

Temank Off-Grid-3000W-Solar-Inverter

Temank Off-Grid 3000W Solar Inverter with 80A MPPT Controller User Manual

Model: Off-Grid-3000W-Solar-Inverter

1. INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your Temank Off-Grid 3000W Solar Inverter. This all-in-one hybrid solar inverter integrates solar energy storage, charging, and AC sine wave output. It is designed to power various household appliances, office loads, power tools, industrial equipment, and electronic audio/video equipment, including refrigerators, lamps, televisions, fans, and air conditioning units. Please read this manual thoroughly before installation and use to ensure proper operation and safety.

2. SAFETY INFORMATION

Important Safety Instructions:

- Read all instructions and cautionary markings on the unit and in this manual before operating.
- Do not disassemble the inverter. Refer servicing to qualified personnel.
- Ensure proper ventilation around the inverter to prevent overheating.
- Connect the protective earth (PE) conductor first during installation.
- This inverter is designed for indoor use. Avoid exposure to rain, snow, or excessive moisture.
- Use appropriate wiring gauges as specified in the installation section.
- Ensure all connections are tight to prevent loose connections that can cause overheating.

3. PRODUCT OVERVIEW

The Temank Off-Grid 3000W Solar Inverter is a versatile power solution featuring a built-in 80A MPPT charge controller. It supports 24V lead-acid (sealed, AGM, Gel, Flooded) and lithium batteries, offering flexible charging and output options.



Figure 3.1: Front view of the Temank 3000W Solar Inverter, showing the display, control buttons, and branding.

Key Features:

- **Pure Sine Wave Output:** Utilizes advanced SPWM technology for stable and clean power suitable for sensitive electronics.
- **Integrated MPPT Controller:** Built-in 80A MPPT charge controller with 99.9% efficiency for optimal solar charging.
- **Multiple Charging Modes:** Supports Only Solar, Mains Priority, Solar Priority, and Mains & Solar hybrid charging.
- **Dual Output Modes:** Mains bypass and inverter output for uninterrupted power supply.
- **LCD Display and LED Indicators:** Provides dynamic display of system data and operating status.
- **Battery Compatibility:** Compatible with 24V Lead-Acid (sealed, AGM, Gel, Flooded) and Lithium batteries. Features lithium battery activation via PV solar or mains.
- **Comprehensive Protections:** Includes short circuit, over voltage, under voltage, overload, and reverse protection.
- **Power Saving Mode:** Reduces no-load loss.

- **Intelligent Cooling:** Variable speed fan for efficient heat dissipation and extended system life.

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your solar inverter. Please follow these guidelines carefully.

4.1 Site Selection

- Install the inverter indoors, away from direct sunlight, rain, and excessive dust.
- Ensure adequate airflow around the unit for proper cooling. Maintain at least 20 cm (8 inches) clearance on all sides.
- Mount the inverter vertically on a non-flammable surface.

4.2 Wiring Diagram

The following diagram illustrates the recommended wiring connections for the inverter. Always connect the protective earth (PE) conductor first.



Figure 4.1: Detailed wiring diagram for the Temank 3000W Solar Inverter. This diagram shows connections for AC input (generator/utility), solar panel array, 24V battery bank, and AC output to various loads. Note the recommended wire gauges and fuse ratings.

4.3 Connection Steps

1. **Grounding:** Connect the ground screw to a reliable earth ground.
2. **Battery Connection:** Connect the 24V battery bank to the Battery Port. Ensure correct polarity (positive to positive, negative to negative). Recommended battery capacity: 200AH. Battery wire: 2AWG. The battery must be connected for the system to operate.
3. **Solar Panel Connection:** Connect the solar panel array (all in series) to the PV Input. Max PV input power $\leq$ 4000W, Max PV input current $\leq$ 13A. Start-up voltage needs to be greater than 150V. Total Open Circuit Voltage (VOC) $\leq$ 450V. PV wire: 12AWG.
4. **AC Input Connection (Optional):** If using utility or generator power, connect the AC input to the designated AC Input terminals. AC Input Voltage: 120Vac $\pm$ 5%, Frequency: 50Hz/60Hz. Max AC Bypass Current: 40A. Max AC Charge Current: 40A. AC wire: 10AWG.
5. **AC Output Connection:** Connect your AC loads to the AC Output terminals. AC Output Power $\leq$ 3000W. Rate Voltage: 120Vac $\pm$ 5%. Rate Current: 27.5A.

