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## SUNSUL 6ef04d35-c980-4ec1-a090-33a6eaf2eee5

# SUNSUL 100W 12V Monocrystalline Solar Panel Kit User Manual

Model: 6ef04d35-c980-4ec1-a090-33a6eaf2eee5

## INTRODUCTION

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This manual provides detailed instructions for the installation, operation, and maintenance of your SUNSUL 100W 12V Monocrystalline Solar Panel Kit. This kit is designed for various 12V DC applications, including RVs, boats, trailers, campers, and off-grid home systems. Please read this manual thoroughly before use to ensure proper function and safety.

## PACKAGE CONTENTS

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Verify that all components listed below are included in your package:

- 1 x 100W Monocrystalline Solar Panel
- 1 x 30A 12V/24V PWM Solar Charge Controller
- 1 pair x 196.8 inch Solar Cable (red & black)
- 1 pair x 98.4 inch Alligator Clips Line (red & black)
- 4 x Z Mounting Brackets
- 2 x Plastic Wrenches
- 4 x Screw Sets



Image: All components included in the SUNSUL 100W Solar Panel Kit, featuring the solar panel, charge controller, cables, alligator clips, Z-brackets, and tools.

## SPECIFICATIONS

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Feature	Detail
Brand	SUNSUL
Material	Aluminum, Tempered Glass, EVA
Product Dimensions	39"L x 31.9"W x 2"H
Efficiency	Up to 23% conversion rate (Monocrystalline cells)
AC Adapter Current (Charge Controller)	30 Amps
Maximum Voltage	12 Volts
Maximum Power	100 Watts
Item Weight	20.4 pounds
Charge Controller System Voltage	12V/24V (Auto-sensing)
Charge Controller USB Output	2 x 5V/2A ports
Weather Resistance	Windproof, rainproof, operating temperature -40°F to 185°F

