

Anern 20amp 12/24V

Anern 20A MPPT Solar Charge Controller User Manual

Model: 20amp 12/24V

1. PRODUCT OVERVIEW

The Anern 20A MPPT Solar Charge Controller is designed to efficiently manage power flow from solar panels to batteries, ensuring optimal charging and battery longevity. It utilizes advanced Maximum Power Point Tracking (MPPT) technology to maximize energy harvest from your solar array. This controller is suitable for various applications, including solar RV systems, household power systems, and industrial field monitoring.



Figure 1: Front view of the Anern 20A MPPT Solar Charge Controller, showing the LCD display and control buttons.

The controller automatically recognizes 12V or 24V battery systems and is compatible with multiple battery types, including Lithium, AGM, Gel, and Flooded lead-acid batteries. Its detailed LCD screen and user-friendly buttons

simplify operation and parameter adjustment.

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Video 1: An overview of the Anern MPPT Solar Charge Controller, highlighting its features and different models.

2. KEY FEATURES

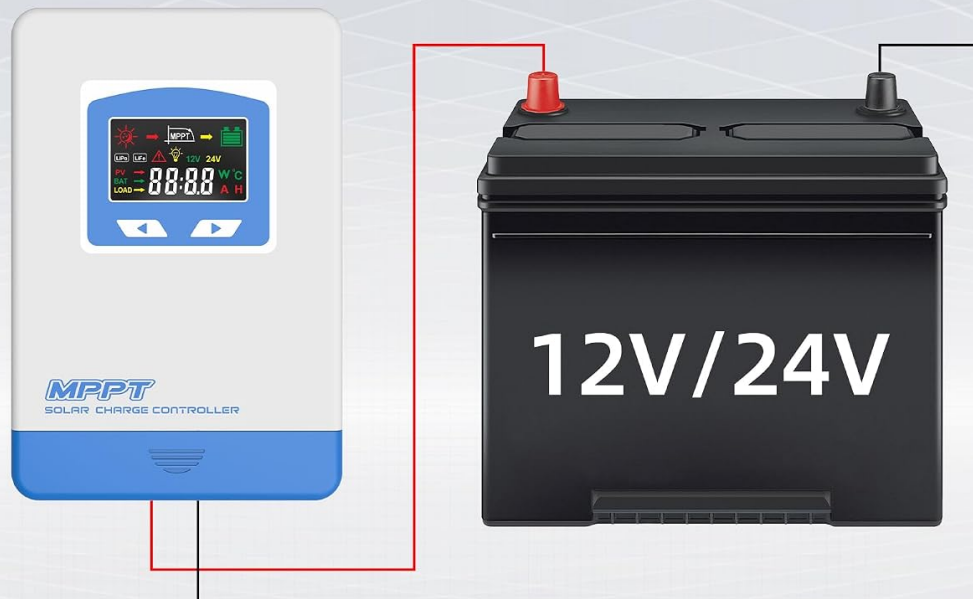
- **High Efficiency MPPT Technology:** Applied the latest optimized MPPT technology to quickly track the maximum power point of the PV array, achieving up to 99% efficiency and over 98% conversion rate. This ensures maximum energy extraction from solar panels.



Figure 2: Illustration of the high efficiency of the MPPT technology in the solar charge controller.

- **Multiple Protection Functions:** Equipped with comprehensive protection against overcharge, over discharge, overload, short circuit, reverse polarity, overheating, and battery undervoltage.
- **Wide Battery Compatibility:** Automatically recognizes 12V/24V systems and supports Lithium, Sealed, Flooded, Gel, and AGM battery types, with preset charging parameters for convenience.

