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SUNER POWER BC-30W-Ultra

SUNER POWER 30W 12V Solar Battery Charger Maintainer

Model: BC-30W-Ultra

1. INTRODUCTION

The SUNER POWER 30W 12V Solar Battery Charger Maintainer (Model BC-30W-Ultra) is designed to efficiently charge and maintain 12-volt batteries using solar energy. It features a built-in Smart MPPT (Maximum Power Point Tracking) charge controller and a 3-stage charging algorithm to optimize battery performance and extend its lifespan. This waterproof solar panel kit is suitable for various applications including cars, automotive, boats, marine vehicles, RVs, and trailers.



Image: The SUNER POWER 30W 12V Solar Battery Charger Maintainer.

2. KEY FEATURES

- **Smart MPPT Technology:** Utilizes advanced MPPT technology for high tracking efficiency (up to 99%) and peak conversion efficiency (98%), improving power utilization by 20%-30% compared to traditional controllers.
- **Improved 3-Stage Charging:** Features a 3-stage charging algorithm (Bulk, Absorption, Float) to effectively charge 12-volt batteries, ensuring safe recharging and increased battery life.
- **Free Maintenance:** Automatically stops charging when the battery is full and resumes when discharge is detected, providing worry-free maintenance.
- **Full Safety Protections:** Built-in protections against over-charge, over-discharge, over-voltage, over-current, overload, short circuit, reverse polarity, and over-temperature. The unit is waterproof and spark-proof.
- **Wide Compatibility:** Compatible with various 12-volt sealed lead-acid batteries, including flooded, gel, AGM, SLA, maintenance-free, and LiFePO4 lithium batteries.

Built-in Smart MPPT Charge Controller

Optimize the charging performance of solar panel,
Generates at least **20%-30%** more power than
other brand, and fully protect your battery.



Over Temperature
Protection



Over Voltage
Protection



Over Current
Protection



Short Circuit
Protection



Discharge
Protection



Over Charge
Protection

Image: Built-in Smart MPPT Charge Controller with multiple safety protections.

Smart 3-stage of Charging

Visually Monitor LED Indicator

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)



98%

Peak conversion
efficiency of



99%

High tracking
efficiency up to

Image: Smart 3-stage charging process and LED indicator for charge status.

HIGH EFFICIENCY RATE

30% Higher Conversion Rate

Ours



Others



Operating TEMP:

