



**1200W PURE SINE WAVE INVERTER
DC12V TO AC120V**



Model:MEI 1200

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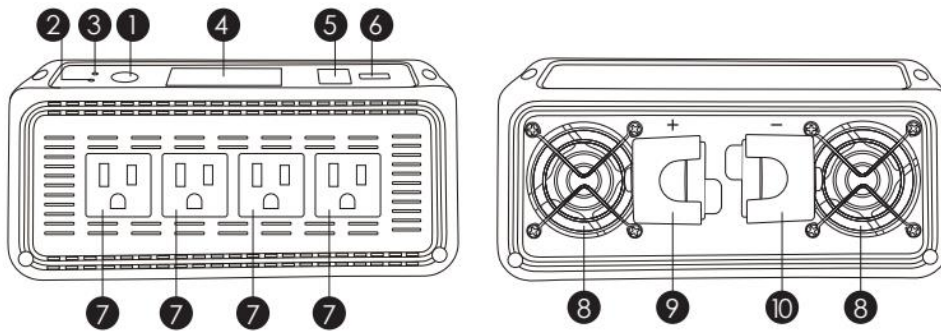
General Information

► Introduction

This pure sine wave inverter is designed to meet the requirements of a complete off-grid solar system. It converts DC12V power to AC120V power, the common household power that charges and operates a wide range of electric appliances, including laptops, cellphones, digital cameras, fans, music players, air conditioners, and more.

Note: Pure sine wave power is similar to the waveform of grid power. In a pure sine wave, the voltage rises and falls in a smooth and clean fashion with very low harmonic distortion, similar to utility power. This results in an inverter that is more stable and efficient. Only pure sine wave inverters can power sensitive appliances that require a high-quality waveform with little harmonic distortion, such as refrigerators, washing machines, microwave ovens, air conditioners, mercury lamps, sodium lamps, and electric drills.

► Components and Indicators



- ① On/Off Switch
- ② LED (GREEN): When this green LED is illuminated, the inverter is operating.
- ③ LED (RED): When the red LED is illuminated, the inverter has shut down, due to overheating, overload, under voltage, or over voltage.
- ④ LCD display
- ⑤ Remote switch connection port: Insert a wired remote switch here (optional).
- ⑥ USB power port: 5V/2.4A for charging tablets, smart phones, and other small electronic devices.
- ⑦ AC outlets: U.S sockets*4
- ⑧ Fans
- ⑨ Positive terminal
- ⑩ Negative terminal

► Inverter Key Features

- *Soft Start function: This inverter can increase output voltage progressively when connecting to heavy loads with minimum noise interruption.
- * Remote control function (optional): Users can control this inverter from a distance with a remote control.
- * Excellent surge ratings for differing loads.
- * ETL ROHS FCC REACH APPROVAL.
- * Advanced LCD display and LED indicators.
- * Pure sine wave technology delivers clean power to safely operate sensitive electronic devices.
- * Convenient mounting kits are available.
- * Multiple protection features, including battery protection, AC overload, over temperature, and short circuit protection.
- * 5V/2.4A USB port for quickly charging small electronic devices.

Before Installation

Please read the instructions, warnings, and caution statements in this manual prior to installation.

▶ **Device Safety**

1. Operating the inverter when it is seriously damaged could be dangerous.
2. Contact customer service if the inverter appears faulty. Do not disassemble or attempt to repair the device as this will void the warranty.
3. Always disconnect AC/DC connections and make sure the inverter power switch is in the OFF position before performing any maintenance or circuit wiring.
4. Under no circumstances should the household AC power output terminals be connected to the inverter's AC outlets. This inverter is ONLY designed for a 12V battery bank.
5. Ensure the polarity of the battery connections is correct when connecting the terminals. Incorrect polarity connection may cause permanent damage to this inverter.

▶ **Personal Safety**

1. Installation and wiring of this inverter must comply with NEC codes and be completed by a certified electric technician.
2. Be cautious when touching bare terminals of capacitors. They may retain high or lethal voltages, even after power is disconnected.
3. Wear eye and clothing protection while connecting the inverter to the battery bank. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters the eye, immediately flood the eye with running cold water for at least 10 minutes and seek medical attention.

4. Do not put flammable items near this inverter during installation, check for dangerous gas fumes, and make

sure all electrical connections are tight. The connection process may cause sparks.

5. To avoid dangerous short circuits, avoid wearing metal items during installation, such as rings, bracelets, necklaces, or watches.
6. A frozen battery should never be operated with a charger or inverter.

