

SOLPERK HC-WM10A

SOLPERK MPPT 10A 12V Solar Charge Controller User Manual

Model: HC-WM10A

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your SOLPERK MPPT 10A 12V Solar Charge Controller. This device is designed to efficiently manage power from your solar panels to charge various 12V battery types, including Gel, AGM, and LiFePO4, while offering comprehensive protection features.

2. SAFETY INFORMATION

Please read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in personal injury or damage to the controller or other components.

- Ensure all connections are correct and secure before applying power.
- Do not disassemble or attempt to repair the controller yourself. Contact qualified personnel for service.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- Always connect the battery to the controller first, then the solar panel. Disconnect in reverse order.
- Wear appropriate personal protective equipment, including eye protection, when working with batteries and electrical systems.
- Ensure the battery type setting on the controller matches your battery to prevent damage.

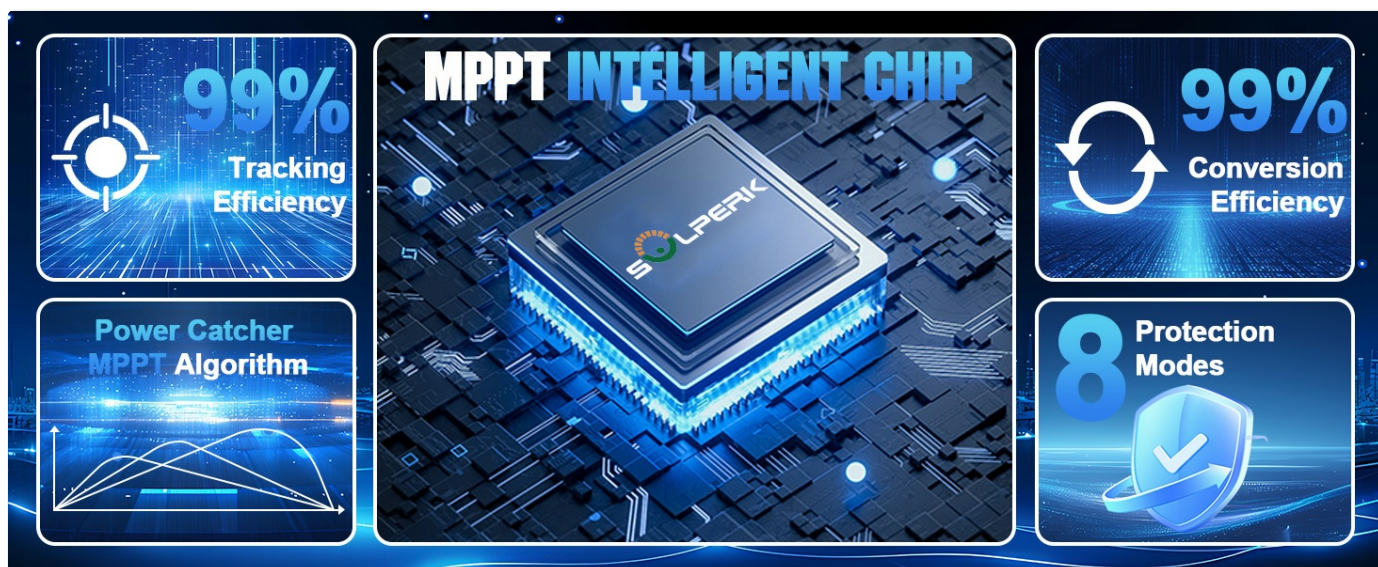
3. PRODUCT FEATURES

- **Battery Compatibility:** Supports Gel, AGM, and LiFePO4 12V battery types. For lead-acid batteries, select the AGM type.
- **Military-Grade Durability:** Constructed with high-strength ABS flame-retardant material and an IP65 waterproof and dustproof rating, ensuring resilience in various weather conditions.
- **High-Efficiency MPPT Technology:** Achieves up to 99% conversion efficiency, maximizing solar power generation by over 30% compared to traditional PWM controllers.
- **Real-Time Monitoring:** Features an LCD screen and LED indicators for real-time tracking of solar panel and battery status. A single press of the switch displays current for 5 seconds before reverting to battery voltage.
- **Multi-Device Charging:** Equipped with Type-C and USB output ports for charging various electronic devices.

- **Comprehensive Safety Protections:** Integrates eight safety mechanisms including overcharge, over-discharge, overload, short-circuit, and reverse connection protection to safeguard your solar system.



The controller offers 8 types of charging protection: Reverse Polarity, Over Charge, Over Discharge, Over Voltage, Over Temperature, Short Circuit, Over Current, and Overload Prevention.



The SOLPERK MPPT controller features an intelligent chip for 99% tracking and conversion efficiency, utilizing a Power Catcher MPPT Algorithm.

