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› POWOXI 50W Solar Battery Charger M-Series MPPT Pro User Manual

POWOXI 50W-MPPT Pro

POWOXI 50W Solar Battery Charger M-Series MPPT Pro User Manual

Model: 50W-MPPT Pro | Brand: POWOXI

1. INTRODUCTION AND OVERVIEW

The POWOXI M-Series High-Power ETFE Thin & Flexible Solar Battery Charger is designed for smart, high-power charging. It features a fully potted and sealed IP67 waterproof independent MPPT charge controller built directly into the unit, offering a convenient 2-in-1 configuration for a simple and effortless charging experience. This charger is compatible with all 12V lead-acid batteries, including flooded, gel, AGM, SLA, VRLA, maintenance-free types, as well as LiFePO4 and Lithium batteries, making it suitable for a wide range of applications such as boats, cars, RVs, powersports, campers, and deep cycle systems.



Image: The POWOXI 50W Solar Battery Charger, highlighting its integrated MPPT controller and versatile use for 12V batteries in various vehicles.

2. SETUP INSTRUCTIONS

Setting up your POWOXI solar battery charger is straightforward. The unit comes with various connectors to suit different battery terminals and vehicle setups.

2.1 Connecting the Solar Panel to the Controller

The solar panel is pre-wired to connect directly to the integrated MPPT charge controller. Ensure the connection is secure.

2.2 Connecting to Your Battery

Choose the appropriate connector for your battery:

- **Alligator Clips:** For direct connection to battery terminals (red to positive, black to negative).
- **Ring Terminals:** For a more permanent connection, screw these onto the battery posts.
- **Cigarette Lighter Adapter:** For convenient charging via your vehicle's 12V accessory socket.

Once the solar panel is connected to the controller, and the controller is connected to your battery, ensure the solar panel is exposed to direct sunlight for optimal charging.

2.3 Mounting the Solar Panel

The solar panel can be mounted using the included carabiner clips or suction cups. The four holes in each corner of the panel are designed for secure attachment. For vehicle use, you can attach it to the windshield or other suitable surfaces to maximize sun exposure.

