

Temank 10000W 48V

PowMr 10000W Solar Inverter Instruction Manual

Model: 10000W 48V

Brand: Temank

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the PowMr 10000W Solar Inverter. This low-frequency pure sine wave solar inverter is designed for reliable power conversion and management in various applications. Please read this manual thoroughly before installation and operation to ensure safe and efficient use of the product.



Figure 1: Front view of the PowMr 10000W Solar Inverter. This image displays the main unit with its control panel and branding.

2. KEY FEATURES

- **Low-Frequency Pure Sine Wave Inverter:** Provides stable and reliable power output, suitable for sensitive electronics.

- **Built-in 120A MPPT Controller:** Maximizes solar energy harvesting from PV arrays.
- **Integrated 60A AC Charger:** Supports charging from utility grid or generator.
- **High Peak Power Capacity:** Peak power of 30000W, three times its rated power, for handling high-load applications.
- **Wide Battery Compatibility:** Supports LiCoMnNiO₂, LiFePO₄, AGM, Gel, User, and Flooded batteries.
- **Multiple Charging/Discharging Modes:** Offers Utility Priority, Solar Priority, and Only Solar modes for flexible power management.
- **Comprehensive System Protections:** Includes overcurrent, overvoltage, short circuit, and overtemperature protection.
- **Efficient Heat Dissipation:** Features an intelligent variable speed fan to prevent overheating.

3. PRODUCT OVERVIEW

3.1. Components and Controls

The PowMr Solar Inverter features a robust design with clearly labeled components for ease of use. Key elements include the LCD screen, LED indicators, control buttons, and various input/output terminals.



Figure 2: Detailed view of the PowMr 10000W Solar Inverter showing the LCD screen, LED indicators, LCD buttons, toggle switch, AC input/output terminals, PV input terminal, communication port, and battery circuit fuse. This image also illustrates the three battery charging modes (Utility Priority, Solar Priority, Only Solar) and three output modes (Utility Priority, Solar Priority, Inverter Priority).

3.2. AC Output Voltage Range

The POW-RELAB series offers different models to cater to various AC power system voltage applications. The 10000W 48V model provides a 110V AC output.

Video 1: An introductory video to the POW-RELAB series of solar low-frequency inverters, highlighting their AC output voltage ranges and various applications. This video provides a visual overview of the product's capabilities and different models.

4. APPLICATION SCENARIOS

The PowMr 10000W Solar Inverter is versatile and suitable for a wide range of applications, from residential to commercial and industrial settings.

4.1. Residential Use

This inverter is ideal for larger homes, enabling multiple high-power appliances to run simultaneously. It can

power essential household items such as refrigerators, air conditioners, washing machines, and microwaves.

TAKE CONTROL OF YOUR ENERGY BILL WHILE SAVING THE PLANET !

MAX INPUT 6400W,150V 120A; AC OUTPUT 10000W

PowMr

PowMr

AGM GEL FLD LI SLD

Compatible with Multiple Battery Types

Figure 3: The PowMr 10000W Solar Inverter installed in a home environment, demonstrating its compatibility with multiple battery types and its ability to power various household appliances.

4.2. Office and Commercial Use

It addresses comprehensive power requirements in large and medium-sized office spaces, accommodating multiple offices, large copiers, servers, and air conditioning systems. It also supports small commercial setups like coffee shops.

4.3. Industrial and Agricultural Use

The inverter serves commercial and industrial applications, supporting small factories, workshops, and farms requiring high-power equipment operation.

5. TECHNICAL ADVANTAGES

5.1. Low-Frequency Transformer

One of the standout advantages of the POW-RELAB series low-frequency inverters lies in its use of low-frequency transformers for voltage conversion. This capability enables them to withstand high current surges and enhances stability when starting up loads with characteristics such as high starting currents typical of motors.

SUPER RING TRANSFORMER

Peak Power: **30000W**, Rated Power: **10000W**

Experience Superior Performance: This solar inverter features a built-in oversized toroidal transformer, enhancing its load-bearing capacity and stability. With a peak power output of 15000W, it triples the rated power!

