

Ximimark XH-M604 Battery Charger Control Module User Manual

Model: XH-M604 | Brand: Ximimark

1. Introduction

The Ximimark XH-M604 Battery Charger Control Module is designed to manage the charging process of various DC 6-60V batteries, including lithium-ion, polymer, lead-acid, nickel-cadmium, and nickel-hydrogen types. This module allows users to set precise charging start and stop voltage thresholds, ensuring optimal battery health and preventing overcharge or deep discharge. It features a 3-digit LED display for real-time voltage monitoring and a high-power 30A relay for robust performance.

2. Product Overview

2.1 Key Features

- **Wide Voltage Range:** Supports DC 6-60V battery charging control.
- **Adjustable Thresholds:** User-settable charging initiation and stop voltages.
- **High Current Capacity:** Equipped with a 30A relay for large-capacity battery charging.
- **Digital Display:** 3-digit red LED for clear voltage parameter display.
- **Automatic Power Off:** Automatically cuts off charging when the stop voltage is reached, extending battery life and preventing overcharge.
- **Versatile Application:** Suitable for solar cells, new energy batteries, electric vehicle batteries, and more.

2.2 Component Identification

Refer to the diagram below for an identification of the main components on the XH-M604 module.

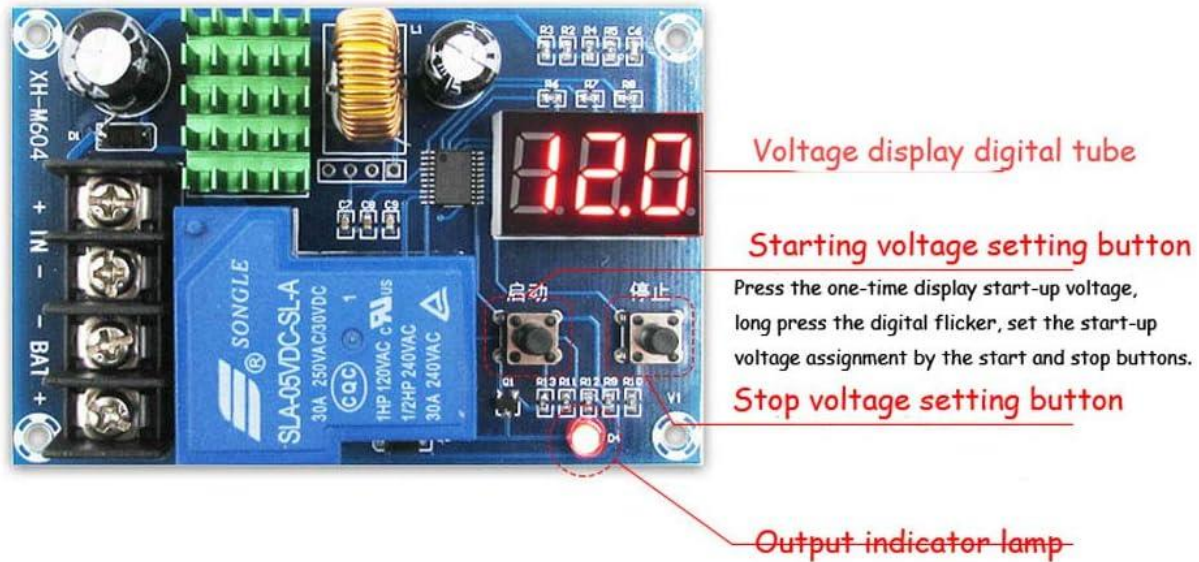


Figure 1: XH-M604 Module with labeled components. Key components include the voltage display digital tube, starting voltage setting button, stop voltage setting button, and output indicator lamp.