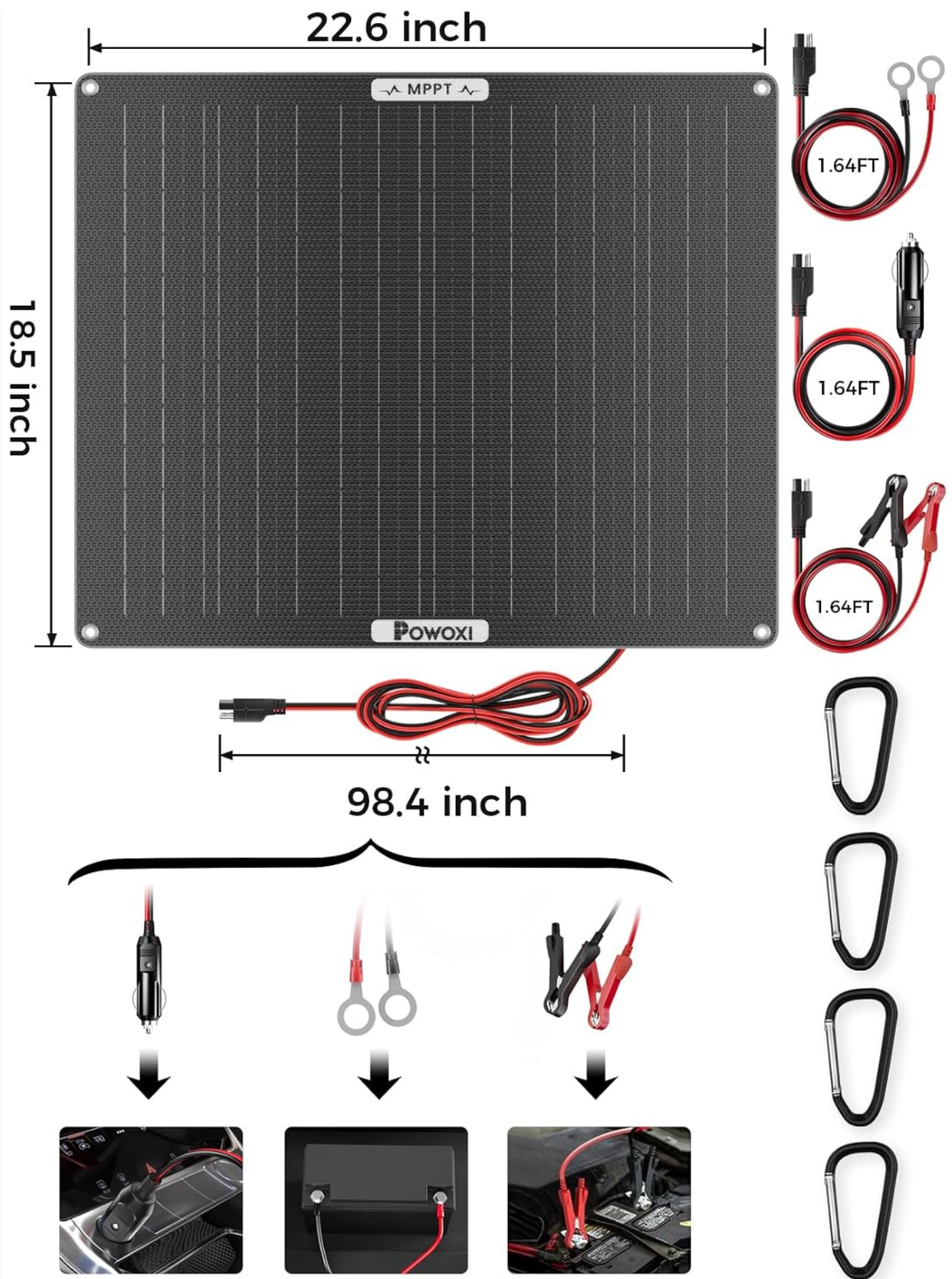


Image: The POWOXI solar panel with its various connection accessories, including alligator clips, ring terminals, and a cigarette lighter adapter, along with carabiner clips for mounting.

3. OPERATING INSTRUCTIONS

The POWOXI solar battery charger is designed for intuitive, hands-free operation.

3.1 Battery Type Selection

Use the **MODE** button on the MPPT controller to select your battery type. The controller supports 12V AGM, GEL, LiFePO4, and Lithium batteries. Ensure the correct battery type is selected for optimal charging and battery longevity.

3.2 Monitoring Charging Progress

The 4-stage battery indicator on the controller provides real-time monitoring of your battery's charge level and charging progress. Indicators for 25%, 50%, 75%, and 100% clearly show the current charge status. During charging, the light for the next stage will flash; once that stage is complete, the light will remain solid.

3.3 Automatic Charging and Maintenance

The charger offers complete hands-free maintenance. It automatically stops charging when your battery is full and automatically resumes charging when needed, ensuring continuous power without overcharging or undercharging.