► **Battery Safety**

1. Do NOT let the positive (+) and negative (-) terminals of the battery touch each other.
2. Use only deep cycle, sealed lead-acid, flooded, or gel batteries.
3. Explosive battery gases may be released while charging.
Always charge batteries in a well-ventilated area.
4. Overcharging can damage the battery plates. Charging continuously at a high setting can cause the battery to be damaged, faulty, and/or ineffective. Prior to charging the device, please review the battery manufacturer's requirements and follow the instructions carefully.

Installation

Always make sure the inverter is switched off before connecting to other devices.

Follow the important guidelines below to determine the installation location.

- * Well-ventilated, cool, dry area. The inverter must be located in an area where the fan is not blocked or exposed to direct sunlight. It should be placed in an area that is free of any moisture, with a minimum of 10 inches of clearance on all sides to provide adequate ventilation.

- * Away from re hazard: Flammable items, liquids, or combustible materials should not be placed near this inverter, due to potential sparks the unit could produce.

- * Away from children: Keep this unit away from children, due to potential fire and electrical hazards.

- * Close to battery bank: Placing the inverter close to the battery can prevent excessive voltage drop. However, do not install the unit above or below a battery bank.

Mount and secure the inverter: This inverter can be mounted with brackets (optional). Refer to the mounting section below for details.

► Mounting the Inverter

1. Turn off the inverter.

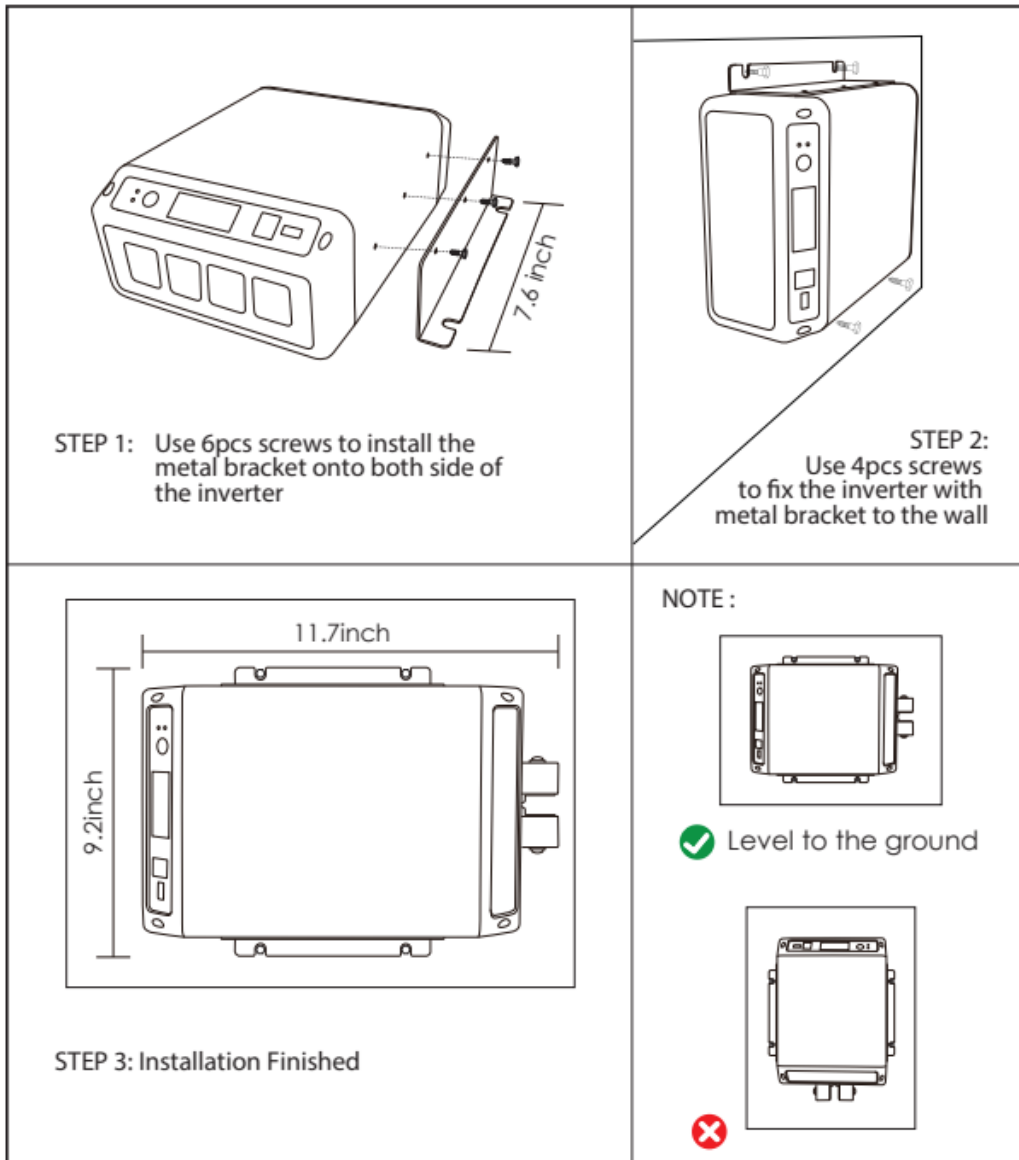
2. Determine the appropriate mounting position. Attach the mounting brackets on both sides of the inverter with 3x5mm screws (three on each side). Note: Screws longer than 5mm will not fit.