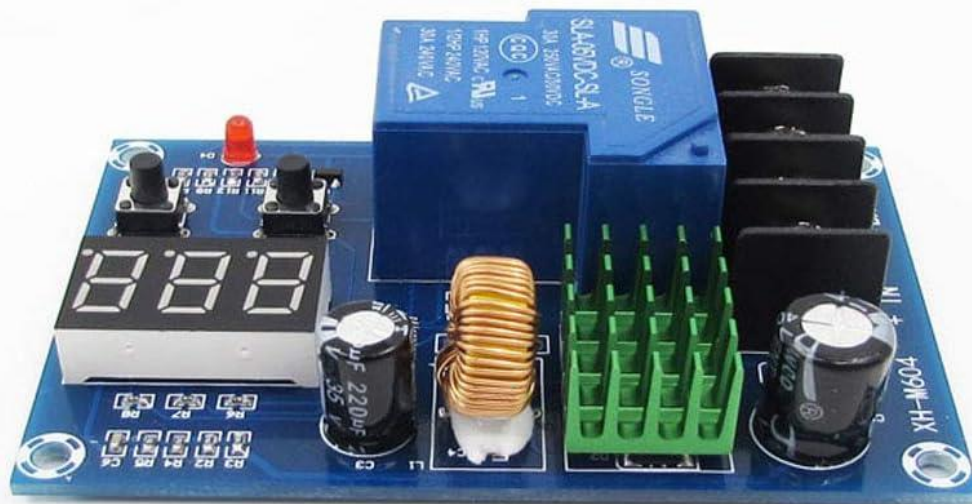
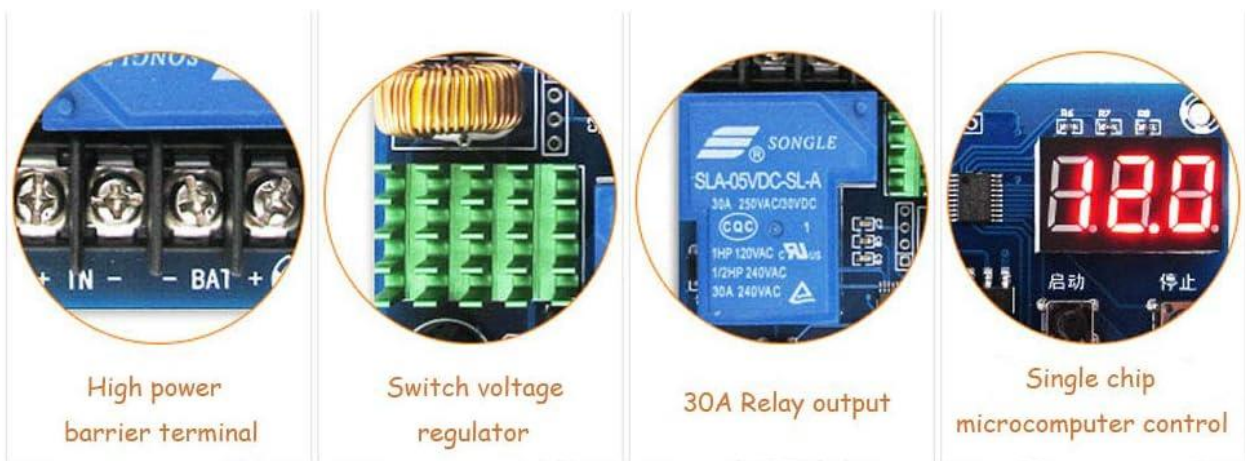


Figure 2: Detailed view of the XH-M604 module, highlighting the high power barrier terminal, switch voltage regulator, 30A relay output, and single-chip microcomputer control.

