Temank Temank-3000W

Temank 3000W Solar Inverter User Manual

Model: Temank-3000W | Brand: Temank

1. Introduction and Overview

This manual provides detailed instructions for the installation, operation, and maintenance of your Temank 3000W Low-Frequency Pure Sine Wave Solar Inverter. This advanced inverter charger features a built-in 60A MPPT controller and a 38A AC charger, designed to support various battery types including lead-acid and lithium, and can be charged via utility, generator, or solar power. Its robust low-frequency design ensures unparalleled reliability and stability for your power needs.

Figure 1.1: Front view of the Temank 3000W Solar Inverter, showcasing its display and controls.

2. Safety Instructions

Please read all instructions carefully before installation and operation. Failure to follow these instructions may result in serious injury, damage to the inverter, or property damage.

- Ensure all power sources (solar, utility, battery) are disconnected before performing any wiring or maintenance.
- This inverter generates high voltage. Only qualified personnel should perform installation and wiring.
- Ensure proper grounding of the inverter to prevent electrical shock.
- Do not expose the inverter to rain, snow, liquids, or excessive dust.
- Ensure adequate ventilation around the inverter to prevent overheating.
- Do not disassemble the inverter. There are no user-serviceable parts inside.

3. Product Features

- **Low-Frequency Pure Sine Wave Output:** Provides stable and clean power suitable for sensitive electronics.
- **High Peak Power:** Capable of 9000W peak power, three times its rated 3000W, ideal for handling high-load applications and sudden power surges.
- **Integrated MPPT Controller:** Built-in 60A MPPT solar charge controller maximizes power harvest from solar panels.
- **Versatile AC Charger:** Features a 38A AC charger for charging batteries from utility grid or generator.
- **Broad Battery Compatibility:** Supports LiCoMnNiO2, LiFePO4, AGM, Gel, User, and Flooded 24V batteries.
- **Multiple Charging/Output Modes:** Offers Utility Priority, Solar Priority, and Only Solar charging modes, along with corresponding output modes for flexible power management.
- **Advanced Protections:** Includes comprehensive system protections, battery circuit fuses, and communication options (RS232/RS482) for monitoring and BMS integration.
- **Efficient Cooling:** Intelligent variable speed fan ensures efficient heat dissipation and extends system life.
- **Fast UPS Function:** Ultra-fast 10ms UPS ensures uninterrupted operation, safeguarding connected equipment.

Figure 3.1: Overview of the inverter's key specifications and features.

Figure 3.2: Illustration of the robust toroidal transformer, contributing to the inverter's reliability and surge capacity.

Figure 3.3: Visual representation of the three selectable battery charging modes (Utility Priority, Solar Priority, Only Solar) and three output modes (Utility Priority, Solar Priority, Inverter Priority).

Figure 3.4: Display of compatible 24V battery types, including Lithium (Li), Gel, AGM, SLD, and FLD.

Figure 3.5: Example of the inverter's capability to handle various household and office loads, including air conditioners, motors, refrigerators, and washing machines, with its 3000W continuous and 9000W peak power.

Figure 3.6: Visual details highlighting the inverter's 90%+ conversion efficiency, clear LCD HD display, efficient cooling fan, and pure sine wave output.

4. Package Contents

Upon unpacking, please verify that all items listed below are included and undamaged:

- Temank 3000W Low-Frequency Solar Inverter Unit
- User Manual
- Communication Cable (RS232)
- Mounting Brackets and Screws
- Battery Terminal Connectors

Figure 4.1: Contents of the product package, including the inverter, manual, cables, and mounting hardware.

5. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your inverter. Refer to the wiring diagram below for connections.

5.1. Site Selection

- Install the inverter in a cool, dry, and well-ventilated area.
- Avoid direct sunlight, heat sources, and flammable materials.

- Ensure the mounting surface can support the inverter's weight (44 pounds).

5.2. Wiring Connections

All wiring must comply with local electrical codes and regulations. Use appropriate wire gauges for all connections.