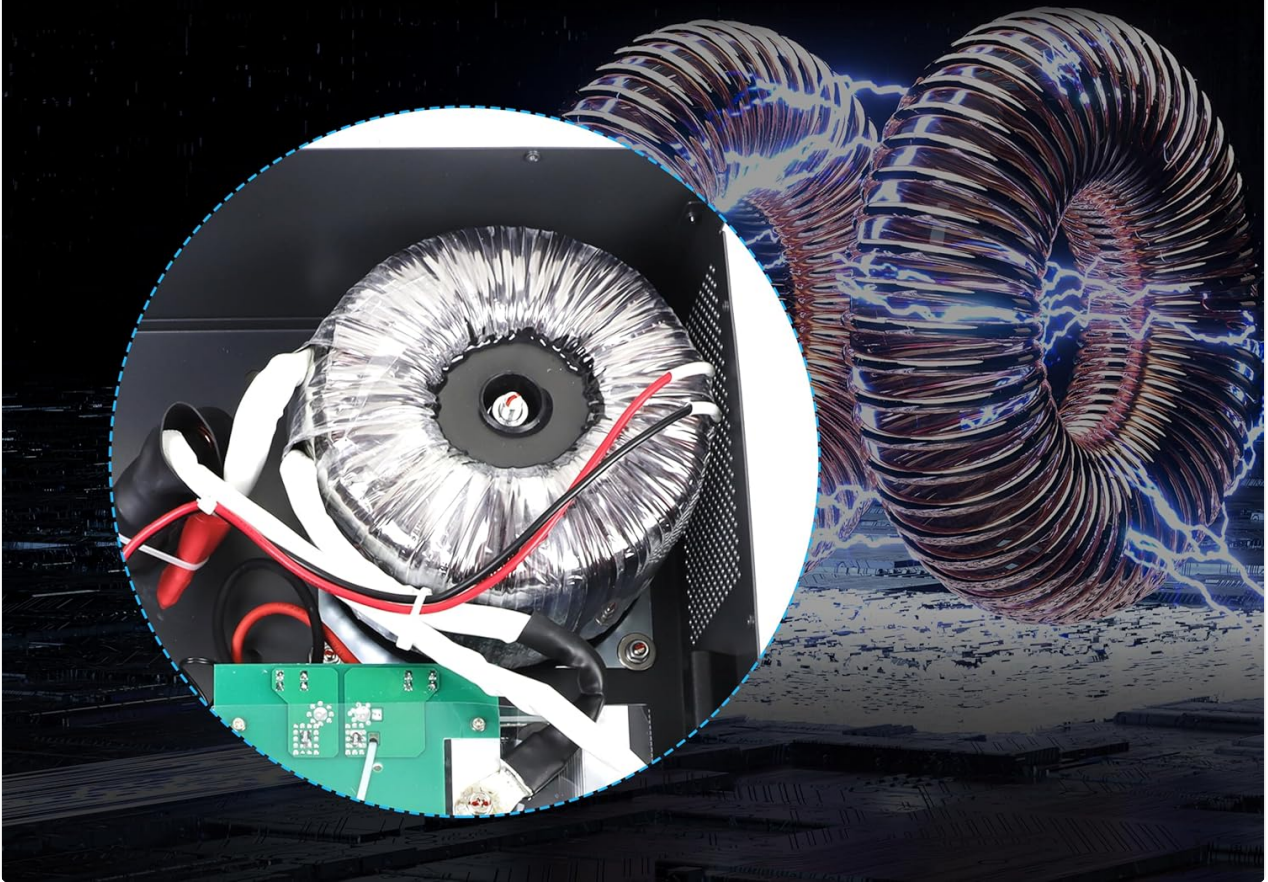


Figure 4: An internal view highlighting the super ring transformer, which contributes to the inverter's 30000W peak power and 10000W rated power, ensuring robust performance.

5.2. Component Quality and Heat Dissipation

High-quality components such as IGBTs and MOSFETs are used on the internal circuit boards, significantly enhancing reliability and lifespan. Efficient heat dissipation systems, including an intelligent variable speed fan, prevent component overheating, ensuring stable operation in various challenging environments.

5.3. Advanced Protection Circuits

Advanced control and protection circuits are integrated, including overcurrent, overvoltage, short circuit, and overtemperature protection. These features promptly detect and respond to anomalies, enhancing system safety and reliability.

6. MPPT TECHNOLOGY

The POW-RELAB solar low-frequency inverters employ advanced MPPT (Maximum Power Point Tracking) control technology. This dynamically tracks and maximizes the output power from the solar array, ensuring optimal conversion of solar energy into electrical power. This technology exhibits strong adaptability to complex and various sunlight conditions, maximizing utilization even under changing light intensities.

LOW-FREQUENCY 10000W SOLAR INVERTER

BUILT-IN LARGE TRANSFORMER

- Pure Sine Wave Inverter built in 120A MPPT Controller and 60A AC Charger
- Max.PV Array Power 6400W,150Vdc;
- Compatible with Lead-acid, Lithium batteries,etc.
- Supports Solar, Utility, or Generator Power to Charge the Battery

10KW
AC Output Power

60A
Max.AC Charging

120A
Max.PV Charging

60V
Starting Voltage



Figure 5: The inverter's key features, including its 120A MPPT controller, are highlighted, emphasizing its role in efficient solar power conversion.

