

Temank MPPT 80A

Temank 80A MPPT Solar Charge Controller User Manual

Model: MPPT 80A

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Temank 80A MPPT Solar Charge Controller. Please read this manual thoroughly before installation and use to ensure proper function and safety. This controller is designed to efficiently manage power flow from solar panels to batteries in 12V, 24V, or 48V systems, supporting both lead-acid and lithium battery types.

2. PRODUCT OVERVIEW

The Temank 80A MPPT Solar Charge Controller utilizes Maximum Power Point Tracking (MPPT) technology to optimize solar power harvesting. It features robust construction and advanced cooling for reliable performance.

Key Features:

- **80A Charging Current:** Capable of handling significant solar input.
- **Automatic System Voltage Detection:** Compatible with 12V, 24V, and 48V battery systems.
- **Parallel Operation Support:** Up to 12 units can be connected in parallel to increase system capacity.
- **Dual Cooling System:** Features a die-cast aluminum heat sink and a turbofan for efficient heat dissipation.
- **Wide Battery Compatibility:** Supports Sealed, Gel, Flooded, LiFePO4, and Lithium-Ion batteries, with user-customizable parameters.
- **High PV Input Support:** Accepts solar voltage up to 160V.
- **Comprehensive Protection:** Includes overcurrent, short circuit, reversed polarity, overvoltage, over-discharge, and over-temperature protection.
- **99% Tracking Efficiency:** Advanced MPPT technology ensures maximum power extraction from solar panels.



Image 2.1: Temank 80A MPPT Solar Charge Controller and its components, including the controller unit, terminal block, mounting screws, and temperature sensor cable.

80 AMP

MPPT SOLAR CHARGE CONTROLLER

- 12V/24V/36V/48V AUTO
- Work With Lead-acid and Lithium Battery
- Supports Up to 12 Units in Parallel
- Dual cooling with a fan and heat sink for efficient heat dissipation.

80A

Charging Current

160V

Max.PV Input
Voltage

3840W

Max.PV Input
Power

8A

Max. DC output
Current



Image 2.2: Overview of the 80A MPPT Solar Charge Controller, detailing its 80A charging current, 160V maximum PV input voltage, 3840W maximum PV input power, and 8A maximum DC output current.

3. SPECIFICATIONS

Feature	Specification
Model	MPPT 80A
System Voltage	12V/24V/36V/48V Auto
Max. Charging Current	80A
Max. PV Input Voltage	160V
Max. PV Input Power (12V System)	960W

Feature	Specification
Max. PV Input Power (24V System)	1920W
Max. PV Input Power (36V System)	2880W
Max. PV Input Power (48V System)	3840W
Battery Compatibility	Sealed, Gel, Flooded, LiFePO4, Lithium-Ion (User Customize)
Display Type	LCD
Operating Temperature	Up to 45°C (Fan activates >45°C, turns off <40°C)
Dimensions (with mounting part)	10.24 x 7.1 x 2.95 inches (260 x 180 x 75 mm)
Net Weight	4.4 lbs (2 kg)
Manufacturer	Temank

DIMENSIONS

With Mounting Part:

10.24x7.1x2.95 inch

Net Weight:

4.4lb(2kg)



Image 3.1: Physical dimensions of the controller, showing measurements of 10.24 inches (260mm) in height, 7.1 inches (180mm) in width, and 2.95 inches (75mm) in depth.

4. SAFETY INFORMATION

- Always disconnect solar panels and battery power before installing or servicing the controller.
- Ensure proper polarity for all connections. Incorrect wiring can damage the controller and other components.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- Use appropriate circuit breakers or fuses for both solar panel and battery circuits.
- Do not charge lithium batteries when the temperature is below 0°C (32°F) to prevent damage.
- Ensure all connections are tight to prevent loose connections and overheating.

5. SETUP AND INSTALLATION

Follow these steps for safe and correct installation of your solar charge controller.

5.1 Wiring Sequence

1. **Connect Battery:** First, connect the battery to the controller's battery terminals. Ensure correct polarity. The controller will automatically detect the system voltage (12V/24V/36V/48V).
2. **Connect Solar Panels:** Next, connect the solar panels to the controller's PV input terminals. Ensure correct polarity.
3. **Connect Load (Optional):** If using the load output, connect your DC load to the load terminals.

Important: Always connect the battery first and disconnect the solar panels first when disassembling the system.

