

[Manuals.plus](#) /

› [YWBL-WH](#) /

› YWBL-WH 1 Channel Relay Module (5V) Instruction Manual

YWBL-WH YWBL-WHo58myapcgk-11

YWBL-WH 1 Channel Relay Module (5V) Instruction Manual

Model: YWBL-WHo58myapcgk-11

INTRODUCTION

This manual provides detailed instructions for the YWBL-WH 1 Channel Relay Module, 5V version. This module is designed for controlling high-power AC or DC loads using a low-power trigger signal, featuring optocoupler isolation for enhanced safety and signal integrity. It supports both high and low-level trigger modes, making it versatile for various electronic projects and industrial applications.

SAFETY INFORMATION

Please read and understand all instructions before operating this module. Improper use can lead to electric shock, fire, or damage to the module and connected equipment. Always ensure power is disconnected before making any connections or adjustments. This module handles high voltage and current; exercise extreme caution. It is recommended that installation and wiring be performed by qualified personnel.

- Do not exceed the specified voltage and current ratings.
- Ensure proper insulation for all high-voltage connections.
- Avoid touching live terminals when the module is powered.
- Keep the module away from moisture and extreme temperatures.

SPECIFICATIONS

The YWBL-WH 1 Channel Relay Module (5V) offers robust performance for various switching applications.

Item Type: Relay Module

Operating Voltage: 5V DC

Relay Type: 1 Channel, 30A

Maximum Load (Normally Open Interface): AC 250V / 30A, DC 30V / 30A

Isolation: SMD Optocoupler Isolation

Trigger Current: 2-4mA

Dimensions: Approximately 4.33 x 3.15 x 1.18 inches (110 x 80 x 30 mm)

Weight: Approximately 1.69 ounces (48 grams)

Electrical Characteristics (5V Version)

Parameter	Value
Quiescent Current	5mA
Maximum Current	190mA
Trigger Current	2-4mA

MODULE INTERFACE DESCRIPTION

Understanding the module's interface is essential for correct wiring and operation. Refer to the image below for visual identification of the terminals.