7. BATTERY COMPATIBILITY AND CHARGING MODES

7.1. Battery Compatibility

This 10000W solar inverter 48V offers versatility by supporting different types of batteries, including LiCoMnNiO₂, LiFePO₄, AGM, Gel, User, and Flooded batteries. It seamlessly integrates pure sine wave inverter output with mains or generator bypass functions, accommodating both solar and AC power charging.

SUPER RING TRANSFORMER

Peak Power: 30000W Rated Power: 10000W



Figure 6: The PowMr inverter connected to a bank of batteries, illustrating its compatibility with various battery types like LiFePO4, AGM, GEL, FLD, and LI.

7.2. Charging/Discharging Modes

The low-frequency 10000W inverter has three battery charging modes and load output working modes that are optional: utility priority, solar priority, and only solar, to meet different application requirements. Users can prioritize output and charging power according to their specific requirements, ensuring optimal functionality in diverse applications.

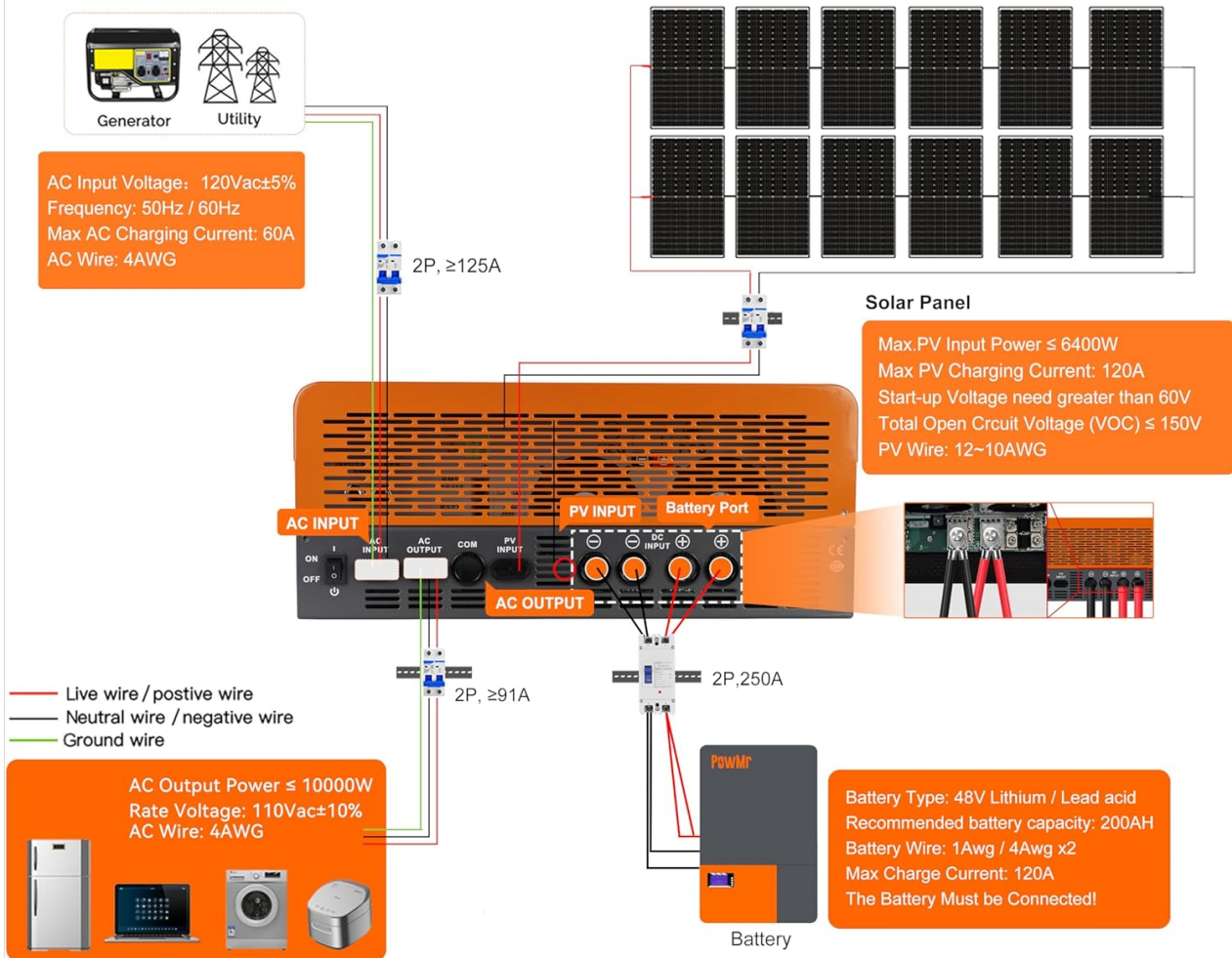
8. SETUP

Proper setup is crucial for the safe and efficient operation of your PowMr Solar Inverter. Always ensure all connections are secure and follow local electrical codes.

