MECCANIXITY 100A

MECCANIXITY MPPT Solar Charge Controller 100A User Manual

Intelligent Regulator with LCD Display and Dual USB Port

1. Introduction

The MECCANIXITY MPPT Solar Charge Controller is designed to optimize the energy utilization efficiency of photovoltaic systems. It features a built-in maximum power tracking program to ensure your solar panels operate at their peak output point. This intelligent regulator is suitable for 12V/24V auto-adaptive systems and includes an LCD display for monitoring and configuration, along with dual USB ports for convenience.

2. Safety Information

- Ensure the battery has sufficient voltage for the controller to recognize the correct battery type during first use.
- Only use photovoltaic panels as a charging source. Do not connect DC or other power sources.
- Always connect the battery to the charge controller first, then connect the solar panel. When disconnecting, disconnect the solar panel first, then the battery.
- Ensure all wiring connections are secure and properly insulated to prevent short circuits or damage to equipment.
- Avoid touching bare wires. If necessary, use electrical tape to cover exposed wire ends.

3. Product Overview

Figure 3.1: Front view of the MECCANIXITY MPPT Solar Charge Controller 100A, showing the LCD display, control buttons, and dual USB ports.

Figure 3.2: Detailed view of the controller's features, including the LCD display, Menu, Page Up, Page Down/Manual buttons, and 2 USB ports.

Figure 3.3: Dimensions of the MECCANIXITY MPPT Solar Charge Controller 100A, measuring 170mm (6.69") in length, 92mm (3.62") in width, and 45mm (1.77") in height.

Key Features:

- **MPPT Technology:** Maximizes energy harvest from solar panels.
- **LCD Display:** Provides real-time status and data, allowing for easy mode switching and parameter configuration.
- **Dual USB Ports:** 5V/2A Max output for charging external devices.
- **Automatic Voltage Adaptation:** Supports 12V/24V systems.
- **Comprehensive Protection:** Includes over-voltage, short circuit, overload, over-charge, and over-discharge protection.

4. Setup and Installation

Wiring Diagram:

Figure 4.1: Wiring diagram illustrating connections for solar panel, battery, load, and inverter.

Installation Steps:

1. **Connect the Battery:** Connect the battery to the charge regulator's positive and negative terminals first. Ensure correct polarity.
2. **Connect the Solar Panel:** Connect the photovoltaic module (solar panel) to the charge regulator's positive and negative terminals.
3. **Connect the Load:** Connect the consumer (load) to the charge regulator's positive and negative terminals.

Important: Always connect the battery first and disconnect the solar panel first to prevent damage to the controller.

Installation Video:

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Video 4.1: This video demonstrates the proper installation sequence for the solar charge controller, emphasizing the importance of connecting the battery before the solar panel and disconnecting the solar panel first. It shows how to secure wiring and check connections.

5. Operating Instructions

LCD Display and Button Functions:

The LCD display provides real-time information about your solar system. The control buttons (Menu, Page Up, Page Down/Manual) allow you to navigate through different screens and adjust parameters.

- **Main Display:** Shows current battery voltage and charging status.
- **Float Voltage:** Displays the voltage at which the battery is maintained after full charge (e.g., 13.7V for 12V systems).
- **Discharge Reconnect:** The voltage at which the load will be reconnected after being disconnected due to low battery (e.g., 12.6V for 12V systems).
- **Discharge Stop:** The voltage at which the load will be disconnected to protect the battery from over-discharge (e.g., 10.7V for 12V systems).
- **Battery Type:** Allows selection of battery type (e.g., Sealed, Gel, Flooded).
- **Work Mode:** Configures load output modes (e.g., 24-hour output, dusk-to-dawn, timed output).

Press the 'Menu' button to cycle through different display interfaces. Use the 'Page Up' and 'Page Down/Manual' buttons to adjust settings when in configuration mode (typically by long-pressing the 'Menu' button to enter setting mode).

6. Maintenance

- Regularly check all wiring connections for tightness and corrosion.
- Keep the controller clean and free from dust and debris to ensure proper heat dissipation.
- Ensure adequate ventilation around the controller.
- Monitor the LCD display for any error codes or unusual readings.

7. Troubleshooting

Common Issues and Solutions:

- **No Display/No Power:** Check battery connections and voltage. Ensure the battery has sufficient charge.
- **Battery Not Charging:** Verify solar panel connections and ensure adequate sunlight. Check for shading on solar panels. Confirm correct battery type setting.
- **Load Not Working:** Check load connections. Ensure the battery voltage is above the discharge reconnect voltage. Verify load work mode settings.
- **Over-voltage/Over-current Protection:** The controller will automatically disconnect to protect the system. Identify the cause (e.g., too many solar panels, incorrect battery voltage) and rectify it before restarting.

Figure 7.1: The controller features a 7-point security protection system, including short circuit, open circuit, over current, over charge, over voltage, over load, and over discharge protection.

8. Specifications

Parameter	Value
Voltage	12V/24V Auto Adapt
Rated Charging Current	100A
Discharge Current	30A
Size	170*92*45 mm (6.69 x 3.62 x 1.77 inches)
Operating Temperature	-35-80°C / -31°F-176°F
Float Charge Voltage (12V/24V)	13.8V / 27.6V
USB Output	5V/2A Max
Item Weight	10.1 ounces

9. Warranty and Support

For warranty information and technical support, please refer to the product packaging or contact MECCANIXITY customer service directly. Keep your purchase receipt for warranty claims.