Temank 35A

MPPT Solar Charge Controller 35A User Manual

Model: 35A

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Temank MPPT Solar Charge Controller 35A. This advanced Maximum Power Point Tracking (MPPT) controller is designed to maximize solar panel output and enhance charging efficiency for 12V/24V battery systems. It is compatible with various battery types, including lead-acid (Sealed, Gel, Flooded) and lithium (LiFePO4, Lithium-Ion) batteries, and features comprehensive protection mechanisms.

Figure 1.1: Front view of the Temank MPPT Solar Charge Controller 35A, showing the LCD display and control buttons.
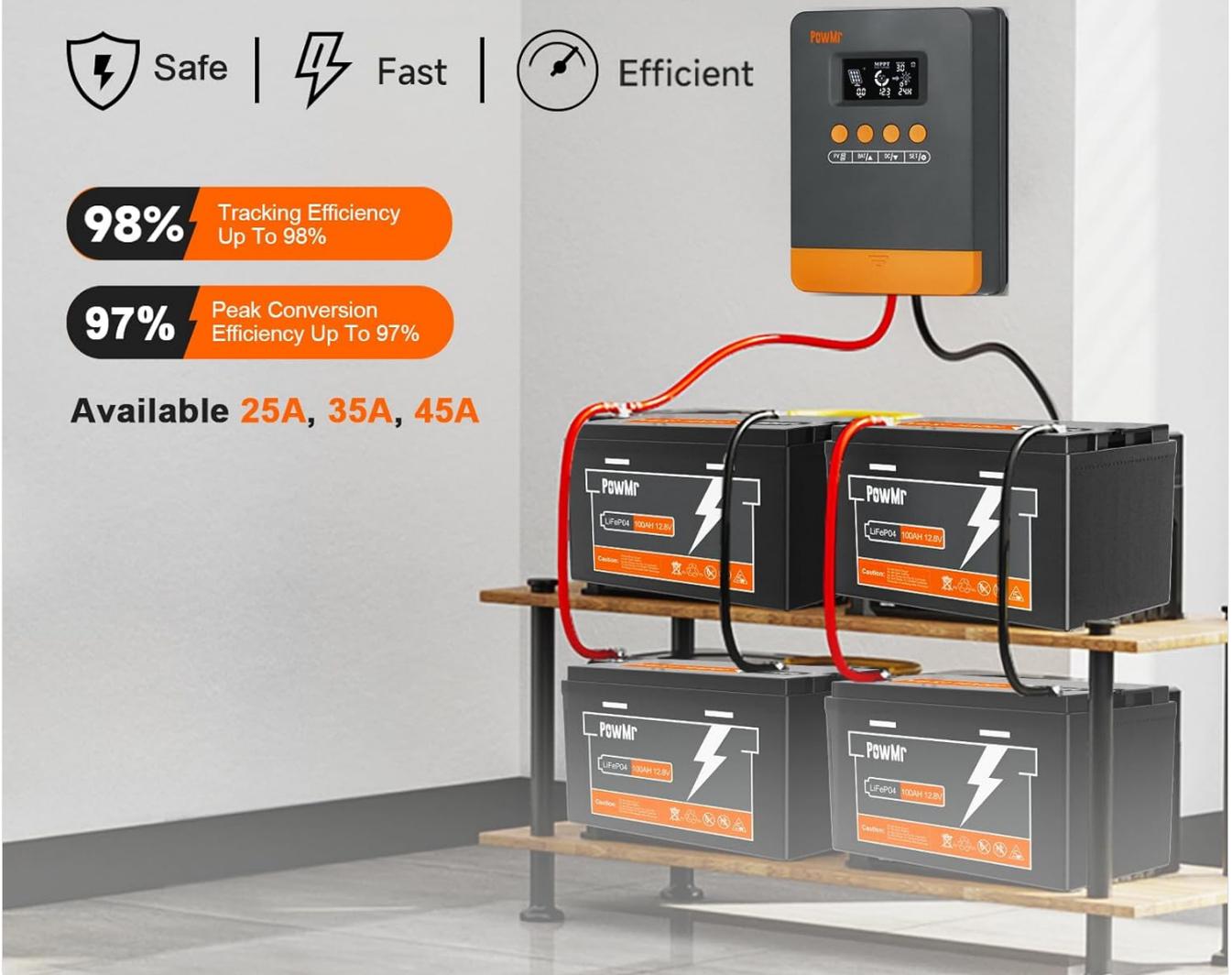
Figure 1.2: Illustration highlighting the controller's high tracking efficiency (up to 98%) and peak conversion efficiency (up to 97%), shown connected to a battery bank.