8.1. Wiring Diagram

Refer to the detailed wiring diagram for correct connection of AC input, AC output, PV input, and battery ports. Ensure proper grounding for safety.

WIRING DIAGRAM AND TECHNICAL SPECIFICATIONS



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

Figure 7: A comprehensive wiring diagram illustrating connections for the AC input (from generator or utility), solar panel array, battery bank, and AC output to various loads. This diagram is for reference only, and the actual wiring method should be determined by the specific situation and local regulations.

8.2. Initial Connections

Connect the battery cables to the inverter's battery terminals, ensuring correct polarity (positive to positive, negative to negative). Then, connect the PV input from your solar panels. Finally, connect the AC input from the utility grid or generator and the AC output to your loads.

- Ensure all connections are tight and secure.
- Verify correct voltage and current ratings for all connected components.
- Always connect the battery first, then PV, then AC input/output. Disconnect in reverse order.

9. OPERATING

The PowMr inverter is designed for ease of use and operation, featuring clear wiring logic and program configuration. Through intelligent power management, POW-RELAB inverters adjust electricity output based on real-time load demands and the status of solar, grid, and battery power sources, maximizing overall efficiency of solar energy systems.

9.1. Powering On/Off

1. Ensure all wiring is correctly installed and secured.
2. Turn on the battery breaker.
3. Turn on the PV array breaker (if applicable).
4. Turn on the AC input breaker (if applicable).
5. Turn on the inverter's main power switch.
6. The LCD display will illuminate, and the system will begin its startup sequence.

9.2. Display and Settings

The LCD screen provides real-time information about the system's status, including input/output voltage, current, power, battery status, and operating mode. Use the navigation buttons (ESC, UP, DOWN, ENTER) to browse through menus and adjust settings as needed.

10. MAINTENANCE

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

- **Cleaning:** Keep the inverter's exterior clean and free from dust and debris. Ensure ventilation openings are not blocked.
- **Connections Check:** Periodically inspect all electrical connections for tightness and signs of corrosion.
- **Battery Inspection:** Check battery terminals for corrosion and ensure battery ventilation is adequate. Follow battery manufacturer's maintenance guidelines.
- **Environmental Conditions:** Ensure the inverter is operating within its specified temperature and humidity ranges.

11. TROUBLESHOOTING

The inverter is equipped with advanced protection circuits to prevent damage. If an issue occurs, the system may display an error code or shut down. Refer to the LCD display for fault indicators.

- **No Power:** Check all power connections, battery voltage, and circuit breakers.
- **Overload:** Reduce the connected load. The inverter will typically attempt to restart after an overload condition is cleared.
- **Over-temperature:** Ensure adequate ventilation around the inverter. Clear any obstructions from the fan or vents. Allow the unit to cool down.
- **Short Circuit:** Immediately disconnect all loads and check for any short circuits in the wiring or connected appliances.
- **Abnormal Voltage/Current:** Verify input voltages (PV and AC) and ensure they are within the inverter's operating range.

For persistent issues, contact customer support.

12. SPECIFICATIONS

| Feature | Value |
|-----------------------------|--------------------------------|
| Model | 10000W 48V |
| Rated Power | 10000W |
| Peak Power | 30000W |
| Max PV Input | 6400W, 150V (VOC) |
| Max PV Output Current | 120A |
| AC Charger Current | 60A |
| Hybrid Charging Max Current | 120A (AC charger + PV charger) |
| Starting Voltage | >60V |
| AC Output Voltage | 110V |
| Item Weight | 129 pounds |
| Package Dimensions | 26 x 20 x 10 inches |

13. WHAT'S IN THE BOX

- Low-Frequency solar inverter unit
- Instruction Manual
- Mounting accessories
- Communication cable



Inverter unit

Packing List



Figure 8: The packing list showing the inverter unit and included accessories such as cables and mounting hardware.

14. WARRANTY AND SUPPORT

This product is sold by Y-SOLAR and is fulfilled by Amazon. For any product-related inquiries, technical assistance, or warranty claims, please contact Y-SOLAR customer support through the Amazon platform.

- **Return Policy:** 30-day easy returns.
- **Protection Plans:** Optional 2-Year and 3-Year Protection Plans are available for purchase.