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› Sun Energise 20W 12V Solar Powered Battery Charger & Maintainer User Manual

Sun Energise SE-20WPRO

20W 12V Solar Powered Battery Charger & Maintainer

MODEL: SE-20WPRO | BRAND: SUN ENERGISE

1. Introduction

The Sun Energise 20W 12V Solar Powered Battery Charger & Maintainer is designed to efficiently charge and maintain 12-volt batteries using solar energy. Featuring a built-in Smart MPPT Charge Controller, this waterproof solar panel kit provides a reliable trickle charge for various vehicles and equipment, ensuring extended battery life and optimal performance. It is ideal for cars, boats, RVs, marine vehicles, trailers, and more.



Figure 1: Sun Energise 20W 12V Solar Powered Battery Charger & Maintainer with accessories.

2. What's in the Box

- 1 X 20W Mono solar charger
- 1 X Battery Clamp Cable
- 1 X Cigarette Lighter Cable
- 1 X Bare Wire Cable
- 4 X Mount Screws
- 1 X User Manual

3. Key Features

- **Smart MPPT Technology:** The integrated MPPT (Maximum Power Point Tracking) technology optimizes the solar panel's performance, delivering high tracking efficiency of up to 99% and peak conversion efficiency of 98%. This can improve the utilization rate by 20%-30%.

INTELLIGENT MPPT CHARGE CONTROLLER

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



Over Temperature Protection



Over Voltage Protection



Over Current Protection



Short Circuit Protection



Discharge Protection



Over Charge Protection

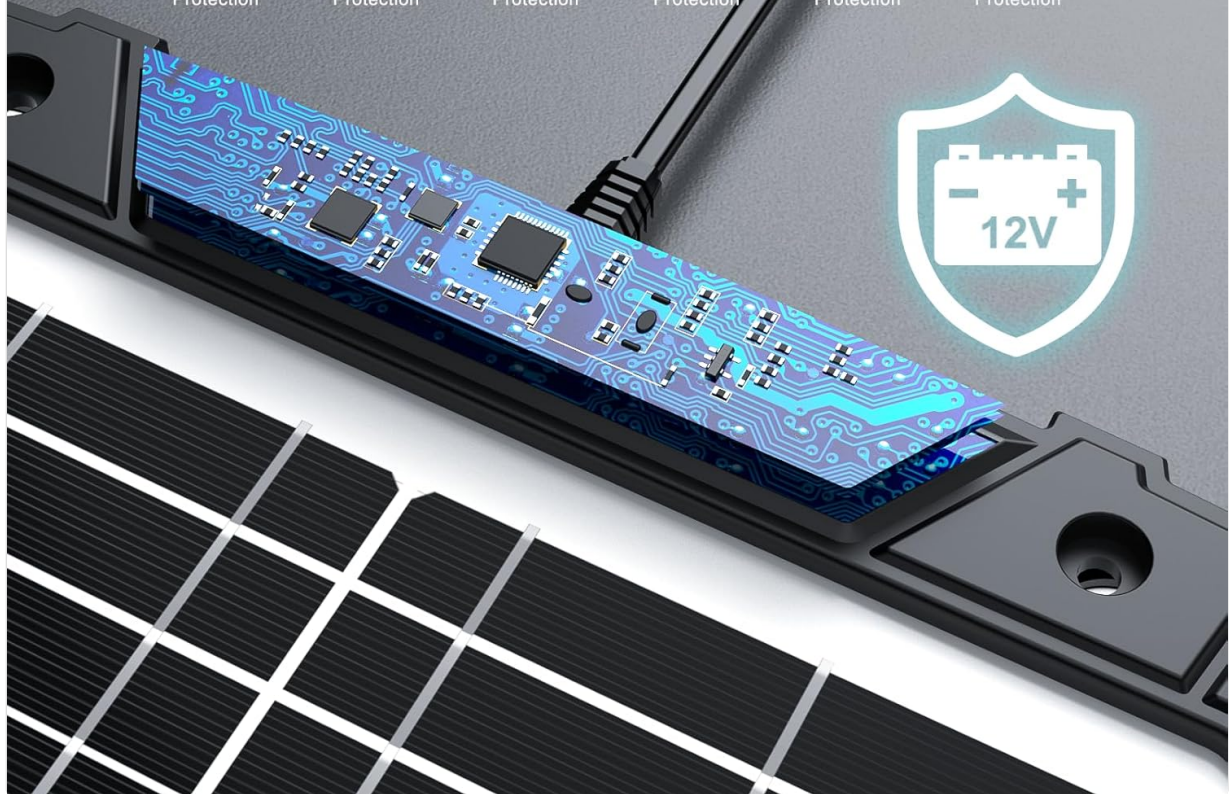


Figure 2: Intelligent MPPT Charge Controller with multiple protections.