2. SAFETY INFORMATION

Please read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure all connections are secure and correct before powering on the system.
- Always disconnect the solar panel and battery power before performing any maintenance or wiring changes.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- Do not charge lithium batteries below 0°C (32°F) to prevent damage.
- The negative grounding design enhances safety. Ensure proper grounding.
- This device is equipped with protections against short circuits, overcurrent, and reverse polarity. However,

proper installation is crucial to prevent these issues.

- Only qualified personnel should perform installation and maintenance.

Figure 2.1: Overview of the 9 built-in electronic protections, including PV overcurrent, PV short circuit, PV reverse polarity, battery reverse polarity, battery overvoltage, battery over-discharge, lithium battery low temperature, load overcurrent protection, and overtemperature protection.

3. Setup and Installation

3.1 Wiring Instructions

Follow the wiring order precisely to ensure safe and correct operation. Connect the system in the following sequence:
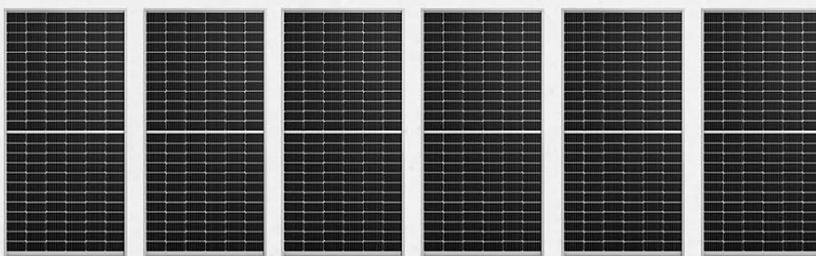
1. **Connect the Battery:** First, connect the battery to the charge controller. Ensure the battery breaker is open before connecting, then close it once connected.

2. **Connect the Load (if applicable):** Next, connect any DC loads to the controller.

3. **Connect the PV Array:** Finally, connect the solar panels to the charge controller. Ensure the PV breaker is open before connecting, then close it once connected.

To disconnect the system, reverse this order: disconnect PV array, then load, then battery.

WITH BATTERY MODE

Model:	POW-M25-PRO		POW-M35-PRO		POW-M45-PRO	
Net Weight	12V	24V	12V	24V	12V	24V
Max. PV Open-Circuit Voltage:	60V		80V		100V	
Net Weight	300W	600W	420W	840W	540W	1080W
Dimensions:	6.3*4.53*2.01in		7.68*5.31*2.56in			
Net Weight	1.1lb		1.98lb		2.28lb	

12V/24V

Connect the system in the order of ❶ battery ❷ load ❸ PV array by Figure,"Schematic Wiring Diagram" and disconnect the system in the reverse order ❶ ❷ ❸

Figure 3.1: Schematic diagram illustrating the correct wiring order for the battery, load, and PV array to the solar charge controller.

3.2 Battery Compatibility and Settings

The controller is compatible with various 12V and 24V batteries. You can select the battery type and customize settings for absorption voltage, float voltage, low voltage cutoff, and load timer.

