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> SUNER POWER 25W 12V Solar Battery Charger & Maintainer PRO User Manual

SUNER POWER BC-25W-Pro

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Model: BC-25W-Pro

INTRODUCTION

This manual provides essential information for the safe and effective operation, installation, and maintenance of your SUNER POWER 25W 12V Solar Battery Charger & Maintainer PRO. Please read this manual thoroughly before using the product and retain it for future reference.

SAFETY INFORMATION

- **Read all instructions:** Before operating the charger, read and understand all safety and operating instructions.
- **Battery compatibility:** This charger is designed for 12-volt lead-acid batteries (Flooded, GEL, AGM, SLA, Maintenance-Free) and LiFePO4 lithium batteries. Do not attempt to charge other battery types.
- **Ventilation:** Ensure adequate ventilation when charging lead-acid batteries, as they can produce explosive gases.
- **Avoid sparks:** Do not smoke or allow sparks or flames in the vicinity of the battery or charger.
- **Eye protection:** Always wear eye protection when working with batteries.
- **Waterproof rating:** The unit has an IP65 waterproof rating, but avoid submerging it in water.
- **Proper connection:** Ensure correct polarity when connecting to the battery. Reverse polarity can damage the charger and battery.
- **Children and pets:** Keep the charger and battery out of reach of children and pets.

PRODUCT OVERVIEW

The SUNER POWER 25W 12V Solar Battery Charger & Maintainer PRO is an advanced solar charging kit featuring UltraSmart MPPT technology. It is designed to efficiently charge and maintain 12-volt batteries for various applications.

3 Connection Ways



Image: The SUNER POWER 25W Solar Charger positioned next to a car wheel, demonstrating its compact size and suitability for automotive use.

Key Features:

- **UltraSmart MPPT Technology:** High tracking efficiency (up to 99%) and peak conversion efficiency (98%) for optimized power delivery.
- **Improved 3-Stage Charging:** Bulk, Absorption, and Float stages ensure effective and safe charging, extending battery life.
- **Automatic Maintenance:** Stops charging when full and resumes when discharge is detected, providing worry-free maintenance.
- **Full Safety Protections:** Includes over-charge, over-discharge, over-voltage, over-current, over-load, short circuit, reverse polarity, and over-temperature protection.
- **Wide Compatibility:** Suitable for 12-volt sealed lead-acid (flooded, gel, AGM, SLA, maintenance-free) and LiFePO4 lithium batteries.
- **Durable Construction:** Made with A+ grade solar cells, tempered solar glass, and a corrosion-resistant frame, designed to withstand extreme weather.
- **Easy Installation:** Plug-and-play cables and pre-designed mounting holes for quick setup.

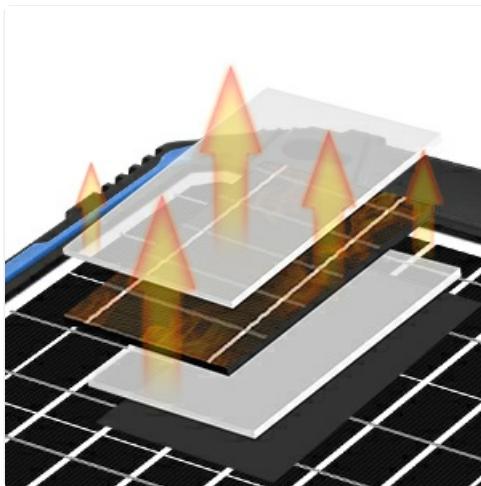


Image: A close-up view of the high-efficiency solar cells, highlighting the quality of the solar panel material.

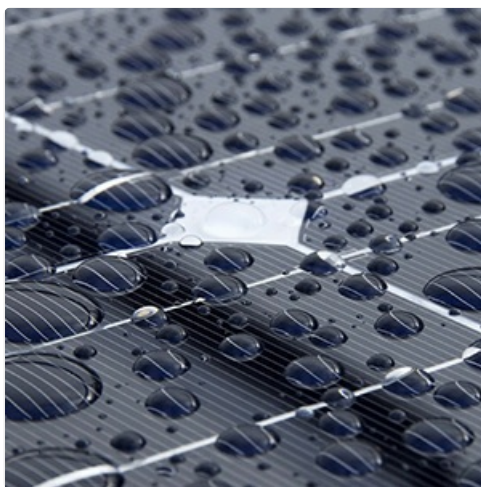


Image: The solar panel with water droplets on its surface, illustrating its IP65 waterproof and weather-resistant design.

