ECO-WORTHY 60A regolatore di carica solare

ECO-WORTHY 12V/24V 60A Solar Charge Controller User Manual

Comprehensive guide for installation, operation, and maintenance of your ECO-WORTHY solar charge controller.

1. Safety Information

Please read all instructions and warnings carefully before installation and operation. Failure to do so may result in damage to the controller, battery, or other components, and may cause personal injury.

- Ensure all connections are correct and secure before applying power. Incorrect polarity can damage the controller.
- Always connect the battery to the charge controller first, then the solar panel, and finally the load. Disconnect in the reverse order.
- The controller is designed for 12V/24V systems. Do not exceed the maximum input voltage or current ratings.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- This device is equipped with integrated protection against short circuits, open circuits, reverse polarity, and overloads. However, proper installation is crucial.
- Do not attempt to disassemble or repair the controller yourself. Contact qualified personnel for service.

2. Product Overview

2.1 Features

- **Versatile Battery Compatibility:** Supports Lead-Acid (SLA), GEL, Flooded (FLD), and Lithium (LI) batteries.
- **Comprehensive Protection:** Built-in safeguards against overcharge, over-discharge, over-current, short-circuit, and reverse polarity.
- **Automatic 12V/24V System Recognition:** Automatically adapts to 12V or 24V systems, supporting up to 1000W for 12V and 2000W for 24V.
- **Intelligent Control:** Features an intelligent chip for customizable light control and time control settings.
- **Real-time Monitoring:** Large LCD screen displays real-time input and output data, allowing for easy status monitoring.
- **Efficient Heat Dissipation:** High-quality aluminum alloy base and grille design ensure effective heat dissipation.
- **User-Friendly Connections:** U-type connectors facilitate easy and secure wiring.

2.2 Package Contents

- ECO-WORTHY 12V/24V 60A Solar Charge Controller
- User Manual

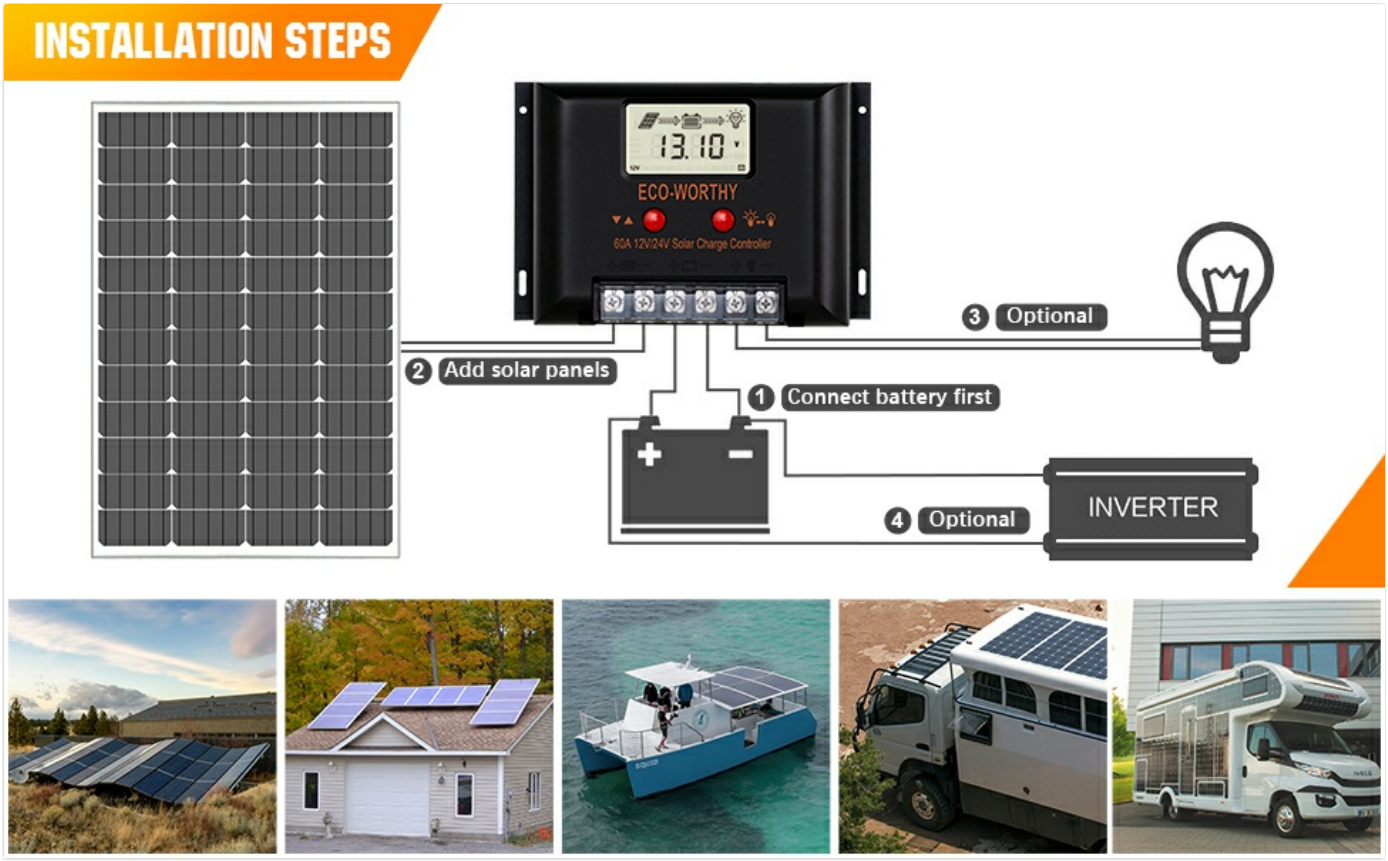
2.3 Product Diagram

Front view of the ECO-WORTHY 12V/24V 60A Solar Charge Controller, showing the LCD display, control buttons, and terminal connections.

