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› DIYables 5V 1-Channel Relay Module Instruction Manual

DIYables DIY-RELAY-3-5V-1C-LH

DIYables 5V 1-Channel Relay Module Instruction Manual

Brand: DIYables | **Model:** DIY-RELAY-3-5V-1C-LH

1. PRODUCT OVERVIEW

The DIYables 5V 1-Channel Relay Module is designed for controlling higher voltage or current devices using a low-voltage microcontroller. This package includes three individual relay modules, compatible with platforms such as Arduino, ESP32, ESP8266, Raspberry Pi, and other 5V or 3.3V microcontrollers.

Each module features a single relay channel with both Normally Open (NO) and Normally Closed (NC) contacts, allowing for flexible control applications. It incorporates optocoupler isolation for safety and includes terminal blocks for secure input and output connections. Two LED indicators provide visual feedback: a green LED for power status and a red LED to show the relay's current state. The fault-tolerant design ensures the relay does not operate unintentionally even if the control line is interrupted.

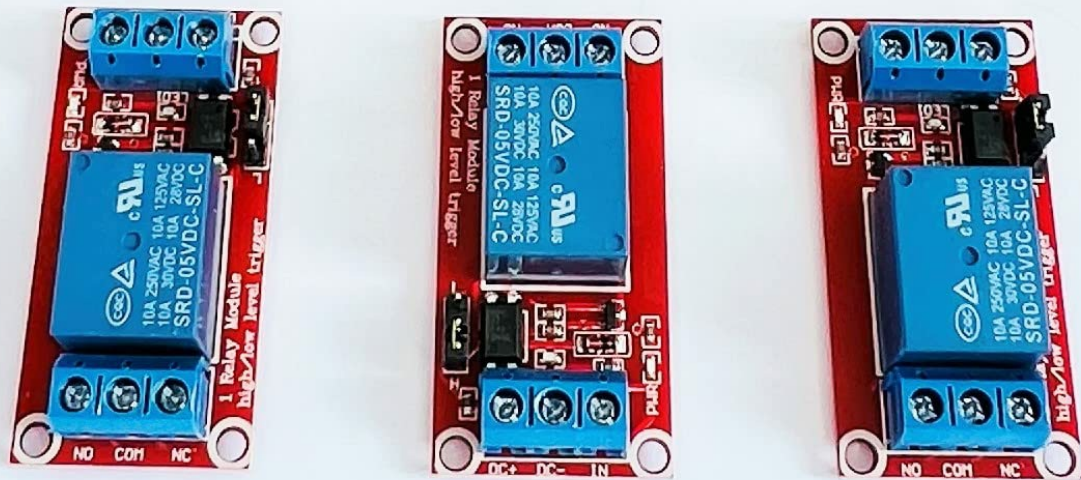
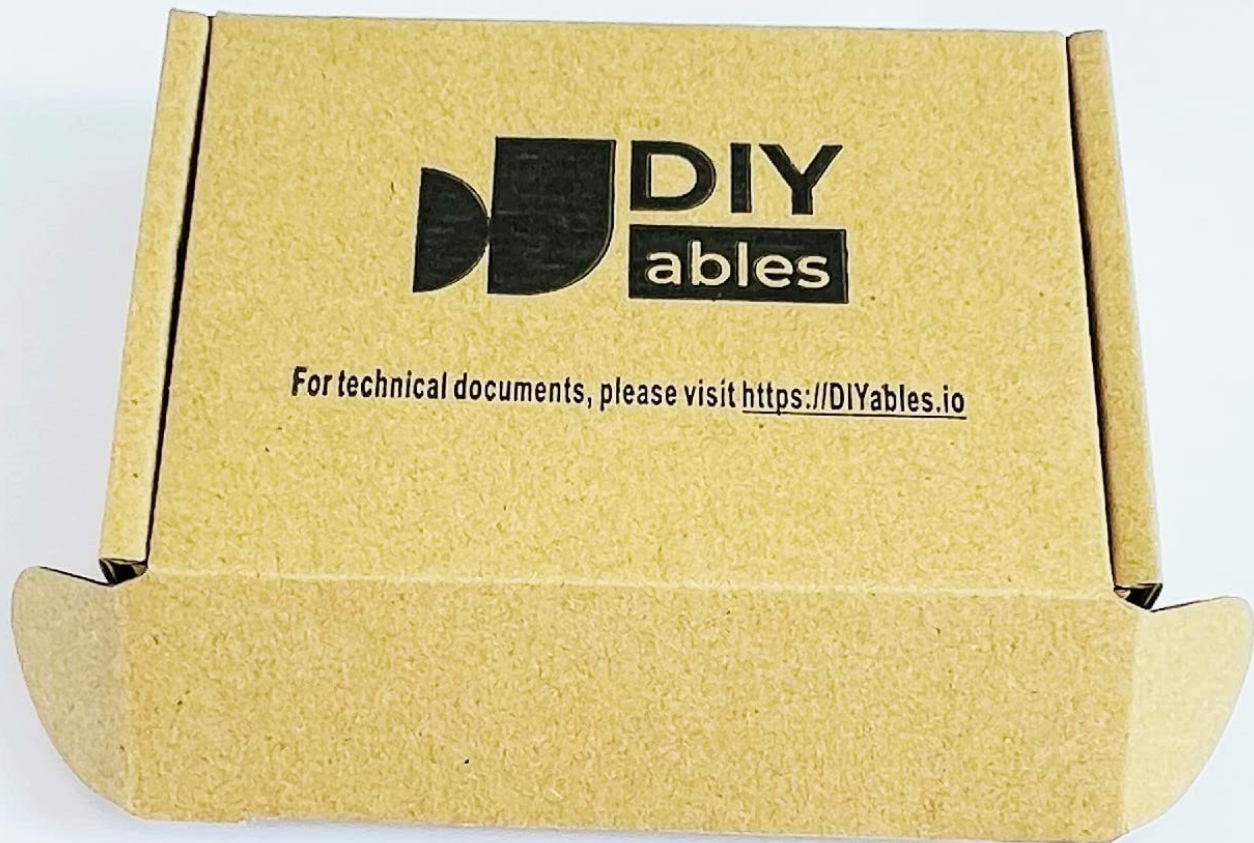


