EPEVER

EPEVER IP500-12 Pure Sine Wave Inverter

USER MANUAL

1. Introduction

The EPEVER IPower series pure sine wave inverter is designed to convert 12V DC power into stable 220V or 230V AC power. Engineered for robust performance, this inverter is suitable for a wide range of applications, from solar power systems to vehicle-mounted setups and home security lighting.

Its industrial design ensures a broad operating temperature range and high reliability, making it a dependable power solution. The IP500-12 model offers a continuous power output of 400W and a peak output of 500W for up to 15 minutes.

Key Features:

- High efficiency, up to 95%.
- Advanced SPWM technology for pure sine wave output.
- Safe design with electrical isolation between input and output.
- LED indicators for clear error and operating status display.
- Low no-load power consumption.
- Comprehensive 3-way protection:
  - Input protection: Over-voltage and under-voltage.
  - Output protection: Overload and short-circuit.
  - Over-temperature protection: Temperature-controlled fan and automatic shutdown.
- Suitable for various electrical appliances.

2. Safety Instructions

Please read all instructions and warnings carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or severe injury.

- Ensure the inverter is installed in a well-ventilated area, away from direct sunlight, heat sources, and flammable materials.
- Do not expose the inverter to rain, moisture, or excessive dust.
- Ensure all DC input and AC output connections are secure and correctly polarized. Loose connections can cause overheating and fire.

- Do not open the inverter casing. There are no user-serviceable parts inside. Refer all servicing to qualified personnel.
- Keep children away from the inverter.
- Always disconnect the battery before performing any maintenance or wiring.
- Verify that the input voltage of the inverter matches the battery voltage (12V DC).
- Ensure the total power consumption of connected AC appliances does not exceed the inverter's continuous power rating.

3. Package Contents

Upon unpacking, please verify that all components are present and undamaged:

- 1 x EPEVER IP500-12 Pure Sine Wave Inverter
- 1 x User Manual (this document)

4. Product Overview

Familiarize yourself with the various components and interfaces of the EPEVER IP500-12 inverter.



Figure 4.1: Front view of the EPEVER IP500-12 Pure Sine Wave Inverter, showing the DC input terminals (+DC INPUT -), the cooling fan, and the DC input voltage range (DC 10.8~16V). Two fuse compartments are also visible.



Figure 4.2: Rear view of the EPEVER IP500-12 Inverter, featuring the ON/OFF switch, the AC output socket (230V/220V 50Hz/60Hz selectable via switch), a 5V Max. 1A USB output, and LED indicators for FAULT and POWER status.



Figure 4.3: Close-up of the inverter's output side, highlighting the ON/OFF switch, the standard European AC outlet, the voltage/frequency selection switch (230V/220V 60Hz/50Hz), the 5V USB port, and the FAULT/POWER LED indicators.



Figure 4.4: Close-up of the inverter's input side, showing the positive (+) and negative (-) DC input terminals, the cooling fan, the specified DC input voltage range (10.8~16V), and the two fuse compartments.

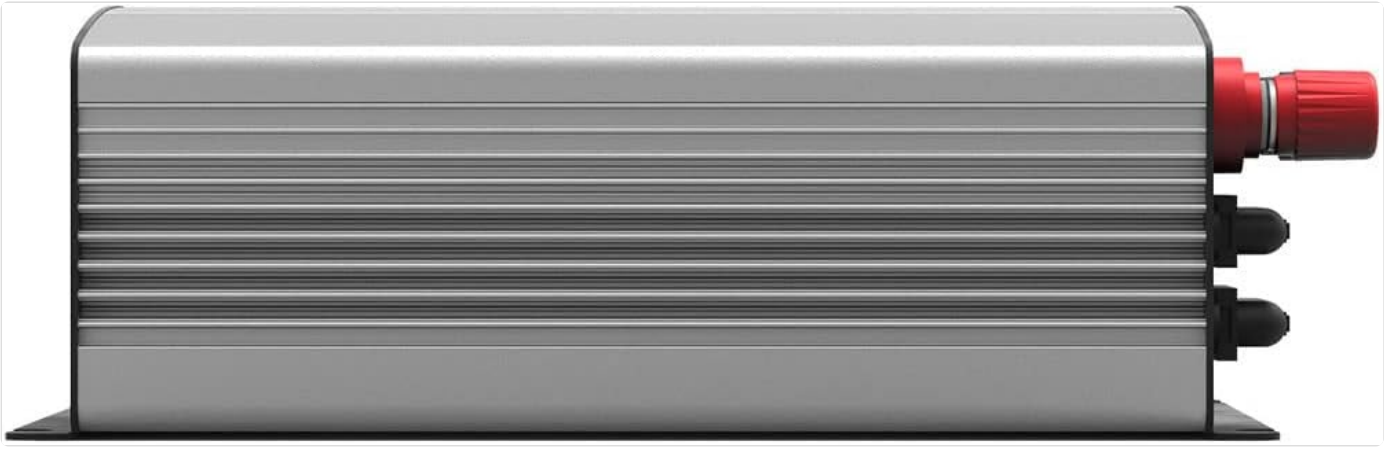


Figure 4.5: Side view of the EPEVER IP500-12 Inverter, illustrating its compact design and the heat sink fins for efficient cooling.