- 40°F to 185°F

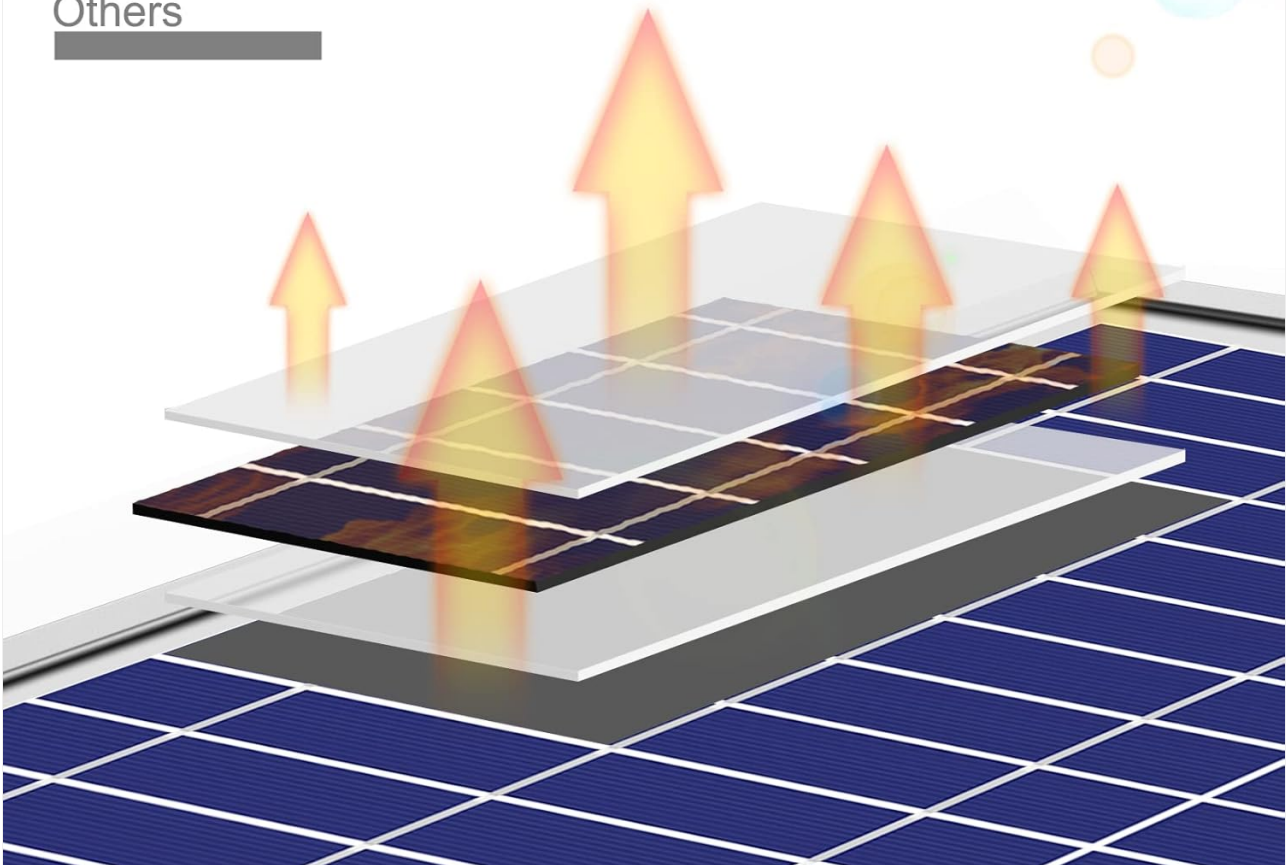


Image: High efficiency solar panel construction.

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: Wide compatibility with multiple 12V battery types.

3. PACKAGE CONTENTS

Verify that all components are present in your package:

- 1 x 30W Solar Panel with Built-in MPPT Charge Controller
- 1 x Adjustable Mounting Brackets
- 1 x SAE-Alligator Clip Cable
- 1 x SAE-Bare End Cable
- 1 x SAE-Battery Eyelet Cable

4. SETUP

4.1 Mounting the Solar Panel

The solar panel comes with adjustable mounting brackets, allowing you to optimize the angle for maximum sunlight absorption. This flexibility helps to increase power generation. The panel can be mounted on a flat surface, such as a roof,

or on a vertical wall.



Image: The solar panel with its adjustable stand, allowing for angle customization.



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 NJ, 08512
 Web: www.sunerpower.com
support@sunerpower.com

Model **BC-30W-M**

Max Power at STC(Pmax)	30W
Optimum Operating Current(Imp)	1.67A
Trickle Charge Current	0.2A
Floating Charge Voltage	13.8V
Overcharge protection voltage	14.4V
Temp Coefficient of Pmax	-0.45%/°C
Temp Coefficient of Voc	-0.37%/°C
Temp Coefficient of Isc	0.1%/°C
Operating Temperature	-40°C- 85°C
Weight	3.2 lb
Dimensions	24.0"X13.8"X0.7"

All technical parameters are tested in STC (Standard Test Condition)
 Irradiance= 1000W/m², Temperature= 25°C, AM= 1.5

LED Indicator Status

Flash Green	Sunshine is effective(Not active yet)
Flash Red	Working to charge battery(Activated)
Solid Green	Battery is fully charged
Solid Red	Reversed polarity

Warm Tips

1. There is no way to test any output when the solar charger is inactive!!! Refer to the user manual for more details about how to test the solar charger or contact our support team.
2. No shade on the solar charger, make sure it gets maximum sunshine exposure in whole day.
3. Our team respond every case within 24 hours.



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Image: Example of the solar panel mounted on an RV for continuous battery charging.

4.2 Connecting to the Battery

The solar charger includes a 3-piece cable kit with an SAE connector for easy plug-and-play connection. Choose the appropriate cable (alligator clip, bare end, or battery eyelet) based on your battery's terminals.

1. Ensure the solar panel is exposed to sunlight.
2. Connect the desired cable (e.g., alligator clips) to the battery terminals, ensuring correct polarity (red to positive, black to negative).