4. PACKAGE CONTENTS

Upon unpacking, please verify that the following item is included:

- SOLPERK MPPT 10A 12V Solar Charge Controller (Model: HC-WM10A)

5. SETUP AND INSTALLATION

Follow these steps for proper installation of your solar charge controller:

1. **Connect the Controller to the Battery:** Ensure the battery is connected to the controller first. This allows the controller to recognize the battery voltage.
2. **Set the Battery Type:** Configure the controller to match your battery type (Gel, AGM, or LiFePO4). Refer to Section 6.1 for

detailed instructions.

3. **Check Solar Panel for Obstructions:** Before connecting, ensure your solar panel is free from obstructions and receives direct sunlight.
4. **Connect the Solar Panel:** Connect the solar panel to the controller.

HOW TO SWITCH BATTERY TYPES

PRESS THE **SET & MODE** BUTTON FOR 3S; THE **GEL** INDICATOR LIGHT WILL BEGIN TO FLASH. PRESS THE **SET & MODE** BUTTON ONCE MORE TO SWITCH TO THE **AGM** BATTERY TYPE. PRESSING IT AGAIN WILL SWITCH TO **LIFEPO4**.

(MOREOVER, THE CONTROLLER FEATURES A MEMORY FUNCTION, SO THE NEXT TIME IT IS SWITCHED ON, IT WILL DEFAULT TO THE PREVIOUSLY SET BATTERY TYPE.)



Visual guide for the four-step connection process of the solar charge controller.

This video demonstrates the connection method for the SOLPERK MPPT 10A Controller, showing how to properly connect it to your battery and solar panel.

6. OPERATING INSTRUCTIONS

6.1. How to Switch Battery Types

The controller supports Gel, AGM, and LiFePO4 battery types. It features a memory function, so the last selected battery type will be retained upon restart.

1. Press and hold the **SET & MODE** button for 3 seconds. The **GEL** indicator light will begin to flash.
2. Press the **SET & MODE** button once more to switch to the **AGM** battery type.
3. Pressing it again will switch to **LiFePO4**.

STEP 1

Connect the controller to the battery first.

STEP 2

Set the battery type.

STEP 3

Check the solar panel for obstructions and direct sunlight.

STEP 4

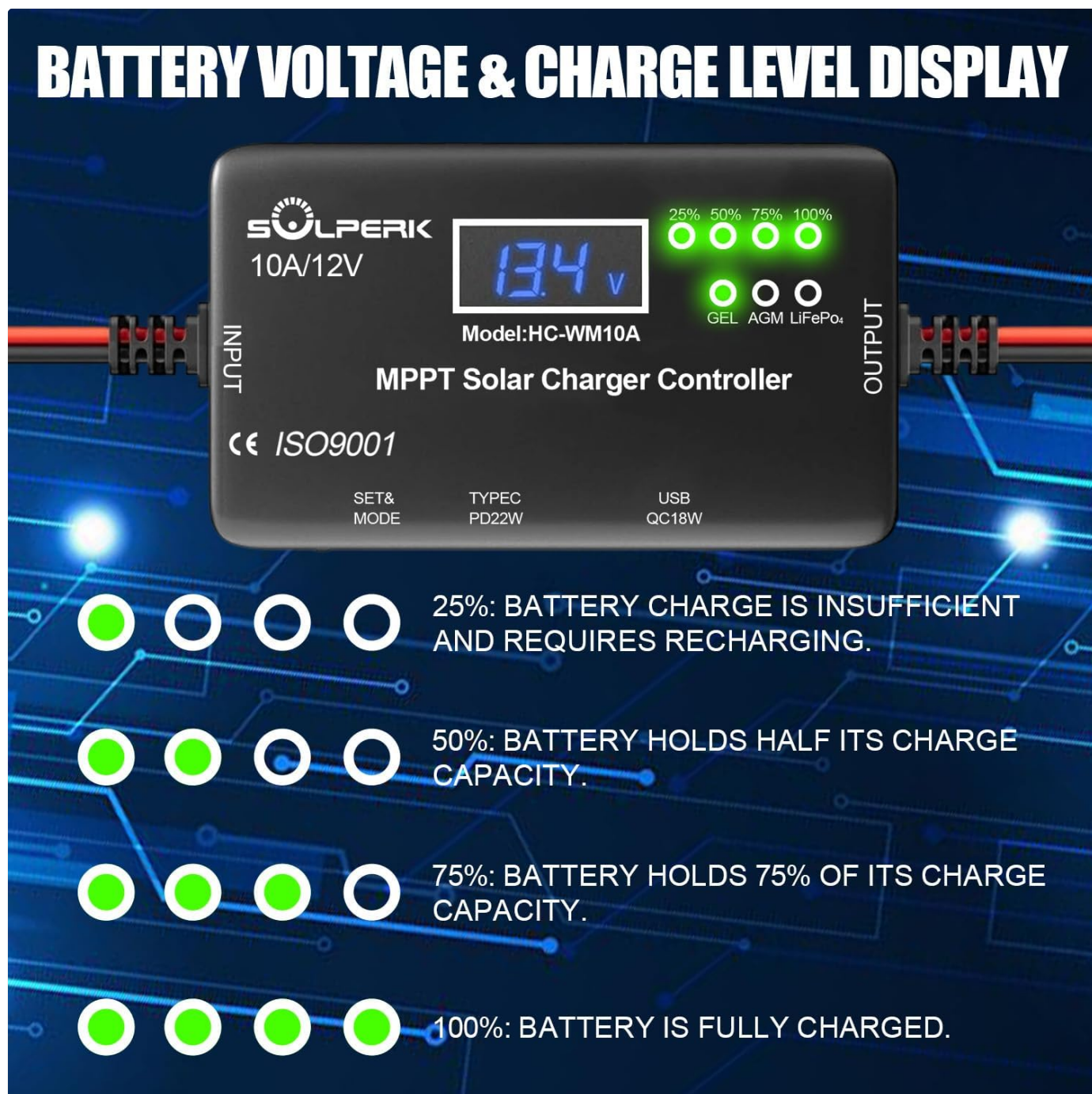
Connect the solar panel.