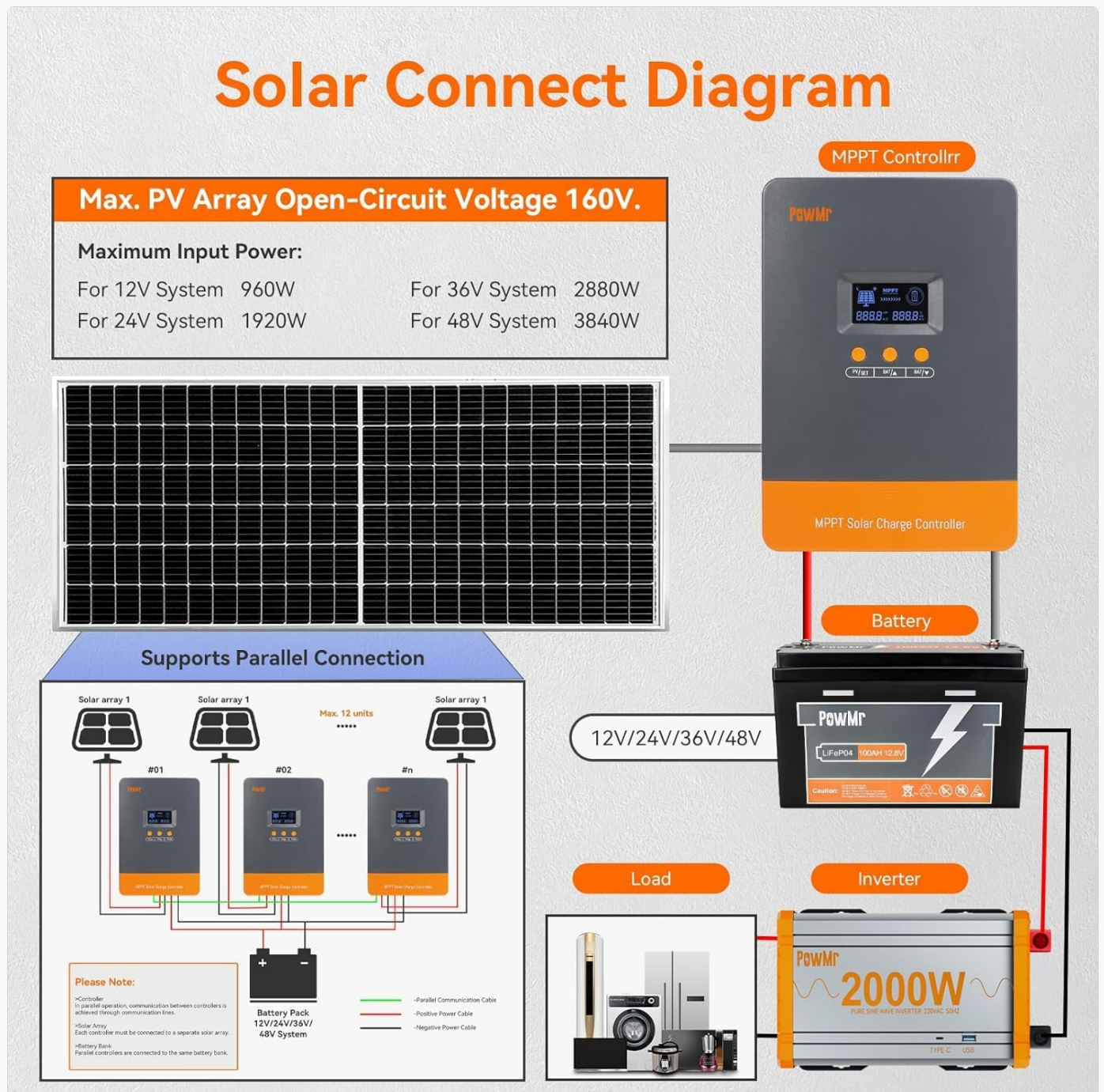


Image 5.1: A detailed solar connection diagram showing the MPPT controller connected to solar panels, a battery bank, and an inverter for AC loads. It illustrates the correct wiring order and components.