3. Place the inverter in the desired position and mark the location of the four mounting fasteners.

4. Drill holes for the four mounting fasteners.

5. Mount the inverter with four 6x35mm screws.

► Mounting Diagram



Warning: Vertically mounting the inverter is not recommended; it would affect the efficiency of fans.

► **Sizing Off-Grid Solar Batteries:**

Calculating How Many Amp-Hours You Need

Step 1: Determine inverter size

First calculate the peak load or maximum wattage of your applications by adding up the wattage of the appliances and devices that could run at the same time. For example, a room with two 60-watt light bulbs and a 300-watt desktop computer will need an inverter size up to 420 watts (60 times two, plus 300).

Step 2: Figure out energy used in a day

Figure out how long each electronic device will run during the day, in hours. Multiply the wattage of each device by its running time to get the energy in watt-hours per day. For example, a microwave oven is 750 watts. Divide this by 12VDC to calculate amps: $750 \text{ watts} / 12 \text{ volts} = 62.5 \text{ amps}$. If the microwave will be run for four hours, then you will need at least a 250Ah battery (62.5 amps times four hours).

► Battery Connecting Methods

Figure 1. This wiring setup shows an inverter connected directly to a vehicle engine battery for light load devices.

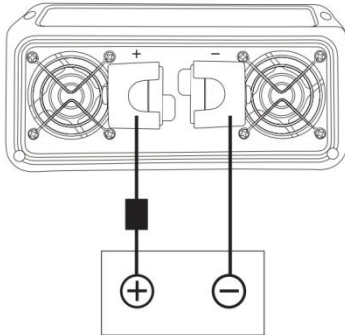


Figure 1

Figure 2. This wiring setup shows a battery connection for medium load devices. This setup only allows the inverter to draw power from the auxiliary battery, not the vehicle starting battery.

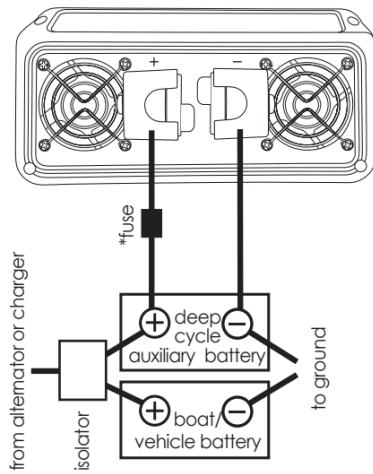


Figure 2

To maximize battery capacity, you may need to connect several batteries. Two identical batteries can be connected with positive-to-positive (+ to +) and

negative-to-negative (- to -) in a parallel system, doubling capacity. We recommend that you not connect batteries from different manufacturers or with different amp-hour ratings in parallel. This may result in decreased battery life.

Figure 3. Two 12V batteries connected in a parallel system for double capacity. This battery bank requires a negative battery charging system.

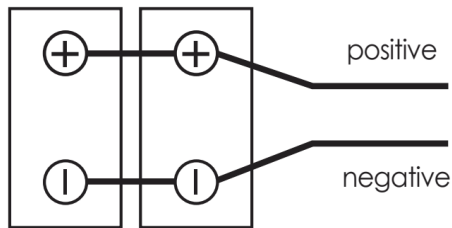


Figure 3

Figure 4. If you need to connect different batteries or need to use more than two, we recommend you set up two separate battery banks and alternate between them. Battery selecting switches, available from marine and RV dealers, allow you to select between two banks of batteries, use both in parallel, or disconnect both banks from the load.

