DOKIO US1 FSP main

DOKIO Portable Foldable 100W Solar Panel Kit Instruction Manual

Model: US1 FSP main

1. Introduction

The DOKIO Portable Foldable 100W 18v Solar Suitcase is designed to provide convenient and reliable power for various outdoor and off-grid applications. This monocrystalline solar panel kit includes a built-in charge controller, making it suitable for charging 12-volt batteries such as AGM, Lead/Acid, Vented, and Gel types, commonly found in RVs, camping setups, and boats. Its foldable design and integrated features ensure ease of use and portability.

Key features include smart PWM charging with intelligent protection against reverse polarity, overcharging, short-circuit, and reverse current. It also features integrated 5V 2A USB ports for charging mobile devices. The corrosion-resistant aluminum frame and adjustable brackets enhance durability and optimize sun exposure.

Figure 1.1: DOKIO Portable Foldable 100W Solar Panel Kit, showing the two foldable panels, the integrated charge controller, and various connection cables and adapters.

2. Safety Information

Please read and understand all safety instructions before operating the DOKIO Solar Panel Kit. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure proper polarity when connecting the alligator clips to the battery. Incorrect connections can damage the battery and the controller.
- Do not attempt to disassemble or modify the solar panel or charge controller. Refer all servicing to qualified personnel.
- Keep the solar panel away from open flames, flammable liquids, and explosive gases.
- Avoid touching the exposed electrical parts of the panel or controller when wet.
- Position the solar panel securely to prevent it from falling or being blown over by wind.
- The charge controller provides intelligent protection against reverse polarity, overcharging, short-circuit, and reverse current. However, always exercise caution during setup.

Figure 2.1: The DOKIO solar panel is designed with IP67 waterproof rating and can withstand up to 2400 Pa high wind, ensuring durability in various weather conditions.

3. Package Contents

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

- 1 x DOKIO 100W Solar Panel (Foldable)
- 1 x DOKIO 10A Charge Controller (Integrated)
- 1 x 9.8FT (3m) XT60 Cable
- 1 x 3.3FT (1m) XT60 to Alligator Clip Cable
- 1 x JY60 to DC Cable
- 5 x DC Conversion Adapters (8.0mm, 3.5x1.35mm, 5.5x2.1mm, 5.5x2.5mm, 6.4x4.0mm)
- 1 x Carrying Bag

Figure 3.1: All components included in the DOKIO 100W Solar Panel Kit, ensuring you have everything needed for setup and operation.

4. Setup

4.1 Unfolding and Positioning the Solar Panel

1. Place the folded solar panel on a flat, stable surface.
2. Unlatch the clasps and carefully unfold the two panels.
3. Extend the adjustable support frames on the back of the panels. Secure them to achieve the desired angle for optimal sun exposure. The solar panel has the best charging efficiency when positioned at a 90-degree angle to the sunlight.

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Video 4.1: This video demonstrates the unfolding and positioning of the DOKIO solar panel, including how to set up the adjustable support frames for optimal sun exposure.

4.2 Connecting to a 12V Battery

The DOKIO solar panel kit is designed for direct connection to 12V batteries (AGM, Lead/Acid, Gel types) using the integrated charge controller.

1. Ensure the solar panel is unfolded and positioned.
2. Connect the XT60 to Alligator Clip Cable to the charge controller's output port.
3. Connect the red alligator clip to the positive (+) terminal of your 12V battery and the black alligator clip to the negative (-) terminal. Ensure a secure connection.
4. The charge controller display will illuminate, indicating the battery voltage and charging status.

Figure 4.1: Connection diagram for charging a 12V battery using the DOKIO solar panel kit, illustrating the flow from the panel through the controller to the battery.

4.3 Connecting to a Power Station

For power stations, the connection typically bypasses the integrated charge controller, as most power stations have their own MPPT or PWM controllers. Use the appropriate DC conversion adapter.

1. Ensure the solar panel is unfolded and positioned.
2. Connect the XT60 Cable to the solar panel's output port.
3. Select the correct DC conversion adapter for your power station and connect it to the XT60 cable.
4. Plug the adapter into the solar input port of your power station.
5. Monitor your power station's display for charging status.