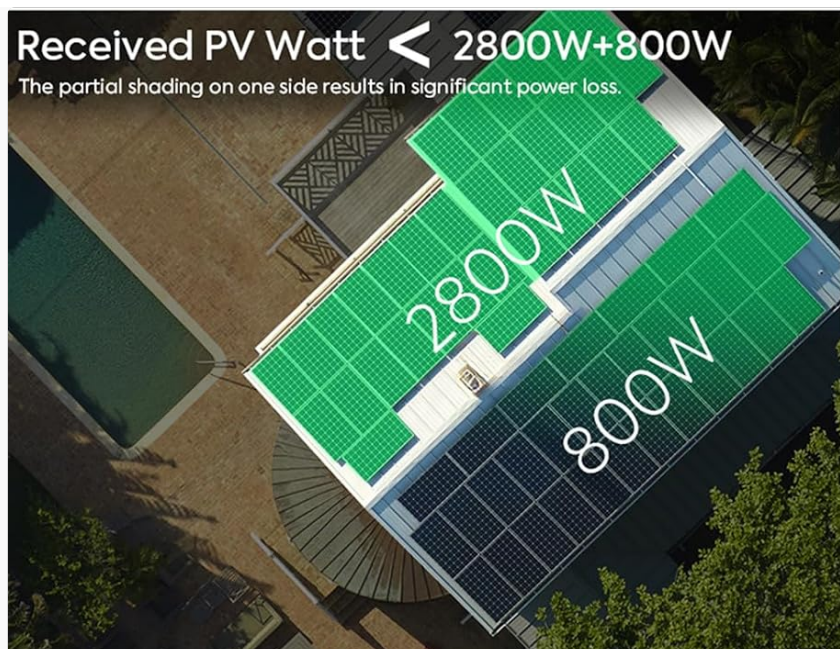
5.2 Parallel Operation

The Temank 80A MPPT controller supports parallel connection of up to 12 units to expand your solar system's capacity. When operating in parallel:

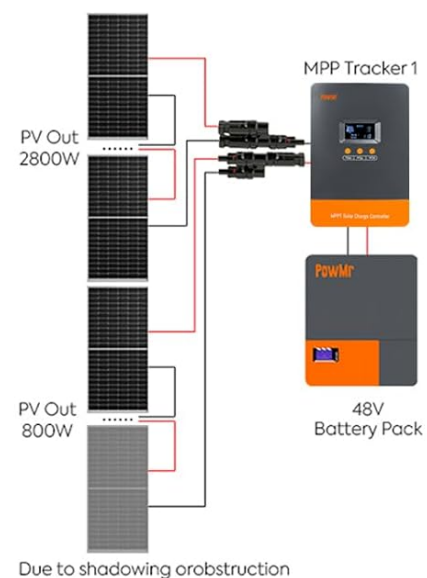
- Each controller must be connected to a separate solar array.
- All parallel controllers are connected to the same battery bank.
- Communication between controllers is achieved through dedicated communication lines.



Image 5.2: Schematic illustrating how multiple MPPT controllers are connected in parallel to a single battery bank, each with its own solar array, and interconnected via communication cables.



Parallel Operation -1 MPPT



Parallel Operation -2 MPPT

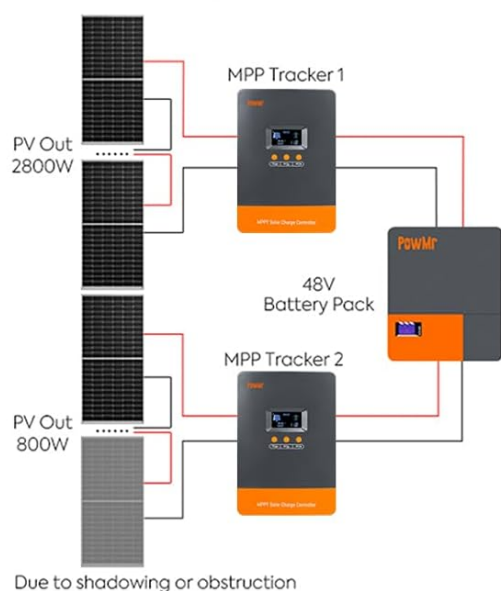


Image 5.3: Visual comparison demonstrating the benefits of parallel operation with two MPPT controllers for solar arrays with partial shading, showing increased power generation compared to a single MPPT setup.

6. OPERATING INSTRUCTIONS

6.1 LCD Display and Navigation

The controller features an LCD display for monitoring system status and adjusting parameters. Use the buttons (PV/SET, BAT/▲, BAT/▼) to navigate through the display interfaces and modify settings.

STAY COOL WITH QUIET BLADELESS FAN

Intelligent fan-on temperature $>45^{\circ}\text{C}$ and off $<40^{\circ}\text{C}$. Updated Heat Dissipation system with bladeless fan, much more quiet and efficient.



Fits for RVs, commercial vehicles, boats, yachts, and solar systems



Image 6.1: The LCD display interface, showing various screens for current battery voltage, charging current, device temperature, battery type, parallel communication code, calibrated battery voltage, boost charging voltage, float charging voltage, and MPPT tracking return voltage.

6.2 Battery Type Selection and Customization

The controller is compatible with various battery types. You can select a preset type or customize charging parameters.

