

Working Principle

This module is an external signal trigger delay module. Operation

sequence: Step 1 → Step 2 → Step 3 → Step 4

1. Supply power to the module (12V or 5V), the relay will pull in immediately. At this time, the output terminal status: Normally Open (NO) connects to Common (COM); Normally Closed (NC) disconnects from Common (COM).

2. After a 0–25 second delay, the relay releases. Output terminal status changes: NO disconnects from COM; NC connects to COM.

3. The relay stays released continuously until an external trigger signal is received, then the relay pulls in again.

4. After successful triggering, the relay will release after another 0–25 second delay. Note: If the trigger signal remains present, the relay stays pulled in. Only after the trigger signal disappears will the module start the delay countdown, and the relay releases after 0–25 seconds. The relay then returns to its pre-trigger state: NO open from COM, NC closed to COM.

Additional note: The trigger signal can be powered by an independent power supply system separate from the module's main power supply. It supports both high-level pulse and low-level pulse triggering, offering strong versatility.

Module Features

1. Dimension: 52mm (Length) × 16mm (Width)
2. Operating voltage: 12V DC
3. Load control capacity: Supports loads below 10A 250VAC (AC) and 10A 30VDC (DC)
4. Delay time adjustable via potentiometer, adjustable range 0–25 seconds by default
5. Delay time formula: $T = 1.1RC$ Example: 47μF capacitor + 500KΩ resistor $T = 1.1 \times 500000 \times 0.000047 = 25.85$ seconds
6. Built-in anti-reverse power diode for safe wiring
7. Optocoupler isolation on signal input terminal, strong anti-interference performance. Compatible with both high-level and low-level control signals, ideal for industrial control applications.
8. Retriggerable function: If a new trigger signal arrives during the ongoing delay cycle (e.g. 10s set delay), the timer resets to restart the full 10-second countdown based on the latest trigger signal. After the delay finishes, the module awaits the next trigger for another delay cycle.
9. Zero standby power consumption: Nearly zero current draw in standby mode, greatly extending automotive battery service life. Eco-friendly product.

Product Applications

Robots, automotive light delay control, smart product development, automation equipment, PLC development, smart home, anti-theft alarm delay, electronic development and more.

Common Wiring Diagram Usage Scenarios

Automotive reading lights, reversing radar, reversing cameras, etc.

Module Function Description

When a reversing signal is received, the module turns on the reversing radar and maintains power for a set delay T. It cuts off power to the reversing radar after the vehicle finishes reversing.