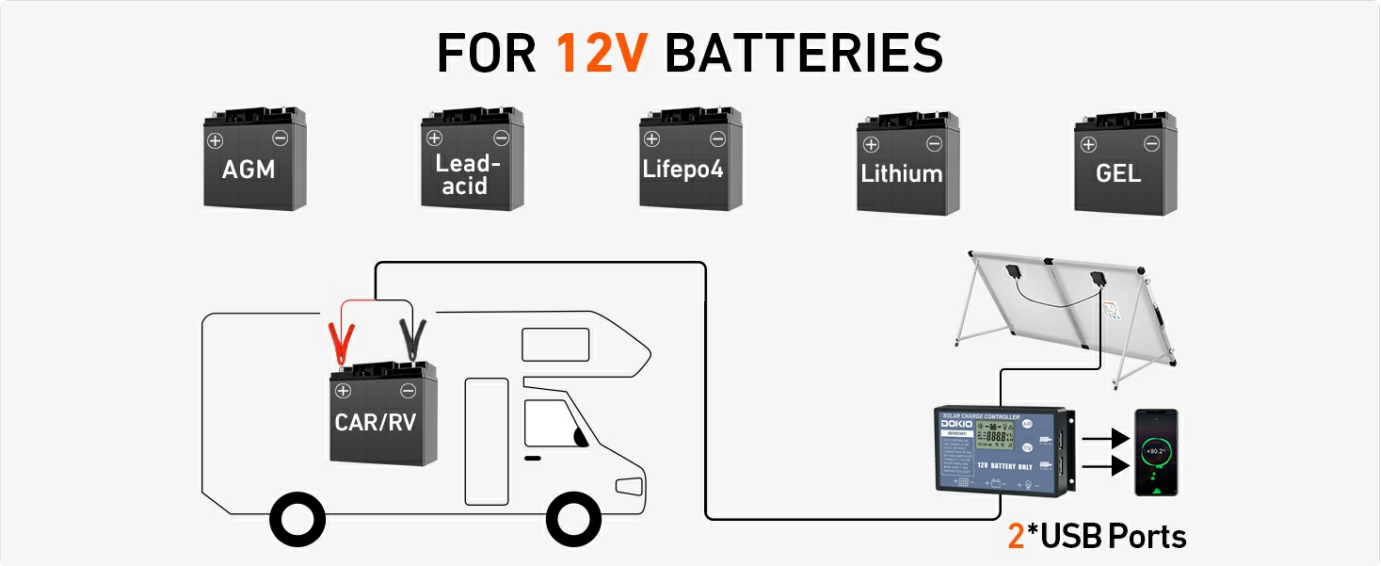

Figure 4.2: Compatibility chart for DOKIO solar panels with various solar generators, indicating the required DC adapter types for connection.

5. Operating Instructions

5.1 Understanding the Charge Controller Display

The integrated charge controller features an LCD display that provides real-time information about the charging process. Familiarize yourself with the icons and parameters:

- **PV (Solar Panel Parameter):** Displays voltage and current from the solar panel.
- **BAT (Battery Parameter):** Shows battery voltage, charging current, and temperature.
- **LOAD (Load Parameter):** Indicates current drawn by connected loads (if any).
- **Unit Symbol Value:** Displays units like V (Volts), A (Amperes), °C (Celsius), AH (Ampere-hours).
- **Battery Type:** Indicates the selected battery type (b1 for AGM/GEL/Lead-acid, b2 for FLD, b3 for Lithium, b4 for Lifepo4).
- **Cumulative Charging/Discharge Power:** Shows total Ampere-hours charged or discharged.

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Video 5.1: This video provides a detailed guide on how to use the DOKIO charge controller, explaining each display parameter and navigation through the menus.

5.2 Selecting Battery Type

It is crucial to select the correct battery type on the charge controller for proper charging and to prevent damage to your battery. To change the battery type:

1. With the battery connected, press and hold the "Menu" button (usually the top button) for 3 seconds until the battery type setting appears (e.g., "b1", "b2", "b3", "b4").
2. Press the "Up" or "Down" buttons (usually the middle and bottom buttons) to cycle through the battery types:
    - **b1:** AGM / GEL / Lead-acid (Default)
    - **b2:** FLD (Flooded)
    - **b3:** Lithium
    - **b4:** Lifepo4

3. Once your battery type is displayed, press and hold the "Menu" button again for 3 seconds to confirm and save the setting.

5.3 Optimal Panel Placement

For maximum efficiency, position the solar panel to receive direct sunlight throughout the day. Adjust the angle of the panel using the integrated stands to face the sun directly. Even on cloudy days, the monocrystalline cells will generate power, but direct sunlight yields the best results.

Figure 5.1: The DOKIO solar panel is versatile for various applications, including home backup, RV travel, camping, and marine use.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your DOKIO Solar Panel Kit.

- **Cleaning:** Periodically clean the surface of the solar panels with a soft, damp cloth to remove dust, dirt, and debris.

Avoid abrasive cleaners or harsh chemicals that could scratch the surface.

- **Inspection:** Regularly inspect all cables, connections, and the charge controller for any signs of wear, damage, or corrosion. Ensure all connections are secure.
- **Storage:** When not in use, fold the solar panel and store it in its protective carrying bag. Store in a cool, dry place away from direct sunlight and extreme temperatures.
- **Battery Health:** For optimal battery life, avoid deep discharges and ensure your battery is regularly charged.

7. Troubleshooting

If you encounter issues with your DOKIO Solar Panel Kit, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No power output from solar panel / Controller display off	Insufficient sunlight; Incorrect connections; Damaged panel/cable.	Ensure panel is in direct sunlight and properly angled. Check all cable connections for security and correct polarity. Inspect cables for damage.
Low charging current	Partial shading; Dirty panel surface; Incorrect battery type selected; Low battery voltage.	Relocate panel to full sun. Clean panel surface. Verify correct battery type on controller. Battery may be near full charge.
Controller shows error code or warning icon	Overcharge, short-circuit, reverse polarity, or other system fault.	Refer to the controller's manual (if separate) for specific error codes. Disconnect and re-connect components carefully, checking for faults.
USB ports not charging devices	Battery voltage too low; Device not compatible; USB cable fault.	Ensure battery is sufficiently charged. Try a different USB cable or device.

8. Specifications

Feature	Specification
Brand	DOKIO
Model Number	US1 FSP main
Material	Monocrystalline
Maximum Power	100 Watts
Maximum Voltage	18 Volts
AC Adapter Current	5.76 Amps
Product Dimensions (Folded)	26"L x 21"W x 1.97"H
Item Weight	17.95 pounds

Feature	Specification
Efficiency	High Efficiency
Connector Type	XT60
Special Features	Portable, Foldable, Adjustable Brackets, Long Lifespan, Intelligent Protection
UPC	613852939529

9. Warranty and Support

DOKIO offers a 25-year transferable power output warranty for this solar panel. For any product problems, technical assistance, or warranty claims, please contact DOKIO Customer Service. They are committed to providing prompt and quick solutions.

For further information and support, you may visit the official DOKIO Store on Amazon:DOKIO Store.