

VGEBY YCX-003

VGEBY YCX-003 MPPT Solar Charge Controller User Manual

Model: YCX-003

1. INTRODUCTION

The VGEBY YCX-003 MPPT Solar Charge Controller is designed to manage power flow from your solar panels to your battery bank and connected loads. It features an industrial-grade master chip for accurate monitoring and control, ensuring efficient charging and protection for your battery system. This controller automatically adapts to 12V or 24V systems and incorporates advanced Maximum Power Point Tracking (MPPT) technology for high charging efficiency.

Key functions include:

- Maintaining optimal battery charge levels.
- Protection against over-charging and over-discharging.
- Prevention of reverse charging from battery to solar panels at night.
- Reverse polarity protection for both battery and solar panels.
- Automatic load cut-off and recovery based on battery voltage.
- Built-in thunder protection.
- Automatic temperature compensation for charging voltage.

2. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your solar charge controller. Please follow these steps carefully.

2.1 Wiring Diagram

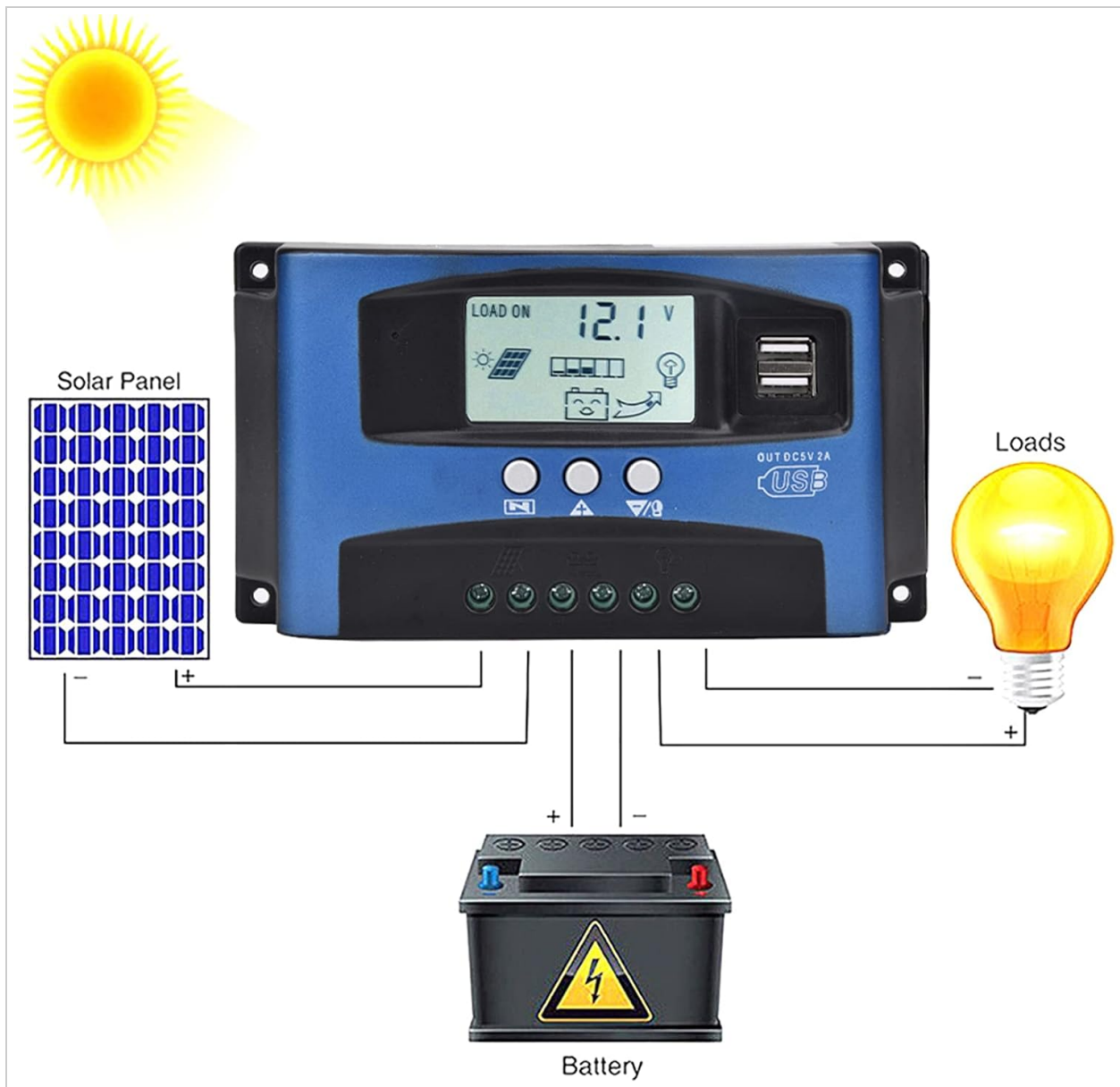


Figure 1: Wiring connections for the solar charge controller.