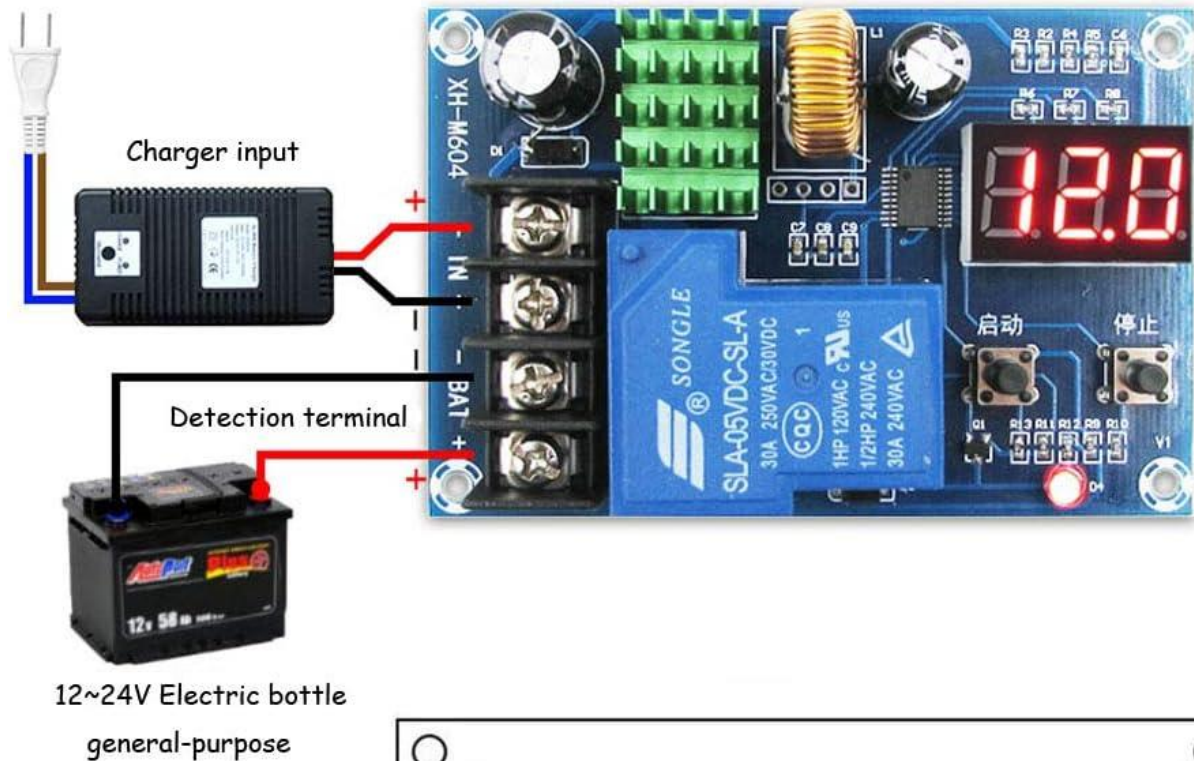
3. Specifications

Parameter	Value
Input Voltage	DC 6-60V (max 80V)
Output Type	Direct Output
Display Precision	0.1V
Control Precision	0.1V
Current Rating	30 Amps
Product Dimensions	0.71 x 2.13 x 0.71 inches
Item Weight	2.39 ounces (0.07 Kilograms)

4. Setup and Installation

Before connecting the module, ensure all power sources are disconnected. The XH-M604 module requires a DC power input for its operation and connects directly to the battery and charger.

1. **Identify Terminals:** Locate the input terminals (IN+ / IN-) for the charger and the battery terminals (BAT+ / BAT-) on the module.
2. **Connect Charger:** Connect the positive (+) output of your DC charger to the IN+ terminal and the negative (-) output to the IN- terminal of the module. Ensure the charger's voltage is within the 6-60V range.
3. **Connect Battery:** Connect the positive (+) terminal of the battery to the BAT+ terminal and the negative (-) terminal to the BAT- terminal of the module.
4. **Verify Connections:** Double-check all connections for correct polarity and secure fastening to prevent short circuits or damage.



