

POWOXI MPPT-Solar Battery Charger 12W

POWOXI 12V Solar Car Battery Charger MPPT Pro-12W Instruction Manual

Model: MPPT Pro-12W

1. INTRODUCTION

Thank you for choosing the POWOXI 12V Solar Car Battery Charger MPPT Pro-12W. This device is designed to maintain and trickle charge 12V batteries using solar energy, featuring an advanced MPPT controller for optimal efficiency. It is suitable for various vehicles and equipment, including cars, RVs, boats, motorcycles, trailers, trucks, snowmobiles, and tractors.

2. PRODUCT FEATURES

- **Innovative MPPT Built-in Controller:** Maximizes charging efficiency with up to 99% conversion, adjusting power based on sunlight intensity for superior performance even on cloudy days.
- **Smart Maximum Power Point Tracking:** Optimizes energy extraction for changing conditions, ensuring efficient solar power harnessing by dynamically adjusting to the environment for maximum output.
- **Comprehensive Battery Protection:** Includes a float/maintenance stage to prevent overcharging, extending battery life and improving energy efficiency. Compatible with various 12V batteries, including gel, AGM, SLA, VRLA, and lithium-ion.
- **3 LED Indicator Lights:** Provides visual feedback on operation status: blue for sunlight reception, red for charging, and green for a fully charged battery. The MPPT takes 2 seconds for calculation and LED status updates.
- **Robust and Long-lasting Materials:** Constructed with PC+ABS+Tempered glass, designed to withstand temperatures from -40 to 137°C and rated IP65 waterproof for durability against heavy rain. ABS+PC frames are stronger than flexible panels and prevent damage to vehicle paint.

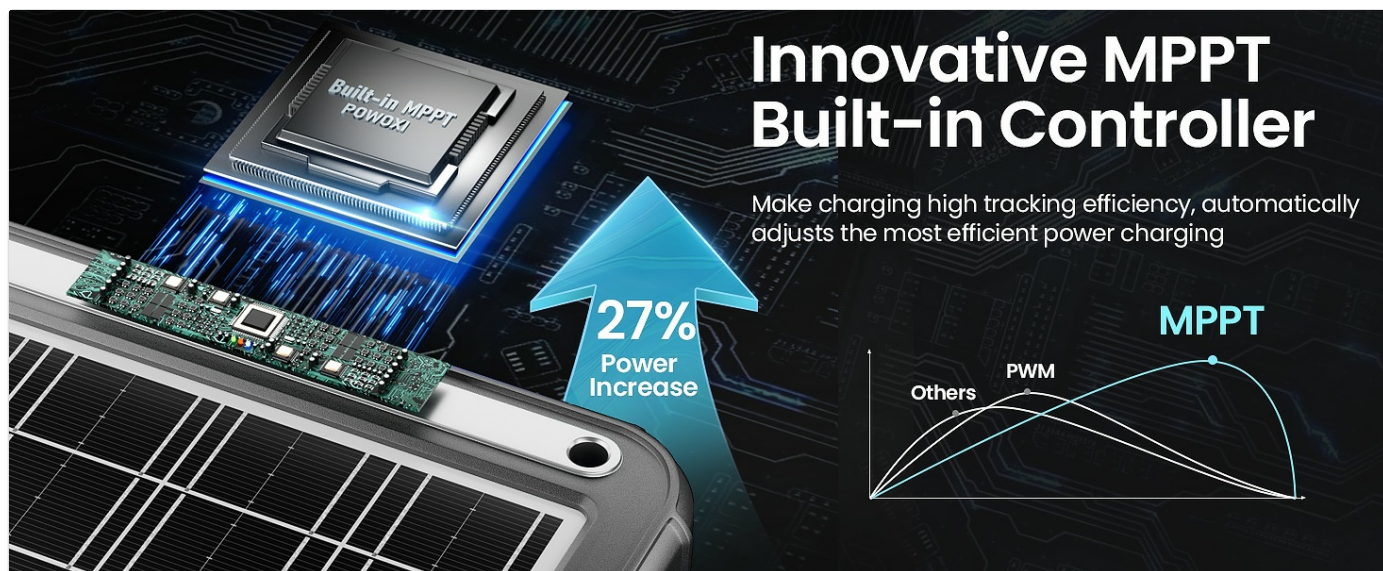


Image: The POWOXI solar charger features an innovative built-in MPPT system for efficient power conversion.

