

## Zerone SRD-12VDC-SL-C

# Zerone 12V Delay Timer Relay Module User Manual

Model: SRD-12VDC-SL-C

## 1. INTRODUCTION

This manual provides comprehensive instructions for the Zerone 12V Delay Timer Relay Module, model SRD-12VDC-SL-C. This versatile module is designed for various applications requiring timed control, such as DIY smart home projects, tachographs, GPS systems, PLC control, industrial automation, electronic experiments, and robotics. Please read this manual thoroughly before installation and operation to ensure correct usage and optimal performance.

## 2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the module:

- Ensure the power supply voltage matches the module's specified input (12V DC).
- Do not exceed the maximum current and voltage ratings for the relay contacts (250V AC 10A or 30V DC 10A).
- Disconnect all power before making or changing any wiring connections.
- Avoid touching live electrical components.
- Install the module in a dry, non-condensing environment, away from flammable materials.
- If you are unsure about any wiring or electrical procedures, consult a qualified electrician.

## 3. PRODUCT OVERVIEW

The Zerone 12V Delay Timer Relay Module is a compact and robust device featuring a single-channel relay with adjustable delay times. It incorporates a potentiometer for fine-tuning the delay and DIP switches for selecting broad time ranges.

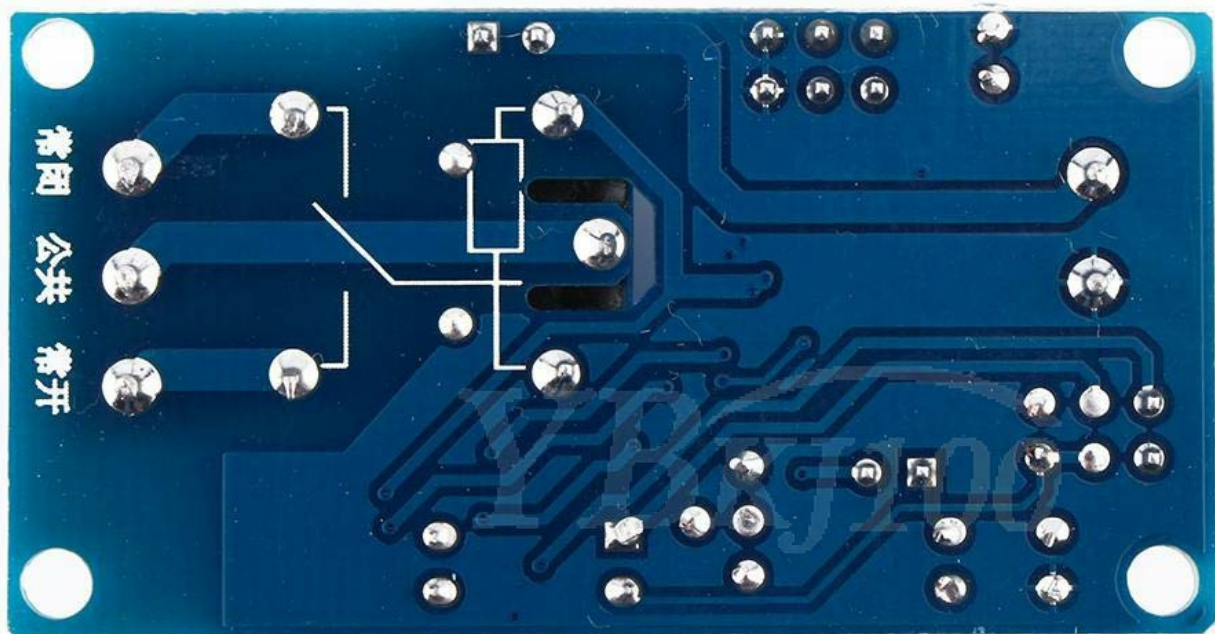


**Figure 3.1:** Top-down view of the Zerone 12V Delay Timer Relay Module. This image displays the Zerone 12V Delay Timer Relay Module from a top-down perspective, showing the main relay component, terminal blocks for input and output, the potentiometer for time adjustment, and the DIP switches for time range selection.