Figure 3.2: Diagram showing compatibility with multiple battery types, including AGM, GEL, FLD (Flooded), LI (Lithium), and SLA (Sealed Lead-Acid).

To select the battery type:

- Long press the **BAT/▲** key to enter the setting program.

- Use the **BAT/▲** and **DC/▼** keys to toggle through the battery type options.

- Press the **SET/⚙** key to save and confirm your selection.

- If you select "User-defined battery type" (USE), you can proceed with setting specific battery parameters.

3.3 Calibrating Battery Voltage

If there is a discrepancy between the battery voltage monitored by the controller and the value measured by a multimeter, you can calibrate the battery voltage using this setting.
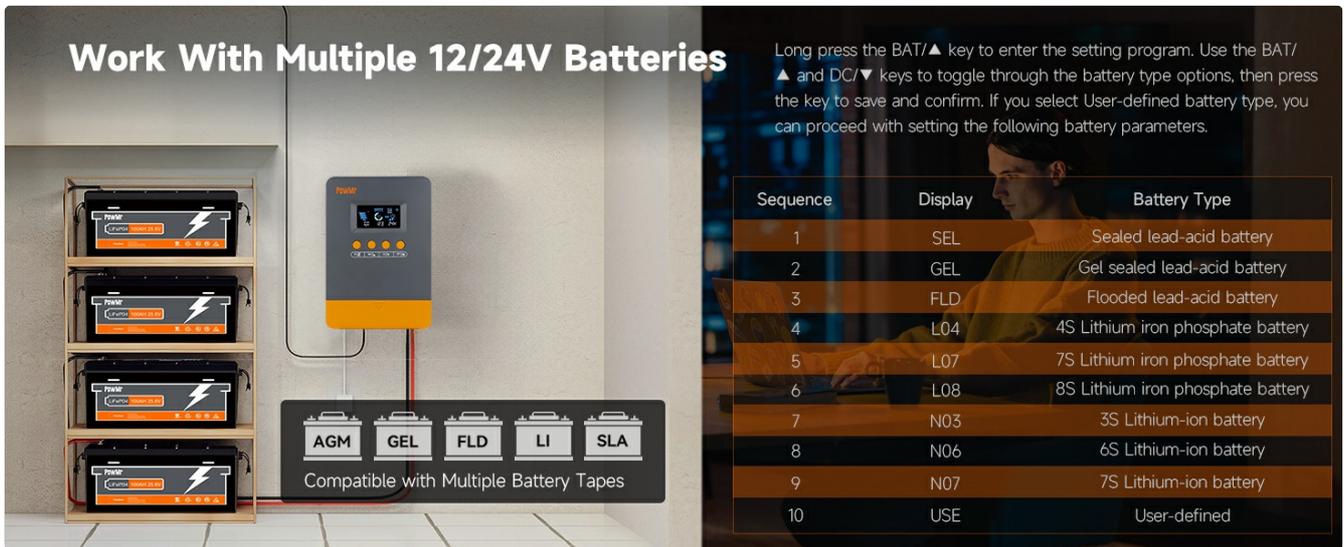
Figure 3.3: Screen showing the battery voltage calibration interface on the LCD display.

- Long press the **BAT/▲** key to enter the setting program.

- Use the **BAT/▲** and **DC/▼** keys to adjust the value.

- Press the **SET/⚙** key to save and confirm.

4. OPERATING INSTRUCTIONS

4.1 LCD Display and Working Modes

The clear LCD screen provides real-time information about the controller's working state and process. It displays various parameters and indicators.