Image 1.1: Three DIYables 5V 1-Channel Relay Modules.

2. SPECIFICATIONS

Operating Voltage (Power)	5V
Trigger Voltage	3.3V to 5V
Trigger Current	5mA
Maximum Load (AC)	250V/10A
Maximum Load (DC)	30V/10A

Dimensions (L x W x H)	50mm x 26mm x 18.5mm (1.97 x 1.02 x 0.73 inches)
Contact Type	Normally Open (NO) and Normally Closed (NC)
Isolation	Optocoupler Isolation
Indicators	Power (Green LED), Relay Status (Red LED)

3. SETUP AND CONNECTIONS

This section details the physical connections and trigger selection for the relay module.

3.1 Input Interface

The input interface connects the relay module to your microcontroller's power and signal pins.

- **DC+:** Connect to the positive pole of a 5V power supply.
- **DC-:** Connect to the negative pole of a 5V power supply (Ground).
- **IN:** This is the signal trigger input. It accepts a 3.3V to 5V signal. The relay can be configured for either high-level or low-level triggering via a jumper.

3.2 Output Interface

The output interface connects to the device you wish to control.

- **NO (Normally Open):** This interface is open (disconnected) when the relay is inactive and closes (connects to COM) when the relay is activated.
- **NC (Normally Closed):** This interface is closed (connected to COM) when the relay is inactive and opens (disconnects from COM) when the relay is activated.
- **COM (Common):** This is the common interface for both NO and NC connections.