Works with All common types of battery



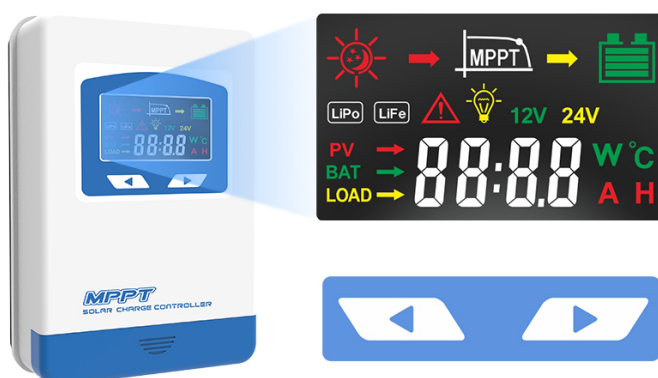
Lithium battery activation 12V/24V Automatic Detection



Figure 3: The controller's compatibility with various 12V/24V battery types.

- **Informative LCD Display:** A detailed LCD screen and two buttons provide easy access to system parameters and settings.
- **Robust Heat Dissipation:** Features a die-cast aluminum structure for effective heat dissipation, ensuring continuous and stable charging performance.

Interface Description



Item	ICO	Status	
PV-Array		Day	Night
		Charging	
Battery		Uncharged / battery capacity	
		Battery type	
Load		Load on	Load off

Button Meaning	Button pattern	Button function
MENU		Press briefly to downshift and hold down for 3 seconds to switch to the next interface.
SET		Press briefly to switch up Press and hold for 3 seconds to end the process without saving

Figure 4: The controller's design for efficient heat dissipation.

3. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your solar charge controller. Please follow these steps carefully:

1. **Safety First:** Before connecting any wires, ensure all power sources (solar panels and battery) are disconnected.
2. **Mounting:** Mount the controller in a cool, dry, and well-ventilated area, away from direct sunlight and moisture. Ensure adequate space around the unit for air circulation.
3. **Wiring Sequence:**
 - Connect the battery to the controller first. Ensure correct polarity (+ to + and - to -).
 - Connect the solar panel array to the controller. Ensure correct polarity.
 - Connect the DC load to the controller (if applicable). Ensure correct polarity.

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



Figure 5: Wiring diagram for the solar charge controller, illustrating connections to PV array, battery, and load.

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Video 2: A detailed look at the MPPT Solar Charge Controller, including its interfaces and physical design, useful for understanding setup.

4. OPERATING INSTRUCTIONS

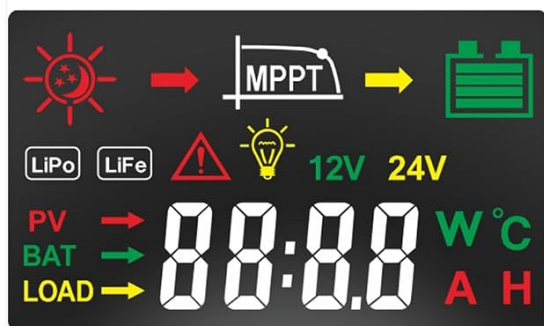
The controller features an intuitive LCD display and two control buttons for easy operation.

4.1 LCD Display Interface

The LCD screen provides real-time information about the system's status. Key indicators include:

- **PV-Array Status:** Indicates whether the solar panel is charging (day) or not (night/unloaded).
- **Battery Status:** Shows battery capacity and type (LiPo, LiFe, etc.).
- **Load Status:** Indicates if the load is on or off.
- **Numerical Values:** Displays PV voltage, battery voltage, load current, temperature, and accumulated energy.

Interface Description



Article	ICO		Status	
PV-Array			Day	Night
			Charging	
Batterie			Unloaded / battery capacity	
			Battery type	
Load			load on	Unload

Button Meaning	Button patterns	Function of the Button
MENU		Short press to switch down press and hold for 3 seconds to enter the next interface
SETTING		Short press to switch up Press and hold for 3 seconds to exit without saving



Figure 6: Description of the LCD display interface and button functions.

4.2 Button Functions

- **MENU Button (Left Arrow):** Short press to switch down through display interfaces. Press and hold for 3 seconds to enter the next interface for settings.
- **SET Button (Right Arrow):** Short press to switch up through display interfaces. Press and hold for 3 seconds to exit settings without saving.

