

## Renogy 100 Watt 12 Volt

# Renogy 100 Watt 12 Volt Portable Solar Panel with Waterproof 20A Charger Controller Instruction Manual

Model: 100 Watt 12 Volt

Brand: Renogy

## 1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Renogy 100 Watt 12 Volt Portable Solar Panel with Waterproof 20A Charger Controller. This system is designed to provide portable solar power for various 12V battery applications, offering a convenient and reliable energy source for off-grid use.

## 2. SAFETY INFORMATION

- Read all instructions before installation and operation.
- Do not disassemble or attempt to repair the solar panel or charge controller. Refer all servicing to qualified personnel.
- Ensure all connections are secure and properly insulated to prevent electrical shock.
- Avoid touching exposed wires or terminals when the system is connected to a power source or battery.
- Wear appropriate personal protective equipment, including eye protection and gloves, during installation and maintenance.
- Keep the solar panel away from flammable materials and sources of ignition.
- Do not immerse the charge controller in water, despite its waterproof rating.

## 3. PACKAGE CONTENTS

Verify that all components are present and undamaged:

- 100 Watt Monocrystalline Foldable Solar Suitcase
- 20A Voyager Charge Controller
- Solar Connectors to Alligator Clips with Fuse

## 4. PRODUCT OVERVIEW

The Renogy 100 Watt Portable Solar Panel system is designed for ease of use and durability in outdoor environments. It features high-efficiency monocrystalline solar cells and an integrated waterproof charge controller.

