

Temank 2500W Pure Sine Wave Inverter 12V & MPPT 60A Solar Charge Controller

Temank PowMr 2500W Pure Sine Wave Inverter 12V & MPPT 60A Solar Charge Controller User Manual

Model: 2500W Pure Sine Wave Inverter 12V & MPPT 60A Solar Charge Controller

Brand: Temank

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Temank PowMr 2500W Pure Sine Wave Inverter 12V & MPPT 60A Solar Charge Controller. Please read this manual thoroughly before installation and use, and retain it for future reference.

The 2500W Pure Sine Wave Inverter converts 12V DC to 110V AC, providing clean power for sensitive electronics. The integrated 60A MPPT Solar Charge Controller supports 12V/24V/48V auto battery systems and is compatible with lead-acid and lithium batteries. It features an LCD display for real-time data and supports parallel connections for increased system capacity.

2. SAFETY INFORMATION

Important Safety Instructions:

- Read all instructions carefully before installation and operation.
- Installation must be performed by qualified personnel.
- Ensure all connections are tight and correct polarity is observed to prevent damage to the unit or batteries.
- Do not expose the unit to rain, moisture, or extreme temperatures outside the specified operating range (-25°C to 55°C).
- Ensure adequate ventilation around the unit to prevent overheating.
- This device is not grid-tie compatible.
- Always disconnect power before performing any maintenance or wiring.

3. PRODUCT FEATURES

- **High-Efficiency Pure Sine Wave Inverter:** Converts 12V DC to 110V AC with a clean pure sine wave output, suitable for sensitive electronics.
- **Integrated MPPT 60A Solar Charge Controller:** Supports 12V/24V/48V auto battery systems and is compatible with lead-acid and lithium batteries.
- **Smart Inverter Monitoring & Control:** Includes a remote control panel to monitor battery voltage, power output, and fault alerts. LCD display shows real-time data.
- **USB Port:** Built-in 5V/2.4A USB port for convenient device charging.
- **Easy Installation:** Comes with pre-installed 4AWG battery cables, spare fuses, and a detailed manual.
- **Reliable Performance:** Operates in extreme temperatures (-25°C to 55°C).
- **Scalable System:** Supports up to 12 units in parallel to increase total solar system capacity and power output.
- **Wide Voltage/Power Support:** The 60A solar controller supports high PV input power/voltage.
 - 12V system: Suggested Solar power 720W, range: DC20V~DC80V
 - 24V system: Suggested Solar power 1440W, range: 37~105V
 - 36V system: Suggested Solar power 2100W, range: 50~160V
 - 48V system: Suggested Solar power 2800W, range: 72-160V

4. PACKAGE CONTENTS

The package includes the following items:

- 2500W Pure Sine Wave Power Inverter
- MPPT 60A Solar Charge Controller
- Remote Control Panel (with 15ft cable)
- 4AWG Battery Cables (pre-installed)
- Spare Fuses
- User Manual (this document)
- Mounting Hardware (screws, washers, nuts)

WHAT'S IN THE BOX

Dimension 13.78*8.11*3.39in

Weight 9.24lbs



Figure 4.1: Package Contents. Shows the inverter, MPPT controller, remote control, battery cables, spare fuses, and user manual.

5. SPECIFICATIONS

Feature	Specification
Inverter Type	Pure Sine Wave
Continuous Output Power	2500W
Peak Power Rating	5000W
DC Input Voltage	12V
AC Output Voltage	110V
Nominal Efficiency	>85%
Charge Controller Type	MPPT

Max Charge Current	60A
Battery Voltage (Auto)	12V/24V/48V
Battery Compatibility	Lead-Acid (SLD, GEL, FLD, AGM), Lithium
Operating Temperature	-25°C to 55°C
USB Output	5V/2.4A
Parallel Capability	Up to 12 units (MPPT controllers)

6. INSTALLATION AND WIRING

Proper installation is crucial for the safe and efficient operation of your solar power system. Follow these steps carefully.

6.1 Mounting the Components

Mount the inverter and MPPT solar charge controller securely on a wall or suitable surface. Ensure adequate space around the units for ventilation.



Figure 6.1: Mounted Inverter and MPPT Controller. Shows the inverter and controller installed on a wooden panel.

