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› WERCHTAY 200W Monocrystalline Solar Panel Kit with 30A PWM Charge Controller User Manual

WERCHTAY 12V 200W Solar Kit

WERCHTAY 200W Monocrystalline Solar Panel Kit with 30A PWM Charge Controller User Manual

Model: 12V 200W Solar Kit

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your WERCHTAY 200W Monocrystalline Solar Panel Kit. This kit is designed for various off-grid applications, including RVs, campers, boats, trailers, rooftops, and other remote power systems. It features high-efficiency N-Type half-cut solar cells and a smart 30A PWM charge controller for reliable power generation and battery management.



Figure 1: Overview of the WERCHTAY 200W Monocrystalline Solar Panel Kit.

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the solar panel kit. Failure to follow these instructions may result in electric shock, fire, serious injury, or property damage.

- Always wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves, during installation and maintenance.
- Do not attempt to disassemble or modify the solar panel or charge controller. Refer all servicing to qualified personnel.
- Ensure all wiring connections are secure and correctly polarized (positive to positive, negative to negative) to prevent damage to components and batteries.
- Avoid touching exposed wires or terminals when the solar panel is exposed to sunlight, as it can generate electricity.
- Install the solar panel in a location with adequate ventilation and away from flammable materials.
- Disconnect the solar panel from the charge controller and battery before performing any maintenance or troubleshooting.

3. PACKAGE CONTENTS

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

- 1 x 200 Watt Monocrystalline Solar Panel
- 1 x PWM 30A Solar Charge Controller (12V/24V)
- 2 x 12AWG Connecting Wire (Red 1.5m + Black 1.5m)
- 2 x 12AWG Connecting Wire (Red 6m + Black 6m)
- 4 x Solar Panel Z-Type Bracket

4. SETUP AND INSTALLATION

Follow these steps for proper installation of your solar panel kit. Pre-drilled mounting holes on the panel frame facilitate easy installation.

1. **Mounting the Solar Panel:** Securely attach the solar panel to your desired surface (RV roof, trailer, shed, etc.) using the provided Z-type brackets. Ensure the panel is oriented to receive maximum sunlight throughout the day.
2. **Connecting the Charge Controller to the Battery:** This is the critical first step. Connect the battery cables (Red for positive, Black for negative) to the corresponding terminals on the 30A PWM charge controller. Then, connect the other ends of these cables to your 12V or 24V battery. The charge controller must detect the battery voltage first.
3. **Connecting the Solar Panel to the Charge Controller:** Once the battery is connected, connect the solar panel cables (MC4 connectors) to the solar input terminals on the charge controller. Ensure correct polarity. The extra-long 232-inch solar cables provide flexibility for placement.

Video 1: Demonstrates the connection process for the 200W solar panel system, showing how to connect the charge controller to the battery and then to the solar panel.