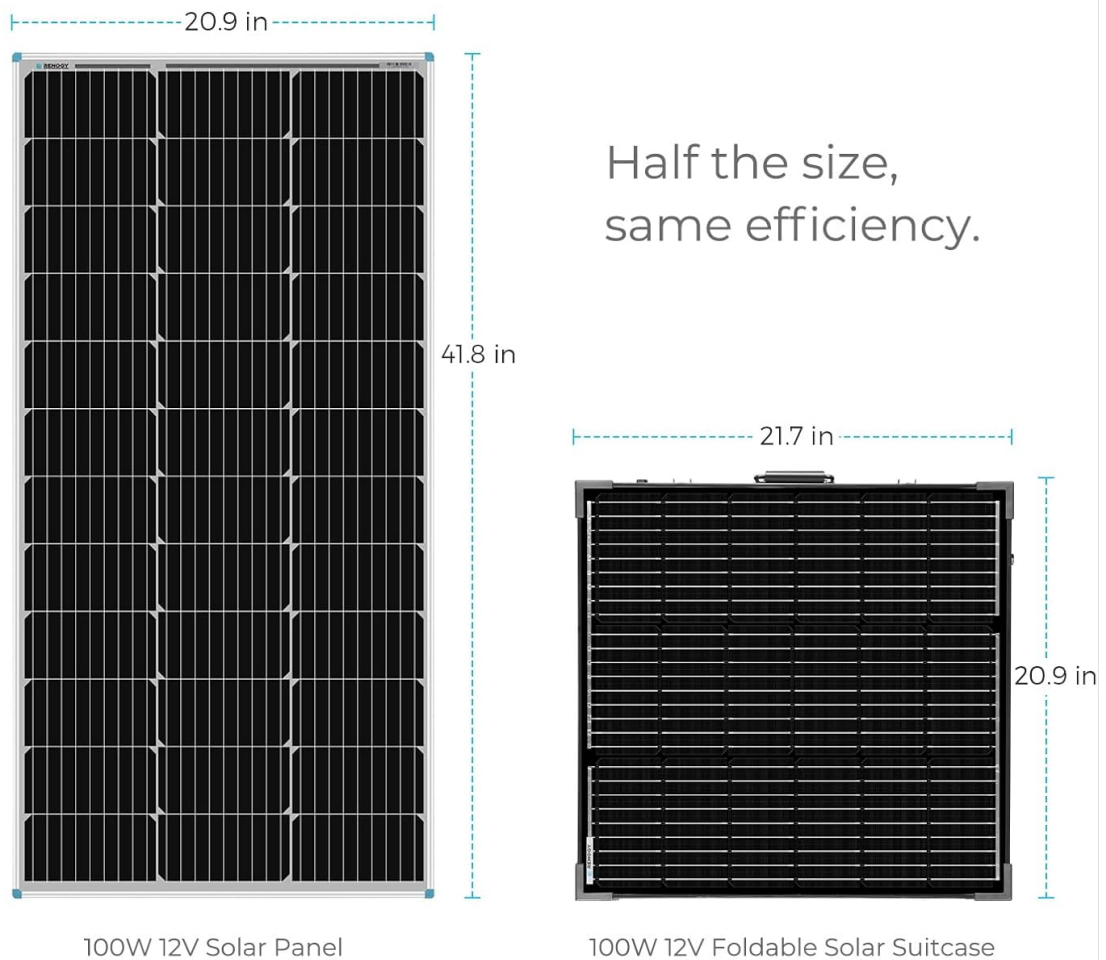


Figure 4.1: Renogy 100 Watt Portable Solar Panel with included 20A waterproof charge controller and alligator clips.

#### 4.1. Key Features

- **Foldable Design:** The solar panel folds into a compact suitcase for easy transport and storage.
- **Adjustable Kickstand:** Integrated kickstands allow for optimal angling towards the sun to maximize energy harvest.
- **Waterproof Charge Controller:** The included 20A Voyager charge controller is waterproof, suitable for outdoor use.
- **High Efficiency:** Utilizes monocrystalline solar cells for efficient power generation.
- **Durable Construction:** Features a rugged aluminum frame, tempered glass, and multi-layered lamination for enhanced durability and weather resistance.

## Easy to Carry



**Figure 4.2:** The compact, folded dimensions of the solar suitcase compared to a standard panel, illustrating its portability.



**Figure 4.3:** Exploded view illustrating the multi-layered construction of the solar panel for durability and performance.