6.2 Circuit Breaker Installation

Install appropriate DC circuit breakers for safety. For this setup, two 63A DC air circuit breakers are used: one for the PV input to the controller and one for the controller's charging line to the battery. A 250A molded-case DC breaker is used for the battery-to-inverter discharge line.

6.3 Wiring Connections

Follow the wiring diagrams below for proper connection. Always ensure correct polarity (positive to positive, negative to negative) and secure all connections tightly.

6.3.1 Single Connection Diagram

This diagram illustrates a basic off-grid solar power system setup with one MPPT controller and one inverter.

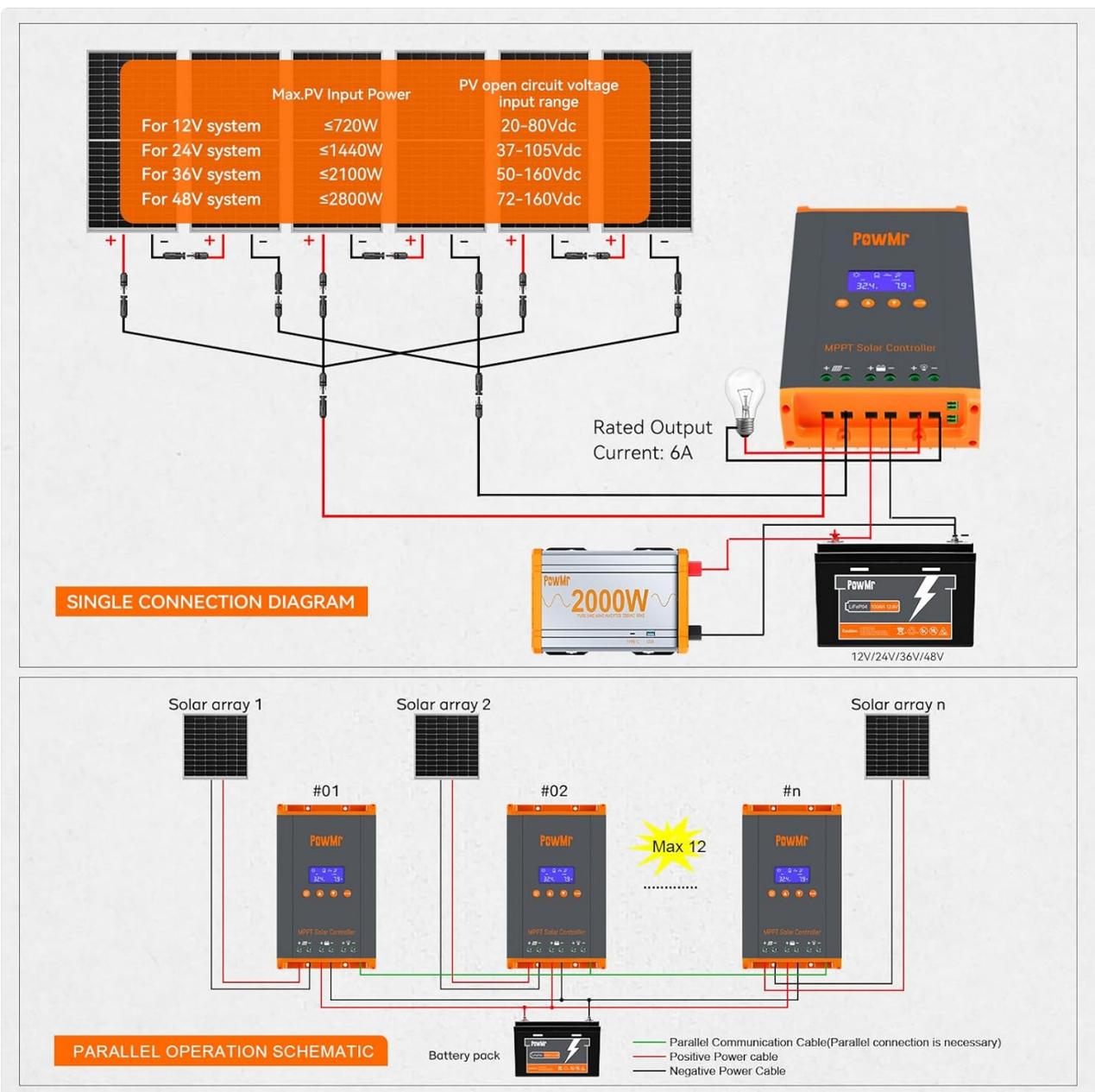
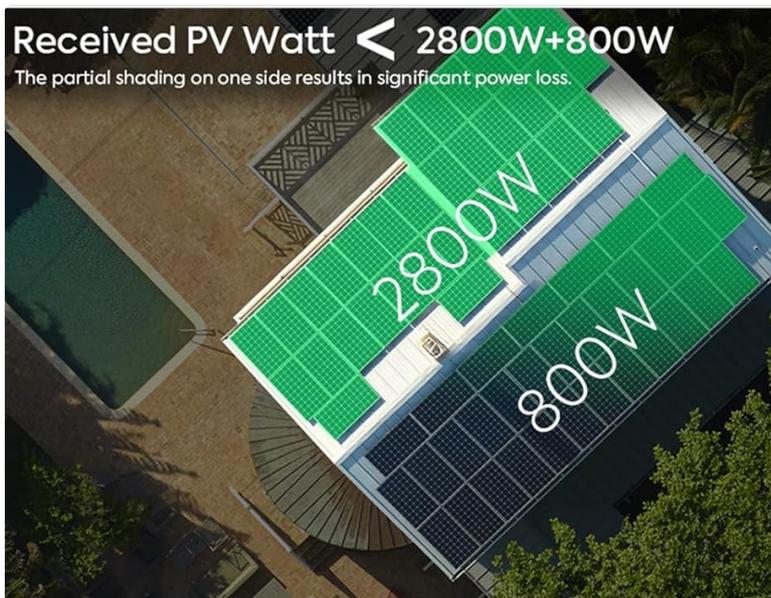


