shutdown	Disconnect the inverter and turn off the ON/OFF switch to reset
		Reduce the load on inverter
	OH:overheat shutdown	Allow inverter to cool down
		Check for adequate ventilation
		Reduce the load on inverter

Problems	Cause	Solutions
No output voltage and buzzer sounds continuous or intermittent and shutdown?	Input battery voltage is low voltage	• Recharge the battery. • Battery may be too small. Please contact us for recommended battery sizes. • Check the cable connections and ensure the cable sizes are sufficient. Use provided cables if included. The shorter and thicker cables the better. • One or some of the batteries in the battery group may be defective, remove the defective battery.
	Input battery voltage is high voltage	• Check the battery charger is not connected to the battery. • Do not use it when the battery is charging Disconnect the solar panel while the battery is fully charged. • Confirm whether the input battery is correct.
	Overload	Reduce the load power or choose a bigger inverter.
	Over temperature	• Turn off the load and let it cool naturally for 10 to 30 minutes. Restart it after it resumes to normal temperature. • Reduce the load . • Avoid blocking the vent and improve the ventilation condition.
No AC output voltage?	1. The power switch is off. 2. Poor contact with battery . 3. Inline fuse(if has) may be burnt.	• Press the inverter power switch or remote controller power switch to turn it on, • Check the cables and make sure they are tightly connected . • Check the inline fuse is fine or remove circuit breaker to test the inverter again. • One or some of the batteries in the battery group may be defective, remove the defective battery.

Cannot drive the load even less power than the size of inverter?	1. Power of load is too large, or the actual power of the appliance exceeds the max power of inverter. 2. The starting power is larger than rated power (especially for appliances with motor, this kind of inductive loads require a large rush of power to start. Even a 80W fridge may need a 1000 watt inverter) . 3. Battery is too small.	• Reduce the load power, or turn on the appliance first, then turn on the inverter. • Choose a bigger inverter. • Change a bigger battery and ensure fully charged. • Choose the shorter and thicker cables.
Starting alarm ?	The main reason is that the instantaneous current is too large, which leads to the detection of low voltage and triggers under-voltage alarm.	Please restart the inverter several times.

Installation

WARNING: Make sure inverter is in the off position before connecting anything.

CAUTION: Do not over-torque or over tighten the terminals. This could potentially damage the unit.

Location Recommendations

Never install the inverter in a sealed enclosure with flooded batteries. Gas can accumulate and there is a risk of explosion.

Ensure installation follows the following guidelines:

1. **Cool, dry, well-ventilated area** — Heat is the worst enemy for electronic equipment.Inverters must be in an area where the fans are not blocked or where they are not hit directly by the sun. They should be in an area free of any kind of moisture and allow for clearance of at least 10” around the unit to provide for adequate ventilation.

2. **Protection against fire hazard** — the unit should be away from any flammable material, liquids, or any other combustible material. The unit can spark and the consequences could be severe.

3. **Close proximity to battery bank**—prevent excessive voltage drop by keeping the unit close to the battery bank and having a properly sized wire going from the battery bank to the inverter.

4.**Do not install the inverter in the same compartment as the battery bank because it could serve as a potential fire hazard.**

5.**Limiting electromagnetic interference (EMI)** — ensure the inverter is firmly grounded to a building, vehicle, or earth grounded. Keep the inverter away from EMI receptors such as TVs, radios, and other audio/visual electronics to prevent damage/interference to the equipment.

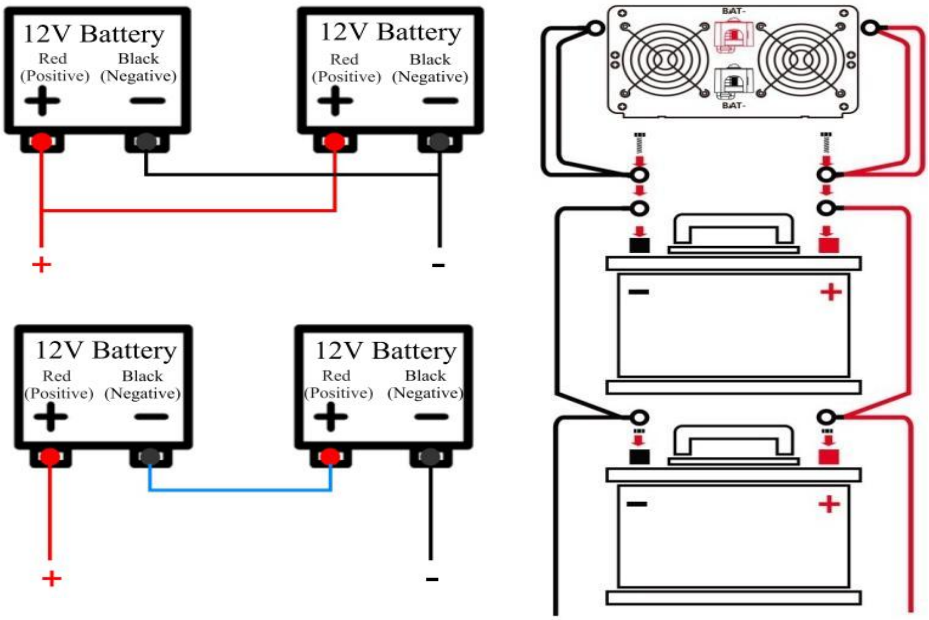
1. **Secure inverter**—the inverter could be stand alone or mounted using the outlying terminals on the inverter.