1. **Battery Connection:** Connect the 24V battery bank to the inverter's battery terminals. Ensure correct polarity (positive to positive, negative to negative). Recommended battery capacity: 200AH. Battery wire: 2AWG.
2. **Solar Panel Connection:** Connect your solar panel array (Max PV Input: 1600W, 150V VOC) to the PV input terminals. PV wire: 10AWG.
3. **AC Input Connection:** Connect the utility grid or generator (120Vac±5%, 50Hz/60Hz) to the AC input terminals. Max AC Charging Current: 38A. AC wire: 7AWG.
4. **AC Output Connection:** Connect your loads (AC Output Power: 3000W, Rate Voltage: 110Vac±10%) to the AC output terminals. AC wire: 10AWG.
5. **Grounding:** Ensure the inverter is properly grounded to a reliable earth ground.

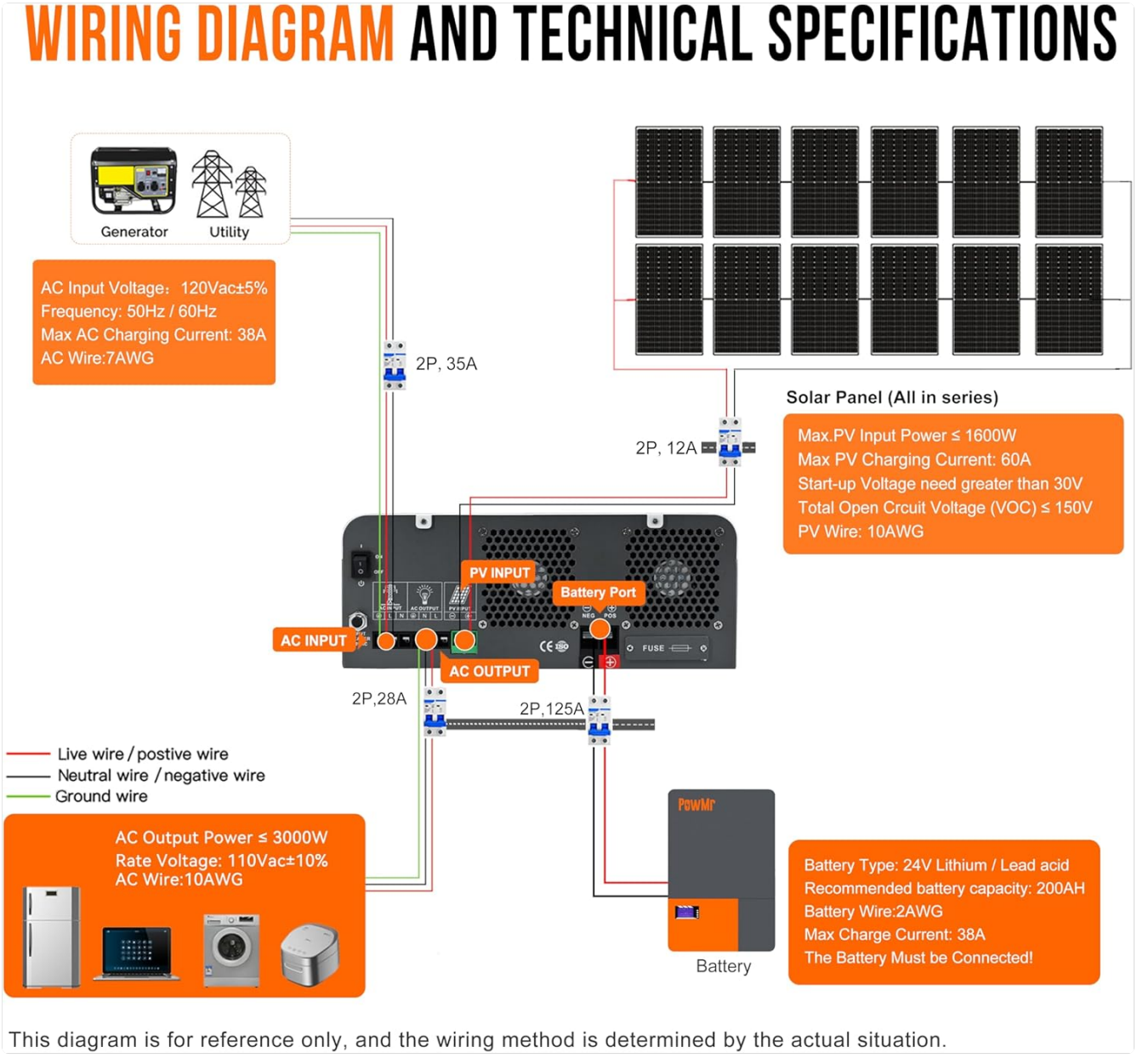

Figure 5.1: Comprehensive wiring diagram showing connections for solar panels, battery, AC input (utility/generator), and AC output (loads).