BACKLIGHT LCD SCREEN

WORKING MODE

3.0——Night mode, no charging
4.0——MPPT Charging Mode
7.0——Boost Charging Mode
8.0——Floating Charge mode
18 60 63 65 71 73 72——Error Code

Fault Code	Fault Cause	Solution
18	Input photovoltaic voltage too low	Increase the number of solar panels or connect them in series to raise the photovoltaic input voltage.
60	Overtemperature protection	Allow the equipment to cool to below the recovery temperature to resume normal charging and discharging.
63	Battery voltage too high	Measure to confirm if battery voltage exceeds rated voltage and disconnect photovoltaic array circuit breaker.
65	Battery voltage too low	Charge the battery until voltage exceeds the undervoltage recovery point. Refer to "3.7 Default Parameters for Different Battery Types" for specific details.
71	Input photovoltaic voltage too high	Reduce the number of photovoltaic arrays connected to the controller to lower photovoltaic input; or adjust series and parallel connections to reduce voltage or current values.
73	Overcharging current	
72	Overdischarging current	Reduce output terminal load to ensure total load is within rated limits of the controller and battery.

Figure 4.1: Detailed view of the backlight LCD screen, showing various icons and numerical readings for system status. It also lists working modes and error codes.

The controller operates in several working modes:

- **3.0:** Night mode, no charging.
- **4.0:** MPPT Charging Mode.
- **7.0:** Boost Charging Mode.
- **8.0:** Floating Charge Mode.

4.2 Multiple Load Work Modes

The controller supports different load operation modes, allowing you to control when your connected DC loads are powered.

MULTIPLE LOAD WORK MODES

Figure 4.2: Illustration of the three primary load work modes: 00H (Load Turn OFF), 24H (Load always Turn ON), and 01H~23H (Time control for load duration).

- **00H:** Load is always turned OFF.
- **24H:** Load is always turned ON.
- **01H~23H:** Time control mode, allowing you to set the duration (in hours) for which the load remains ON.

5. MAINTENANCE

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

- Periodically inspect all wiring connections for tightness and corrosion.
- Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- Ensure adequate ventilation around the controller to prevent overheating.

- Monitor the LCD display for any unusual readings or fault codes.

6. TROUBLESHOOTING

The controller's LCD display may show fault codes if an issue occurs. Refer to the table below for common fault codes and their solutions.

Fault Code	Fault Cause	Solution
18	Input photovoltaic voltage too low	Increase the number of solar panels or connect them in series to raise the photovoltaic input voltage.
60	Overtemperature protection	Allow the equipment to cool to below the recovery temperature to resume normal charging and discharging.
63	Battery voltage too high	Measure to confirm if battery voltage exceeds rated voltage and disconnect photovoltaic array circuit breaker.
65	Battery voltage too low	Charge the battery until voltage exceeds the undervoltage recovery point. Refer to '3.7 Default Parameters for Different Battery Types' for specific details.
71	Input photovoltaic voltage too high	Reduce the number of photovoltaic arrays connected to the controller to lower photovoltaic input; or adjust series and parallel connections to reduce voltage or current values.
73	Overcharging current	Reduce output terminal load to ensure total load is within rated limits of the controller and battery.
72	Overdischarging current	Reduce output terminal load to ensure total load is within rated limits of the controller and battery.

7. SPECIFICATIONS

Feature	Detail
Model	35A
Max PV Input (12V Battery)	360W
Max PV Input (24V Battery)	720W
Max. PV Open-Circuit Voltage	<80V
Battery Voltage	12V/24V Auto
Tracking Efficiency	Up to 98%

Feature	Detail
Peak Conversion Efficiency	Up to 97%
Compatible Battery Types	Lead-acid (Sealed, Gel, Flooded), Lithium (LiFePO4, Lithium-Ion)
Display Type	LCD
Dimensions	7.68 x 5.31 x 2.56 inches (approx. for 35A model)
Item Weight	1.98 pounds
Color	Orange

8. WARRANTY AND SUPPORT

Temank is committed to providing high-quality products and responsive customer service. For any questions, technical assistance, or warranty claims, please contact Temank customer support through the retailer where the product was purchased or refer to the contact information provided with your product packaging.
Please retain your proof of purchase for warranty purposes.