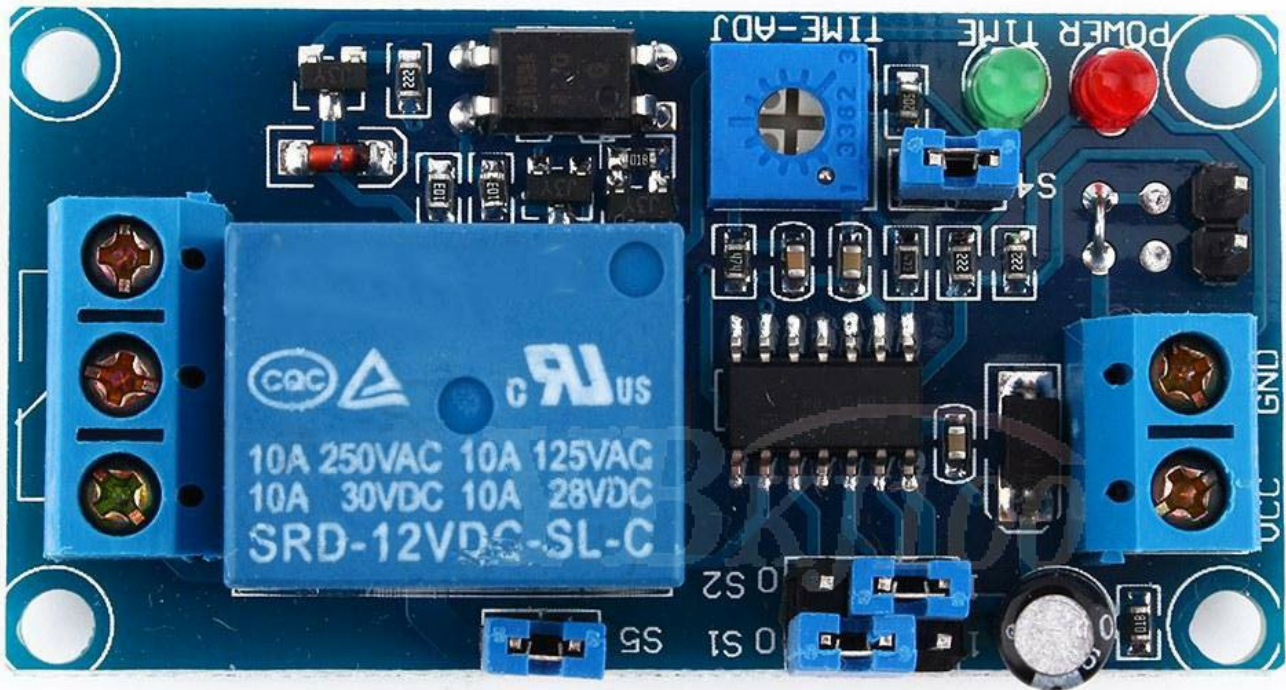


**Figure 3.2:** Top-down view of the Zerone 12V Delay Timer Relay Module with visible labels. A top-down view of the module, clearly showing the labels for 'POWER TIME' and 'TIME-ADJ' near the potentiometer, and 'VCC', 'GND' on the power input terminal block, and 'NO', 'COM', 'NC' on the relay output terminal block.

### Key Components:

- **Power Input Terminals (VCC, GND):** For connecting the 12V DC power supply.
- **Relay Output Terminals (NO, COM, NC):** Normally Open, Common, and Normally Closed contacts for controlling external loads.
- **Time Adjustment Potentiometer:** A blue adjustable resistor (trimmer) used to fine-tune the delay duration within the selected range.
- **DIP Switches (S1, S2, S4):** Used to select one of eight predefined time ranges.
- **Indicator LEDs:** Typically one for power status and another for relay status.