COMPATIBLE WITH ALL POPULAR BATTERY TYPES

12V/24V/36V/48V AUTO



TIP: When the connected battery voltage is 24V/36V/48V, the range values are 2/3/4 times the range. The LCD screen only displays the voltage value of the 12V battery.



AGM Battery



GEL Battery



Flooded Battery



LifePO4 Battery



Sealed Lead-acid Battery

Image 6.2: A chart detailing compatible battery types including AGM, GEL, Flooded, LiFePO4, and Sealed Lead-acid, along with their corresponding display codes and descriptions.

To select or customize battery parameters:

- Navigate to the battery type setting on the LCD.
- Choose from preset options (Sealed, Gel, Flooded, LiFePO4, Lithium-Ion).
- For custom settings, select 'User' and adjust parameters such as Absorption Voltage, Float Voltage, Low Voltage Cutoff, and Load Timer according to your battery manufacturer's specifications.

6.3 Lithium Battery Activation

The controller can activate lithium batteries using solar panel energy. Ensure proper settings are configured for lithium batteries. Avoid charging lithium batteries below 0°C (32°F).

7. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your solar charge controller.

- **Cleaning:** Periodically clean the controller's exterior to prevent dust buildup, especially around ventilation openings.
- **Connection Checks:** Annually inspect all wiring connections for tightness and corrosion.
- **Ventilation:** Ensure the installation area remains well-ventilated. The internal turbofan activates automatically when the temperature exceeds 45°C and turns off below 40°C to maintain optimal operating temperature.

Dual Cooling for Efficient Heat Dissipation!

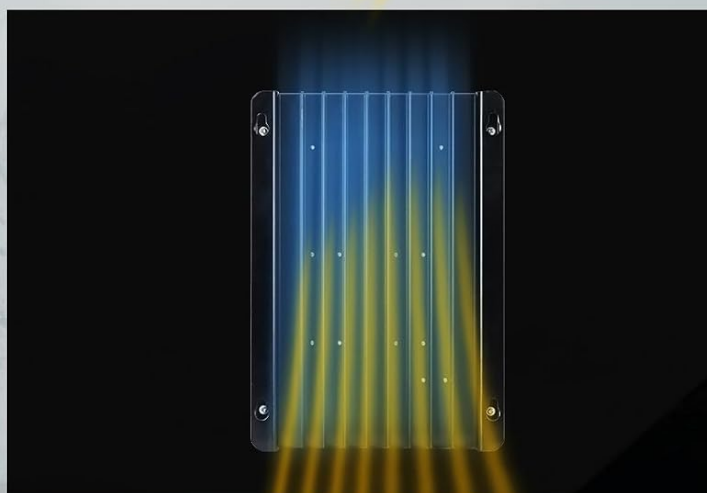
Stay Cool with Quiet Bladeless Fan

Intelligent fan-on temperature $>45^{\circ}\text{C}$ and off $<40^{\circ}\text{C}$.
Updated Heat Dissipation system with bladeless fan, much more quiet and efficient.



Strong Build, High Thermal Conductivity

Made of robust die-cast aluminum, the heat sink that comes with the 60A Solar Charge Controller allows the heat flow away through tubes to ensure maximum charging efficiency and safety of critical components.



Fits for RVs, commercial vehicles, boats, yachts, and solar systems

Image 7.1: Illustration of the controller's dual cooling system, featuring a robust die-cast aluminum heat sink and an intelligent bladeless turbofan for efficient heat dissipation.

8. TROUBLESHOOTING

If you encounter issues with your Temank 80A MPPT Solar Charge Controller, refer to the following common problems and solutions.

- **No Display/No Power:**

- Check battery connections and ensure they are secure and correctly polarized.
- Verify battery voltage is within the controller's operating range.

- **Not Charging/Low Charging Current:**

- Ensure solar panel connections are secure and correctly polarized.
- Check solar panel voltage and current.
- Verify that the solar panels are not shaded.
- Confirm battery type settings match the connected battery.

- **Overvoltage Warning/Error Codes:**

- Review battery charging parameters (Absorption Voltage, Float Voltage) to ensure they are appropriate for your battery type.
- For lithium batteries, ensure settings prevent overcharging.

- **Over-temperature Protection:**

- Ensure adequate ventilation around the controller.
- Clear any obstructions from the fan or heat sink.

For persistent issues or error codes not listed, please contact Temank customer support.

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact Temank directly through their official channels or the seller from whom the product was purchased. Keep your purchase receipt as proof of purchase.

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.

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Question

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Model number, symptoms, what you tried, or the section of the manual you are using.

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