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Video: An official product video demonstrating the SUNER POWER 12V Solar Battery Charger Maintainer in operation, showcasing its features and ease of use.

SETUP

Follow these steps to set up your solar battery charger:

1. **Choose a location:** Place the solar panel in a location that receives maximum direct sunlight throughout the day. Ensure no obstructions block the sunlight.
2. **Mounting:** Use the pre-drilled holes on the panel to securely mount it if desired.
3. **Connect to battery:** The charger comes with three connection options:
 - **SAE-Alligator Clip Cable:** For temporary connections to battery terminals. Connect the red clip to the positive (+) terminal and the black clip to the negative (-) terminal.
 - **SAE-Bare End Cable:** For permanent wiring to a battery system. Ensure correct polarity.
 - **SAE-Cigarette Lighter Cable:** For charging through a vehicle's 12V cigarette lighter socket. This method is typically for maintenance and requires the socket to be powered when the vehicle is off.
4. **Ensure secure connections:** Double-check all connections for tightness and correct polarity before leaving the charger unattended.

Compatible with

Multiple 12V Batteries

CHEMISTRIES

Flooded, GEL, Maintenance-free, AGM, Seal-Lead Acid and Lithium Batteries

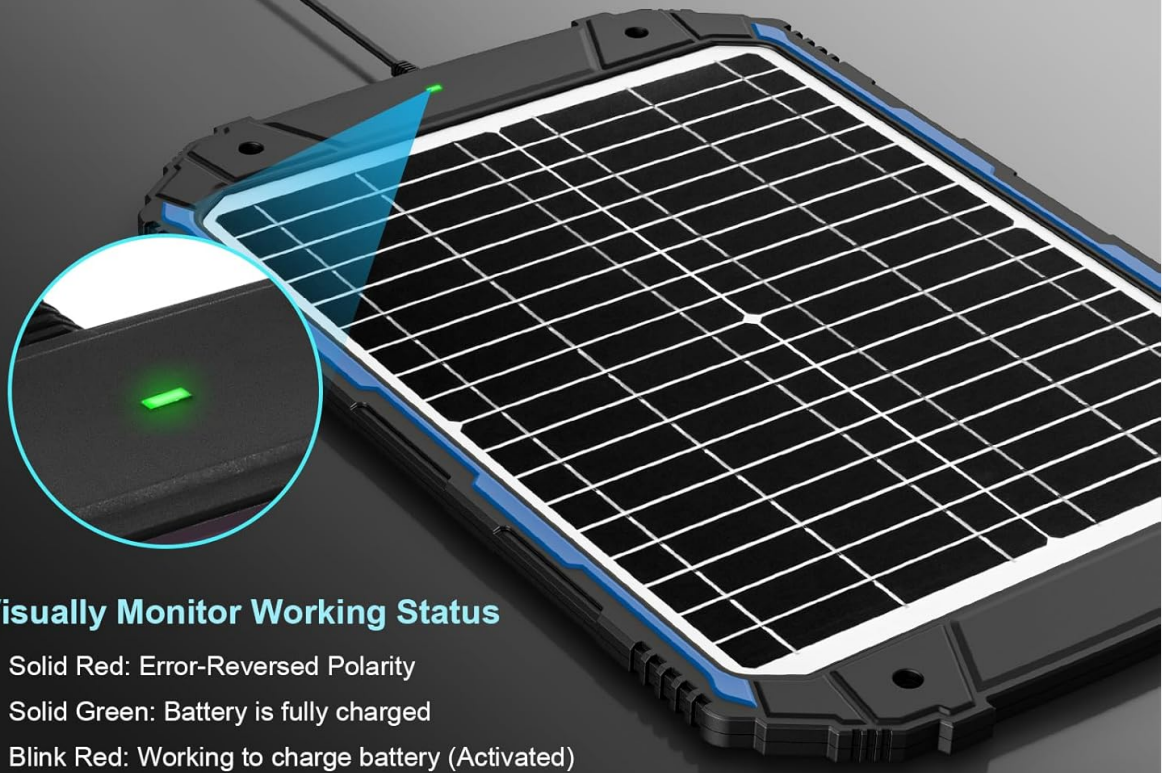
TYPES

Starter, Deep-cycle, Marine, Powersport, Car, RV, Trailer and more



Image: A visual guide illustrating the three available connection methods: alligator clips, bare end terminals, and a cigarette lighter adapter, for versatile battery connection.