3. PACKAGE CONTENTS

The package includes the POWOXI 12W Solar Panel with integrated MPPT controller and various connection accessories:

- 1x POWOXI 12W Solar Panel with MPPT Controller
- 1x Alligator Clip Cable
- 1x Cigarette Lighter Plug Cable
- 1x O-ring Terminal Cable
- 4x Suction Cups for windshield mounting
- 4x Magnetic Mounts for metal surfaces

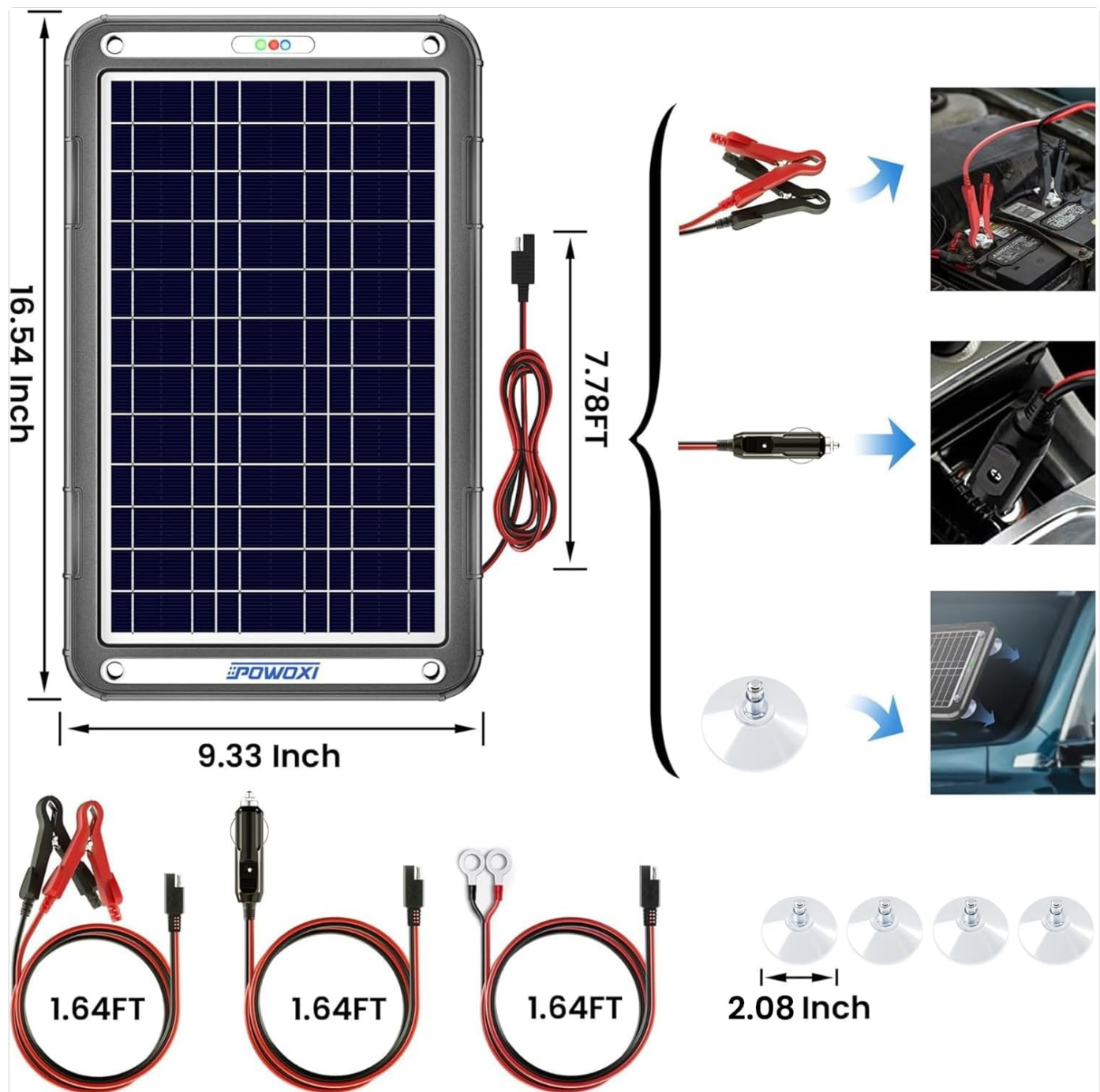


Image: Overview of the POWOXI 12W solar panel and its included accessories, including various connection cables and mounting options.

4. SETUP AND INSTALLATION

The POWOXI solar charger offers multiple connection and mounting options for versatility. Ensure the solar panel is placed in direct sunlight for optimal charging.

4.1. Connecting to the Battery

Choose one of the following methods to connect the solar panel to your 12V battery:

- **Alligator Clips:** Connect the red clip to the positive (+) battery terminal and the black clip to the negative (-) battery terminal. This is ideal for temporary connections.
- **O-ring Terminals:** For a more permanent connection, attach the O-ring terminals directly to your battery posts using the existing battery terminal bolts. Ensure a secure fit.
