Anern 30amp 12/24V

Anern MPPT Solar Charge Controller User Manual

Model: 30amp 12/24V

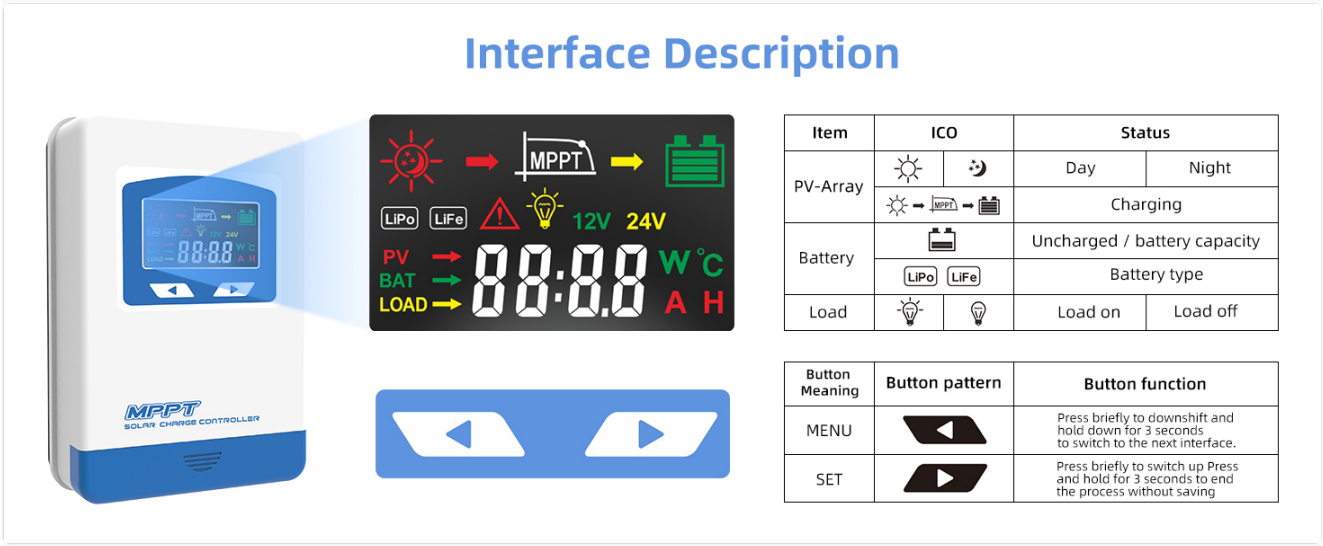
1. Product Overview

The Anern MPPT Solar Charge Controller is designed to efficiently manage power flow from your solar panels to your battery bank, ensuring optimal charging and battery longevity. It utilizes advanced Maximum Power Point Tracking (MPPT) technology to maximize energy harvest from solar panels under all conditions.

Figure 1: Anern MPPT Solar Charge Controller (Front View)
This image shows the front of the Anern MPPT Solar Charge Controller, featuring its clean white and blue design with an LCD display and control buttons.

2. Key Features

- **High Efficiency MPPT Technology:** Achieves up to 99% tracking efficiency and over 98% conversion efficiency by rapidly tracking the maximum power point of the PV array.
- **Multiple Protection Features:** Includes safeguards against overcharge, over discharge, overload, short circuit, reverse polarity, overheating, and battery undervoltage.
- **Multi-Battery Compatibility:** Automatically recognizes 12V/24V systems and supports various battery types including Lithium, Sealed, Flooded, Gel, and AGM, with preset charging parameters.
- **User-Friendly LCD Display:** Provides detailed information and easy navigation through settings with two control buttons.
- **Robust Design:** Features a metal back cover for efficient heat dissipation, ensuring continuous and stable charging.



Item	ICO		Status	
PV-Array			Day	Night
			Charging	
Battery			Uncharged / battery capacity	
	LiPo	LiFe	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 2: MPPT Efficiency Diagram
This diagram illustrates the high tracking efficiency (up to 99%) and peak conversion efficiency (98%) achieved by the MPPT technology.

Figure 3: Heat Dissipation Design
This image highlights the metal back cover and finned design of the controller, which is crucial for effective heat dissipation and stable operation.

3. Setup and Installation

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

3.1 Wiring Connections

Connect the solar panel, battery, and load to the controller in the specified order to prevent damage. Always connect the battery first.