Detailed steps for selecting the correct battery type on the controller.

6.2. Real-Time Monitoring and Charge Level Display

The LCD screen displays the current battery voltage. LED indicators provide a visual representation of the battery's charge level.

- Press the switch once to view the current for 5 seconds; it will then revert to displaying battery voltage.



The LED indicators provide a quick reference for battery charge status:

- **25%:** Battery charge is insufficient and requires recharging.
- **50%:** Battery holds half its charge capacity.
- **75%:** Battery holds 75% of its charge capacity.
- **100%:** Battery is fully charged.

6.3. Multi-Device Charging

Utilize the integrated Type-C (PD22W) and USB (QC18W) output ports to charge compatible electronic devices directly from the controller.



CAR



RV



Boat



Pick-up



ATV



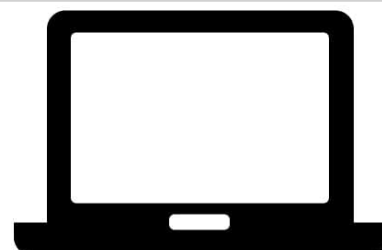
Motorcycle



Phones



Tablets



Laptops

The controller provides daily battery maintenance and can charge various devices via its Type-C and USB outputs.

7. MAINTENANCE

To ensure optimal performance and longevity of your SOLPERK MPPT Solar Charge Controller, consider the following maintenance guidelines:

- **Regular Inspection:** Periodically check all wiring connections for tightness and corrosion.
- **Cleanliness:** Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- **Ventilation:** Ensure the installation area remains well-ventilated to prevent overheating.
- **Environmental Conditions:** While the controller is IP65 rated, extreme conditions can still impact performance. Monitor for any signs of water ingress or physical damage.

8. TROUBLESHOOTING

If you encounter issues with your controller, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No display/Controller not powering on	Incorrect battery connection; Battery voltage too low; Faulty wiring.	Ensure battery is connected first and correctly. Check battery voltage (must be 12V). Inspect all wiring.
Battery not charging	Solar panel not connected; Insufficient sunlight; Incorrect battery type setting; Faulty solar panel.	Connect solar panel. Ensure panel is in direct sunlight. Verify battery type setting (Section 6.1). Test solar panel output.
Overcharge/Over-discharge protection active	Battery voltage outside safe limits.	The controller's built-in protections are working. Check battery health and ensure proper sizing for your system.
USB/Type-C outputs not working	Battery voltage too low; Overload on output port.	Ensure battery is sufficiently charged. Reduce load on output ports.

If the problem persists after attempting these solutions, please contact SOLPERK customer support.

9. SPECIFICATIONS

Specification	Value
Brand	SOLPERK
Model	HC-WM10A
Color	Black
Product Dimensions (L x W x H)	4" x 2" x 2"
Material	Plastic
Display Type	LED
Operating Temperature	Up to 50 Degrees Celsius (122°F)
Smart Home Compatibility	Not Smart Home Compatible
Included Components	Controller

10. WARRANTY AND SUPPORT

SOLPERK stands by the quality of its products. Your MPPT Solar Charge Controller comes with a one-year warranty from the date of purchase.

- **Professional Technical Assistance:** Our team is available to provide expert guidance and support.
- **24/7 Online Customer Service:** For any queries or assistance, please contact our customer service team available around the clock.
- **Warranty:** Enjoy peace of mind with a 1-year warranty covering manufacturing defects.

Get Super Peace of Mind with After-sales Service



Professional technical assistance



24/7 online support



1 year warranty



SOLPERK offers comprehensive after-sales support for customer satisfaction.

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.

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