Diagram illustrating the efficient heat dissipation design of the controller, featuring an aluminum alloy shell and 10MM+ grille for optimal ventilation.

3. Setup and Installation

3.1 Wiring Diagram and Sequence



This diagram illustrates the correct wiring sequence for the solar charge controller: 1. Connect battery first. 2. Add solar panels. 3. Optional: Connect DC load. 4. Optional: Connect inverter. Always connect the battery before solar panels.

Follow these steps for proper installation:

1. **Connect the Battery:** Connect the battery to the charge 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 charge controller's solar panel terminals. Ensure correct polarity.
3. **Connect the DC Load (Optional):** Connect your DC load to the charge controller's load terminals. Ensure correct polarity.
4. **Connect the Inverter (Optional):** If using an inverter, connect it to the battery terminals, not directly to the controller's load terminals.
5. **Secure Connections:** Double-check all connections to ensure they are tight and secure to prevent loose contacts and potential damage.

3.2 Battery Type Setting

The controller supports Lithium, GEL, and Flooded (FLD) battery types. The battery type can be selected through the controller's settings menu on the LCD display.

The controller is compatible with Lead-Acid, GEL, Flooded, and Lithium batteries. It is crucial to set the correct battery type for optimal charging and battery longevity. Refer to the LCD display and control buttons to navigate the settings menu and select your battery type. Incorrect battery type settings can lead to improper charging and reduced battery lifespan.

The controller automatically adjusts for 12V (max 1000W) and 24V (max 2000W) systems, making it suitable for various applications like RVs and homes.

4. Operating Instructions

4.1 LCD Display Overview

The LCD screen displays critical information including: 1. Solar panel status, 2. Battery voltage, 3. DC Load status, 4. Units (V, A, kWh), 5. Battery status, 6. Battery type, 7. Error code, 8. Voltage setting, 9. Charging status.

The LCD provides real-time data on your solar system's performance. Use the buttons below the screen to navigate through different display modes and settings.

4.2 Parameter Settings

The controller allows for customization of your system, including voltage check, current check, power check, timing control, automatic light control, and battery charging status monitoring.

The intelligent chip allows for various customizable settings:

- **Light Control:** Set the controller to automatically turn the load on/off based on ambient light conditions.
- **Time Control:** Program specific times for the load to be active.
- **Voltage Settings:** Adjust charging and discharging voltage parameters for specific battery types or system requirements.
- **Monitoring:** View real-time voltage, current, and power readings for solar input, battery, and load.

Refer to the detailed instructions in the full manual (if provided separately) for specific button functions and menu navigation to adjust these parameters.

5. Maintenance

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

- **Cleanliness:** Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- **Connection Check:** Periodically inspect all wiring connections to ensure they are tight and free from corrosion. Loose connections can cause overheating and poor performance.
- **Ventilation:** Ensure the installation area has adequate ventilation to allow for proper heat dissipation. Do not block the cooling fins.
- **Visual Inspection:** Check for any signs of physical damage, such as cracked casing or frayed wires.
- **Environmental Conditions:** Ensure the controller is not exposed to excessive moisture, extreme temperatures, or corrosive environments.

6. Troubleshooting

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
No display on LCD	Battery not connected or low voltage; reverse polarity.	Check battery connections and voltage. Ensure battery voltage is above minimum operating voltage. Correct polarity if reversed.
Battery not charging	No solar input; solar panel reversed; faulty solar panel; incorrect battery type setting.	Check solar panel connections and ensure sufficient sunlight. Verify solar panel polarity. Check battery type setting on controller.
Load not working	Load disconnected; battery low; overload protection activated; load setting incorrect.	Check load connections. Ensure battery has sufficient charge. Reduce load if overloaded. Verify load control settings (e.g., light/time control).
Error code displayed	Specific system fault.	Refer to the full manual for a list of error codes and their corresponding solutions. Common errors include over-voltage, under-voltage, or short-circuit.

7. Specifications

Specification	Value
Product Dimensions (L x W x H)	18.9 x 12.9 x 5.2 cm
Product Weight	790 grams
Manufacturer	ECO-WORTHY
ASIN	B09BCS53Z6
Model Number	60A Solar Charge Controller
Color	Aluminum
Voltage	12V/24V (DC) Auto-sensing
Material	Aluminum
Display Type	LCD
Max Solar Input (12V System)	1000W
Max Solar Input (24V System)	2000W

8. Warranty and Support

ECO-WORTHY products are designed for reliability and performance. For any questions, technical assistance, or warranty claims, please contact ECO-WORTHY customer support.
You can typically find support contact information on the ECO-WORTHY official website or through your purchase platform. Please have your model number and purchase details ready when contacting support.