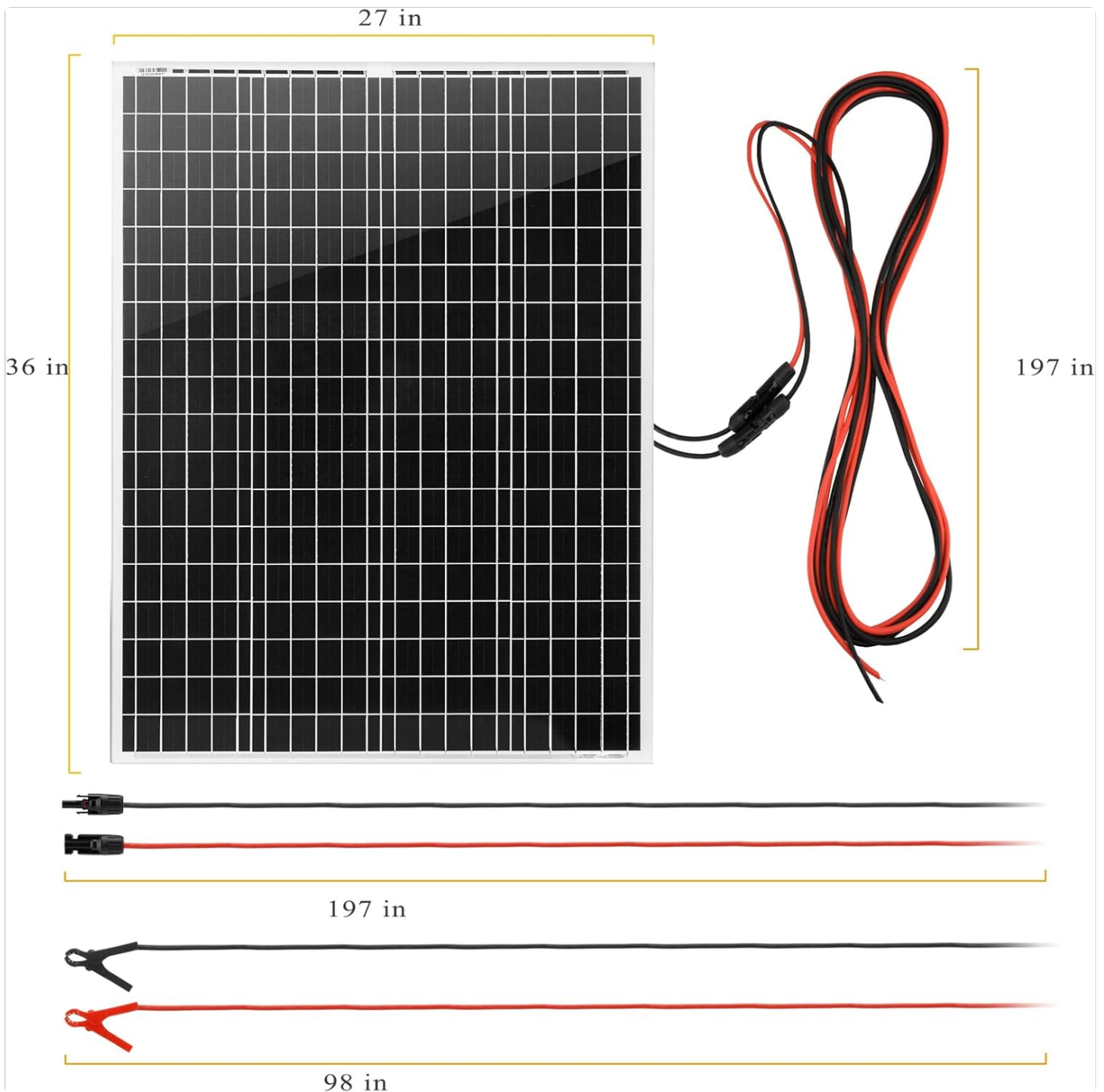


Image: Diagram illustrating the dimensions of the solar panel (approximately 27x36 inches) and the lengths of the included solar cables (197 inches) and alligator clip cables (98 inches).

## SAFETY INFORMATION

Please observe the following safety precautions during installation and operation:

- Always disconnect power before making or breaking electrical connections.
- Ensure proper polarity when connecting the solar panel, charge controller, and battery. Incorrect polarity can damage components.
- Avoid touching exposed wires or terminals when the system is active.
- Install the solar panel in a location with adequate ventilation and away from flammable materials.
- Do not attempt to disassemble or modify the solar panel or charge controller.
- Wear appropriate personal protective equipment (PPE) during installation, such as gloves and eye protection.
- Keep children and unauthorized personnel away from the solar power system.

## SETUP AND INSTALLATION

Follow these steps for proper installation of your solar panel kit:

### 1. Mounting the Solar Panel

The solar panel features pre-drilled holes for easy mounting. Use the included Z Mounting Brackets or other compatible solar panel brackets to secure the panel in a location that receives maximum sunlight throughout the day. Ensure the panel is angled correctly for optimal performance based on your geographical location and season.



Image: Close-up view of the solar panel's construction, highlighting the durable aluminum frame, efficient monocrystalline solar cells, IP65 waterproof junction box, and IP67 waterproof male and female connectors.

### 2. Connecting the Charge Controller

The 30A PWM charge controller manages the power flow between the solar panel and the battery. Connect the components in the following order to prevent damage:

1. **Connect the Battery:** First, connect the battery to the charge controller. Ensure correct polarity (positive to positive, negative to negative). The charge controller will detect the battery voltage (12V or 24V) automatically.
2. **Connect the Solar Panel:** Next, connect the solar panel to the charge controller. Again, observe correct polarity.
3. **Connect the Load (Optional):** If you are connecting a DC load directly to the charge controller, connect it last.

**Important:** Always connect the battery to the charge controller first, and disconnect the solar panel from the charge controller first when disassembling the system.