Figure 6.2: Single Connection Diagram. Shows solar panels connected to the MPPT controller, which is connected to a battery, and the battery is connected to the inverter. A load is connected to the inverter.

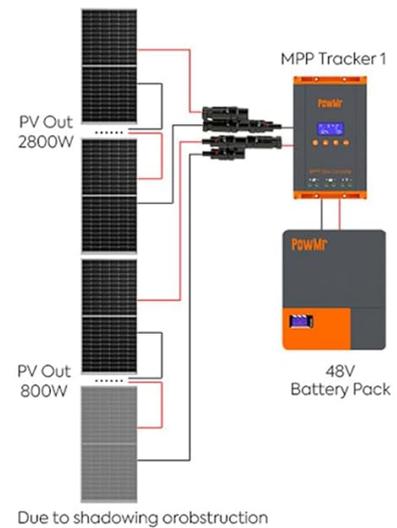
1. Connect the solar array to the PV input terminals of the MPPT controller via the PV breaker.
2. Connect the battery to the battery terminals of the MPPT controller via the battery-side breaker.
3. Connect the battery to the DC input terminals of the inverter via the 250A DC breaker.
4. Connect your AC loads to the AC output terminals of the inverter.

6.3.2 Parallel Operation Schematic

For increased capacity, multiple MPPT controllers can be connected in parallel. This schematic shows how to connect multiple controllers to a single battery bank.



Parallel Operation -1 MPPT



Parallel Operation -2 MPPT

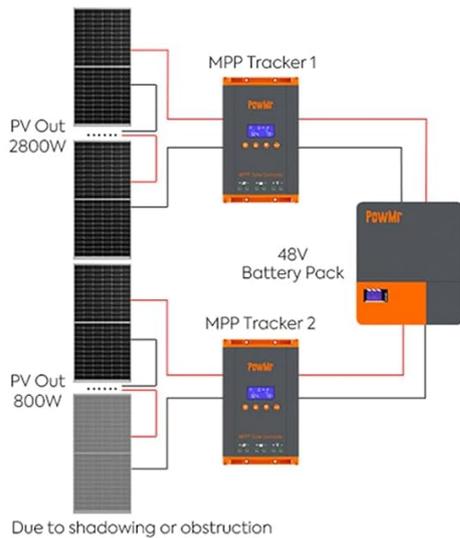


Figure 6.3: Parallel Operation Schematic. Illustrates multiple MPPT controllers connected to separate solar arrays and then combined to charge a single battery pack. Communication cables are also shown for synchronization.

1. Connect each solar array to its dedicated MPPT controller.
2. Connect the battery output of each MPPT controller to the common battery pack. Ensure proper sizing of cables and breakers for the combined current.
3. Connect parallel communication cables between the controllers as shown in the diagram to ensure synchronized operation.

