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› WEIMILOR 5500W Solar Inverter 48V to 110V/120V Pure Sine Wave with 120A MPPT Controller User Manual

## WEIMILOR 5500W Solar Inverter

# WEIMILOR 5500W Solar Inverter User Manual

Model: 5500W Solar Inverter (48V to 110V/120V)

## 1. INTRODUCTION

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Thank you for choosing the WEIMILOR 5500W Solar Inverter. This pure sine wave inverter is designed for off-grid solar power systems, converting 48V DC battery power to 110V/120V AC power. It features a built-in 120A MPPT charge controller, ensuring efficient solar energy harvesting. This manual provides essential information for safe installation, operation, and maintenance of your inverter.



Image 1: Front view of the WEIMILOR 5500W Solar Inverter. This image displays the compact design and the integrated LCD screen on the front panel.

## 2. SAFETY INSTRUCTIONS

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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.

- Installation must be performed by qualified personnel.
- Ensure all connections are tight and correct to prevent loose connections that can cause overheating.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Keep the inverter away from flammable materials, moisture, and direct sunlight.
- Ensure adequate ventilation around the inverter to prevent overheating.
- Always disconnect all power sources (PV, battery, AC utility) before performing any maintenance or wiring.
- Use appropriate personal protective equipment (PPE) during installation.

## 3. PRODUCT FEATURES

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The WEIMILOR 5500W Solar Inverter is equipped with advanced features for reliable off-grid power generation:

- **Pure Sine Wave Output:** Provides clean and stable power suitable for sensitive electronics.
- **Integrated MPPT Charge Controller:** Built-in 120A MPPT controller with up to 99.9% efficiency for optimal solar charging.
- **Wide Compatibility:** Supports 48V Lead-Acid (Seal, AGM, Gel, Flooded) and Lithium batteries. Includes lithium battery activation function via solar or AC mains.
- **Multiple Operating Modes:** Four charging modes (PV priority, Utility Priority, Hybrid Charging, Only Solar Charging) and two output modes (mains bypass, inverter output) for versatile application.
- **LCD Display:** Segment LCD display shows real-time operational data and system status.
- **Comprehensive Protection:** Features overload, short circuit, and other electronic protection functions.
- **Intelligent Cooling:** Variable speed fan for efficient heat dissipation and extended system life.
- **Parallel Functionality:** Supports parallel operation of up to 6 inverters for increased power output (up to 30000W in split phase).

## 4. SETUP AND INSTALLATION

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Proper installation is crucial for the inverter's performance and safety. Refer to the wiring diagram for detailed connection instructions.