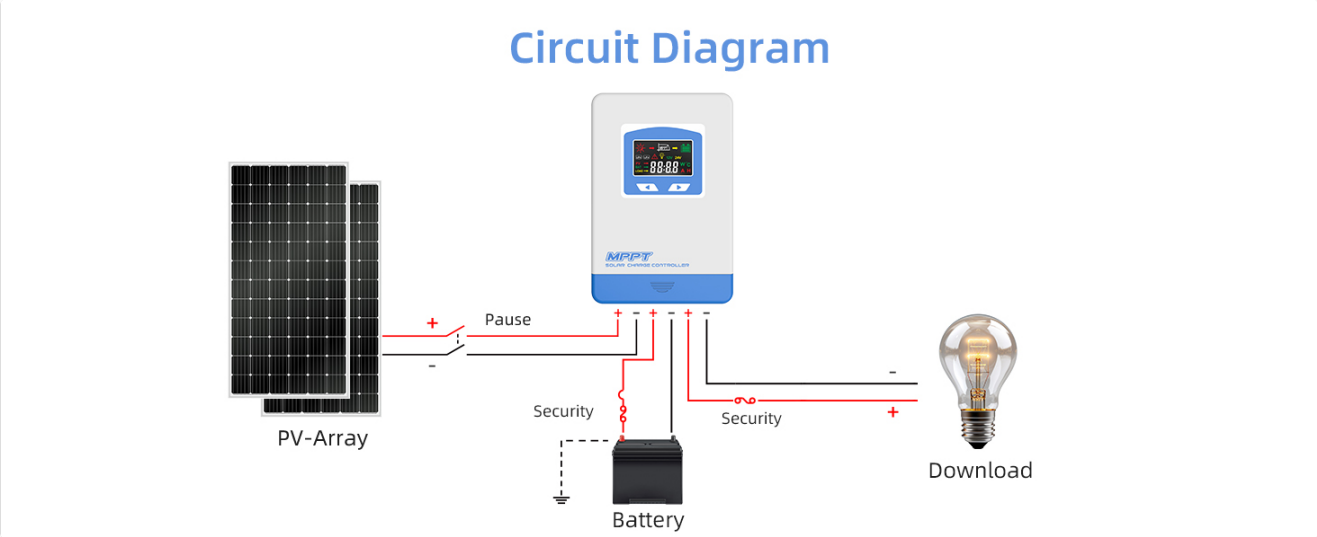


Figure 4: Basic Circuit Diagram

This diagram illustrates the correct wiring sequence for connecting the PV array, battery, and load to the solar charge controller. Ensure proper polarity and use appropriate security measures like fuses.

3.2 Mounting

Mount the controller in a well-ventilated area, away from direct sunlight and moisture. Ensure sufficient clearance around the unit for air circulation, especially around the heat sink.

4. Operating Instructions

The controller features an LCD display and two buttons for easy operation and parameter adjustment.