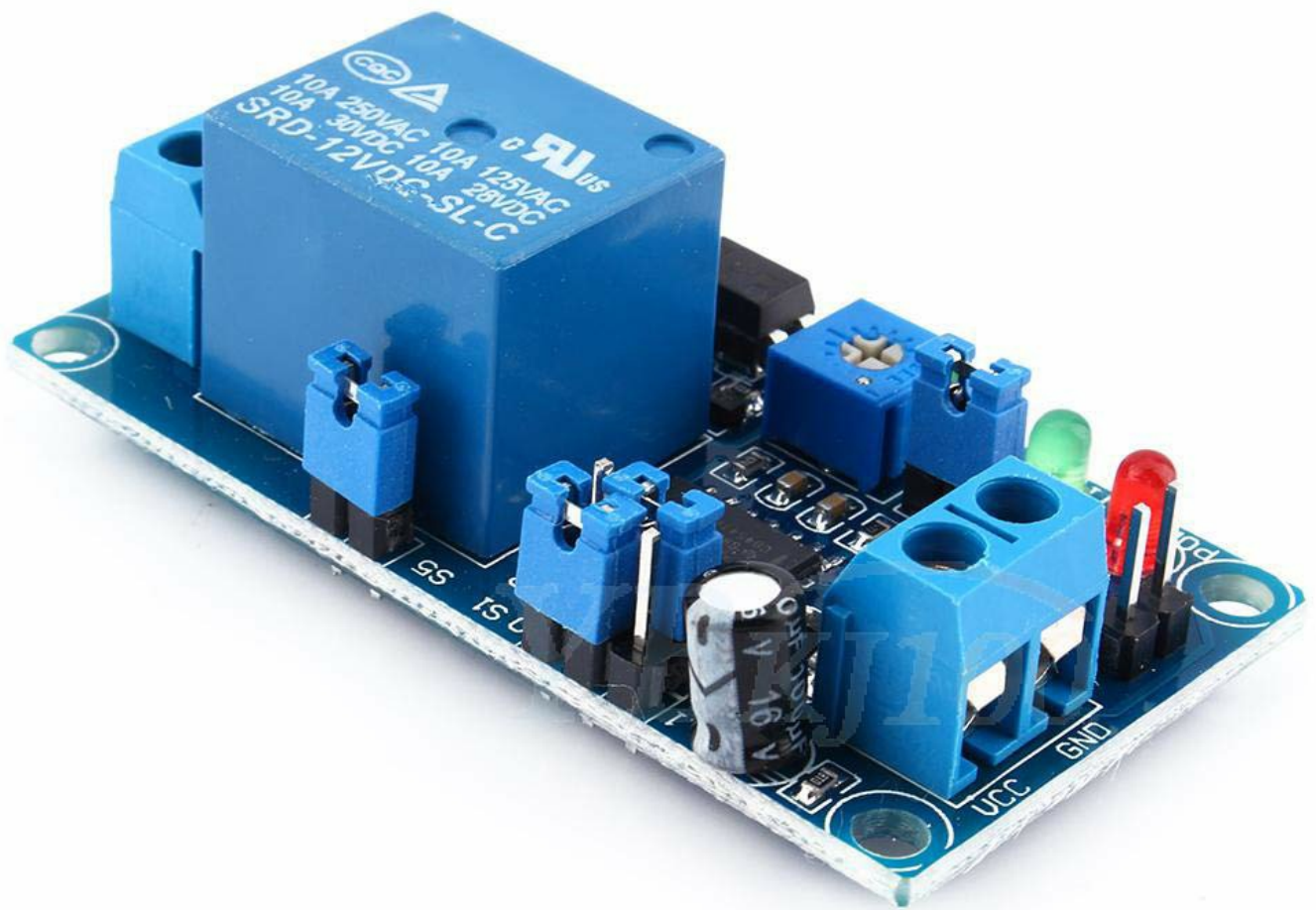


**Figure 3.3:** Angled view of the Zerone 12V Delay Timer Relay Module. An angled view of the relay module, providing a closer look at the blue relay, the screw terminal blocks for power and load connections, and the small red and green indicator LEDs.