### 4.1 Site Selection

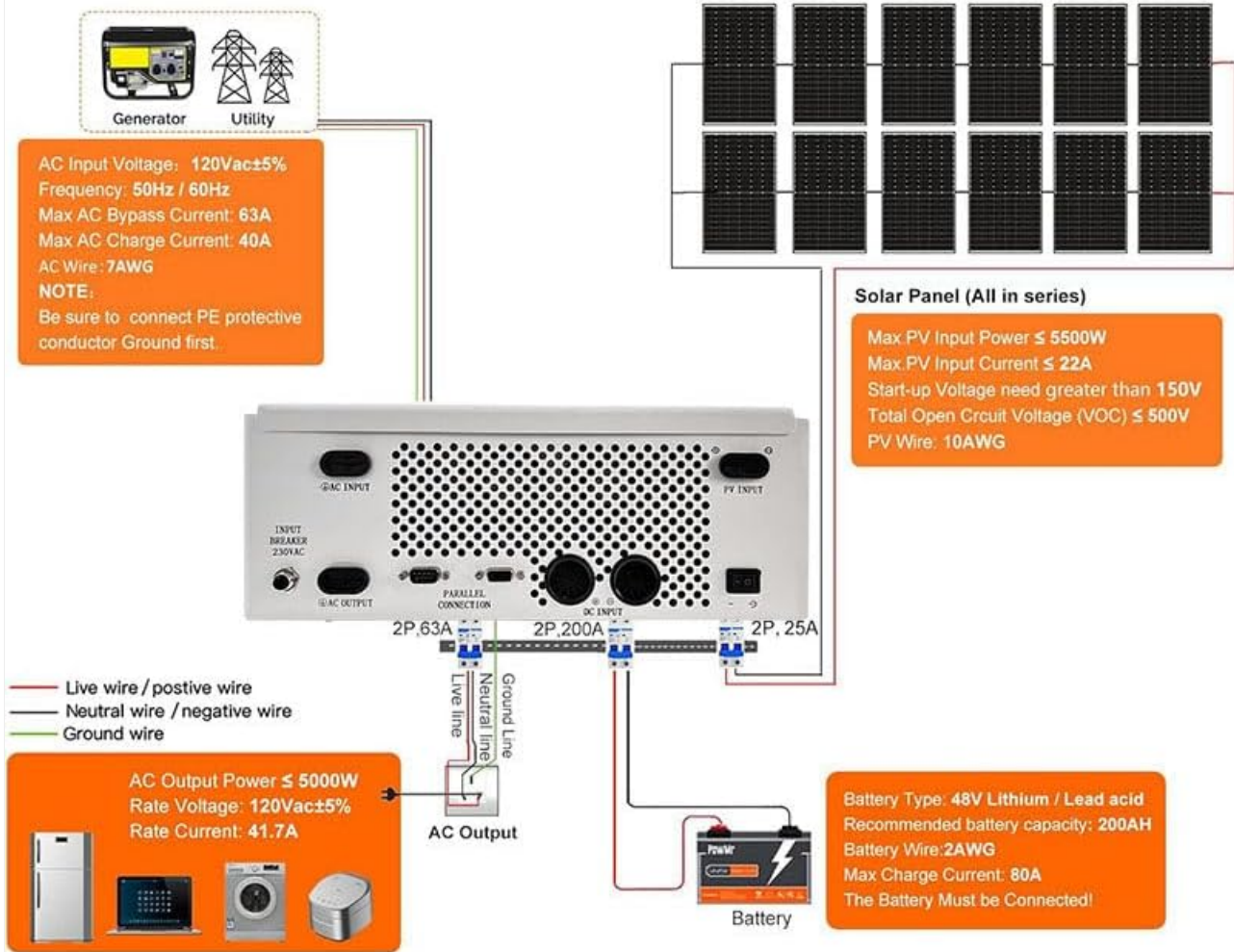
- Mount the inverter vertically on a non-flammable surface.
- Ensure sufficient clearance (at least 20 cm) around the inverter for proper airflow.
- Avoid areas with high humidity, dust, or corrosive gases.
- Install in a location protected from direct sunlight and rain.

### 4.2 Wiring Connections

All wiring must comply with local electrical codes. Use appropriately sized cables for all connections.

- **Battery Connection:** Connect the 48V battery bank to the inverter's battery terminals. Ensure correct polarity. The battery must be connected for the inverter to operate.
- **PV Input Connection:** Connect the solar panel array to the PV input terminals. Ensure the PV input voltage and current are within the specified limits (Max.PV Input Power: 5500W, Max.PV Input Voltage: 500Vdc, Optimal working range of  $V_{mp}$ : 300-400Vdc).
- **AC Input Connection:** Connect the AC utility grid or generator to the AC input terminals.
- **AC Output Connection:** Connect your AC loads to the AC output terminals.
- **Grounding:** Always connect the protective earth (PE) conductor to the inverter's ground terminal.

# WIRING DIAGRAM AND TECHNICAL SPECIFICATIONS



This diagram is for reference only, and the wiring method is determined by the actual situation.

Image 2: Detailed wiring diagram for the WEIMILOR 5500W Solar Inverter. This diagram illustrates connections for solar panels, battery, AC input (utility/generator), and AC output (loads), along with key technical specifications for each connection point.

## 4.3 Parallel Operation

The inverter supports parallel operation for increased capacity. Up to 6 units can be connected in parallel. For split-phase output (120/240V), a minimum of two inverters is required. Single unit operation does not support split-phase output.

# SUPPORT PARALLEL (MAX. 6)

2 inverters connect in single phase  
(Up to 10000W Output)



3 inverters connect in three phase  
(Up to 15000W Output)



6 inverters connect in split phase  
(Up to 30000W Output)



Please note: Two or more inverters are required to split phase.  
Single unit is not supported.

Image 3: Diagram illustrating parallel connection configurations for the inverter. It shows setups for 2 inverters in single phase (up to 10000W), 3 inverters in three phase (up to 15000W), and 6 inverters in split phase (up to 30000W).