3. Plug the SAE connector from the cable into the solar panel's output cable.
4. Observe the LED indicator on the back of the solar panel to confirm charging status.

Video: Demonstrates the setup and connection of the SUNER POWER BC-30W Pro Solar Battery Charger with its adjustable mount brackets.

Video: Overview of the SUNER POWER 12V Solar Battery Charger Maintainer, showing its components and basic connection.

5. OPERATING INSTRUCTIONS

5.1 LED Indicator Status

The built-in LED indicator on the back of the solar panel provides visual feedback on the charging status:

LED Status	Meaning
Flash Green	Sunshine is effective (Not active yet)
Flash Red	Working to charge battery (Activated)
Solid Green	Battery is fully charged
Solid Red	Reversed polarity or error



Image: The LED indicator on the back of the solar panel provides real-time status updates.

Video: Demonstrates the 30W Solar Panel Charger with adjustable mounting brackets and shows the LED indicator in action.

6. MAINTENANCE

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

- **Cleaning:** Regularly clean the surface of the solar panel with a soft, damp cloth to remove dust, dirt, and debris. Avoid abrasive cleaners or harsh chemicals that could damage the panel.
- **Inspection:** Periodically inspect the cables and connections for any signs of wear, corrosion, or damage. Ensure all connections are secure.
- **Shading:** Ensure the solar panel is not shaded by trees, buildings, or other obstructions, as this will significantly reduce its charging efficiency.
- **Waterproof Design:** The panel is designed to be waterproof (IP65 rated), but avoid submerging it in water.

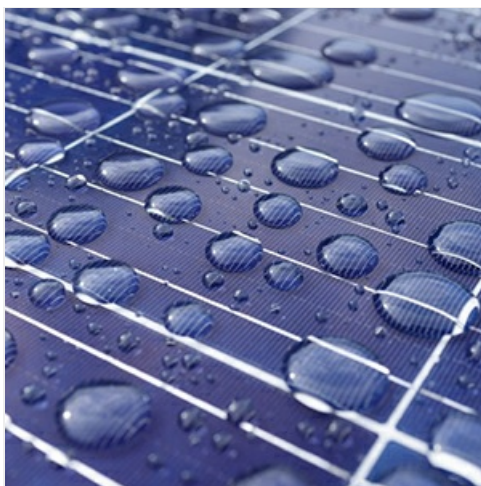


Image: The solar panel features an IP65 waterproof rating for durability in various weather conditions.

7. TROUBLESHOOTING

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

- **No Charging / Solid Red LED:**

- Check all cable connections to ensure they are secure and correctly polarized (red to positive, black to negative).
- Ensure the solar panel is receiving sufficient direct sunlight.
- Verify the battery is a 12V battery and is not severely discharged or damaged.
- If the LED is solid red, it indicates reversed polarity or another error. Disconnect and reconnect carefully.

- **Slow Charging:**

- Ensure the solar panel is positioned at an optimal angle towards the sun and is free from any shading.
- Clean the surface of the solar panel to remove any dirt or debris that might be blocking sunlight.
- Check the battery's condition; an old or damaged battery may not hold a charge efficiently.

- **LED Flashing Green but No Charging:**

- This indicates the solar panel is producing power but is not yet connected to a battery or the battery is already fully charged. Connect to a battery or check battery status.

8. SPECIFICATIONS

Detailed technical specifications for the SUNER POWER 30W 12V Solar Battery Charger Maintainer:

Specification	Value
Brand	SUNER POWER
Model Number	BC-30W-Ultra
Maximum Power (Pmax)	30 Watts
Maximum Voltage	12 Volts
Output Voltage	12 Volts
Product Dimensions	24"L x 13.8"W x 0.7"H
Item Weight	7.88 pounds (3.58 Kilograms)
Material	Aluminum, Tempered Glass
Efficiency	High Efficiency
Special Feature	Adjustable, Short, Waterproof



Image: Technical parameters and LED indicator guide for the solar panel.

9. WARRANTY AND SUPPORT

SUNER POWER products are manufactured to high-quality standards. For specific warranty details, please refer to the product packaging or contact SUNER POWER directly. If you have any questions, require technical assistance, or need to report an issue, please contact our customer support team.

Contact Information:

Web: www.sunerpower.com

Email: support@sunerpower.com