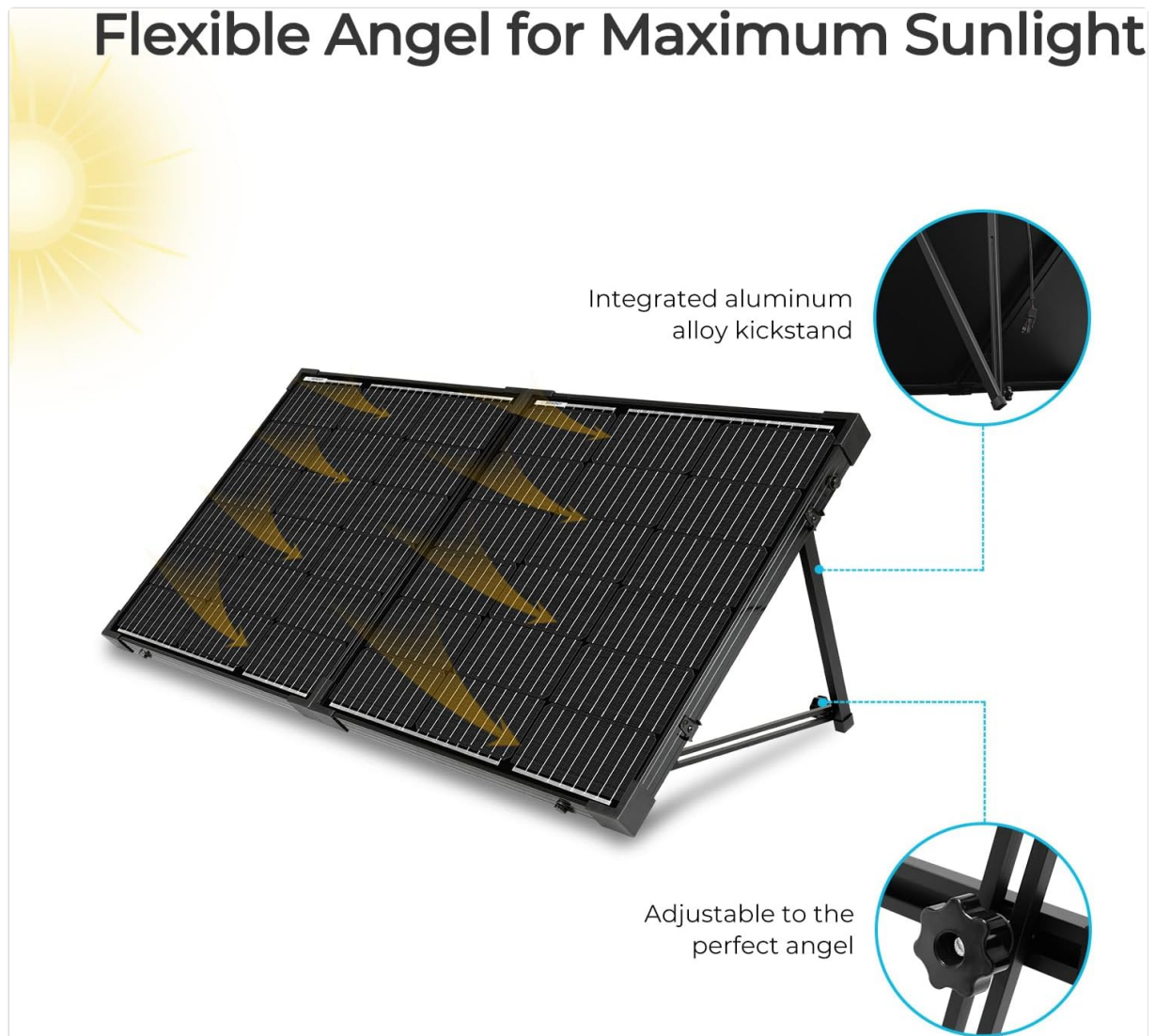
## 5. SETUP INSTRUCTIONS

Follow these steps to set up your Renogy portable solar panel system:

### 5.1. Unfolding and Positioning the Solar Panel

1. Place the folded solar suitcase on a flat, stable surface.
2. Unlatch the clasps and carefully unfold the two solar panels.
3. Extend the integrated kickstands on the back of the panel.
4. Adjust the angle of the kickstands to face the solar panels directly towards the sun. Optimal

performance is achieved when the panels are perpendicular to the sun's rays.



**Figure 5.1:** Adjustable kickstands allow for precise angling of the solar panel towards the sun.

## 5.2. Connecting the Charge Controller and Battery

1. Ensure the solar panel is not exposed to direct sunlight during initial connection to prevent damage.
2. Connect the alligator clips from the charge controller to your 12V battery terminals. Connect the positive (+) clip to the positive battery terminal and the negative (-) clip to the negative battery terminal.
3. Once the battery is connected, connect the solar panel's MC4 connectors to the corresponding inputs on the 20A Voyager charge controller.
4. The charge controller display should illuminate, indicating a successful connection.



# Move With the Sun to Get Maximum Energy

Park in the shade to stay cool while leaving the suitcase in the sun:



Figure 5.2: Example setup showing the solar panel positioned in direct sunlight while the connected RV remains in the shade.

## 6. OPERATING INSTRUCTIONS

The 20A Voyager charge controller manages the charging process to protect your battery and optimize performance.

### 6.1. Charge Controller Functions

- **Display:** The LCD screen shows real-time charging status, battery voltage, and current.
- **Battery Type Selection:** The controller supports various 12V battery types (e.g., Sealed, Gel, Flooded, Lithium). Press and hold the 'BATTERY TYPE' button for 3 seconds to enter the battery type selection mode. Cycle through options by pressing the button briefly, and the selection will save automatically after a few seconds of inactivity.
- **4-Stage PWM Charging:** The controller employs a 4-stage Pulse Width Modulation (PWM) charging algorithm:
  - a. **Bulk Charge:** Rapidly charges the battery.
  - b. **Boost Charge:** Continues charging at a higher voltage to ensure full charge.
  - c. **Float Charge:** Maintains the battery at a full charge level.
  - d. **Equalization Charge:** Periodically overcharges flooded batteries to prevent sulfation (if

applicable to selected battery type).

## 4-Stage PWM Charging Technology

4-stage charging ensures high charging efficiency  
as well as prolongs the battery service life