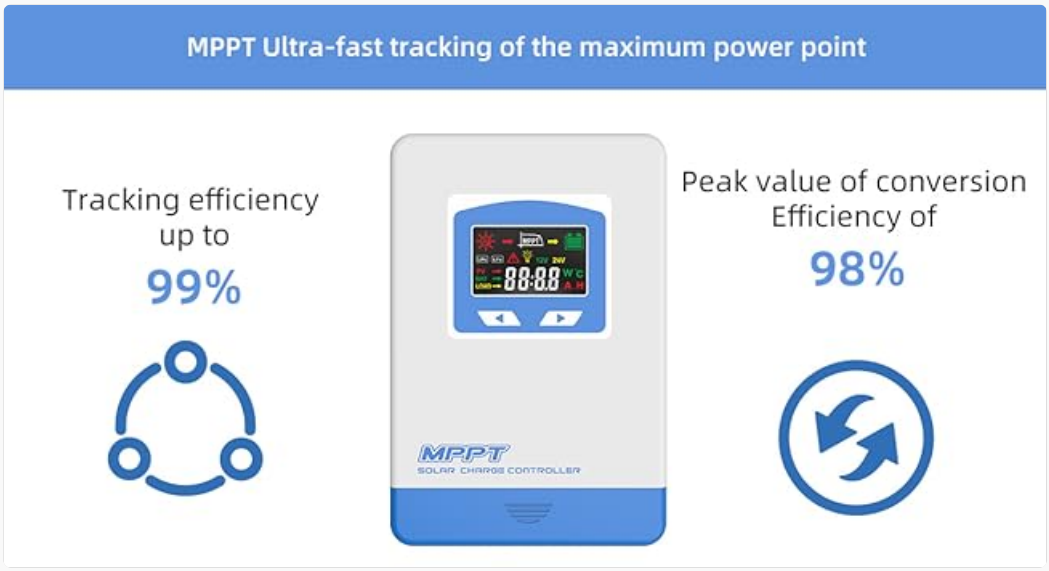


Figure 5: LCD Interface and Button Functions

This image details the icons and their meanings on the LCD display, including PV-Array status, battery status, and load status. It also explains the functions of the MENU and SETTING buttons for navigation and parameter adjustment.

4.1 Battery Type Selection

The controller supports various battery types. Ensure the correct battery type is selected for optimal charging and battery health.

Figure 6: Compatible Battery Types

This image displays the different battery types compatible with the controller: Lithium (LI), Sealed (SEL), Flooded (FLD), Gel (GEL), AGM, and User-defined (USER) for custom settings.

4.2 Load Operating Modes

The controller offers four load working modes to suit different application needs:

- **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 operates for a set number of hours after dark, with automatic detection of dusk and dawn.
- **LD4 (Reverse Light Control Mode):** The load automatically turns on at dawn and off at dusk.

Application

Figure 7: Load Operating Modes
This image visually represents the four distinct load operating modes (LD1, LD2, LD3, LD4) available on the controller, explaining their functionality.

5. Maintenance

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

- Periodically check all wiring connections for tightness and corrosion.
- Keep the controller clean and free from dust and debris. Ensure the heat sink fins are not obstructed.
- Monitor the LCD display for any error codes or unusual readings.
- Inspect the battery terminals for any signs of corrosion and clean if necessary.

6. Troubleshooting

The controller is equipped with multiple protective functions. Understanding these can help in basic troubleshooting.

Figure 8: Protective Functions

This image outlines the various protective functions of the controller, including protection against solar module reversed connection (if battery is not connected), battery reversed connection (if PV is not connected), battery overvoltage, battery overcharging, and overload.

Common Issues and Solutions:

Problem	Possible Cause	Solution
No display/No power	Battery not connected or low voltage; reversed polarity.	Ensure battery is connected correctly and has sufficient charge. Check wiring.
Battery not charging	Solar panel not connected; insufficient sunlight; faulty panel/wiring.	Verify solar panel connections. Check for adequate sunlight. Inspect panel and wiring for damage.
Load not working	Load overload; short circuit; incorrect load mode setting.	Reduce load. Check for short circuits. Verify load operating mode settings.

Problem	Possible Cause	Solution
LCD screen dim/hard to read	Environmental lighting conditions.	Operate in shaded conditions or use external lighting if necessary.

7. Specifications

Specification	Detail
Brand	Anern
Model	30amp 12/24V
Voltage	12 Volts (DC) / 24 Volts (Auto-recognized)
Max PV Voltage	75V
Material	Acrylonitrile Butadiene Styrene (ABS)
Display Type	LCD
Item Weight	2.2 pounds
Package Dimensions	8.4 x 5.62 x 2.51 inches
Included Components	Solar controller

8. Product Application

The Anern MPPT Solar Charge Controller is versatile and can be widely used in various solar power applications.

Figure 9: Diverse Applications

This image showcases common applications for the solar charge controller, including solar RV systems, household solar installations, industrial field monitoring, and marine applications.

9. Official Product Video

Watch the official product video for a visual guide on the Anern MPPT Solar Charge Controller's features and operation.

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Video 1: MPPT Solar Charge Controller Overview

This video provides a comprehensive overview of the Anern MPPT Solar Charge Controller, demonstrating its physical aspects, interfaces, and key functionalities. It highlights the different models available and the heat dissipation design.

10. Warranty and Support

Anern provides a one-year maintenance service for this product. If you encounter any issues, please contact the manufacturer's professional after-sales team. You may be asked to provide pictures or videos of the malfunction to

help diagnose the problem.
For further assistance, please visit the Anern Store on Amazon.