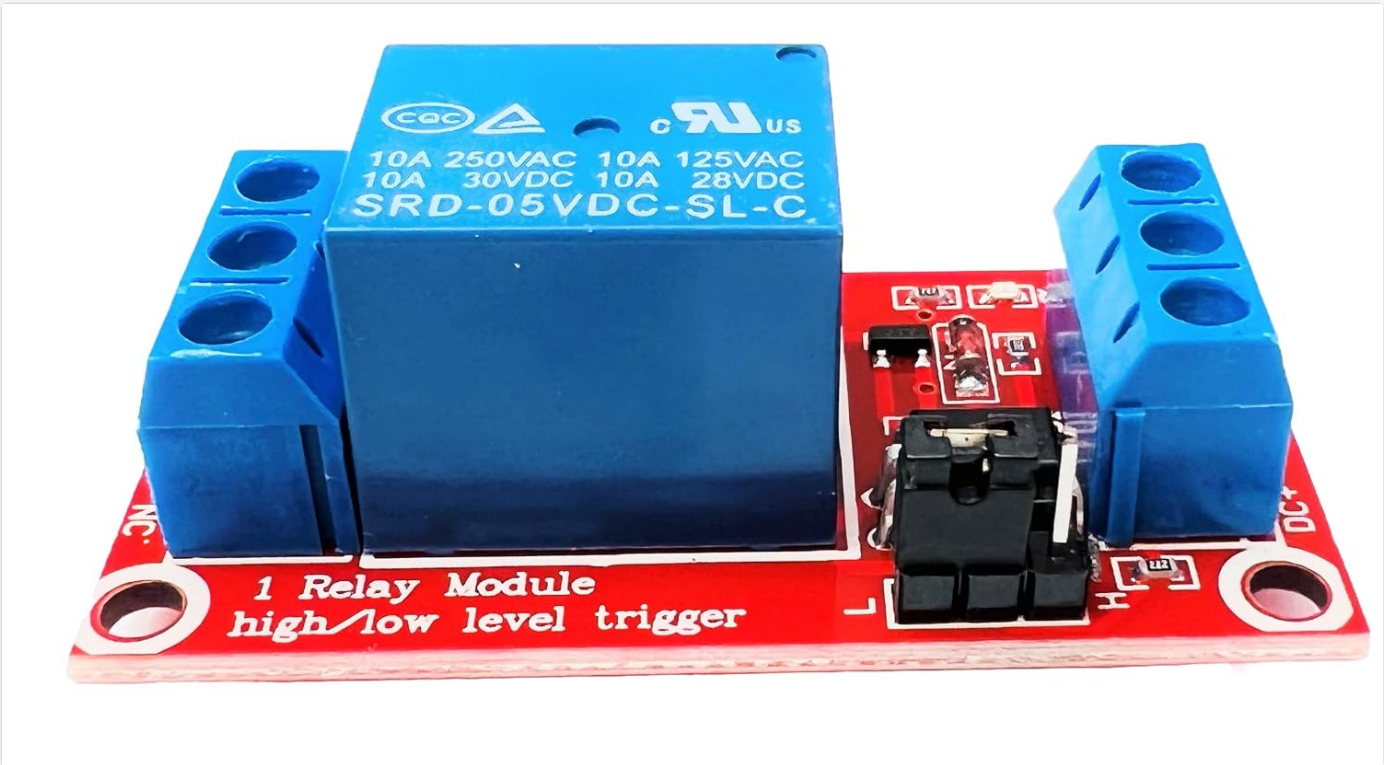


Image 3.1: Detailed view of the relay module's input, output, and trigger selector interfaces.

3.3 High/Low Level Trigger Selection

The relay module features a jumper to select between high-level and low-level triggering for the IN signal.

- If the jumper is placed between **COM** and **L**, the relay uses **LOW level trigger**.
- If the jumper is placed between **COM** and **H**, the relay uses **HIGH level trigger**.