- **Cigarette Lighter Plug:** Plug the cigarette lighter adapter into your vehicle's 12V accessory socket. Note that some

vehicles may not provide power to this socket when the engine is off.

DON'T WORRY ABOUT DEAD BATTERY

POWOXI solar charger & maintainer are for maintaining 12 volts battery daily.

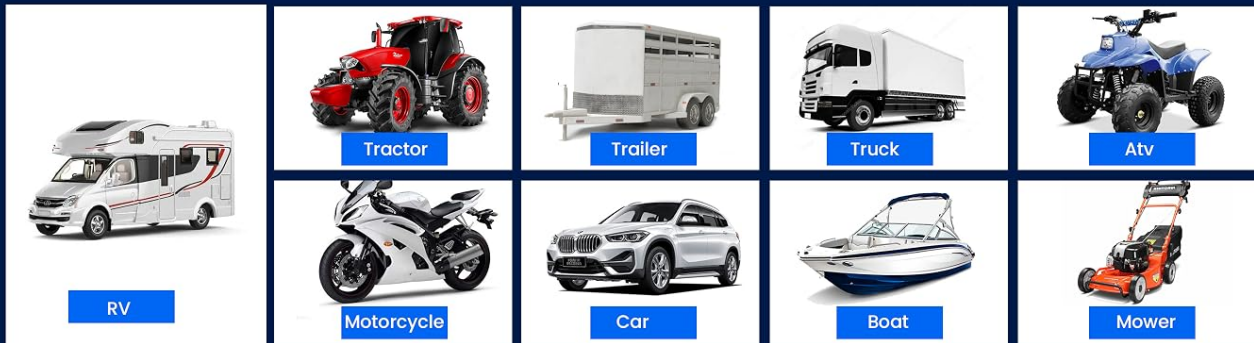


Image: The solar charger provides three connection methods: alligator clips for direct battery connection, O-ring terminals for permanent attachment, and a cigarette lighter plug for in-vehicle charging.

4.2. Mounting the Solar Panel

Secure the solar panel using the provided accessories:

- **Suction Cups:** Attach the suction cups to the designated holes on the solar panel. Press firmly onto a clean, smooth surface like a windshield or window.
- **Magnetic Mounts:** Screw the magnetic mounts into the panel's corner holes. These can be used to secure the panel to metal surfaces on your vehicle or equipment. The magnets include a foam protection layer to prevent scratching.