Note: This diagram is for reference only. The actual wiring method may vary based on your specific setup and local electrical codes. Consult a qualified electrician if you are unsure about any connections.

5. OPERATING INSTRUCTIONS

Once the inverter is properly installed and connected, you can begin operation. The inverter features an LCD screen and three LED indicators for monitoring system status.

5.1 Control Panel

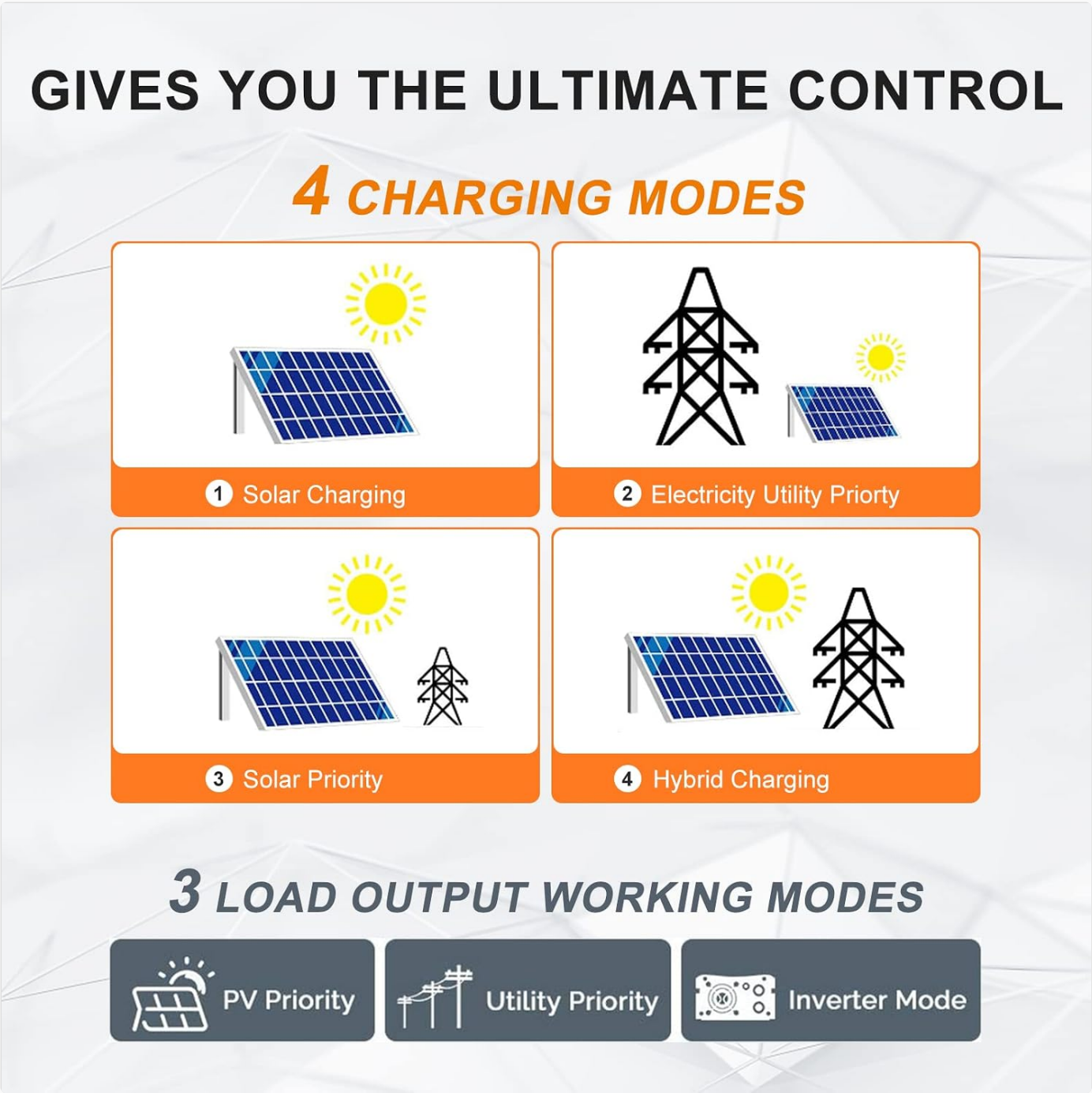
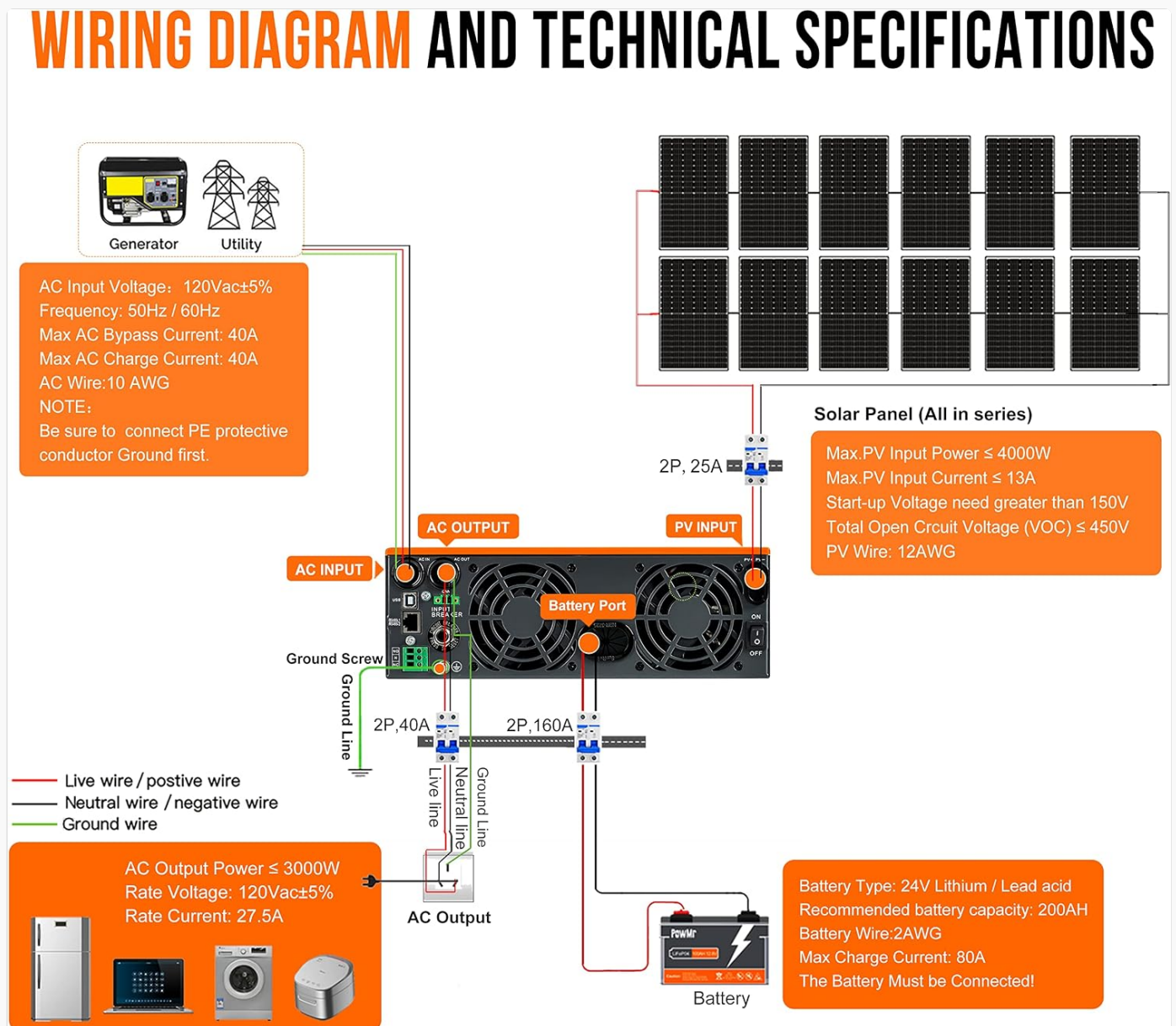


Figure 5.1: The inverter's control panel, featuring an LCD display for system data and buttons for navigation and settings adjustment.

The LCD display shows real-time operational data such as input voltage, output voltage, battery status, and charging/discharging currents. Use the buttons (SET, UP, DOWN, ENT) to navigate menus and adjust settings.