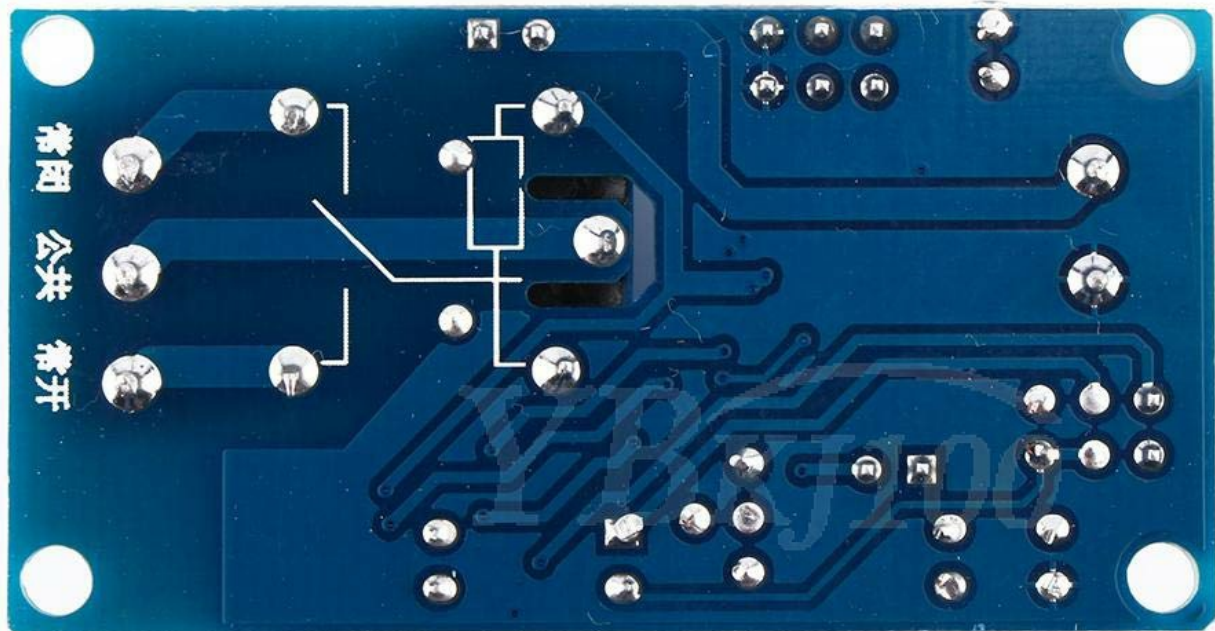


**Figure 3.4:** Bottom view of the Zerone 12V Delay Timer Relay Module. This image shows the underside of the relay module, revealing the intricate circuit board traces and solder points, which form the electrical connections for the components.

## 4. SETUP

### 4.1. Wiring Connections

Before making any connections, ensure the power supply is disconnected.

- **Power Input:** Connect your 12V DC power supply to the VCC (positive) and GND (negative) terminals. Observe polarity carefully.
- **Load Connection:** The relay acts as a switch for your external device (load). It has three terminals:
  - **COM (Common):** This is the common terminal of the relay switch.
  - **NO (Normally Open):** The circuit between COM and NO is open (disconnected) when the relay is de-energized and closes (connects) when the relay is energized.
  - **NC (Normally Closed):** The circuit between COM and NC is closed (connected) when the relay is de-energized

and opens (disconnects) when the relay is energized.

Connect your load according to your application's requirements (e.g., for a device to turn on after a delay, connect it between COM and NO).