- **Upgrade 3-Stage Charging:** A smart 3-stage charging algorithm (Bulk, Absorption, Float) ensures safer charging and maintains the 12-volt battery at a stable level, extending battery life and preventing overcharge. No additional maintenance is required.
- **Easy To Monitor:** An intuitive LED indicator allows for easy monitoring of the working status. Charging automatically cuts off when the battery is fully charged and resumes when the battery drains, providing clear indication of charging status.



Figure 3: Visual Monitor LED Indicator for charging status.

- **Full Charging Protection:** Equipped with multiple protection features including over-charge/discharge, over-voltage, over-current, over-load, short circuit, reverse polarity, over-temperature, IP65 waterproof rating, and spark-proof design, ensuring comprehensive safety.
- **Compatible with Multiple Batteries:** This advanced solar battery charger and maintainer is widely compatible with various 12V battery types, including Gel, Deep Cycle, SLA, Flooded, AGM, Seal-Lead Acid, and LiFePO4 lithium batteries.



Figure 4: Battery Charger & Maintainer compatibility.

- **Robust and Durable Material:** Constructed with A+ monocrystalline solar cells, offering efficiency up to 21%-30%. The strong tempered glass and corrosion-resistant ABS frame allow it to withstand extreme weather conditions such as UV exposure, hail, sandstorms, up to 2400 Pa wind pressure, and 5400 Pa snow load.

WHAT MAKES US DIFFERENT



Figure 5: Waterproof design for various weather conditions.

- **Easy to Install and Use:** The outdoor solar trickle battery maintainer features pre-designed holes on its frame for quick installation. All cables are plug-and-play, simplifying the connection process to the required device.
- **Wide Range of Applications:** An automatic and smart solar battery charger suitable for a variety of scenarios, including cars, boats, RVs, dump trailers, marine vehicles, campers, lawnmowers, motorcycles, jet skis, tractors, trucks, ATVs, and trolling motors.

4. Setup Instructions

1. **Unpack and Inspect:** Carefully remove all components from the packaging. Inspect the solar panel and cables for any visible damage.
2. **Choose Connection Method:** The charger comes with three types of connection cables:
 - **Battery Clamp Cable:** For direct connection to battery terminals (red to positive, black to negative).
 - **Cigarette Lighter Cable:** For connecting to a vehicle's 12V cigarette lighter socket.
 - **Bare Wire Cable:** For custom installations where direct wiring is preferred.
3. **Connect to Battery:** Select the appropriate cable and connect it to your 12V battery. Ensure correct polarity (red to positive '+', black to negative '-'). Incorrect polarity will trigger a solid red error light.

4. **Connect Solar Panel:** Plug the chosen connection cable into the solar panel's output port.
5. **Position Solar Panel:** Place the solar panel in a location that receives maximum direct sunlight throughout the day. The panel is designed to work even in cloudy conditions, but direct sunlight will yield the best charging results.