## 5. OPERATING MODES

The inverter offers various charging and output modes to suit different application requirements. These modes can be configured via the LCD display.

### 5.1 Charging Modes

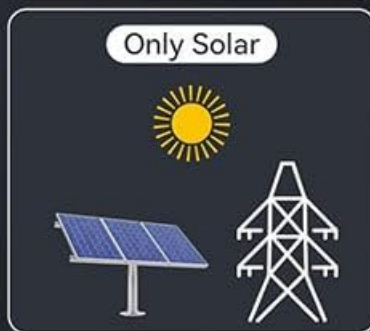
- **PV Priority:** Solar power is the primary charging source. Utility power is used only when solar power is insufficient.
- **Utility Priority:** Utility power is the primary charging source. Solar power is used when utility power is unavailable.
- **Hybrid Charging:** Combines solar and utility power for charging, prioritizing solar.
- **Only Solar Charging:** Only solar power is used for charging the battery.

### 5.2 Output Modes

- **Mains Bypass:** AC loads are powered directly by the utility grid. The inverter acts as a charger.
- **Inverter Output:** AC loads are powered by the inverter, drawing energy from the battery (charged by solar or utility).

# Charging & Output Modes

## Four Charging Modes



## Three Load Output Working Modes



Image 4: Visual representation of the four charging modes (Solar First, Utility First, Solar and Utility, Only Solar) and three load output working modes (Utility First, Solar First, SBU First).

## 5.3 LCD Display and Controls

The segment LCD display provides real-time information about the inverter's operation, including input/output voltage, battery status, load percentage, and fault indicators. Navigation buttons allow for setting adjustments.



Image 5: Close-up view of the inverter's LCD HD display screen and control buttons. The display shows various operational parameters, while the buttons are labeled for functions like Enter/Exit Settings, Option Increase, Option Decrease, and OK/Enter Options. Icons for battery capacity, load percentage, utility, generator, solar power, and home appliances are also visible.

## 6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your inverter.

- **Cleaning:** Periodically clean the inverter's exterior with a dry cloth. Ensure ventilation openings are free from dust and debris.
- **Connections Check:** Annually inspect all electrical connections for tightness and corrosion. Tighten any loose connections.
- **Battery Inspection:** Follow the battery manufacturer's maintenance guidelines for your specific battery type.
- **Environmental Check:** Ensure the installation environment remains within specified temperature and humidity ranges.

## 7. TROUBLESHOOTING

This section provides basic troubleshooting steps for common issues. For complex problems, contact customer support.

<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
Inverter not turning on	No battery connection; Low battery voltage; Blown fuse	Check battery connections; Charge battery; Check and replace fuses.
No AC output	Overload; Short circuit; Inverter fault	Reduce load; Check for short circuits in wiring; Restart inverter.
Low PV charging current	Insufficient sunlight; Dirty solar panels; Incorrect PV wiring	Ensure panels are in direct sunlight; Clean panels; Verify PV wiring.
Overheating alarm	Blocked ventilation; Excessive ambient temperature; Overload	Clear obstructions; Ensure proper ventilation; Reduce load.

## 8. TECHNICAL SPECIFICATIONS

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Detailed specifications for the WEIMILOR 5500W Solar Inverter:

Parameter	Value
Rated Output Power	5500W
Output Voltage	110V/120V/220V/240VAC $\pm$ 5%
Output Frequency	50/60Hz $\pm$ 0.1%
Waveform	Pure Sine Wave
Peak Power	11000VA
Peak Efficiency	>94%
Battery Rated Voltage	48Vdc
PV Maximum Input Power	5500W
MPPT Input Voltage Range	120-500Vdc
Maximum PV Input Voltage	500Vdc
Maximum PV Input Current	20A
Maximum AC Charging Current	100A
Maximum Charging Current (Total)	120A
AC Input Voltage Range	90-280VAC (Normal Mode) / 170-280VAC (Adaptive)
Noise Level	<50dB
Dimensions (L*W*H)	536*352*135mm
Net Weight	10.5 kg (23.15 lbs)
Communication Interfaces	BMS/RS232/RS485/CAN/USB/Dry Contact

## 9. CUSTOMER SUPPORT

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For any questions or technical assistance, please contact our customer service team. We aim to respond within 24 hours. Contact Information: Refer to your purchase documentation or the manufacturer's website for the most current support details.