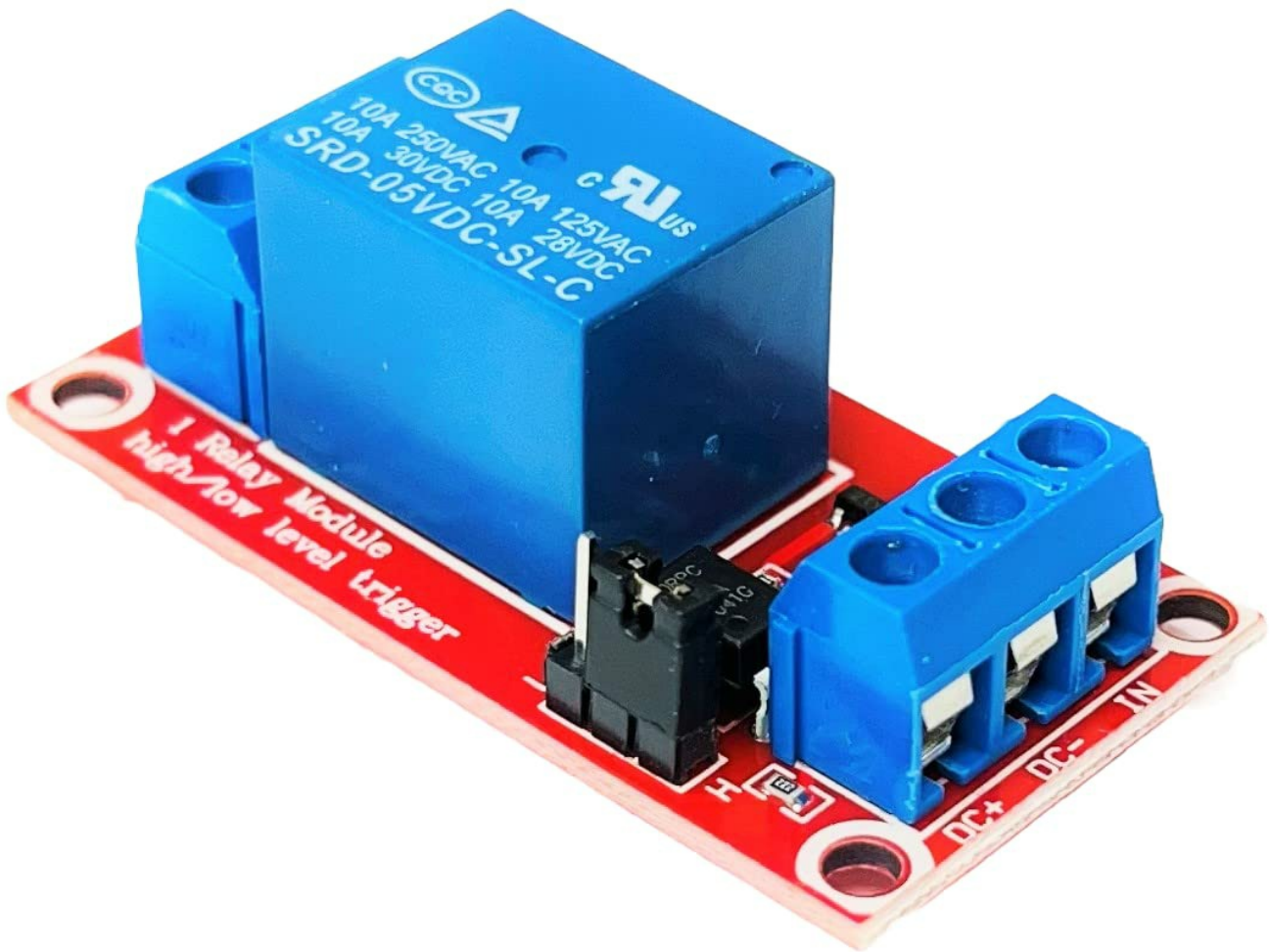


Image 3.2: Close-up of the trigger selection jumper. Ensure correct placement for desired trigger logic.