5.2 Charging Modes

The inverter offers four selectable charging modes to optimize energy management:



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

Figure 5.2: Visual representation of the four charging modes and three load output working modes available on the inverter.

1. **Only Solar:** The inverter charges the battery exclusively from solar panels.
2. **Mains Priority:** The inverter prioritizes charging from the utility grid (mains) when available. Solar power acts as a supplementary source.
3. **Solar Priority:** The inverter prioritizes charging from solar panels. The utility grid is used only when solar power is insufficient.
4. **Mains & Solar Hybrid Charging:** The inverter combines power from both mains and solar to charge the battery.

5.3 Load Output Working Modes

The inverter also provides three load output working modes:

1. **PV Priority:** Loads are primarily powered by solar PV. If PV power is insufficient, battery or utility power will supplement.
2. **Utility Priority:** Loads are primarily powered by the utility grid. If utility power fails, the inverter switches to battery/PV power.
3. **Inverter Mode:** Loads are powered by the inverter, drawing from the battery.

5.4 ON/OFF Switch

Use the ON/OFF rocker switch to control the AC output of the inverter. Ensure all connections are secure before turning the unit on.

6. MONITORING AND CONTROL VIA SMARTESS APP

The Temank Solar Inverter can be monitored and controlled remotely using the SMARTESS app. This requires an optional Wi-Fi/GPRS data acquisition module, which must be purchased separately.



Figure 6.1: The inverter with an optional Wi-Fi module (sold separately) and examples of the SMARTESS app interface for monitoring system data and adjusting settings.

The app allows you to view real-time energy data, historical records, and adjust various parameters of the inverter. You can download the SMARTESS app from the App Store or Google Play.