4.3 Load Operating Modes

The controller offers four distinct load working modes:

- **LD1 (Regular Mode):** The load operates normally and can be manually turned on or off.
- **LD2 (Light Control Mode):** The load automatically turns on at dusk and off at dawn.
- **LD3 (Light & Time Control Mode):** The load turns on after dark and operates for a specified number of hours.
- **LD4 (Reverse Light Control Mode):** The load automatically turns on at dawn and off at dark.

4 Load Operating Modes

The controller default load working 24 hours, and there are 4 loadworking modes for selection

L d1 (LD1)

Regular Mode

The load works normally and can be turned on or off manually.



L d2 (LD2)

Light Control Mode

The load automatically opens at dark and closes at dawn.



L d3 (LD3)

Light & Time Control Mode

Load working hours after dark, load working hours before dawn. automatically identify dark and light according to local environment)



L d4 (LD4)

Reverse Light Control Mode

Load automatically open at dawn, load automatically close at dark.



Figure 7: Explanation of the four available load operating modes.

5. MAINTENANCE

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

- **Cleanliness:** Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- **Connection Checks:** Periodically inspect all wiring connections to ensure they are tight and secure. Loose connections can lead to power loss or overheating.
- **Ventilation:** Ensure that the ventilation openings on the controller are not blocked to allow for proper heat dissipation.
- **Environmental Conditions:** Verify that the operating environment remains within the recommended temperature and humidity ranges.

6. TROUBLESHOOTING

This section outlines common issues and their potential solutions. The controller is equipped with multiple protective functions to ensure safe operation.

6.1 Protective Functions

The controller includes the following built-in protections:

- **Solar Module Reversed:** Protection against reversed solar module connection when the battery is not connected.
- **Battery Reversed:** Protection against reversed battery connection if the PV is not connected.
- **Overvoltage of the Battery:** Protects when the battery voltage reaches the overvoltage point.
- **Battery Overcharging:** Protects when the battery voltage falls below the undervoltage point.
- **Overload:** Protects when the load current exceeds the rated current.