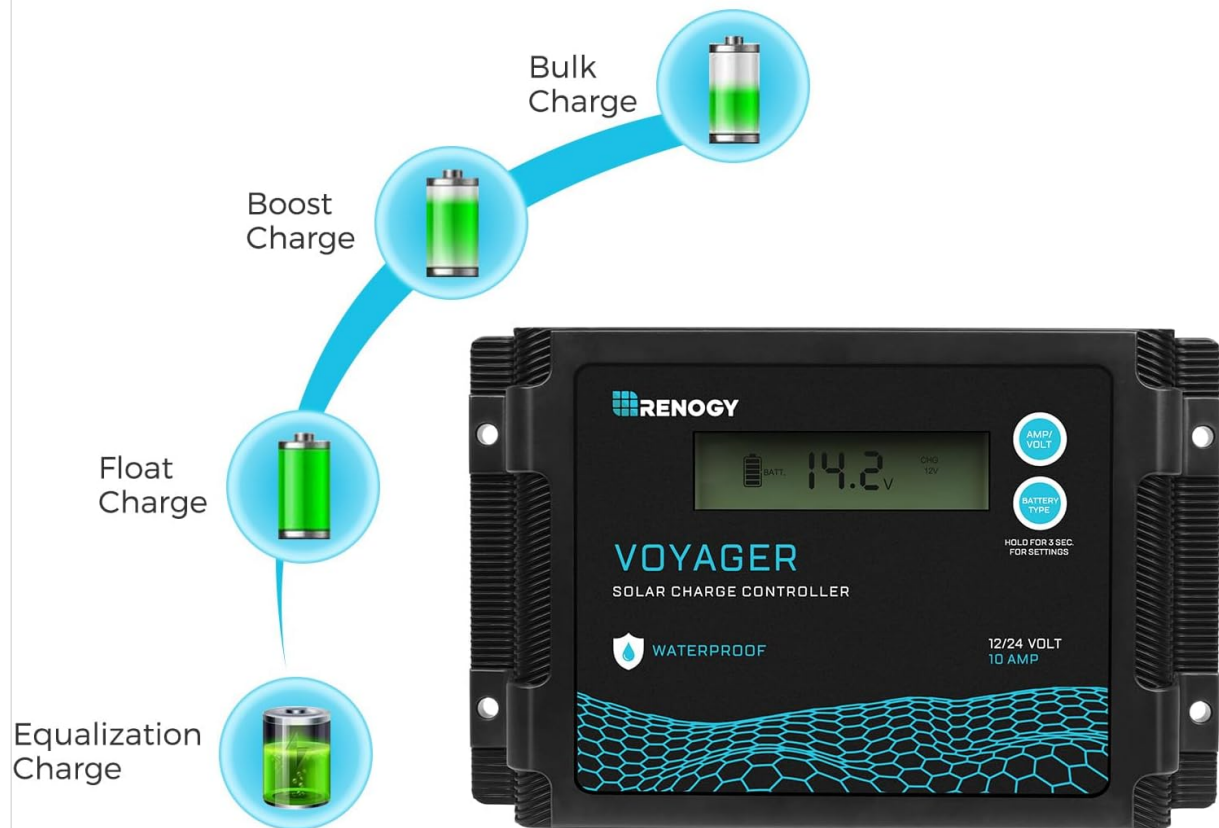


Figure 6.1: The 4-stage PWM charging process ensures efficient and safe battery charging.

### 6.2. Maximizing Solar Harvest

- Periodically adjust the panel's angle throughout the day to follow the sun's path.
- Ensure no shadows fall on the solar panels, as even partial shading can significantly reduce power output.

## 7. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your solar panel system.

- **Cleaning:** Clean the solar panel surface periodically with a soft, damp cloth to remove dust, dirt, and debris. Avoid abrasive cleaners or harsh chemicals.
- **Inspection:** Regularly inspect all cables and connections for signs of wear, corrosion, or damage. Ensure all connections are tight.
- **Storage:** When not in use, fold the solar panel and store it in its protective canvas case in a dry, cool place.



