Drhomeam Q968DQB56UP0B5RGH2CE9

A30-U3 Voltage Monitor Module User Manual

Model: Q968DQB56UP0B5RGH2CE9 | Brand: Drhomeam

1. Introduction

The Drhomeam A30-U3 Voltage Monitor Module is a versatile DC 6-80V voltage monitoring relay designed for precise overvoltage and undervoltage control. It integrates time delay mechanisms, making it suitable for various applications such as voltage monitoring, charge and discharge control, and protection systems. This manual provides essential information for the proper setup, operation, and maintenance of your A30-U3 module.

Figure 1: A30-U3 Voltage Monitor Module. This image shows the compact black casing of the module, featuring a digital display and "SET" and "ENTER" buttons for configuration. The top panel indicates connection points for 'Volt+', 'GND', 'Power+', 'NC', 'COM', and 'NO'.

2. Features

- **Wide Power Supply Range:** Operates with a DC 6V to 80V power supply, ensuring broad compatibility.
- **High Contact Load:** Features a robust contact load of 30A at 250V AC or 30V DC for reliable performance.
- **Adjustable Time Delay:** Supports delayed opening and closing modes with an adjustable delay time from 0 to 999 seconds.
- **Multiple Working Modes:** Provides four distinct working modes, including voltage control timers for both on-delay and off-delay operations.
- **Voltage Detection Channel:** Equipped with one voltage detection channel and a set of relay switch outputs (normally open and normally closed).
- **Versatile Applications:** Ideal for voltage monitoring, charge/discharge control, and overvoltage/undervoltage protection.

3. Specifications

Parameter	Value
Working Power Supply	DC 6V to 80V
Contact Load (Normally Open)	30A/250V AC or 30A/30V DC
Contact Load (Normally Closed)	20A/250V AC or 20A/30V DC
Time Delay Range	0 to 999 seconds
Detection Channels	1 Voltage Detection Channel
Output Type	1 set of relay switch outputs (NO, NC, COM)
Product Dimensions	3.54 x 1.97 x 1.57 inches
Product Weight	3.07 ounces

4. Setup and Installation

Proper wiring is crucial for the safe and effective operation of the A30-U3 module. Refer to the wiring diagram below and ensure all connections are secure before applying power.

4.1 Wiring Connections

- **Power Input:** Connect your DC 6-80V power supply to the 'Power+' (positive) and 'GND' (negative) terminals.
- **Voltage Detection:** Connect the voltage source you wish to monitor to the 'Volt+' (positive) and 'GND' (negative) terminals. Ensure this is within the 6-80V range.
- **Relay Output:** The module provides a single-pole double-throw (SPDT) relay output.
  - **COM (Common):** This is the common terminal for the relay switch.
  - **NO (Normally Open):** This terminal is open (disconnected) when the relay is de-energized and closes (connects to COM) when the relay is energized.
  - **NC (Normally Closed):** This terminal is closed (connected to COM) when the relay is de-energized and opens (disconnects from COM) when the relay is energized.

  Connect your load circuit to the appropriate COM and NO/NC terminals based on your application's requirements.