4.2. Time Range Selection

The module offers 8 time ranges, selected by adjusting the S1, S2, and S4 DIP switches. The potentiometer then fine-tunes the delay within the chosen range. Refer to the table below for switch configurations:

| S1  | S2  | S4  | Time Range                      |
|-----|-----|-----|---------------------------------|
| OFF | OFF | OFF | 0.1 to 1 second                 |
| ON  | OFF | OFF | 1 to 10 seconds                 |
| OFF | ON  | OFF | 10 to 100 seconds (1.6 minutes) |
| ON  | ON  | OFF | 1 to 10 minutes                 |
| OFF | OFF | ON  | 10 to 100 minutes (1.6 hours)   |
| ON  | OFF | ON  | 1 to 10 hours                   |
| OFF | ON  | ON  | 10 to 100 hours (4.1 days)      |
| ON  | ON  | ON  | 100 to 1000 hours (41 days)     |

*Note: 'ON' typically means the switch is in the down position, and 'OFF' means it's in the up position, but this can vary by module. Refer to any markings on your specific module.*

4.3. Time Adjustment

Once the desired time range is selected using the DIP switches, use a small screwdriver to carefully turn the potentiometer (labeled 'TIME-ADJ' or similar) clockwise to increase the delay time and counter-clockwise to decrease it within the chosen range.

5. OPERATING INSTRUCTIONS

After completing the wiring and setting the desired time range and adjustment:

- 1. Apply Power:** Connect the 12V DC power supply to the VCC and GND terminals. The power indicator LED should illuminate.
- 2. Delay Function:** The module typically operates in a delay-on or delay-off mode depending on its internal configuration. When power is applied (or a trigger is received, if applicable), the module will begin its timing sequence.
- 3. Relay Activation:** After the set delay period, the relay will change its state (e.g., NO contacts close, NC contacts open), activating or deactivating the connected load. The relay status LED will indicate this change.
- 4. Cycle:** The module will maintain the relay's state until power is removed or a new trigger event occurs, depending on the specific operating mode (e.g., single shot, retriggerable).

6. MAINTENANCE

The Zerone Delay Timer Relay Module is designed for reliable operation with minimal maintenance. Follow these guidelines:

- Keep the module clean and free from dust and debris.
- Ensure the operating environment is dry and within the specified temperature range.
- Periodically inspect wiring connections for tightness and signs of corrosion.
- Avoid exposing the module to excessive vibration or mechanical shock.

## 7. TROUBLESHOOTING

If you encounter issues with your module, consider the following:

- **Module Not Powering On:**
  - Check the 12V DC power supply connection and ensure correct polarity (VCC to positive, GND to negative).
  - Verify the power supply is providing the correct voltage.
- **Incorrect Delay Time:**
  - Confirm the DIP switches (S1, S2, S4) are set correctly for the desired time range.
  - Adjust the potentiometer to fine-tune the delay within the selected range.
- **Relay Not Switching:**
  - Ensure the module is powered correctly and the power indicator LED is on.
  - Check the load wiring to the COM, NO, and NC terminals.
  - Verify the load's current and voltage requirements do not exceed the relay's capacity.
- **Intermittent Operation:**
  - Check for loose wiring connections.
  - Ensure the module is not exposed to electromagnetic interference.

## 8. SPECIFICATIONS

| Parameter                 | Value                                                  |
|---------------------------|--------------------------------------------------------|
| Input Voltage             | 12V DC                                                 |
| Quiescent Dissipation     | 13mA                                                   |
| Maximum Power Consumption | 48mA                                                   |
| Relay Load Capacity (AC)  | 250V AC, 10A                                           |
| Relay Load Capacity (DC)  | 30V DC, 10A                                            |
| Module Dimensions         | 5.5 x 3 cm (2.16 x 1.18 inches)                        |
| Delay Time Ranges         | 0.1 seconds to 1000 hours (8 selectable ranges)        |
| Mounting Type             | Through Hole (for panel mounting or custom enclosures) |

## 9. WARRANTY AND SUPPORT

For warranty information or technical support regarding your Zerone 12V Delay Timer Relay Module, please refer to the purchase documentation or contact your retailer. Ensure you have your product model number (SRD-12VDC-SL-C) and

purchase details available when seeking support.

## ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

### Name

Anonymous

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### Question

Example: How do I reset this device or fix this error?

### Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question