Video 5.1: This video demonstrates the split-phase output voltage test for the POW-RELAB Series, showing how to measure voltage across different output ports (L1-L2, N-L2, N-L1) to confirm correct voltage levels (110V and 220V).

6. Operating Instructions

6.1. Initial Power-Up

1. After all connections are secure, turn on the battery breaker.
2. Turn on the inverter's power switch. The LCD screen will illuminate.
3. If connecting to utility/generator, turn on the AC input breaker.
4. Turn on the solar panel breaker (if applicable).

6.2. LCD Display and Buttons

The LCD screen displays real-time operating status, input/output voltages, battery status, and error codes. Use the LCD buttons (ESC, UP, DOWN, ENTER) to navigate menus and adjust settings.

6.3. Charging and Output Modes

The inverter offers three selectable battery charging modes and three load output working modes:

- **Charging Modes:**
  - **Utility Priority:** Battery is primarily charged by utility/generator. Solar acts as a supplementary source.
  - **Solar Priority:** Battery is primarily charged by solar. Utility/generator acts as a supplementary source.
  - **Only Solar:** Battery is charged exclusively by solar power.
- **Output Modes:**
  - **Utility Priority:** Loads are primarily powered by utility. Inverter switches to battery/solar only when utility is unavailable.
  - **Solar Priority:** Loads are primarily powered by solar and battery. Inverter switches to utility when solar/battery is insufficient.
  - **Inverter Priority:** Loads are primarily powered by the inverter (battery/solar). Utility is used only when battery voltage drops to a low warning point.

7. Maintenance

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

- **Cleaning:** Periodically clean the exterior of the inverter with a dry cloth. Ensure ventilation openings are free from dust and debris.
- **Connections Check:** Annually inspect all wiring connections for tightness and corrosion. Re-tighten if necessary.
- **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.

8. Troubleshooting

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

Problem	Possible Cause	Solution
Inverter not turning on	No battery connection; Battery voltage too low; Power switch off	Check battery connections; Charge battery; Turn on power switch
No AC output	Overload; Short circuit; Low battery voltage; AC output breaker tripped	Reduce load; Check for short circuits; Charge battery; Reset breaker
Battery not charging	Solar panels not connected/producing; AC input not present; MPPT/AC charger fault	Check solar connections/sunlight; Verify AC input; Contact support if fault persists
Overheating alarm	Insufficient ventilation; Excessive ambient temperature; Overload	Ensure clear airflow; Relocate inverter; Reduce load

9. Specifications

Specification	Value
Model Number	Temank-3000W
Rated AC Output Power	3000W
Peak Power	9000W
Battery Voltage	24V
AC Output Voltage	110Vac±10%
AC Output Frequency	50Hz/60Hz (Auto Sensing)
Max PV Input Power	1600W
Max PV Input VOC	150V
Max PV Charger Current	60A (MPPT)
Max AC Charger Current	38A
Hybrid Charging Max Current	60A (AC charger + PV charger)
UPS Transfer Time	10ms
Dimensions (Package)	20 x 15 x 8.27 inches
Item Weight	44 pounds
Color	Grey

Specification	Value
Recommended Uses	Home, Office, Vehicle

10. Warranty and Support

Temank products are designed for reliability and performance. For warranty information, please refer to the documentation provided with your purchase or contact Temank customer support directly.
For technical assistance, troubleshooting beyond this manual, or to inquire about replacement parts, please visit the official Temank website or contact their customer service team. Keep your purchase receipt and model number handy for faster service.

Online Support: Visit the Temank Store on Amazon