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Sunforce 68060

Coleman 60 Amp Digital Charge Controller User Manual

Model: 68060
Brand: Sunforce

1. Introduction and Overview

The Coleman 60 Amp Digital Charge Controller is designed to manage the power flow from your solar panels to your battery bank, preventing overcharge and optimizing battery life. It automatically detects 12 Volt or 24 Volt systems and can handle up to 900 Watts (12 Volt) or 1800 Watts (24 Volt) of solar input.

Key Features:

- Automatic system voltage detection (12V / 24V).
- Pulse Width Modulation (PWM) technology for efficient charging.
- LCD digital display for monitoring system status.
- Multiple levels of battery protection.
- Temperature compensation for accurate charging.
- Fully programmable settings.
- Rated power: 900W (12V) / 1800W (24V).
- Maximum charge current: 60 Amps.

2. Package Contents

Please verify that all items are present in your package:

- 1 x Coleman 60 Amp Digital Charge Controller

3. Setup and Installation

Before installation, ensure all components are compatible and that you have appropriate safety gear. Disconnect all power sources before making any connections.

3.1 Controller Overview

The image below shows the front panel of the Coleman 60 Amp Digital Charge Controller, highlighting its display and control buttons.



Figure 3.1: Front view of the Coleman 60 Amp Digital Charge Controller. It features an LCD screen, 'MENU' and 'LOAD' buttons, and indicators for charge and load status. The device is black with a silver display, and includes 'Coleman' branding and 'CE RoHS' certifications.

3.2 Connection Diagram

Follow the connection sequence carefully to ensure proper and safe operation. Connect the battery first, then the solar panel, and finally the load.

1. **Connect the Battery:** Connect the positive and negative terminals of your battery bank to the corresponding battery terminals on the charge controller. Ensure correct polarity. The controller will automatically detect the battery voltage (12V or 24V).
2. **Connect the Solar Panel:** Connect the positive and negative leads from your solar panel array to the solar panel input terminals on the charge controller. Ensure correct polarity.
3. **Connect the Load (Optional):** If you are connecting a DC load directly to the controller, connect its positive and negative leads to the load output terminals. Note that the load output is typically controlled by the controller's settings (e.g., low voltage disconnect).



Figure 3.2: Connection diagram illustrating the flow from a solar panel to the Coleman 60 Amp Digital Charge Controller, and then to a 12V battery. The diagram shows the solar panel at the top, connected to the controller in the middle, which then connects to the battery at the bottom, indicating a 12V system.

Important: Always connect the battery to the charge controller first, and disconnect the battery last, to prevent damage to the controller.

4. Operating Instructions

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

4.1 LCD Display and Navigation

The LCD screen displays various parameters such as battery voltage, charging current, load current, and accumulated charge/discharge. Use the 'MENU' button to cycle through different display screens and settings. The 'LOAD' button typically controls the DC load output.

4.2 Charging Modes

The controller utilizes Pulse Width Modulation (PWM) technology for efficient multi-stage charging, including bulk, absorption, and float stages, to ensure optimal battery health and longevity.

4.3 Programmable Settings

The controller is fully programmable, allowing you to adjust parameters such as battery type, low voltage disconnect (LVD), low voltage reconnect (LVR), and charge voltage settings. Refer to the detailed programming section in the full manual (if available) for specific instructions on adjusting these settings.

5. Maintenance

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

- **Cleanliness:** Keep the controller clean and free from dust and debris. Use a dry, soft 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 overheating.
- **Ventilation:** Ensure the controller has adequate ventilation to prevent overheating. Do not block ventilation openings.
- **Battery Health:** Monitor your battery's health regularly. Ensure proper electrolyte levels for flooded batteries and check for any signs of damage or swelling.

6. Troubleshooting

If you encounter issues with your Coleman 60 Amp Digital Charge Controller, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Controller display is off / No power	Loose battery connection; Battery voltage too low; Reversed polarity.	Check battery connections and polarity. Ensure battery voltage is above minimum operating threshold.
Battery not charging	No solar input; Reversed solar panel polarity; Faulty solar panel; Battery already full.	Check solar panel connections and polarity. Ensure sufficient sunlight. Verify solar panel output. Controller will stop charging when battery is full.
Load output not working	Load output disabled; Low battery voltage (LVD activated); Overload on load output.	Check controller settings for load output. Charge battery. Reduce load or check for short circuit.

If the problem persists after attempting these solutions, please contact customer support.

7. Specifications

Specification	Value
Model Number	68060
System Voltage	12V / 24V Auto Detect
Rated Charge Current	60 Amps
Max. Solar Input Power (12V)	900 Watts
Max. Solar Input Power (24V)	1800 Watts
Display Type	LCD

Specification	Value
Dimensions (L x W x H)	5 x 7.44 x 2 inches
Weight	1.63 Pounds
Material	Metal
Color	Gray
Manufacturer	Coleman
Brand	Sunforce

8. Warranty and Support

For warranty information and technical support, please contact Sunforce customer service. Keep your purchase receipt as proof of purchase.
Contact information can typically be found on the manufacturer's website or on the product packaging.

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