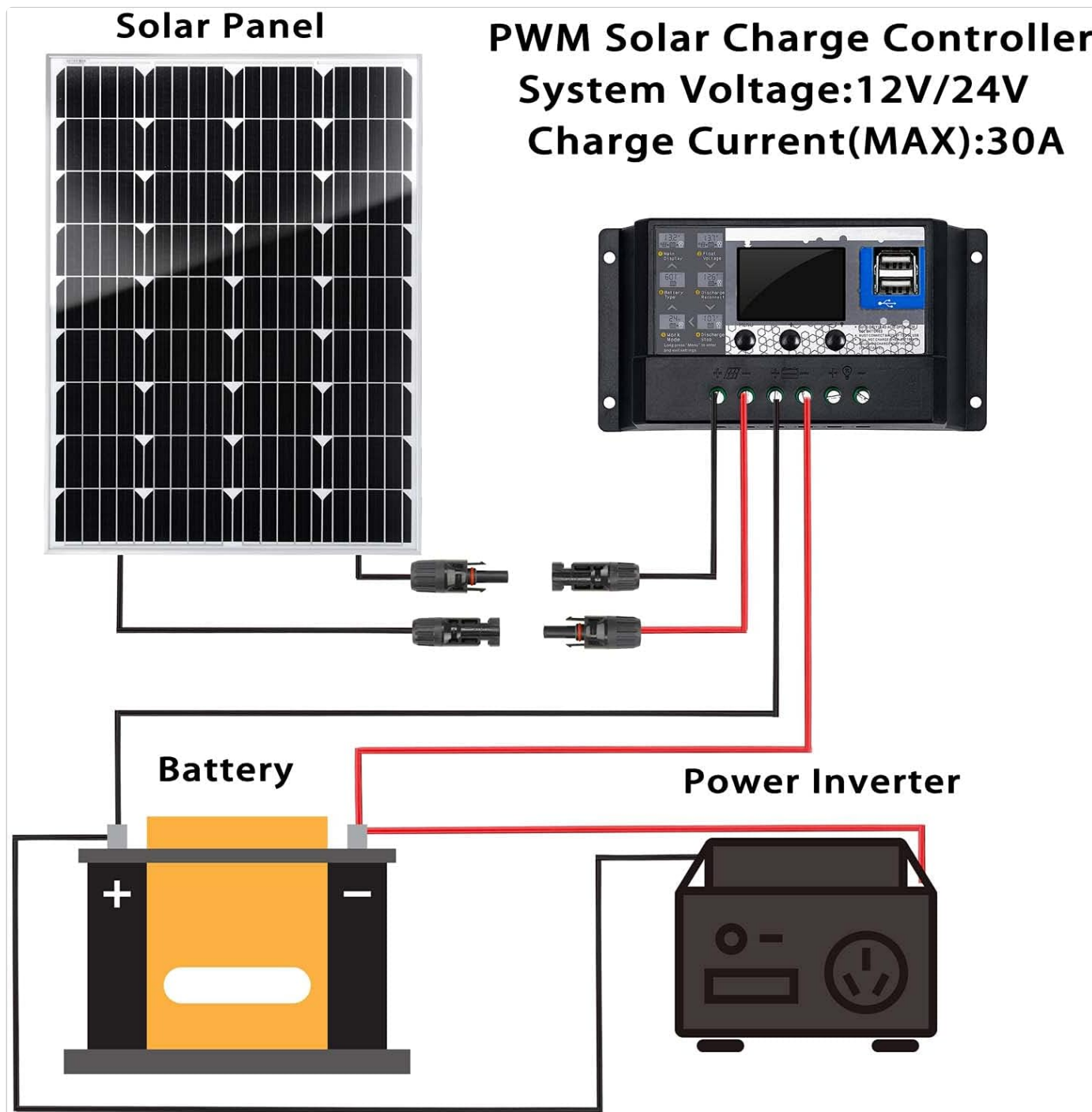


Image: A clear wiring diagram showing the connection sequence: solar panel to charge controller, charge controller to battery, and battery to power inverter (optional load).

## OPERATING INSTRUCTIONS

Once installed, the system operates automatically. The 30A PWM charge controller features smart 4-stage charging to optimize battery life and system performance.

- **Bulk Charging:** Rapid charging to bring the battery to approximately 80% capacity.

- **Boost Charging:** Further charging to bring the battery to full capacity.
- **Float Charging:** Maintains the battery at full charge by providing a small, continuous current.
- **Equalization (if applicable):** Periodically overcharges the battery to balance cell voltages and prevent sulfation.

The charge controller also includes two 5V/2A USB output ports for charging mobile phones, tablets, or other compatible 5V devices.

## MAINTENANCE

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Regular maintenance ensures the longevity and optimal performance of your solar panel kit:

- **Solar Panel Cleaning:** Periodically clean the surface of the solar panel with a soft, damp cloth to remove dust, dirt, and debris. A clean panel ensures maximum sunlight absorption.
- **Connection Checks:** Annually inspect all electrical connections for tightness and corrosion. Loose or corroded connections can reduce efficiency and pose safety risks.
- **Environmental Inspection:** Ensure the solar panel and charge controller are free from obstructions, excessive moisture, or physical damage. The panel is designed for outdoor use and is windproof and rainproof.
- **Battery Health:** Monitor your battery's health according to its manufacturer's guidelines.

## TROUBLESHOOTING

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If you encounter issues with your solar panel kit, consider the following common troubleshooting steps:

- **No Power Output from Panel:**
  - Check for sufficient sunlight exposure.
  - Inspect all connections from the panel to the charge controller for looseness or damage.
  - Clean the solar panel surface.
- **Battery Not Charging:**
  - Verify that the battery is properly connected to the charge controller with correct polarity.
  - Ensure the solar panel is producing power.
  - Check the charge controller display for error codes or indicators. The controller has intelligent protection against reverse polarity, overcharging, short-circuit, and reverse current.
  - Confirm the battery type setting on the charge controller (if adjustable).
- **Charge Controller Not Functioning:**
  - Ensure the battery is connected first and has sufficient voltage to power the controller.
  - Check for any physical damage to the controller.

## WARRANTY AND SUPPORT

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SUNSUL products undergo thorough testing to ensure quality. In the event of any damage or operational issues, please contact SUNSUL customer support for assistance. Refer to your purchase documentation for specific warranty terms and contact information.