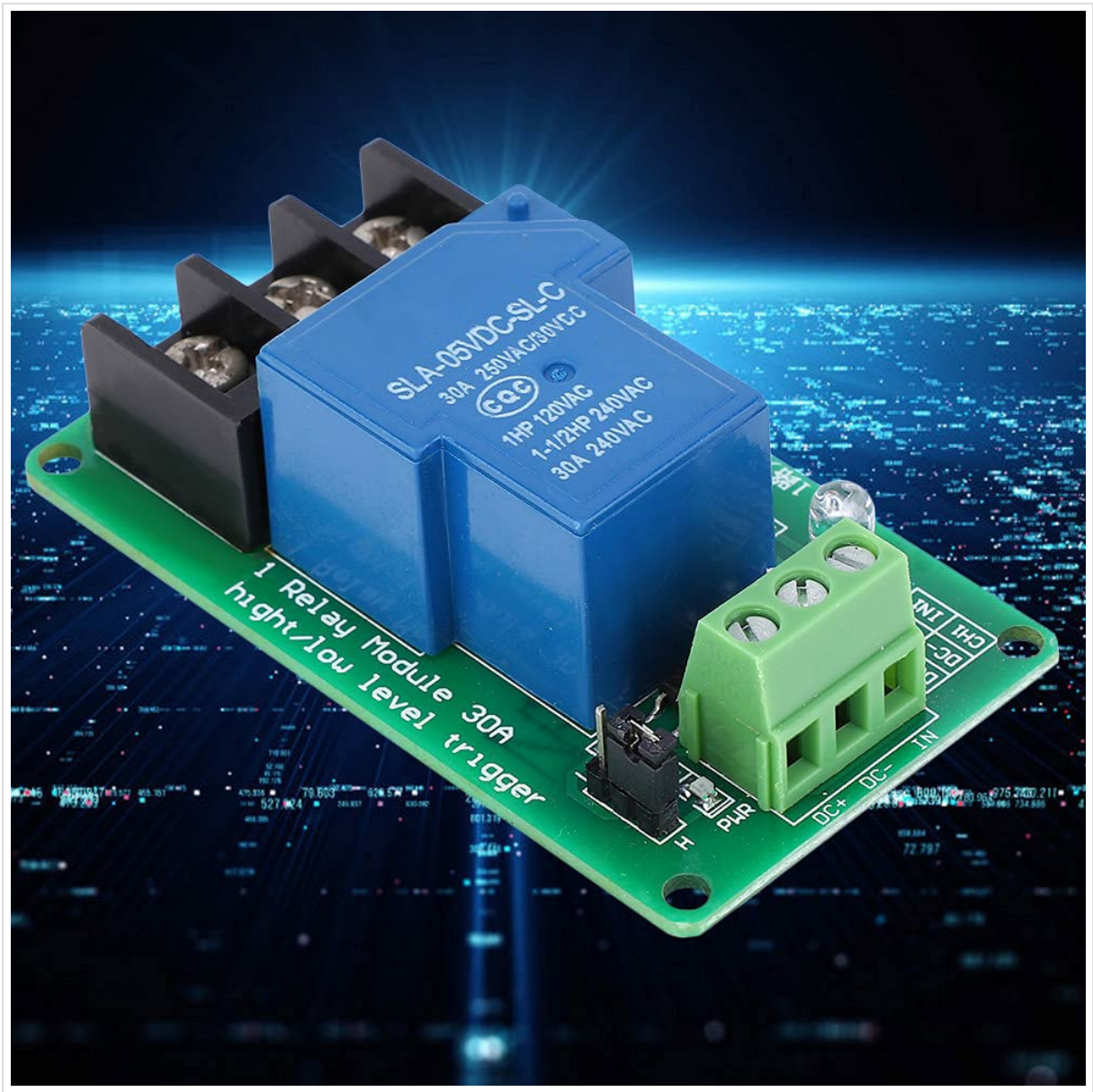


Figure 1: Top view of the 1 Channel Relay Module, highlighting input and output terminals.

- 1. **DC +:** This terminal is for the positive DC power supply input to the module. Connect the positive

voltage of your trigger terminal power supply here.

2. **DC -:** This terminal is for the negative DC power supply input to the module. Connect the negative voltage of your trigger terminal power supply here.
3. **IN:** This is the trigger input terminal. The default trigger voltage is the same as the power supply voltage (DC+). This input controls the relay's state.
4. **High / Low Level Trigger Mode Selection (Jumper):**