12~24V Electric bottle
general-purpose

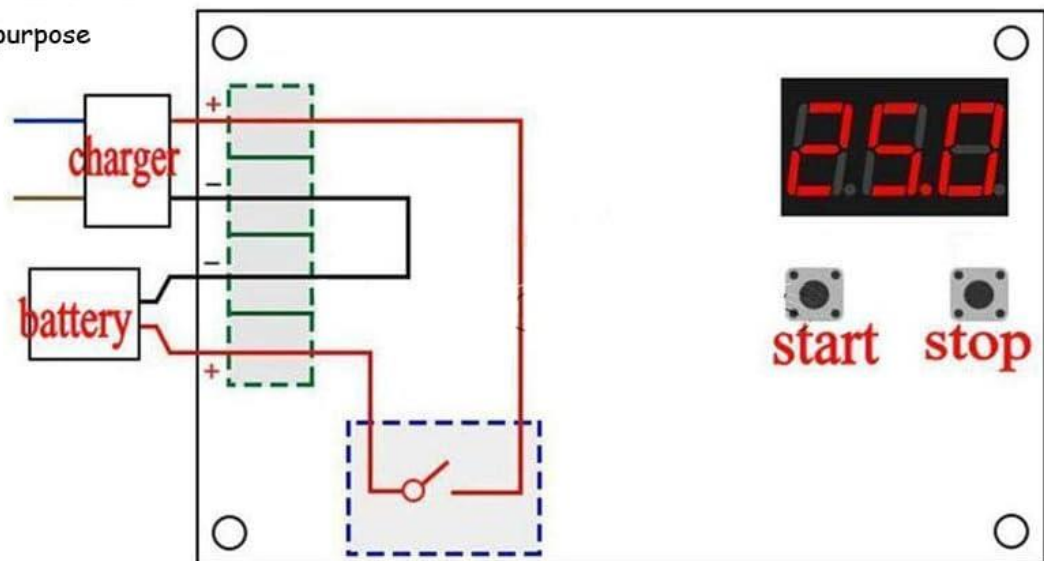


Figure 3: Wiring diagram showing connections for charger input and battery detection terminals. The module acts as an intermediary switch between the charger and the battery.

Note: The module itself is powered by the battery it is connected to, or by the charger input if the battery is completely depleted. Always ensure the input voltage from the charger is compatible with the battery being charged.

5. Operating Instructions

The XH-M604 module allows you to set the charging start voltage (lower limit) and stop voltage (upper limit).

1. **Power On:** Once connected, the module's LED display will show the current battery voltage.
2. **Set Starting Voltage (Lower Limit):**
 - Press the "Start" button (labeled "启动" or with an upward arrow) once. The display will flash, showing the currently set starting voltage.
 - While the display is flashing, use the "Start" button to increase the voltage and the "Stop" button (labeled "停止" or with a downward arrow) to decrease the voltage.
 - Once the desired starting voltage is set, wait a few seconds for the display to stop flashing and save the setting automatically.
3. **Set Stop Voltage (Upper Limit):**
 - Press the "Stop" button once. The display will flash, showing the currently set stop voltage.
 - While the display is flashing, use the "Start" button to increase the voltage and the "Stop" button to decrease the voltage.
 - Once the desired stop voltage is set, wait a few seconds for the display to stop flashing and save the setting automatically.
4. **Charging Process:**
 - When the battery voltage drops below the set starting voltage, the module will activate the relay, allowing the charger to begin charging the battery. The output indicator lamp will illuminate.
 - When the battery voltage reaches the set stop voltage, the module will deactivate the relay, cutting off the charging current to prevent overcharge. The output indicator lamp will turn off.

Important: Ensure the starting voltage is always set lower than the stop voltage. If the starting voltage is set higher than or equal to the stop voltage, the module may not function correctly.

6. Maintenance

The XH-M604 module is designed for reliable operation with minimal maintenance.

- **Keep Clean:** Periodically clean the module to prevent dust and debris accumulation, which can affect performance and heat dissipation. Use a soft, dry cloth.
- **Environmental Conditions:** Operate the module within its specified temperature and humidity ranges. Avoid exposure to moisture, corrosive gases, or extreme temperatures.
- **Connection Integrity:** Regularly check all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or damage.
- **Visual Inspection:** Inspect the module for any signs of physical damage, such as cracked components, burnt areas, or swollen capacitors.

7. Troubleshooting

Problem	Possible Cause	Solution
Module display is off or blank.	No power supply to the module or incorrect wiring.	Check input power connections (IN+ / IN- or BAT+ / BAT-). Ensure correct polarity and voltage.
Module does not start charging.	○ Battery voltage is above the set starting voltage. ○ Starting voltage is set higher than or equal to the stop voltage. ○ Charger is not providing power.	○ Allow battery voltage to drop below the set starting voltage. ○ Adjust the starting and stop voltages correctly (start < stop). ○ Verify charger functionality and connections.
Module does not stop charging.	○ Battery voltage has not reached the set stop voltage. ○ Stop voltage is set too high or incorrectly. ○ Faulty relay or module.	○ Monitor battery voltage. ○ Re-adjust the stop voltage to a suitable level. ○ If issues persist after checking settings, the module may be faulty and require replacement.

Problem	Possible Cause	Solution
Inaccurate voltage readings.	Poor connections or external interference.	Ensure all connections are tight and clean. Test with a multimeter to verify actual battery voltage.

8. Warranty and Support

For warranty information or technical support regarding your Ximimark XH-M604 Battery Charger Control Module, please refer to the retailer or manufacturer's official website. Keep your purchase receipt as proof of purchase.

If you encounter any problems during use, please contact the seller for assistance.