2. The inverter should never be mounted vertically on a vertical surface since it would present a hazard for the fan opening which is crucial for cooling the inverter.

Note: Connection

If you have multiple 12V batteries, please connect them in series or parallel according to the model you ordered(12V for parallel connection, 24V for series connections).

Note that connecting(+) terminal and (-) terminal will cause failure. Please connect+(plus), -(minus) each other.



Sizing a Battery Bank

1.The battery is for supplying DC input voltage to the inverter. Its rated voltage should be the same as the rated input voltage of the OLTEANP inverter.Any voltage that exceeds the input voltage range of the inverter will cause the inverter to be overloaded and may damage the inverter.

2.The battery ought to supply enough current for the load.(The load is the amperage or wattage rating of the equipment being powered by the inverter.)A small capacity battery cannot supply enough power for large electrical equipment and it will cause the inverter to be under-voltage.

For determining the required battery capacity size is shown below for reference:

1.Determine the Watts (Amps *Volts) of the load
(Each appliance has technical specifications indicates the wattage or voltage and amperage required for operation)

2.Utilize the formula Amps=Watts/Volts

3.Inverter consumption=Amps*10%
(Due to inverter efficiency 90%, the recommended estimate for the calculation is 10%)

4.Estimated load runtime
(The capacity of the battery depends on the load wattage and runtime. Most loads are not constant, so estimation is essential.)

5. Determine Ah(Ampere-Hour) of the battery

Example: Using 12VDC battery to run a 1200 Watts hotplate for 2 hours needs at least 220Ah battery.(10%Inverter consumption) The calculations are as follows:	
Utilize the formula Amps=Watts/Volts	1200 Watts /12 Volts = 100 Amps
Inverter consumption	100 Ampsx10%=10Amps
Load runtime = 2 hours	(100 Amps+10)x2 hours =220 Ah
Conclusion: At least a 220 Ah battery must be selected in order to use the 1200 watts hotplate at 2 hours a day. However, determining the capacity of the battery is also dependent on the battery that is able to handle repeated discharge/charge cycles.	

• This is just an example. Actual quantities vary by battery capacity and rates.

• Running wattage may fluctuate. To power the hotplate in the example, must use an inverter of at least 1500 watts.

DC Side Connection

• The OLTEANP Pure Sine Wave Inverters are suitable for 12V battery bank systems ONLY. Not following the minimum DC requirement will cause irreversible damage to the unit.

• Be careful of the positive and negative poles. Reversing the poles might cause permanent damage to the inverter. It will surely blow the internal fuse.

• Damage to the OLTEANP inverters due to reverse polarity is NOT covered by warranty.

• The input terminals of the inverters have large capacitors connected to them. Once a positive and negative wire are connected to the terminals, it will complete the circuit, and commence drawing a heavy current momentarily. As a result, there may be a sparking occurring even if the inverter is in the off position. To minimize sparking, it is recommended that the user have the appropriate size wire feeding into the inverters.

AC Side Operation

1.Connect electronic devices to electrical socket (s) on inverter. Flip inverter power to ON position (on AC side)

2.When finished, switch AC devices off first, then turn off inverter switch.

• **CAUTION** : Avoid switching on the inverter with the load (electronic devices) already switched on. This may trigger an overload since some electronic devices have an initial high power surge to start.

• **CAUTION** : When switching off the inverter, turn off the electronic devices first. Although the inverter is off, the capacitors will still have a charge, so the DC and AC terminals must be disconnected if altering the circuitry.

Warranty

• Thank you for purchasing OLTEANP power inverter, your trust will encourage us to produce more high quality items. We always provide the best customer service to our each customer.

• We provide 12 months warranty for OLTEANP product. Any problems please feel free to reach out to our after-sales service. Our OLTEANP support will reply you in 12 hours.

• To better service you , please send us email with your order number, problem details, problem pictures or videos, which can help us solve your problems faster.

After-Sales Service Email: egtech66@outlook.com