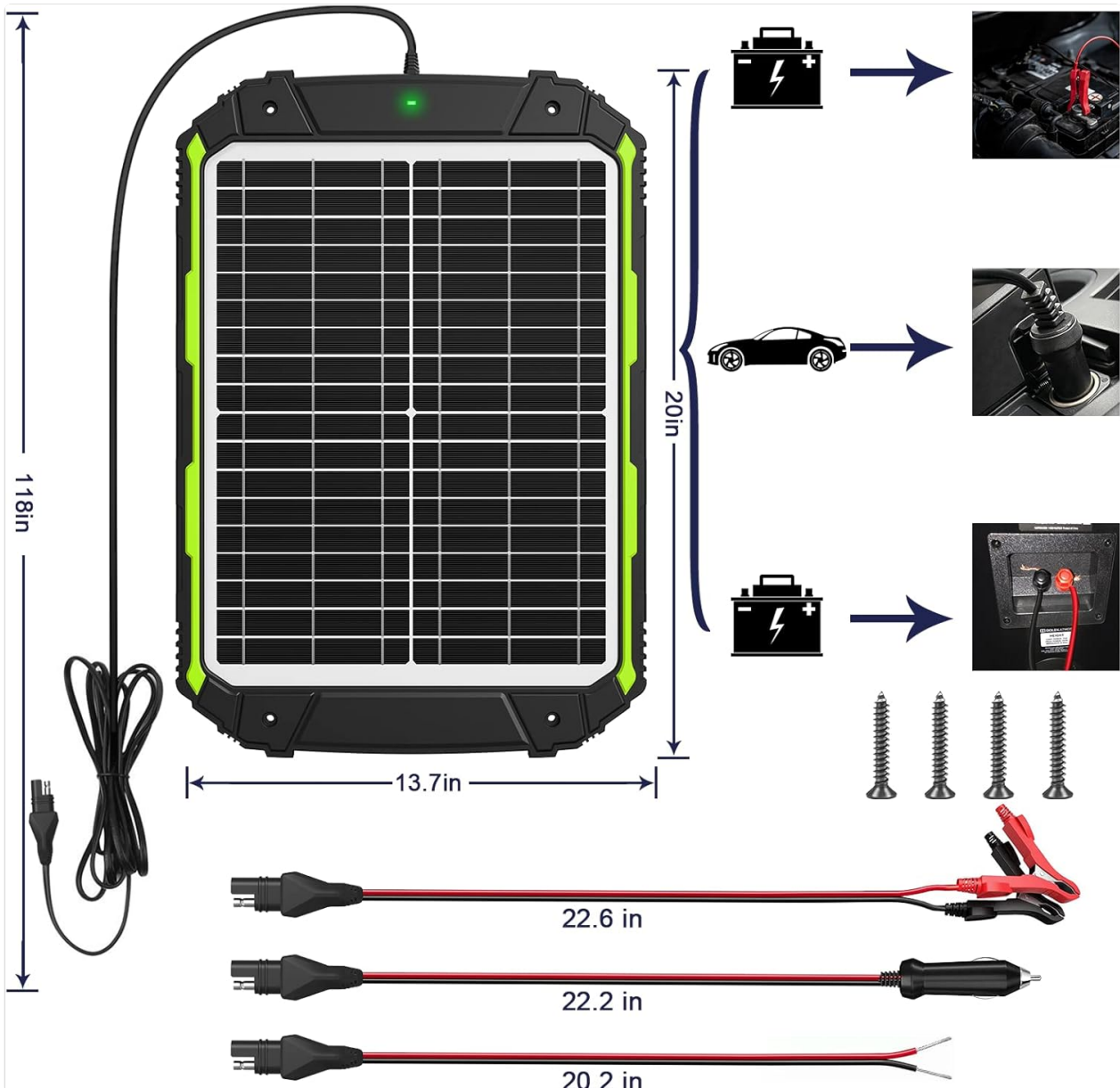


Figure 6: Connection options for the solar charger.

5. Operating Instructions

Once properly set up and exposed to sunlight, the solar charger will automatically begin charging and maintaining your 12V battery. Observe the LED indicator for operational status:

- **Blink Green:** Indicates that the solar panel is effectively receiving sunshine and generating power.
- **Blink Red:** Indicates that the charger is actively working to charge the battery.
- **Solid Green:** Indicates that the battery is fully charged. The charger will automatically stop charging to prevent overcharge and switch to maintenance mode.
- **Solid Red:** Indicates an error, most commonly a reversed connection (incorrect polarity). Disconnect immediately and re-connect with correct polarity.

The intelligent charge controller ensures that your battery is charged safely and efficiently, preventing overcharging and extending its lifespan. The charger will automatically resume charging if the battery voltage

drops below a certain level.

6. Maintenance

- **Clean the Panel:** Periodically clean the surface of the solar panel with a soft, damp cloth to remove dust, dirt, or debris that may reduce efficiency. Do not use abrasive cleaners.
- **Check Connections:** Regularly inspect all cable connections to ensure they are secure and free from corrosion.
- **Storage:** When not in use for extended periods, store the solar charger in a cool, dry place away from direct sunlight and extreme temperatures.

7. Troubleshooting

- **Solid Red LED:** This indicates a reversed polarity connection. Immediately disconnect the solar panel from the battery and re-connect ensuring the red cable is attached to the positive (+) terminal and the black cable to the negative (-) terminal.
- **No LED Indication / Not Charging:**
 - Ensure the solar panel is receiving sufficient direct sunlight.
 - Check all cable connections for looseness or damage.
 - Verify that the battery is a 12V battery and is capable of accepting a charge.
 - Inspect the cables and the solar panel for any physical damage.

8. Specifications

Attribute	Value
Manufacturer	Sun Energise
Brand	Sun Energise
Item Weight	5.2 pounds
Product Dimensions	20.1 x 13.8 x 0.7 inches
Item Model Number	SE20W-PRO
Manufacturer Part Number	SE20W-PRO
Wattage	20 watts
Output Voltage	12 Volts (DC)
Color	Green

9. Warranty & Support

For any questions, technical assistance, or warranty claims regarding your Sun Energise 20W 12V Solar Powered Battery Charger & Maintainer, please contact Sun Energise customer support. Refer to the product packaging or the official Sun Energise website for the most up-to-date contact information and warranty details.

