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Comimark XH-M609

Comimark XH-M609 DC6-60V Battery Low Voltage Disconnect Module

Model: XH-M609 | Brand: Comimark

1. Introduction

The Comimark XH-M609 is a DC 6-60V battery low voltage disconnect protection module designed to safeguard batteries from over-discharge. This module automatically cuts off the power supply to a load when the battery voltage drops below a user-defined threshold, thereby extending the battery's lifespan and preventing damage. It is suitable for various battery-powered systems, ensuring stable and reliable operation.

2. Features

- **Wide Voltage Range:** Operates effectively within a DC 6-60V range, making it suitable for a variety of battery-powered setups.
- **Low Voltage Protection:** Automatically disconnects the circuit when the battery voltage falls below a specified level, preventing over-discharge.
- **Battery Lifespan Extension:** By safeguarding against excessive discharge, it helps to significantly increase the overall lifespan of the battery.
- **Reliable Circuit Cut-off:** Ensures a stable and secure disconnection of the circuit, minimizing the risk of damage to the battery and associated components.
- **Versatile Application:** Ideal for use in multiple systems such as solar power storage, electric vehicles, and backup power supplies.

3. Package Contents

- 1 x Comimark XH-M609 DC6-60V Battery Low Voltage Disconnect Protect Undervoltage Module

4. Safety Information

Please read and understand all instructions before installing and operating this module. Failure to follow these instructions may result in electric shock, fire, or serious injury. Keep this manual for future reference.

- Ensure the power source is disconnected before making any wiring connections.
- Verify correct polarity (+/-) for all connections to prevent damage to the module and connected devices.
- Do not exceed the specified voltage and current ratings of the module.
- Install the module in a dry, well-ventilated area, away from flammable materials and moisture.
- If you are unsure about any aspect of installation or operation, consult a qualified technician.

5. Product Overview and Components

The XH-M609 module features a compact design with essential components for battery voltage monitoring and control.



Figure 1: Front view of the XH-M609 module. This image displays the digital voltage display, three push buttons for setting parameters, and

the green screw terminals for input and output connections. The black relay is also visible.



Figure 2: Angled view of the XH-M609 module. This perspective provides a clearer view of the inductor (copper coil), capacitors, and other surface-mounted components on the circuit board.



Figure 3: Rear view of the XH-M609 module. This image shows the underside of the circuit board, revealing the solder joints and electrical traces.

Key Components:

- **Digital Display:** Shows the current battery voltage and setting parameters.
- **Control Buttons:** Typically labeled 'SET', '+' (Up), and '-' (Down) for configuring the voltage thresholds.
- **Input Terminals (IN+ / IN-):** Connect to the battery or DC power source (6-60V).
- **Output Terminals (OUT+ / OUT-):** Connect to the load that needs protection.
- **Relay:** Electromechanical switch that disconnects the output when the voltage drops below the set threshold.

6. Setup and Installation

Follow these steps to correctly install and connect your XH-M609 module:

1. **Prepare Wiring:** Ensure all power sources are disconnected before making any connections. Use appropriate gauge

wires for your application.

2. **Connect Input Power:** Connect the positive (+) terminal of your DC power source (battery) to the 'IN+' terminal on the module. Connect the negative (-) terminal of your DC power source to the 'IN-' terminal on the module. Ensure correct polarity.
3. **Connect Load:** Connect the positive (+) terminal of your load to the 'OUT+' terminal on the module. Connect the negative (-) terminal of your load to the 'OUT-' terminal on the module.
4. **Verify Connections:** Double-check all wiring for correct polarity and secure connections. Loose connections can cause malfunction or damage.
5. **Apply Power:** Once all connections are secure, apply power to the input terminals. The digital display should illuminate, showing the current battery voltage.

7. Operating Instructions

The XH-M609 module allows you to set a specific low voltage disconnect threshold. When the battery voltage falls below this set value, the module will disconnect the load.

Setting the Disconnect Voltage:

1. **Enter Setting Mode:** With the module powered on and displaying the current voltage, press and hold the 'SET' button for approximately 3-5 seconds. The display will start flashing, indicating it is in setting mode.
2. **Adjust Voltage:** Use the '+' (Up) and '-' (Down) buttons to adjust the desired low voltage disconnect threshold. Increase the value with '+' and decrease with '-'.
3. **Save Setting:** After setting the desired voltage, press the 'SET' button again briefly to save the value and exit the setting mode. The display will stop flashing and return to showing the current battery voltage.

The module will now monitor the battery voltage. When the voltage drops to or below the set threshold, the relay will open, disconnecting the load. When the battery voltage recovers (e.g., after charging) to a level above the set threshold plus a small hysteresis (typically 0.5V-1V, which is often fixed), the relay will close, reconnecting the load.

8. Maintenance

The Comimark XH-M609 module requires minimal maintenance to ensure optimal performance and longevity.

- **Keep Clean:** Periodically clean the module with a soft, dry cloth to remove dust and debris. Do not use liquid cleaners.
- **Check Connections:** Regularly inspect all wiring connections to ensure they are secure and free from corrosion.
- **Environmental Conditions:** Ensure the module is operated within its specified temperature and humidity ranges. Avoid exposure to extreme conditions.

9. Troubleshooting

If you encounter issues with your XH-M609 module, refer to the following troubleshooting guide:

- **Module Not Powering On:**
  - Check if the input voltage is within the 6-60V DC range.
  - Verify that the input power connections (IN+ and IN-) are correctly wired with proper polarity.
  - Ensure the power source is active and providing sufficient voltage.

- **Module Not Disconnecting Load:**
  - Confirm that the set low voltage disconnect threshold is appropriate for your battery type and desired protection level.
  - Check if the actual battery voltage has dropped below the set threshold.
  - Ensure the load current does not exceed the relay's maximum current rating.
- **Module Disconnecting/Reconnecting Erratically:**
  - This could indicate an unstable power supply or fluctuating battery voltage.
  - Check for loose wiring connections at both input and output terminals.
  - Ensure the module is not exposed to excessive electrical noise or interference.
- **Incorrect Voltage Reading on Display:**
  - Verify the input voltage with a multimeter to compare against the module's display.
  - Ensure connections are solid and free from resistance.

10. Specifications

Parameter	Value
Brand	Comimark
Model Number	XH-M609 (Item model number: LY352)
Input Voltage Range	DC 6-60V
Output Type	Direct Output (Relay controlled)
Voltage Accuracy	0.1V
Item Weight	1.06 ounces
Package Dimensions	5.71 x 3.82 x 0.51 inches

11. Warranty and Support

For warranty information or technical support, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

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