6.4 Powering On the System

Once all wiring is complete and checked for security and correct polarity, power on the system in the following sequence:

1. Switch on the battery breaker connected to the controller.
2. Switch on the PV breaker.
3. Switch on the inverter-side breaker.
4. Flip the inverter's rocker switch to power it on.

The load connected to the AC output will begin operating normally once the inverter starts working.

6.5 Installation Videos

For a visual guide on installation and wiring, please refer to the following official seller videos:

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Video 6.1: How to Set Up Solar System with Solar Controller & Inverter. This video demonstrates the step-by-step process of setting up an off-grid solar power system using a solar charge controller and an inverter.

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Video 6.2: POW-M60-ULTRA Parallel Installation and Wiring Guide. This video provides instructions for installing and wiring multiple POW-M60-ULTRA solar charge controllers in parallel.

7. OPERATING INSTRUCTIONS

The MPPT solar charge controller and inverter feature LCD displays for monitoring system status and settings.

7.1 MPPT Controller Display and Buttons



MPPT 60A
SOLAR CONTROLLER

- 12V/24V/36V/48V Auto
- Fit for Lead-acid and Lithium Battery
- Supports Up to 12 Units in Parallel
- Dual cooling with a fan and heat sink for efficient heat dissipation.
- Tracking efficiency of up to 99.9% , peak conversion efficiency of up to 97%.

720W
For 12V System

1440W
For 24V System

2100W
For 36V System

2800W
For 48V System

The image shows a black and orange POWMr MPPT Solar Controller. The front panel features a blue LCD display showing PV voltage (32.4V) and Load current (7.9A). Below the display are four control buttons: a menu button, a power button, a down arrow button, and an enter button. The device has a heat sink on the right side and terminal blocks at the bottom for PV, battery, and load connections.

Figure 7.1: MPPT Controller Interface. Shows the LCD display with solar input, battery status, and load output, along with control buttons.

- The LCD display shows real-time data such as PV voltage, battery voltage, charging current, and load

status.

- Use the buttons (PV, BAT, DC, SET) to navigate through menus and adjust settings.
- Refer to the detailed settings configuration in the full user manual for advanced adjustments.

7.2 Inverter Display and Remote Control



Figure 7.2: Inverter and Remote Control. Displays the inverter's status on its own screen and on the remote control panel, including input voltage, output voltage, and power.

- The inverter's built-in display and remote control panel provide information on battery voltage, power output, and fault alerts.
- The remote control allows for convenient monitoring and control, especially if the inverter is installed in a less accessible location.

7.3 Real-Time LCD Display Demo

Observe the real-time data display and parameter settings in the following official seller videos:

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Video 7.1: MPPT Controller Connected | Real-Time LCD Display Demo. This video demonstrates the real-time data displayed on the MPPT controller's LCD screen during operation.

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Video 7.2: D01-D06 Parameter Setting Information. This video explains how to access and modify parameters (D01-D06) on the MPPT solar charge controller.

8. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your solar power system.

- **Check Connections:** Periodically inspect all wiring connections for tightness and corrosion. Tighten any loose connections.
- **Clean Components:** Keep the inverter and controller free from dust and debris. Use a dry cloth to wipe surfaces. Ensure ventilation openings are clear.
- **Battery Inspection:** Regularly check battery terminals for corrosion and clean if necessary. Monitor battery voltage and health.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature range and is free from excessive moisture.

9. TROUBLESHOOTING

If you encounter issues with your system, refer to the following basic troubleshooting steps. For complex problems, consult a qualified technician or the manufacturer's support.

- **No Power Output from Inverter:**
 - Check battery connections and voltage.
 - Ensure the inverter's rocker switch is ON.
 - Verify the 250A DC breaker is engaged.
 - Check for any fault codes on the inverter's display or remote panel.
- **MPPT Controller Not Charging:**
 - Check solar panel connections and ensure they are receiving sunlight.
 - Verify the PV breaker is engaged.
 - Check battery connections and voltage.
 - Ensure the battery type setting on the controller matches your battery.
- **Overheating:**
 - Ensure adequate ventilation around both units.
 - Check for obstructions in cooling fans or vents.
 - Reduce load if operating continuously at high capacity in hot environments.

10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official Temank website or

contact their customer service directly. Details are typically provided in the product packaging or on the manufacturer's website.

Manufacturer's Website: [Visit the Temank Store on Amazon](#)