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Srliya 40A

Srliya 12V/24V Solar Charge Controller (40A)

INSTRUCTION MANUAL

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Srliya 12V/24V Solar Charge Controller. This device is designed to manage the power flow from your solar panels to your battery bank, ensuring efficient charging and protecting your battery from overcharge and deep discharge. It features automatic system voltage detection, PWM intelligent charging, dual USB outputs, and a clear digital display for monitoring system status.

2. Safety Instructions

- Ensure all connections are correct and secure before powering on the system. Incorrect wiring can cause damage to the controller, battery, or other components.
- Always connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order.
- Do not attempt to disassemble or repair the controller yourself. Refer to qualified personnel for service.
- Install the controller in a well-ventilated area, away from flammable gases and liquids.
- The controller is rated IP32 waterproof, meaning it is protected against solid objects over 2.5mm and spraying water. However, avoid direct exposure to heavy rain or immersion in water.
- Use appropriate wire gauges for all connections to prevent overheating and power loss.
- Ensure the battery type selected in the controller settings matches your actual battery type.

3. Product Overview

The Srliya Solar Charge Controller is equipped with a user-friendly interface and robust protection features. It includes a digital display for real-time monitoring, two control buttons for parameter adjustment, and dual USB ports for charging external devices.



Figure 3.1: Front view of the Srliya Solar Charge Controller. This image highlights the digital display, the two operational buttons, and the dual USB charging ports located on the front panel.

Key components include:

- **Digital Display:** Shows voltage, current, load status, battery power, and charging status.
- **Dual USB Ports:** Provide 5V output for charging electronic devices.
- **Control Buttons:** Used for navigating menus and adjusting settings.
- **Terminal Blocks:** For connecting solar panels, battery, and DC load.

4. Setup and Installation

Follow these steps for proper installation of your solar charge controller. Ensure all power sources are disconnected before making any connections.



Figure 4.1: Schematic diagram illustrating the correct wiring sequence for a solar power system. Solar panels connect to the controller, the battery connects to the controller, and the load (e.g., energy-saving light bulbs) connects to the controller.

1. **Connect the Battery:** Connect the battery to the controller's battery terminals. Ensure correct polarity (+ to + and - to -). The controller will automatically detect the system voltage (12V or 24V).
2. **Connect the Solar Panels:** Connect the solar panels to the controller's solar panel terminals. Ensure correct polarity.
3. **Connect the DC Load:** Connect your DC load (e.g., lights, fans) to the controller's load terminals. Ensure correct polarity.

Important: Always connect the battery first, then the solar panels, and finally the load. Disconnect in the reverse order: load, then solar panels, then battery.

5. Operating Instructions

Once connected, the controller will begin operating automatically. The digital display provides real-time information about your solar system.

5.1 Digital Display Information

The large digital display cycles through various parameters, including:

- **Battery Voltage:** Current voltage of the connected battery.
- **Charging Current:** Current flowing from the solar panels to the battery.
- **Load Current:** Current being drawn by the connected DC load.
- **Battery Power Identification:** An icon indicating the battery's charge level.
- **Charging Identification:** An icon indicating if the battery is currently being charged.
- **Load Identification:** An icon indicating if the load is currently active.

5.2 Parameter Adjustment

The two-button design allows for simple parameter adjustment. Press the left button to enter the setting mode and cycle through parameters. Use the right button to adjust values. Refer to the on-screen prompts for specific adjustments such as battery type, load control mode, and charge/discharge thresholds.

5.3 USB Output

The dual USB ports provide a stable 5V output for charging compatible electronic devices. Ensure the total current draw does not exceed the controller's specified USB output limit.

6. Maintenance

Regular maintenance ensures optimal performance and longevity of your solar charge controller.

- **Cleanliness:** Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- **Connections:** Periodically check all wiring connections to ensure they are tight and free from corrosion. Loose connections can lead to power loss or damage.
- **Ventilation:** Ensure the installation area has adequate ventilation to prevent overheating.
- **Environmental Check:** While the controller is IP32 waterproof, avoid prolonged exposure to extreme weather conditions or direct water spray.

7. Troubleshooting

This section addresses common issues you might encounter with your solar charge controller.

Problem	Possible Cause	Solution
No display/No power	Battery not connected or low voltage; incorrect battery polarity.	Check battery connections and voltage. Ensure correct polarity.
Battery not charging	Solar panels not connected; insufficient sunlight; incorrect solar panel polarity; faulty solar panel.	Check solar panel connections and polarity. Ensure adequate sunlight. Test solar panel output.
Load not working	Load not connected; incorrect load polarity; battery undervoltage protection active; overload/short circuit protection active.	Check load connections and polarity. Charge battery. Reduce load or check for short circuits.
Controller overheating	Poor ventilation; excessive load.	Ensure adequate airflow around the controller. Reduce connected load if possible.

The controller includes built-in protections against reverse battery discharge, battery undervoltage, battery reverse polarity, overload, and short circuit. If a protection is triggered, the controller may temporarily shut down or display an error code. Address the underlying issue before restarting the system.

8. Specifications

Technical specifications for the Srliya 12V/24V Solar Charge Controller (40A):

- **Product Dimensions:** Approximately 167 x 90 x 35 mm (6.6 x 3.5 x 1.4 inches)
- **Weight:** Approximately 285g (10.1oz)
- **Material:** ABS
- **System Voltage:** 12V/24V (Automatic detection)
- **Rated Current:** 40A
- **Maximum Working Voltage:** 50V
- **Charging Mode:** PWM (Pulse Width Modulation)
- **Working Temperature:** -35°C to +60°C
- **Waterproof Level:** IP32
- **Supported Battery Type:** Lead-acid batteries (e.g., GEL, Sealed, Flooded)
- **USB Output:** Dual 5V USB ports

9. Warranty and Support

For warranty information, please refer to the terms and conditions provided by your retailer or the manufacturer at the time of purchase. If you encounter any issues or require technical assistance, please contact the seller or manufacturer directly. Keep your purchase receipt as proof of purchase.

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