# Specially Made for Outdoor Adventures

IP65 rated splashproof

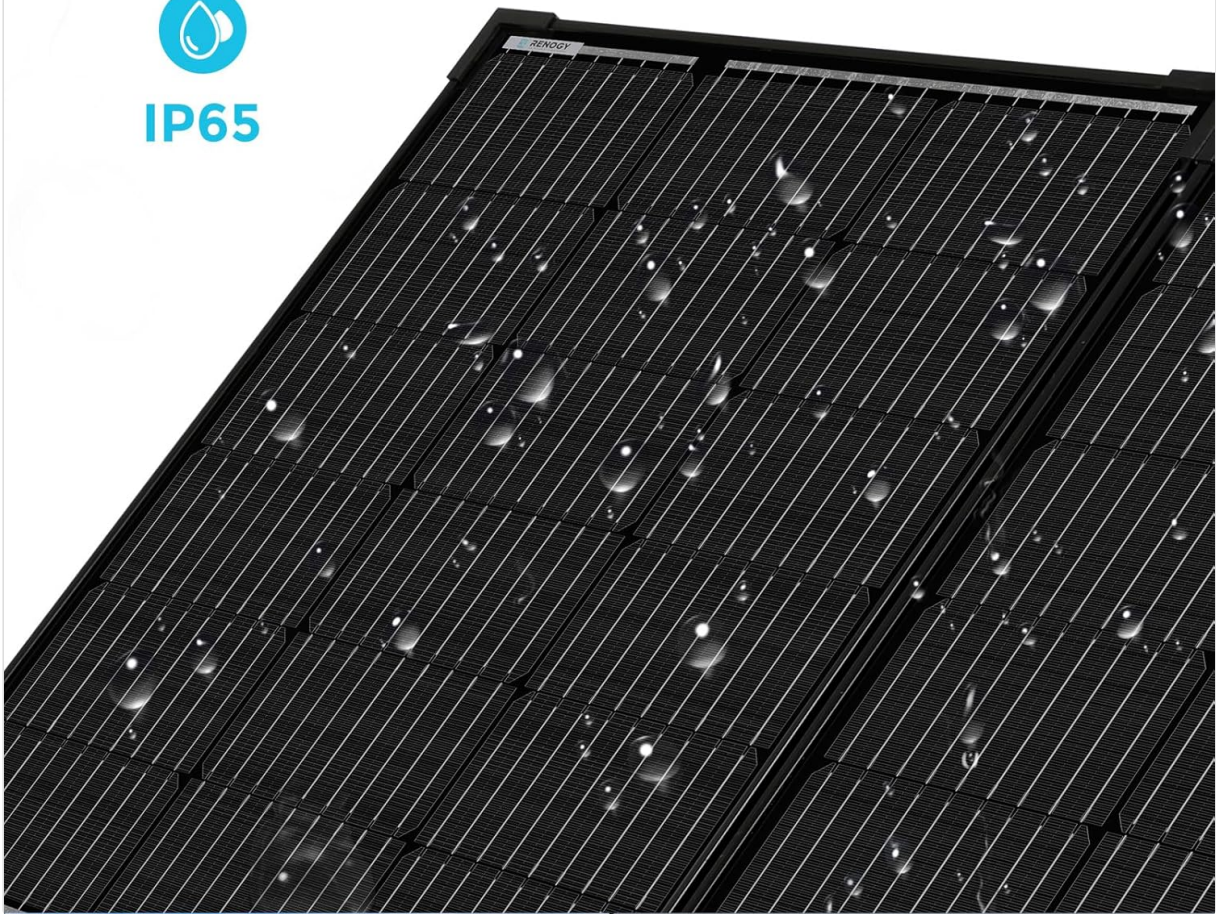


Figure 7.1: The solar panel's IP65 splashproof design allows for use in various outdoor conditions.

## 8. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
No power output from solar panel	No sunlight or insufficient sunlight Shading on panels Loose or incorrect connections	Move panel to direct sunlight Remove any obstructions causing shade Check all cable connections (MC4, alligator clips)
Low charging current	Panel not optimally angled Dirty panel surface Partial shading Weak sunlight (cloudy weather)	Adjust panel angle towards the sun Clean panel surface Ensure no shading Output will naturally be lower in cloudy conditions

Problem	Possible Cause	Solution
Charge controller display off	No power from battery or solar panel Incorrect wiring sequence	Ensure battery is connected first, then solar panel Check battery voltage Verify all connections are secure
Battery not charging fully	Incorrect battery type setting Battery degradation	Verify correct battery type is selected on the controller Test battery health; consider replacement if old or damaged

If the problem persists after attempting these solutions, contact Renogy customer support for further assistance.

## 9. SPECIFICATIONS

Specification	Value
Brand	Renogy
Model Number	100 Watt 12 Volt
Material	Aluminum
Product Dimensions (Unfolded)	24.8"L x 20"W x 2.8"H
Item Weight	26.6 Pounds
Efficiency	22%
Included Components	100 Watt Mono Foldable Solar Suitcase, 20A Voyager Charge Controller, Solar Connectors to Alligator Clips w/ Fuse
AC Adapter Current	20 Amps
Maximum Voltage	12 Volts
Upper Temperature Rating	149 Degrees Fahrenheit
Maximum Power	50 Watts (per panel, 100W total)
Special Features	Lightweight Design, Waterproof
UPC	816360026709
Output Voltage	12 Volts
Wattage	100

## 10. WARRANTY AND SUPPORT

The Renogy 100 Watt 12 Volt Portable Solar Panel with Waterproof 20A Charger Controller comes with a



warranty. As an MPPT solar charge controller, it guarantees maximum efficiency, up to 99%.

For detailed warranty information, technical support, or service inquiries, please refer to the official Renogy website or contact Renogy customer service directly.