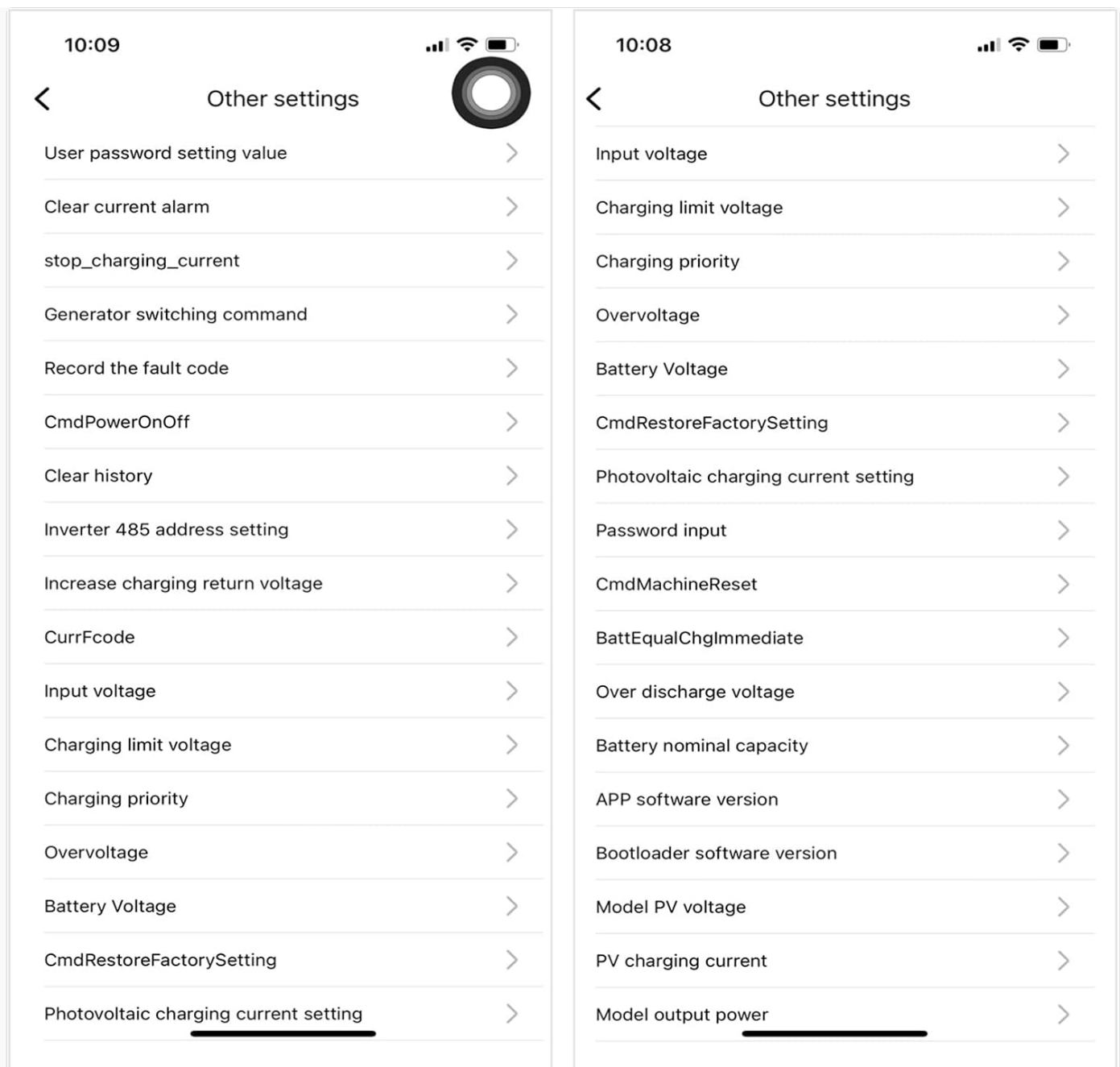


Figure 6.2: Screenshots of the SMARTeSS app displaying detailed energy data, historical logs, and configuration options for the inverter.

For detailed instructions on connecting the Wi-Fi module and using the SMARTeSS app, refer to the separate manual provided with the Wi-Fi/GPRS data acquisition module.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Temank Solar Inverter.

- **Cleaning:** Periodically clean the exterior of the inverter with a dry cloth. Do not use liquid cleaners. Ensure ventilation openings are free from dust and debris.
- **Connections:** Regularly check all electrical connections (battery, solar, AC input/output) for tightness. Loose connections can cause overheating and damage.
- **Environment:** Ensure the installation environment remains within specified temperature and humidity ranges.
- **Battery Health:** Monitor battery voltage and health, especially for lead-acid batteries, to ensure they are functioning correctly.

8. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with your inverter. For problems not listed here, contact customer support.

Problem	Possible Cause	Solution
Inverter not turning on	No battery connection or low battery voltage. Loose power connections.	Check battery connections and ensure battery voltage is above the minimum operating threshold. Verify all power cables are securely connected.
No AC output	Overload condition. Output circuit breaker tripped. Inverter in fault mode.	Reduce connected load. Check and reset any tripped circuit breakers. Refer to the LCD display for fault codes and consult the manual for specific error resolutions.
Battery not charging from solar	Insufficient solar input (low light, shading). Incorrect PV connection. MPPT controller fault.	Check solar panel connections and ensure they are receiving adequate sunlight. Verify PV input voltage and current on the display. Ensure PV array VOC is within specifications.
Battery not charging from mains	No AC input. Mains priority not selected. AC input circuit breaker tripped.	Check AC input connection and ensure mains power is present. Verify the charging mode setting is appropriate (e.g., Mains Priority or Hybrid). Check AC input circuit breaker.
Overheating warning	Blocked ventilation. Excessive ambient temperature. Overload.	Ensure ventilation openings are clear. Reduce ambient temperature if possible. Reduce connected load.

9. SPECIFICATIONS

Technical specifications for the Temank Off-Grid 3000W Solar Inverter:

Feature	Detail
Model Name	Off-Grid 3000W Solar Inverter
Rated Power	3000W
Battery Voltage	24V DC
Output Voltage	110V/120V AC Pure Sine Wave
MPPT Charge Controller Current	80A
Max. PV Input Power	4000W
Max. PV Input Current	13A
Max. PV Open Circuit Voltage (VOC)	450V
AC Input Voltage	120Vac ±5%
AC Input Frequency	50Hz/60Hz
Max AC Bypass Current	40A
Max AC Charge Current	40A

Feature	Detail
Efficiency	MPPT efficiency 99.9%
Battery Type Compatibility	24V Lead-Acid (Seal, AGM, Gel, Flooded), Lithium
Power Source	Battery Powered
Total Power Outlets	1
Color	Black

10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation included with your purchase or contact Temank customer service. Ensure you have your product model number and purchase date available when seeking support.

You can visit the official Temank store for more information:[Temank Store on Amazon](#)

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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

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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