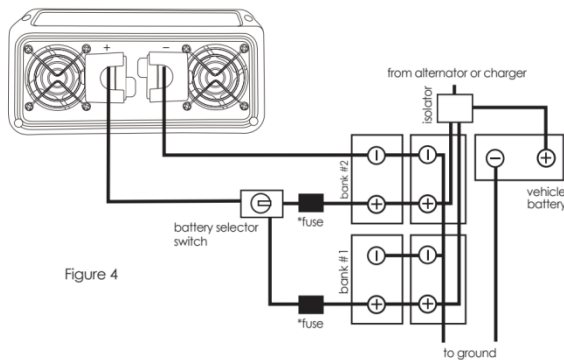
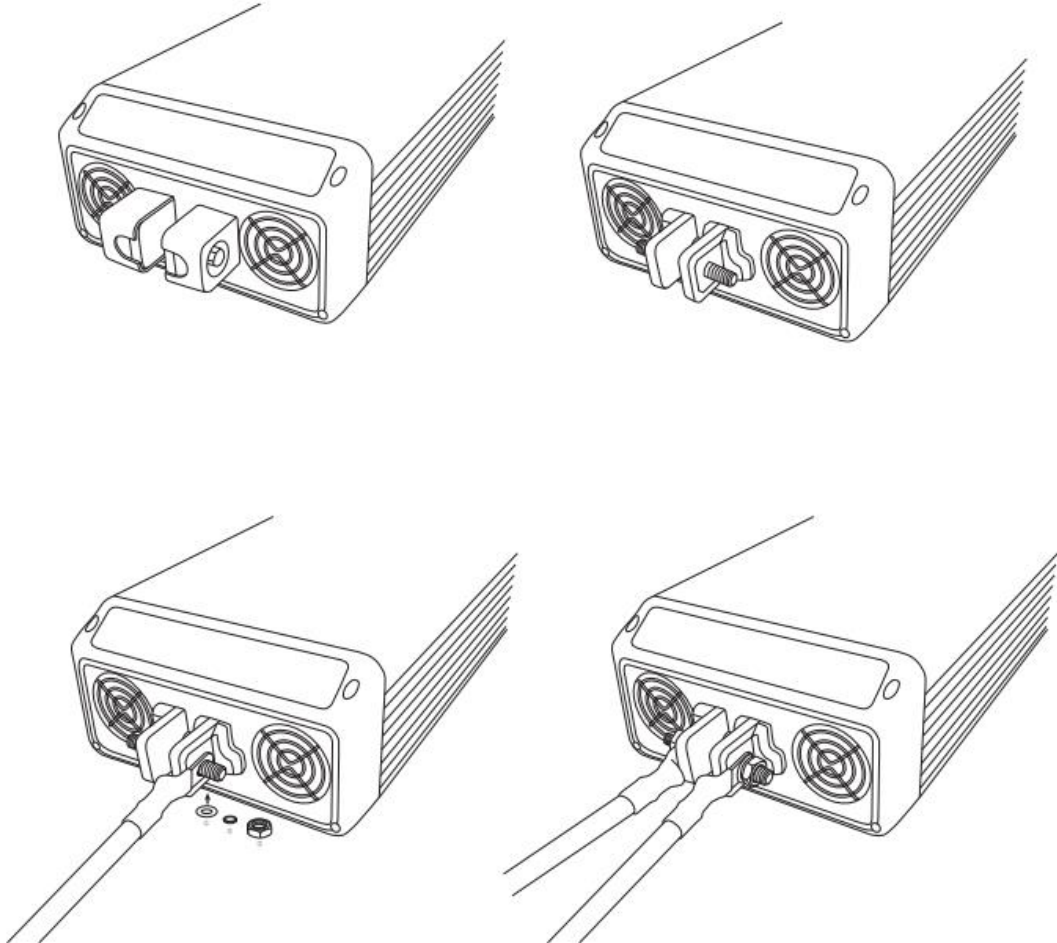


Figure 4

Connecting the Cables

All electrical connections should be fastened securely to avoid risk of sparks and fire.

Connecting Diagrams:



Important: Performance Check

Before starting your inverter, make sure the following requirements have been met.

The On/Off switch is in the Off position.

The positive (+) cable is connected to the positive (+) battery terminal.

The negative (-) cable is connected to the negative (-) battery terminal.

The battery voltage is within the proper range for this unit (roughly 10-15.5 volts DC).

The DC fuse is intact.

System Test

When you are ready to test your system and operate the Inverter, close the DC fuse or the DC circuit breaker to supply DC power to the inverter.

Functions Test of LED Light Patterns:

The ON/OFF switch turns the inverter to ON or OFF:

- In the On position, the inverter power LED/LCD light turns green. The unit begins to invert and output AC power.
- In the O- position, the inverter draws no power from the battery. None of the front LED/LCD Display lights are illuminated.
- A RED light indicates an error. The LCD monitor presents an error code, such as Over Temperature, Output Overload, or Low Voltage / Over Voltage. See "Troubleshooting" for error codes.