5. Installation

Proper installation is crucial for the safe and efficient operation of your inverter.

5.1. Mounting Location:

- Choose a dry, cool, and well-ventilated location.
- Avoid areas with direct sunlight, high temperatures, or excessive humidity.
- Ensure there is sufficient clearance around the inverter for proper airflow, especially around the cooling fan and heat sinks.
- Mount the inverter on a stable, non-flammable surface.

5.2. DC Input Connection:

1. Ensure the inverter's ON/OFF switch is in the "OFF" position.
2. Connect the positive (+) terminal of the battery to the positive (+) DC input terminal on the inverter. Use appropriate gauge cables for the expected current.
3. Connect the negative (-) terminal of the battery to the negative (-) DC input terminal on the inverter.
4. Ensure all connections are tight and secure to prevent voltage drops and overheating.
5. It is recommended to install an external fuse or circuit breaker between the battery and the inverter for additional protection.

5.3. AC Output Connection:

1. Before connecting any AC appliances, ensure they are switched off.
2. Plug your AC appliances directly into the AC output socket on the inverter.
3. Do not exceed the inverter's continuous power rating (400W) to avoid overload protection activation.
4. If using the USB port, connect your USB-powered device to the 5V Max. 1A USB output.

6. Operation

6.1. Powering On:

1. Once all connections are secure, switch the inverter's ON/OFF switch to the "ON" position.
2. The POWER LED indicator should illuminate, indicating the inverter is operational.
3. If the FAULT LED illuminates or the inverter does not power on, refer to the Troubleshooting section.

6.2. Connecting Loads:

After the inverter is powered on, you can switch on your connected AC appliances. Always ensure the total load does not exceed the inverter's capacity.

6.3. Powering Off:

1. Switch off all connected AC appliances.
2. Switch the inverter's ON/OFF switch to the "OFF" position.
3. The POWER LED indicator should turn off.

7. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your inverter.

- **Cleaning:** Periodically clean the exterior of the inverter with a dry, soft cloth. Do not use liquid cleaners or solvents. Ensure the cooling fan and ventilation openings are free from dust and debris.
- **Connection Check:** Regularly inspect all DC input and AC output connections for tightness. Loose connections can lead to voltage drops and heat buildup.
- **Environment:** Ensure the installation environment remains within the specified temperature and humidity ranges.
- **Battery Health:** Monitor the health of your battery bank. A healthy battery ensures stable input voltage to the inverter.

8. Troubleshooting

This section provides solutions to common issues you might encounter with your EPEVER IP500-12 inverter.

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Inverter does not turn on / No power output.	Loose DC input connections. Battery voltage too low or too high. Inverter's ON/OFF switch is OFF. Blown fuse.	Check and tighten DC input cables. Charge or replace battery; ensure voltage is within 10.8-16VDC. Switch the inverter to "ON". Check and replace internal/external fuses if necessary.
FAULT LED is illuminated.	Overload on AC output. Short-circuit on AC output. Over-temperature. Input over-voltage or under-voltage.	Reduce the load; ensure total power consumption is below 400W. Disconnect all AC loads and check for short circuits in wiring or appliances. Allow inverter to cool down; ensure proper ventilation. Check battery voltage and charging system.
Inverter shuts down frequently.	Overload condition. Insufficient ventilation / Overheating. Low battery voltage.	Reduce the connected load. Improve ventilation around the inverter. Recharge or replace the battery.

If the problem persists after trying the above solutions, please contact EPEVER customer support.

9. Specifications

Parameter	Value
Model	IP500-12
Rated Input Voltage	12VDC
Input Voltage Range	10.8 ~ 16VDC
Fuse	32VDC / 35A
Output Voltage	220VAC (±5%) / 230VAC (-10% ~ +5%)
Continuous Power (up to +45℃)	400W
Output Power (up to 15 min)	500W
Efficiency	92%
Protection Class	IP20
Operating Temperature	-20℃ ~ +45℃
Dimensions (L×W×H)	214 × 105.5 × 57.7 mm
Net Weight	0.90 kg (900g)

10. Warranty and Support

Specific warranty information for the EPEVER IP500-12 inverter is not available in this document. For detailed warranty terms, spare parts availability, or technical support, please contact your point of purchase or the official EPEVER customer service directly.

Always provide your product model number (IP500-12) and purchase date when seeking support.

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Model: IP500-12

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

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Email

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question