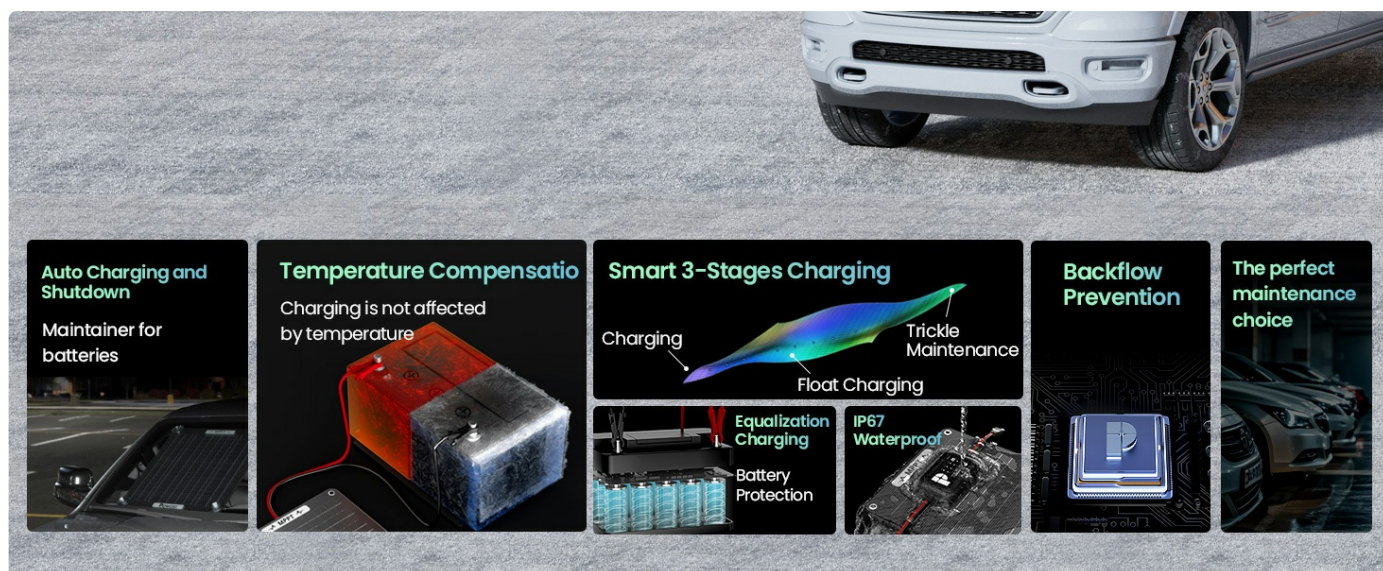


Image: The MPPT controller displaying its smart 3-stage charging process, temperature compensation, and backflow prevention features.

4. MAINTENANCE

The POWOXI solar battery charger is designed for durability and minimal maintenance.

4.1 Solar Panel Care

The solar panel is constructed with ETFE anti-solar refraction material, which offers exceptional light transmittance (up to 95%) and robust carbon-fluorine (C-F) bonds. This material provides superior UV resistance, preventing embrittlement and degradation, and ensures excellent tolerance to harsh temperatures and corrosion. To maintain optimal efficiency, periodically clean the surface of the solar panel with a soft, damp cloth to remove any dust, dirt, or debris that may obstruct sunlight.

4.2 MPPT Controller Durability

The integrated MPPT controller features IP67 potted technology, making it waterproof and capable of handling wet environments. This design minimizes the need for specific maintenance for the controller itself, ensuring reliable operation in various conditions.



Image: A detailed view of the ETFE anti-solar refraction material, highlighting its durability and efficiency in sunlight conversion.

5. TROUBLESHOOTING

The POWOXI M-Series charger incorporates comprehensive safety protections to prevent common issues and ensure safe operation.

5.1 Built-in Protections

The device is equipped with protections against:

- Over-charge
- Over-discharge
- Over-voltage
- Over-current
- Over-load
- Short circuit
- Polarity inversion
- Over-temperature

These features ensure the safety of both the charger and your battery. If the charger is not functioning as expected, first ensure all connections are secure and the solar panel is receiving adequate sunlight. If issues persist, please refer to the warranty and support section for assistance.

6. SPECIFICATIONS

Feature	Detail
Brand	POWOXI
Material	ETFE
Product Dimensions	18.9"L x 1.69"W x 23.23"H
Item Weight	450 Grams
Efficiency	High Efficiency (up to 36% improved with P&O algorithm)
Amperage Capacity	2.78 Amps
Maximum Voltage	18 Volts
Maximum Power	50 Watts
Special Features	Portable, IP67 Waterproof, MPPT Controller, Automatic Charging
Output Voltage	14.4 Volts
Connector Type	MC4 (and various adapters included)
Included Components	Carabiner Clip x4, O-ring x1, cigarette lighter x1, alligator clip x1
Model Number	UK-RX-MPPT-parent



Image: A visual representation of the solar panel's dimensions and the complete set of accessories provided for versatile connectivity.

7. WARRANTY AND SUPPORT

The POWOXI 50W Solar Battery Charger comes with a **12-Month After-Sales Service**. The product is guaranteed by CE/ROHS certifications, ensuring quality and safety standards. Additionally, POWOXI provides **free lifetime technical support** for any questions or assistance you may need.

For technical support or any inquiries, please contact POWOXI customer service. Your feedback is valuable and helps in continuous product improvement.

Contact information can typically be found on the product packaging or the official POWOXI website.

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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.

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