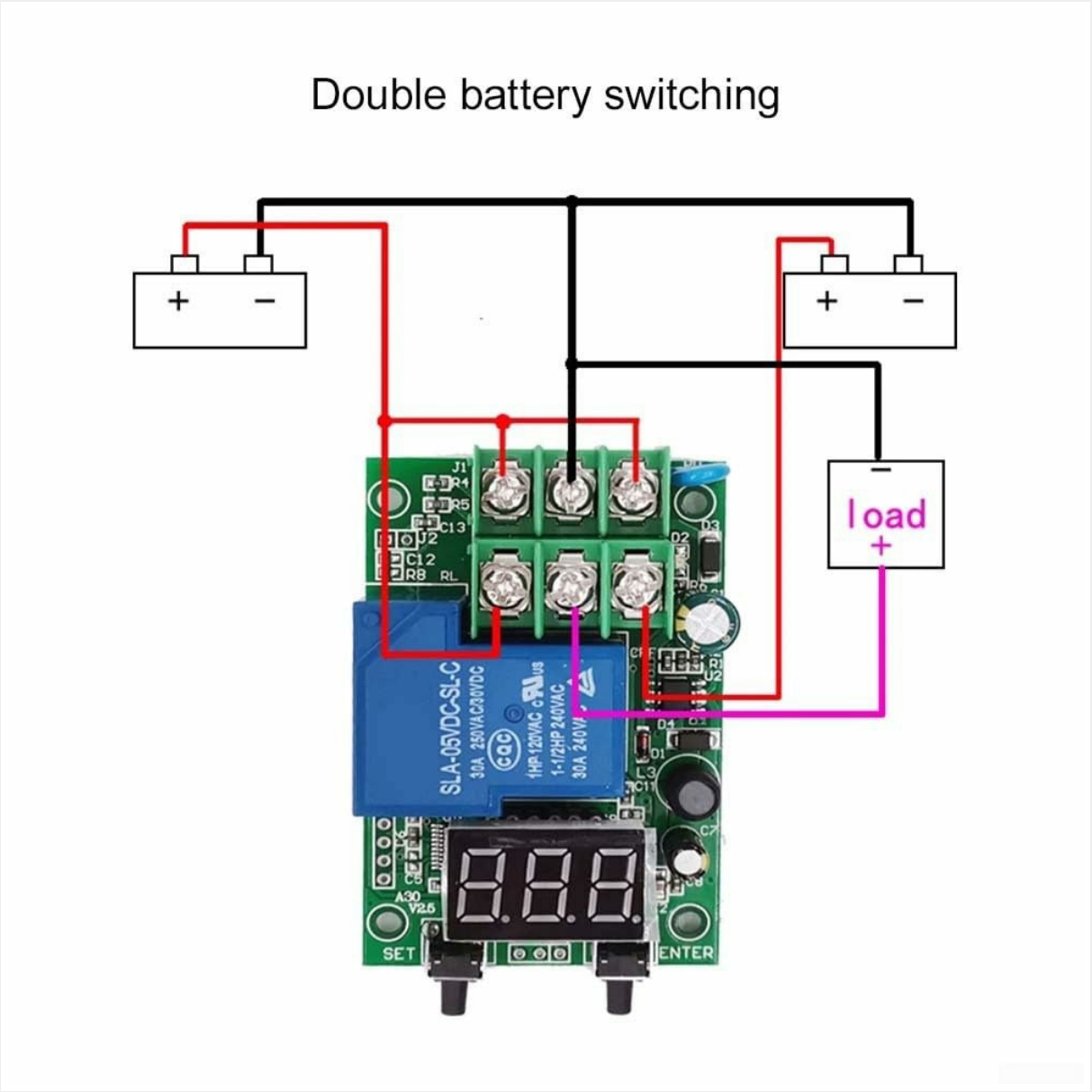

Figure 2: Example Wiring Diagram. This diagram illustrates how to connect the A30-U3 module for a dual-battery switching application. It clearly labels positive and negative terminals for two batteries, the module's power input (Power+, GND), voltage sensing input (Volt+, GND), and the relay output (NC, COM, NO) connected to a load. Red lines indicate positive connections, black lines indicate negative/ground, and colored lines (pink, purple) indicate load connections.

Safety Precaution: Always disconnect power before making or changing any wiring connections. Ensure correct polarity for DC connections to prevent damage to the module.

5. Operating Instructions

The A30-U3 module features a digital display and two control buttons ("SET" and "ENTER") for configuration. The module supports various operating modes and adjustable time delays.

5.1 Display and Controls

Figure 3: Digital Display. This image provides a magnified view of the module's three-digit digital display, which shows voltage readings or parameter values during configuration.

- **Digital Display:** Shows the current voltage reading or parameter values during setup.
- **SET Button (▼):** Used to enter the setting mode and navigate through parameters. Also used to decrease values.
- **ENTER Button (▼):** Used to confirm selections and increase values.

5.2 Working Modes

The module offers four primary working modes for voltage control:

1. **Mode A: Voltage Control Timer (On Delay):** The relay activates after a set delay once the monitored voltage reaches a specified threshold.
2. **Mode B: Voltage Control Timer (Off Delay):** The relay deactivates after a set delay once the monitored voltage drops below a specified threshold.
3. **Mode C: Overvoltage Protection:** The relay activates/deactivates when the voltage exceeds a high threshold.
4. **Mode D: Undervoltage Protection:** The relay activates/deactivates when the voltage falls below a low threshold.

Detailed instructions for configuring each mode and setting voltage thresholds and time delays will typically involve pressing the "SET" button to cycle through parameters and using "SET" and "ENTER" to adjust values. Refer to the specific programming guide that may accompany your module for precise step-by-step instructions on parameter setting.

5.3 Time Delay Adjustment

The time delay for both opening and closing operations can be adjusted from 0 to 999 seconds. This setting is typically accessed within the configuration menu for each working mode.

6. Maintenance

The A30-U3 Voltage Monitor Module is designed for long-term reliability with minimal maintenance. Follow these guidelines to ensure optimal performance:

- **Keep Clean and Dry:** Ensure the module is kept in a clean, dry environment, free from dust, moisture, and corrosive substances.
- **Inspect Connections:** Periodically check all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or damage.
- **Avoid Physical Stress:** Do not subject the module to excessive vibration, shock, or extreme temperatures outside its operating range.
- **Ventilation:** Ensure adequate airflow around the module, especially if it is installed in an enclosed space, to prevent overheating.

7. Troubleshooting

If you encounter issues with your A30-U3 module, consider the following troubleshooting steps:

- **No Power/Display Off:**
  - Check the power supply connections ('Power+' and 'GND') for correct polarity and secure contact.
  - Verify that the input voltage is within the specified DC 6-80V range.
  - Ensure the power supply itself is functioning correctly.
- **Relay Not Activating/Deactivating:**
  - Confirm that the voltage detection input ('Volt+') is correctly connected and receiving the expected voltage.
  - Check the configured voltage thresholds and time delay settings. Ensure they are appropriate for your application.
  - Verify the selected working mode (e.g., Overvoltage, Undervoltage, On-delay, Off-delay).
  - Inspect the load connected to the relay output (COM, NO, NC) for proper wiring and functionality.
- **Incorrect Voltage Reading:**
  - Ensure the 'Volt+' and 'GND' connections for voltage detection are secure and free from interference.
  - Compare the module's reading with a calibrated multimeter to check for discrepancies.
- **Module Unresponsive to Buttons:**
  - Briefly disconnect and reconnect power to reset the module.
  - Ensure buttons are not physically stuck or damaged.

If the problem persists after attempting these steps, contact Drhomeam customer support for further assistance.

8. Warranty and Support

For warranty information, technical support, or service inquiries regarding your A30-U3 Voltage Monitor

Module, please refer to the documentation provided with your purchase or contact Drhomeam customer service directly. Contact details can typically be found on the manufacturer's official website or product packaging.