Protective Function

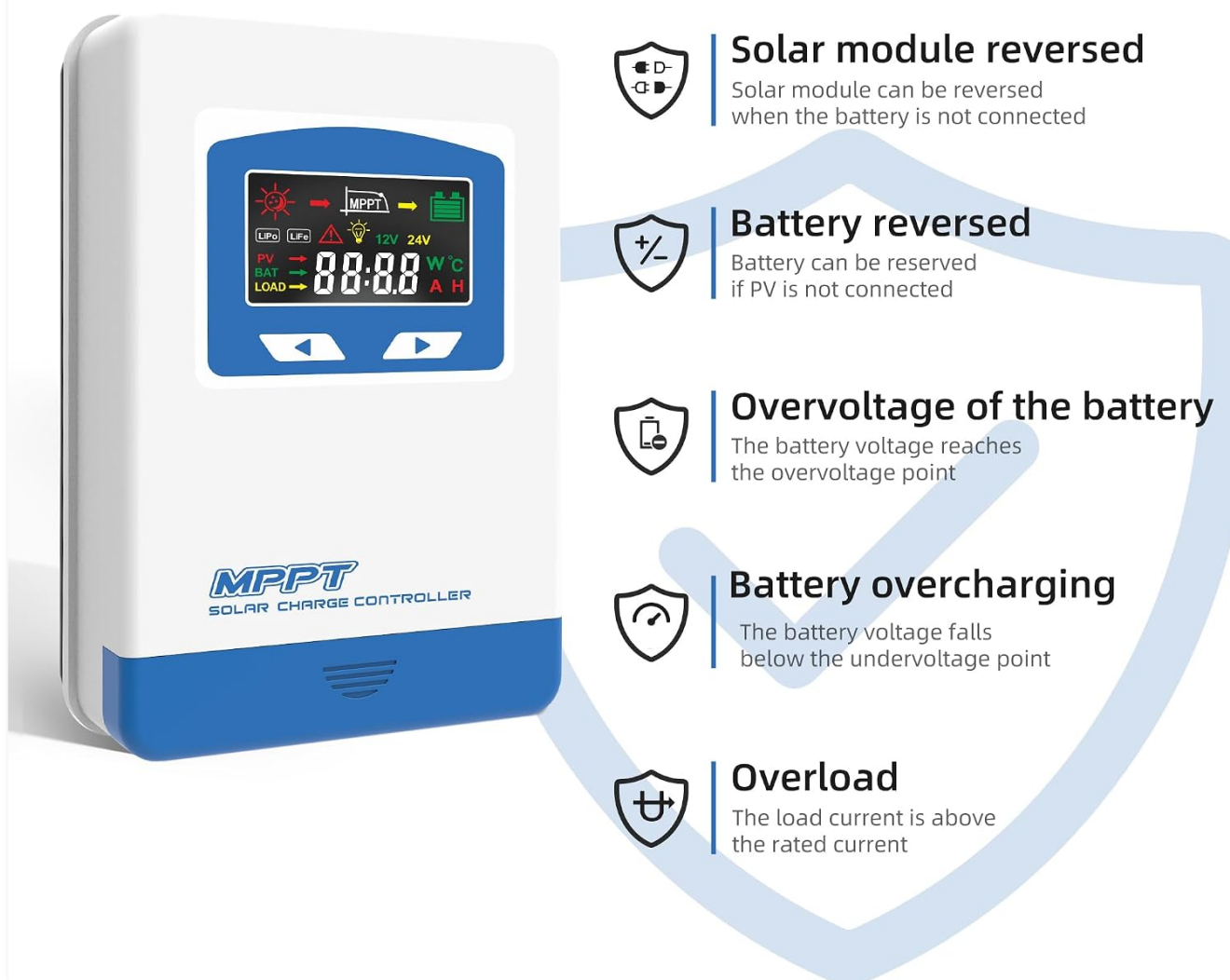


Figure 8: Overview of the controller's protective features.

6.2 Common Issues and Solutions

- **Issue:** LCD screen is dim or unreadable.

Solution: Ensure the controller is in a well-lit area. If in direct sunlight, provide shade. Check battery voltage; a low battery can affect display brightness.

- **Issue:** Battery not charging.
Solution: Verify solar panel connections and polarity. Check battery connections and voltage. Ensure solar panels are receiving adequate sunlight. Check for any error codes on the LCD.
- **Issue:** Load not working.
Solution: Check load connections and ensure the load is not exceeding the controller's rated current. Verify the load operating mode (LD1, LD2, etc.) is correctly set. Check for short circuits in the load circuit.
- **Issue:** Controller is hot.
Solution: Ensure proper ventilation around the controller. Check if the load or solar input is exceeding the controller's specifications. The die-cast aluminum back cover is designed for heat dissipation, but excessive heat can indicate an issue.

7. SPECIFICATIONS

Feature	Detail
Brand	Anern
Model	20amp 12/24V
Manufacturer	Anern
Product Dimensions	4.8 x 1.88 x 6.81 inches (12.19 x 4.78 x 17.3 cm)
Item Weight	10.4 ounces (294.8 grams)
Voltage	12V / 24V Auto Recognition
Max PV Input Voltage	150V
Max Charge Current	20A
Display Type	LCD
Included Components	Solar controller
Country of Origin	China

8. WARRANTY AND SUPPORT

Anern provides a one-year maintenance service for this MPPT Solar Charge Controller. If you encounter any issues or require technical assistance, please contact Anern's professional after-sales team. They can help diagnose malfunctions and provide solutions, including component replacement if necessary.

For further support, please refer to the contact information provided with your product packaging or visit the official Anern website.

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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

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

Submit question