Smart 3-stages of Charging



Visually Monitor Working Status

- Solid Red: Error-Reversed Polarity
- Solid Green: Battery is fully charged
- Blink Red: Working to charge battery (Activated)
- Blink Green: Sunshine is effective (Not Active yet)



Bulk - Absorption - Float

 **98%** Peak conversion efficiency of

 **99%** High tracking efficiency up to

Image: The solar charger connected to different types of 12V batteries, including Flooded, GEL, AGM, SLD, and Lithium, demonstrating its broad compatibility.

OPERATING INSTRUCTIONS

The SUNER POWER solar charger operates automatically once connected and exposed to sufficient sunlight. It utilizes an intelligent 3-stage charging process to optimize battery health.

3-Stage Charging Process:

- **Bulk Stage:** Charges the battery at its maximum current until it reaches approximately 80% capacity.
- **Absorption Stage:** Charges at a decreasing current to bring the battery to 100% charge, preventing overcharging.
- **Float Stage:** Maintains the battery at a full charge by providing a small, constant voltage, compensating for self-discharge.

LED Indicator Status:

The built-in LED indicator provides visual feedback on the charger's status:

- **Solid Red:** Indicates an error, typically reversed polarity. Disconnect and check connections.

- **Solid Green:** Battery is fully charged and in float maintenance mode.
- **Blink Red:** The charger is actively working to charge the battery (Activated).
- **Blink Green:** Indicates that sunlight is effective, but the charger is not yet actively charging (e.g., battery is already full or not connected).



Image: The solar charger displaying its LED indicator status and a graphical representation of the smart 3-stage charging process (Bulk, Absorption, Float).

MAINTENANCE

To ensure optimal performance and longevity of your solar battery charger, follow these maintenance guidelines:

- **Clean the solar panel:** Regularly wipe the solar panel surface with a soft, damp cloth to remove dust, dirt, and debris. A clean panel ensures maximum sunlight absorption.
- **Inspect cables and connections:** Periodically check all cables and connectors for any signs of wear, damage, or corrosion. Replace any damaged components immediately.
- **Battery terminals:** Ensure battery terminals are clean and free of corrosion for efficient charging.
- **Storage:** If storing the charger for an extended period, ensure it is clean and dry. Store in a cool, dry place away from direct sunlight.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Charger LED is off	No sunlight or insufficient sunlight Loose connection Faulty panel	Move panel to direct sunlight Check all cable connections Contact customer support
LED is Solid Red	Reverse polarity connection	Disconnect immediately and reconnect with correct polarity (red to positive, black to negative)
LED is Blinking Green but not charging	Battery is already fully charged Insufficient sunlight for active charging	This is normal if the battery is full; the charger is in maintenance mode. Ensure panel is in direct, strong sunlight.
Battery not charging effectively	Insufficient sunlight Dirty solar panel Battery deeply discharged or damaged	Relocate panel to optimal sunlight Clean the solar panel surface Test battery condition; a deeply discharged battery may require a dedicated charger first.

SPECIFICATIONS

Specification	Detail
Model Number	BC-25W-Pro
Maximum Power	25 Watts
Output Voltage	12 Volts (DC)
Efficiency	High Efficiency (MPPT up to 99% tracking, 98% conversion)
Product Dimensions (L x W x H)	13.7" x 0.7" x 20.15"
Item Weight	2.27 Kilograms
Material	A+ Grade Solar Cell, Premium Materials, Smart MPPT Charge Controller
Included Components	1 x 25W Solar Panel Battery Charger PRO, 1 x SAE-Alligator Clip Cable, 1 x SAE-Bare End Cable, 1 x SAE-Cigarette Lighter Cable

WARRANTY AND SUPPORT

The SUNER POWER 25W 12V Solar Battery Charger & Maintainer PRO comes with a **1-Year Manufacturer Warranty**.

For warranty claims, technical support, or any questions regarding your product, please contact SUNER POWER customer service through the retailer's platform or the official SUNER POWER website.