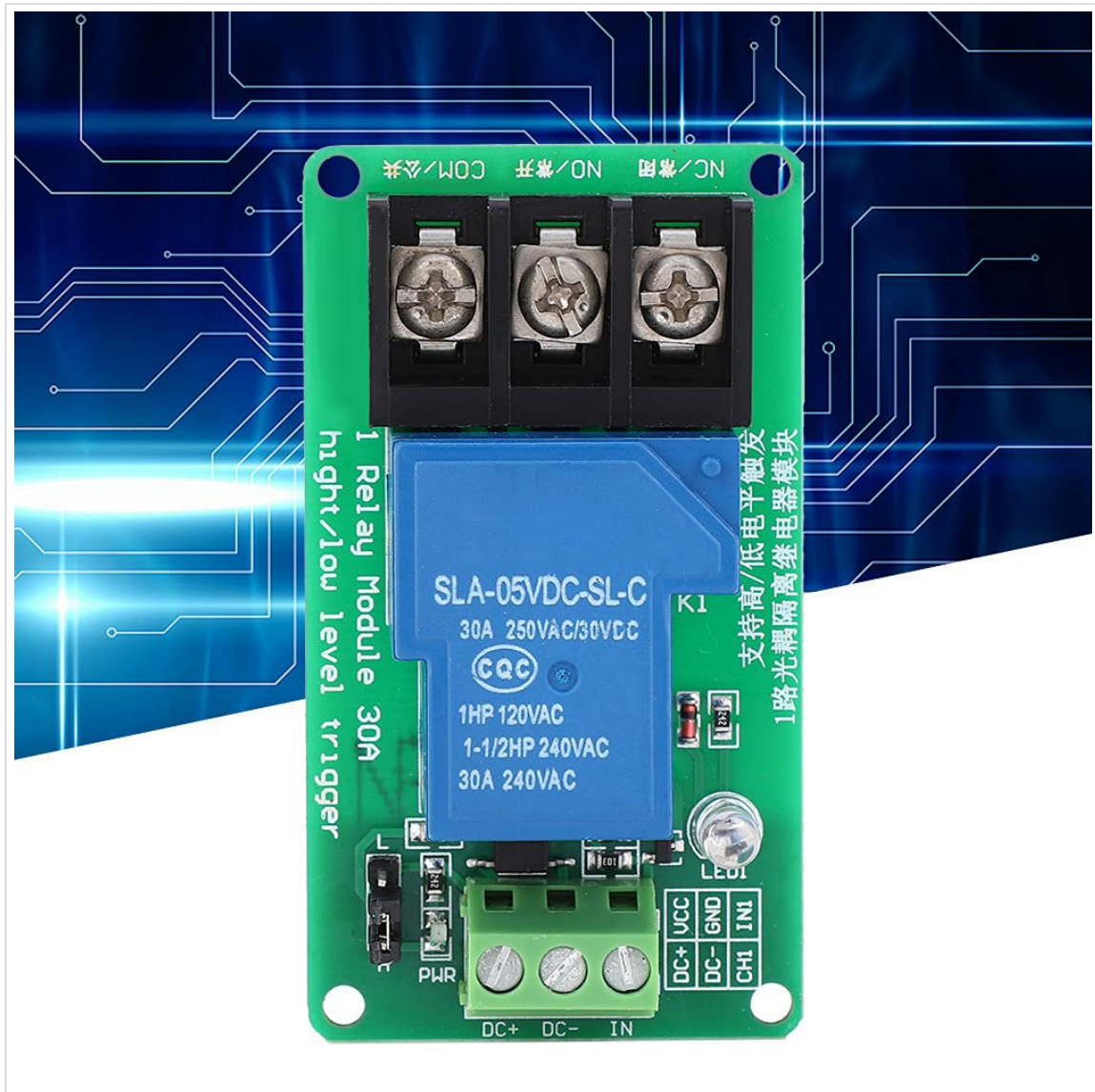


Figure 2: Jumper setting for trigger mode. 'L' for low-level trigger, 'H' for high-level trigger.

- When the jumper is connected to the **L** terminal, the IN terminal operates as a **low-level trigger**. This means the relay will activate when the IN terminal receives a low voltage (e.g., 0V or ground).
 - When the jumper is connected to the **H** terminal, the IN terminal operates as a **high-level trigger**. This means the relay will activate when the IN terminal receives a high voltage (e.g., 5V for a 5V module).
5. **Normally Closed End (NC):** This terminal is connected to the Common terminal (COM) when the relay is de-energized (off). It disconnects from COM when the relay is energized (on).
 6. **Common Terminal (COM):** This is the common terminal for the relay's switch contacts. The load's power source is typically connected here.
 7. **Normally Open (NO):** This terminal is disconnected from the Common terminal (COM) when the relay is de-energized (off). It connects to COM when the relay is energized (on).

SETUP AND WIRING

Follow these steps to correctly set up and wire your relay module. Ensure all power sources are disconnected before proceeding.

1. Power Supply Connection

- Connect the positive terminal of a 5V DC power supply to the **DC+** terminal on the module.
- Connect the negative terminal (ground) of the 5V DC power supply to the **DC-** terminal on the module.
- *Note: The power supply for the module should match the module's operating voltage (5V for this model).*

2. Trigger Mode Selection

- Determine whether you need a high-level or low-level trigger for your application.
- Place the jumper cap on the module:
 - For **low-level trigger**: Connect the jumper between the middle pin and the **L** pin.
 - For **high-level trigger**: Connect the jumper between the middle pin and the **H** pin.

3. Trigger Input Connection

- Connect your control signal (e.g., from a microcontroller GPIO pin) to the **IN** terminal.
- Ensure the voltage level of your control signal matches the selected trigger mode (e.g., 5V for high-level trigger, 0V for low-level trigger).

4. Load Connection

The relay acts as a switch for your load. You can use either the Normally Open (NO) or Normally Closed (NC) contact depending on your application's requirements.