2.2 Connection Steps

Connect the components in the following order to prevent damage to the controller or other system components:

1. **Connect the Battery:** First, connect the battery to the controller's battery terminals. Ensure correct polarity (positive to positive, negative to negative). The controller will automatically detect the system voltage (12V or 24V).
2. **Connect the Solar Panel:** Next, connect the solar panel to the controller's solar panel terminals. Ensure correct polarity.
3. **Connect the Load:** Finally, connect your DC loads to the controller's load terminals. Ensure correct polarity.

Important: Always connect the battery first and disconnect the load first when disassembling the system.



Figure 2: Connection terminals on the side of the controller.

3. OPERATING INSTRUCTIONS

The VGEBY YCX-003 controller features a large LCD display and user-friendly buttons for monitoring and adjusting parameters.

3.1 LCD Display and Buttons



Figure 3: Front panel with LCD display and control buttons.

The LCD display provides real-time information on battery voltage, charging current, discharge current, and system status. The buttons allow you to navigate through display modes and adjust certain charging and discharging parameters.

3.2 Adjustable Parameters

The controller allows for adjustment of floating charge voltage, discharge cut-off voltage, and discharge recovery voltage. Refer to the on-screen menu for specific adjustment procedures. These parameters are factory-set to default values suitable for most lead-acid batteries but can be customized if needed.

3.3 USB Output

The controller includes a 5V/2A USB output for charging small electronic devices. This output is active when

the battery has sufficient charge.



Figure 4: USB charging capability.

4. MAINTENANCE

To ensure the longevity and optimal performance of your VGE BY YCX-003 MPPT Solar Charge Controller, periodic maintenance is recommended.

- **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 secure and free from corrosion. Loose connections can lead to power loss or overheating.
- **Ventilation:** Ensure the controller is installed in a well-ventilated area to prevent overheating.

5. TROUBLESHOOTING

The VGE BY YCX-003 controller is designed with several built-in protection features. If the system is not operating as expected, check the following:

- **No Display/Power:** Check battery connections and ensure the battery has sufficient voltage.

- **No Charging:** Verify solar panel connections and ensure adequate sunlight. Check for reverse polarity on solar panel connections.
- **Load Not Working:** Check load connections and ensure the battery voltage is above the discharge recovery voltage. The controller automatically cuts off the load if battery voltage is too low.
- **Error Codes/Warnings:** The controller has built-in protections for overheating, overcurrent, short circuit, open circuit, and reverse connection. If a fault occurs, the controller will automatically recover once the issue is resolved. Consult the display for any specific indicators.
- **Reverse Polarity:** The controller has reverse polarity protection for both the battery and solar panels. If connected incorrectly, the controller will not operate until the polarity is corrected.

6. TECHNICAL SPECIFICATIONS



Figure 5: VGE BY YCX-003 MPPT Solar Charge Controller.

Feature	Specification
Model	YCX-003
System Voltage	12V/24V Adaptive

Feature	Specification
Solar Panel Voltage	12V, 18V, 24V, 36V
Floating Charge Voltage	13.7V (default, adjustable)
Discharge Cut-Off Voltage	10.7V (default, adjustable)
Discharge Recovery Voltage	12.6V (default, adjustable)
Standby Current	<10mA
USB Output	5V/2A Max
Rated Current Options	40A, 50A, 60A, 100A
Max. PV Voltage	50V
Max. PV Input Power	750W (12V) / 1500W (24V)
Dimensions	Approx. 170 x 92 x 45mm (6.7 x 3.6 x 1.8 inches)
Material	ABS + ROHS
Manufacturer	VGEBY

7. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the documentation provided at the time of purchase or contact VGEBY customer service directly. Ensure you have your product model number (YCX-003) and purchase details available when seeking support.