Video: This video demonstrates the setup and use of the POWOXI solar battery charger, including connecting it to a car battery and mounting the panel on a vehicle's windshield.

5. OPERATING INSTRUCTIONS

Once connected and exposed to sunlight, the solar charger will automatically begin charging your 12V battery. The built-in MPPT controller optimizes the charging process.

5.1. LED Indicator Lights

The solar panel features three LED indicator lights to show its operational status:

- **Blue Light:** Indicates that the solar panel is receiving sufficient sunlight.
- **Red Light:** Indicates that the battery is currently charging.
- **Green Light:** Indicates that the battery is fully charged and the charger is in maintenance mode.
- **No Lights:** May indicate a short circuit or insufficient sunlight.

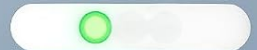
Smart MPPT

99% Tracking Efficiency

3 LED Indicator Lights

Stronger efficient MPPT intelligent algorithm and improve battery charging efficiency

Battery charging is complete



The battery is charging



Receives sufficient sunlight



Image: Close-up of the three LED indicator lights on the solar charger, showing blue for sunlight, red for charging, and green for fully charged.

The controller will automatically shut off at night or when not generating power to prevent draining the battery. It will resume charging the next day when sunlight is available.

6. MAINTENANCE

- **Cleaning:** Regularly clean the solar panel surface with a soft, damp cloth to remove dust, dirt, or debris. Do not use harsh chemicals or abrasive materials.
- **Inspection:** Periodically check all connections (alligator clips, O-ring terminals, cigarette lighter plug) to ensure they are secure and free from corrosion.
- **Storage:** When not in use for extended periods, store the solar panel in a dry, safe place away from direct sunlight and extreme temperatures.

IP 65

Waterproof And Resistant To Running Water



Image: The POWOXI solar charger is IP65 waterproof, indicating its resistance to water and dust, making it suitable for outdoor use in various weather conditions.

7. TROUBLESHOOTING

Refer to the table below for common issues and their solutions:

Problem	Possible Cause	Solution
No voltage / Indicator light is off	1. Insufficient sunlight. 2. Incorrect connection. 3. Short circuit.	1. Place panel in direct sunlight. 2. Verify correct polarity (+ to +, - to -). 3. Check for damaged wires or connections.
Battery power is consumed at night	Other products connected to the battery may consume power.	The controller automatically powers off at night. Ensure no other devices are draining the battery.

Problem	Possible Cause	Solution
Inefficient charging	1. Solar panel surface is dirty. 2. Partial shading. 3. Battery is already near full charge.	1. Clean the solar panel surface. 2. Reposition the panel for full sun exposure. 3. The MPPT controller will maintain the charge.

8. SPECIFICATIONS

Specification	Value
Brand	POWOXI
Model	MPPT-Solar Battery Charger 12W
Maximum Power	12 Watts
Maximum Voltage	14.4 Volts
Output Voltage	14.4 Volts
AC Adapter Current	0.8 Amps
Material	PC+ABS, Tempered Glass
Product Dimensions	9.45"L x 2.17"W x 16.93"H
Item Weight	3.23 pounds
Waterproof Rating	IP65
Operating Temperature	-40 to 137°C

9. WARRANTY AND SUPPORT

POWOXI offers a 12-month warranty and lifetime technical support for this product. If you encounter any issues or have questions, please contact customer service for assistance. Provide pictures or details of the problem for efficient support.
Customer Service Email: support@powoxi.com

Get an Answer within 24 Hours.

We offer real-time professional sales and technical support if you have any questions with a free 12-month warranty+lifetime technical support!



24 Hours



Image: POWOXI customer service representatives are available to provide support and answer questions regarding your product.

© 2026 POWOXI. All rights reserved.

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