Upgrade PWM Charge Controller

Suitable for Batteries
Lead Battery | Ternary Li Battery | LifePo4 Battery

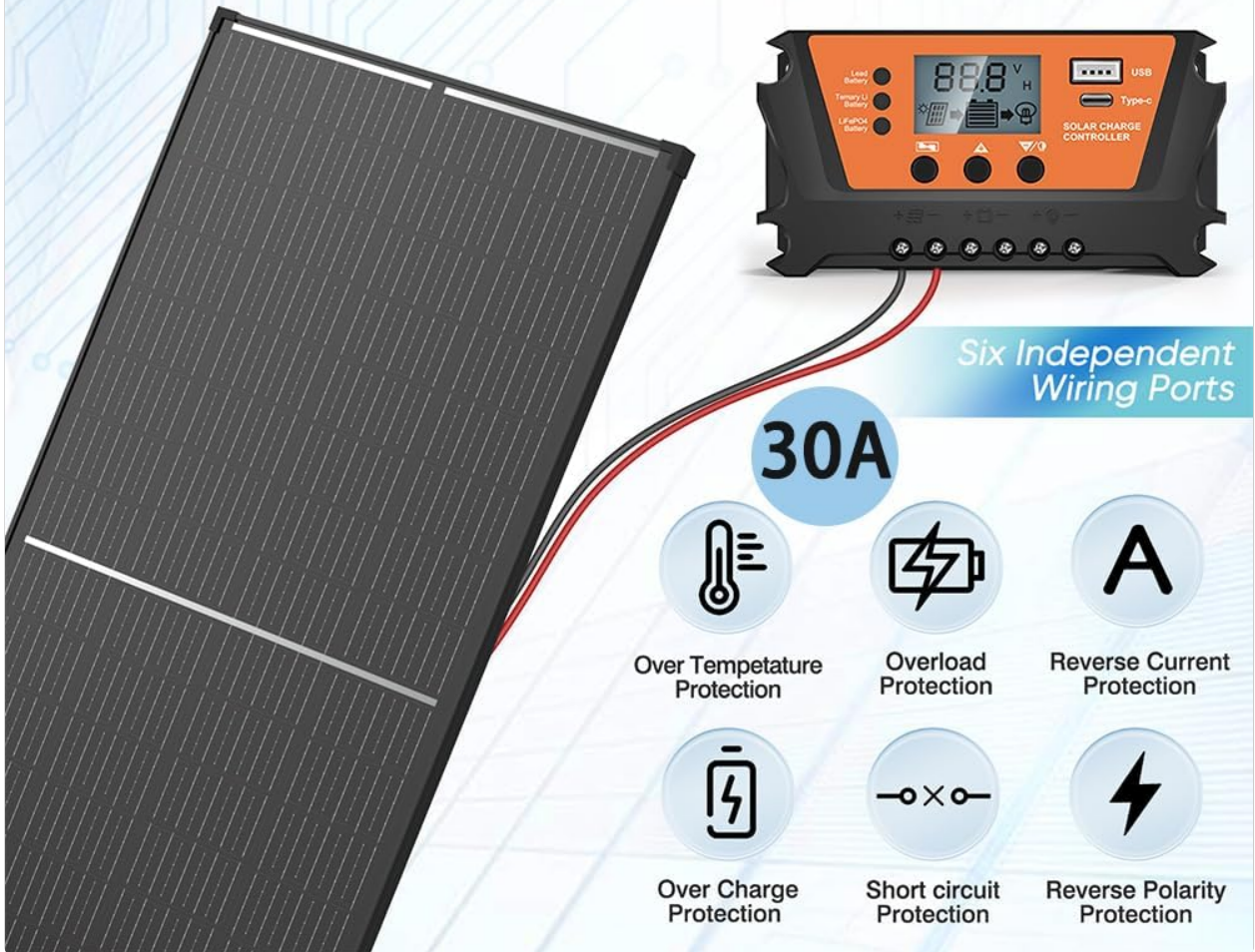


Figure 2: Detailed view of the 30A PWM Charge Controller, highlighting its wiring ports and integrated protection features.



Figure 3: Rear view of the solar panel, illustrating the IP67 waterproof junction box, MC4 connectors, and pre-drilled mounting holes.

5. OPERATING INSTRUCTIONS

The 30A PWM charge controller automatically detects 12V or 24V systems and manages the charging process. It utilizes a 4-stage charging algorithm (Bulk, Boost, Float, Equalization) to optimize battery life and performance. Compatible battery types include Lithium, AGM, Gel, and Flooded.

- Ensure the charge controller display is active and showing battery voltage after initial connection.
- Monitor the charge controller's display for charging status and battery voltage.
- For optimal performance, ensure the solar panel is clean and free from obstructions.

6. MAINTENANCE

Regular maintenance ensures the longevity and efficiency of your solar panel kit.

- **Cleaning:** Periodically clean the surface of the solar panel with a soft cloth and water to remove dust, dirt, and debris. Avoid abrasive materials or harsh chemicals.
- **Inspection:** Regularly inspect all wiring, connections, and mounting hardware for any signs of damage, corrosion, or looseness. Tighten any loose connections.

- **Battery Check:** Monitor your battery's health and charge levels. Ensure battery terminals are clean and free of corrosion.

The solar panel is built for harsh outdoor conditions, featuring low-iron tempered glass, a corrosion-resistant aluminum frame, and IP68 waterproof protection. It is rated to withstand strong winds (2400Pa) and heavy snow loads (5400Pa).

7. TROUBLESHOOTING

If you encounter issues, refer to the following common problems and solutions:

- **No Power Output from Solar Panel:**

- Check for sufficient sunlight exposure.
- Verify all MC4 connections are secure and correctly polarized.
- Inspect solar panel surface for dirt or damage.

- **Battery Not Charging:**

- Ensure the charge controller is correctly connected to the battery first, then the solar panel.
- Check battery cables for secure connections and correct polarity.
- Verify the charge controller settings are appropriate for your battery type (e.g., LiFePO4, AGM).
- The charge controller protects against reverse polarity, overcharging, overload, and short circuits. If a protection mode is active, the controller may indicate an error. Refer to the controller's specific manual for error codes.

- **Charge Controller Display Issues:**

- Ensure the battery is connected and has sufficient voltage to power the display.
- Check all wiring to the charge controller.

8. SPECIFICATIONS



200W Single panel MONOCRYSTALLINE SOLAR MODULE

Maximum Power (Pmaz)	200W
Mazimum power voltage(Vmp)	18.2V
Maximum power current(Imp)	10.9A
Open cireuit voltage(Voc)	22.1V
Short cireuit current(Isc)	12.1A
Weight	9.9KG
Size	52.76 * 26.38 * 1.18inch
Power tolerance	±3%
Maximum system voltage	DC1000V



Figure 4: Key electrical and physical specifications of the 200W Monocrystalline Solar Panel.

Feature	Detail
Brand	WERCHTAY
Model Number	12V 200W Solar Kit
Material	3.2MM Tempered Glass, EVA Film, Electroplated Aluminum Frame, Monocrystalline Solar Cells, Waterproof Black TPTBacksheet
Product Dimensions	52.76"L x 26.38"W x 1.18"H
Item Weight	25 Pounds
Efficiency	25% Efficiency
AC Adapter Current	10.9 Amps
Maximum Voltage	18.2 Volts

Feature	Detail
Upper Temperature Rating	85 Degrees Fahrenheit
Maximum Power	200 Watts
Output Voltage	12 Volts
Special Feature	200 Watt Solar Panels Kit, 25% Efficiency, N-Type

9. WARRANTY AND SUPPORT

The WERCHTAY 200W Monocrystalline Solar Panel comes with the following warranties:

- **25-Year Performance Warranty**
- **5 Years 95% Output Warranty**
- **10 Years 90% Output Warranty**
- **25 Years 80% Output Warranty**

For technical support, warranty claims, or any questions regarding your product, please contact WERCHTAY customer service through the retailer where the product was purchased.