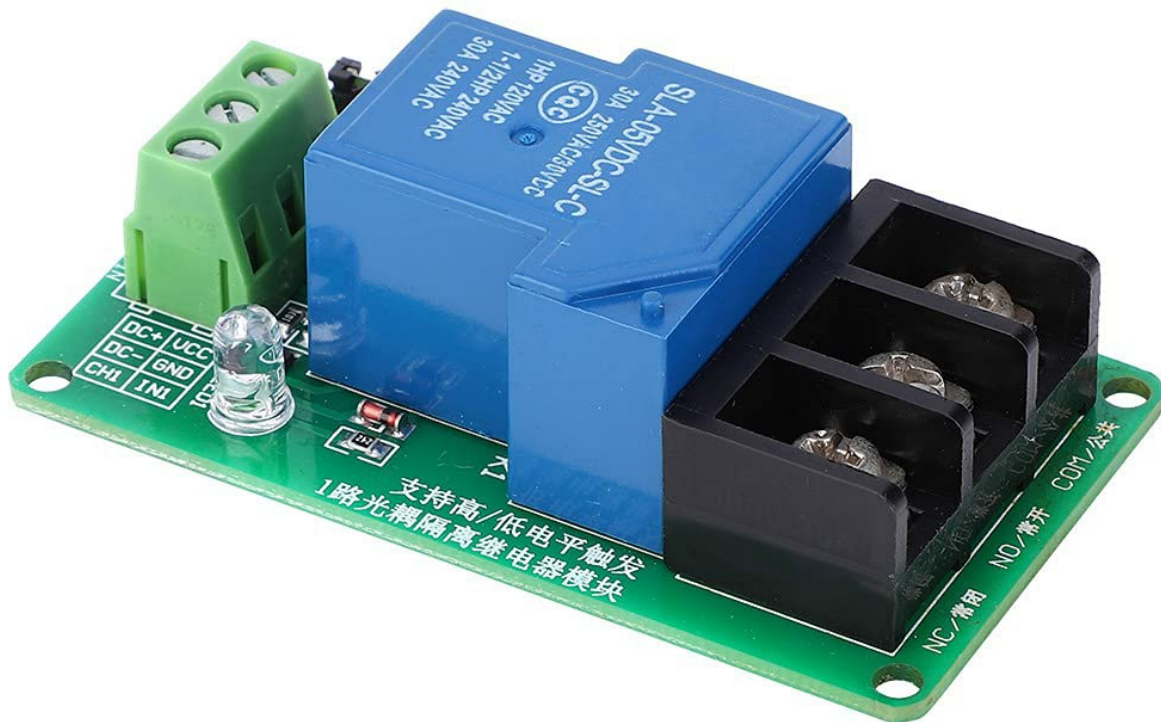


Figure 3: Angled view of the module, illustrating the power input and relay output terminals.

- **Normally Open (NO) Configuration:**

- Connect one side of your load (e.g., a light bulb, motor) to the **NO** terminal.
- Connect the other side of your load to the power source for the load.
- Connect the **COM** terminal to the other side of the load's power source.
- In this configuration, the load is OFF when the relay is de-energized and ON when the relay is energized.

- **Normally Closed (NC) Configuration:**

- Connect one side of your load to the **NC** terminal.
- Connect the other side of your load to the power source for the load.
- Connect the **COM** terminal to the other side of the load's power source.
- In this configuration, the load is ON when the relay is de-energized and OFF when the relay is energized.

Important: Ensure the load's voltage and current do not exceed the relay's maximum ratings (AC 250V/30A, DC 30V/30A).

OPERATING INSTRUCTIONS

Once the module is correctly wired and powered, its operation depends on the trigger signal applied to the **IN** terminal and the selected trigger mode.

- **High-Level Trigger Mode (Jumper on H):**
 - When the **IN** terminal receives a high voltage (e.g., 5V), the relay will energize. The COM terminal will connect to NO, and disconnect from NC.
 - When the **IN** terminal receives a low voltage (e.g., 0V), the relay will de-energize. The COM terminal will connect to NC, and disconnect from NO.
- **Low-Level Trigger Mode (Jumper on L):**
 - When the **IN** terminal receives a low voltage (e.g., 0V), the relay will energize. The COM terminal will connect to NO, and disconnect from NC.
 - When the **IN** terminal receives a high voltage (e.g., 5V), the relay will de-energize. The COM terminal will connect to NC, and disconnect from NO.

An onboard LED indicator (PWR) typically illuminates when the module is powered, and another LED (K1) may indicate the relay's energized state.

MAINTENANCE

The YWBL-WH 1 Channel Relay Module is designed for reliable operation with minimal maintenance. However, following these guidelines can help ensure its longevity:

- **Keep Clean:** Periodically inspect the module for dust or debris accumulation. Use a soft, dry brush or compressed air to clean it.
- **Environmental Conditions:** Operate the module within its specified temperature and humidity ranges. Avoid exposure to corrosive gases or liquids.
- **Connection Integrity:** Regularly check all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or overheating.
- **Avoid Overload:** Do not exceed the maximum current and voltage ratings of the relay. Continuous overloading can significantly reduce the relay's lifespan.

TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Module not powering on (PWR LED off)	No power supply, incorrect voltage, reversed polarity, faulty power supply.	Verify 5V DC power supply is connected correctly to DC+ and DC-. Check power supply functionality.

Problem	Possible Cause	Solution
Relay not activating/deactivating	Incorrect trigger mode selection, incorrect trigger signal, faulty IN connection, damaged optocoupler/relay.	◦ Check jumper position for high/low level trigger. ◦ Ensure the trigger signal to IN matches the selected mode (e.g., 5V for high, 0V for low). ◦ Verify the IN connection is secure.
Load not switching (even if relay clicks)	Incorrect load wiring, faulty load, load exceeding relay ratings, loose COM/NO/NC connections.	◦ Double-check load wiring to COM, NO, or NC terminals. ◦ Test the load independently to ensure it is functional. ◦ Confirm load voltage/current is within relay specifications. ◦ Ensure all load connections are tight.
Module overheating	Load current exceeding relay rating, continuous operation at maximum load, poor ventilation.	Reduce load current, ensure adequate ventilation around the module. Consider a relay with higher current rating if consistently exceeding limits.