Inverter Test:

1. Set the On/Off switch to the ON position, The Inverter/Fault LED light turns green.
2. Plug an appropriate appliance into the AC outlet.
3. Turn the appliance ON to verify that it works.

If the Inverter/Fault light turns red, refer to the Troubleshooting" section that follows.

Trouble Shooting

This section will help you identify and troubleshoot common problems. Please review this information before contacting Customer Service. If you cannot resolve the problem, record the error code, inverter light pattern, and usage data and call Customer Service.

Problem	Solution
No power	The power is off. Turn on the switch.
No Input Voltage to the Inverter	Check whether the DC connection to the inverter is loose or damaged.
The DC fuse has broken	Make sure you have installed the correct standard fuse.
	Ask a qualified technician to check the system and replace the fuse.
The AC circuit breaker trips	Disconnect all appliances to reduce the load. Turn the device off to reset it, then turn it back on again.
LCD Display screen shows OVP fault code	Over-voltage Protection started, Check the battery voltage whether within the working voltage range, and the output can be restored.
LCD Display screen shows UVP fault code	Low-voltage Protection started, Check the battery voltage whether within the working voltage range, and the output can be restored.
LCD Display screen shows OTP fault code	Over-temperature Protection started, Check whether the fan turns, and the output can be resumed after the temperature drops.
LCD Display screen shows OLP fault code	Overload Protection started, Check whether the load exceeds the rated power, and the output can be resumed after reducing the power.
LCD Display screen shows SCP fault code	Output Short Circuit Protection started, Check whether there is short circuit in the load, and the output can be resumed after the short circuit is addressed.
Internal temperature have not reached the fan's start value	No action. The fan will turn on automatically when the internal temperature reaches the fan's start value.
Fan is damaged	Call a qualified technician to check and replace the internal fan.

Specifications:

Specifications:	
Continuous output	1200W
Surge Power	2400W
Input Voltage	12V
AC Voltage	120V
Frequency	60Hz
Wave Form	Pure Sine Wave
Total Harmonic Distortion	THD ≤ 3%
USB Output	DC 5V ± 5% 2400mA AUTO
Under-voltage protection	10.5V±0.5V
Over-voltage protection	15.5V± 0.5V
No load current	650mA
Efficiency	90%
Overload Protection	1400W±100W
Output short circuit protection	Yes
Anti-reverse protection	Built in fuse
Display mode	LCD+LED
Other	Remotely Operated Panel(Optional)
Cooling Fan	Start up : 113°F ± 41°F Shut down: 100°F ± 41°F
	Over temperature shutdown : 203°F ± 41°F Over temperature recovery: 149°F ± 41°F
Fuse	25A*8
Dimension(inch)	10.35 + 1.34(D) x 7.52(W) x 3.86(H)
N.W	6.2lbs

Warranty Terms

Limited Warranty

What is covered?

This limited warranty covers defects in materials and workmanship of this product.

What is not covered?

This limited warranty does not cover any damage caused by the owner modifying, misusing, or attempting to repair the product, or use of the product for anything other than normal consumer use as authorized in our current product literature. This limited warranty excludes warranties from certain parts, such as battery cells, cables and attachments.

How long does this coverage last?

The warranty lasts for one (1) year from the date of original purchase of this product. The sales receipt from the original customer or other reasonable documentary proof is required in order to establish the start date of the warranty period.

Who is covered?

This limited warranty covers only the original purchaser of this product. The limited warranty is not transferable to subsequent owners or purchasers of this product.

How to claim warranty?

To claim your warranty, please notify us immediately to determine the warranty eligibility. Upon validation, please ship the complete product back via prepaid labels.

What will we do?

We shall be responsible if the product fails to operate during the applicable warranty period due to a defect in material or workmanship. If a valid claim is made during the applicable period, we, at its discretion, will either:

- 1) Repair the item
- 2) Replace the item
- 3) Issue a refund for the item

What we will not do under this limited warranty?

This limited warranty does not cover any product loss during transit.

No Other Express Warranty Applies

This warranty is the sole and exclusive warranty. No employee, agent, dealer or other individual is authorized to alter this warranty or make any other warranty on behalf of us.

Warranty & Customer Service Support

We offer a 1-year warranty against manufacturing defects.

If you have any questions or issues, please Email our customer service team for help at customerservice@massimomotor.com

Massimo MotorSports LLC

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