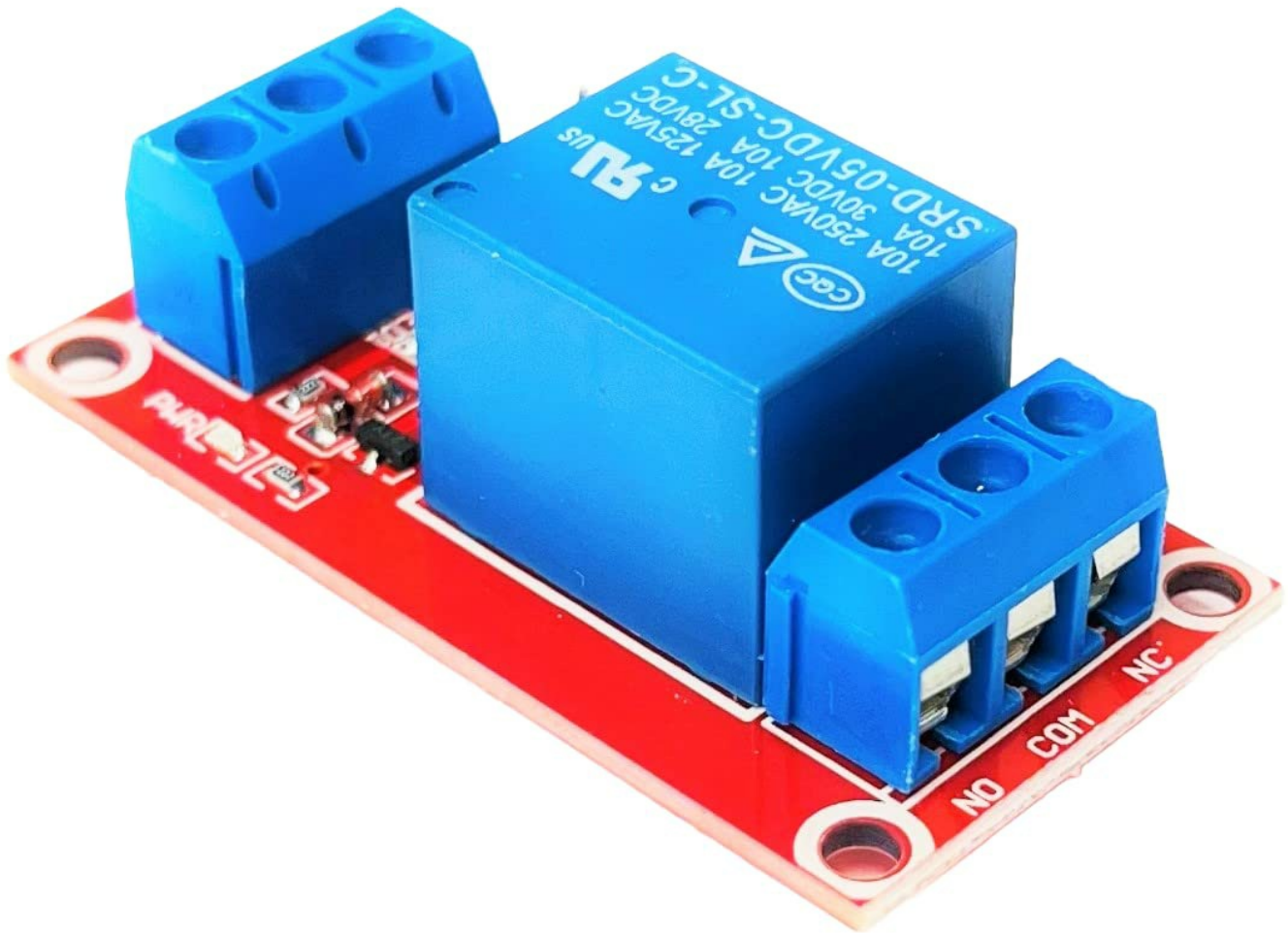


Image 3.3: Another view of the relay module, highlighting the jumper for trigger selection.

4. OPERATING INSTRUCTIONS

Understanding how the relay operates based on the trigger level is essential for proper use.

4.1 High Level Trigger Mode

When the module is configured for High Level Trigger (jumper between COM and H):

- When the **IN** signal is **LOW**, the NO (Normally Open) contact does not connect with COM, and the NC (Normally Closed) contact connects with COM.
- When the **IN** signal is **HIGH**, the NO (Normally Open) contact connects with COM, and the NC (Normally Closed) contact does not connect with COM.

4.2 Low Level Trigger Mode

When the module is configured for Low Level Trigger (jumper between COM and L):

- When the **IN** signal is **LOW**, the NO (Normally Open) contact connects with COM, and the NC (Normally Closed) contact does not connect with COM.
- When the **IN** signal is **HIGH**, the NO (Normally Open) contact does not connect with COM, and the NC (Normally Closed) contact connects with COM.

4.3 Example Wiring Diagrams

Below are example wiring diagrams for common microcontroller platforms.

WIRING DIAGRAM TO ARDUINO

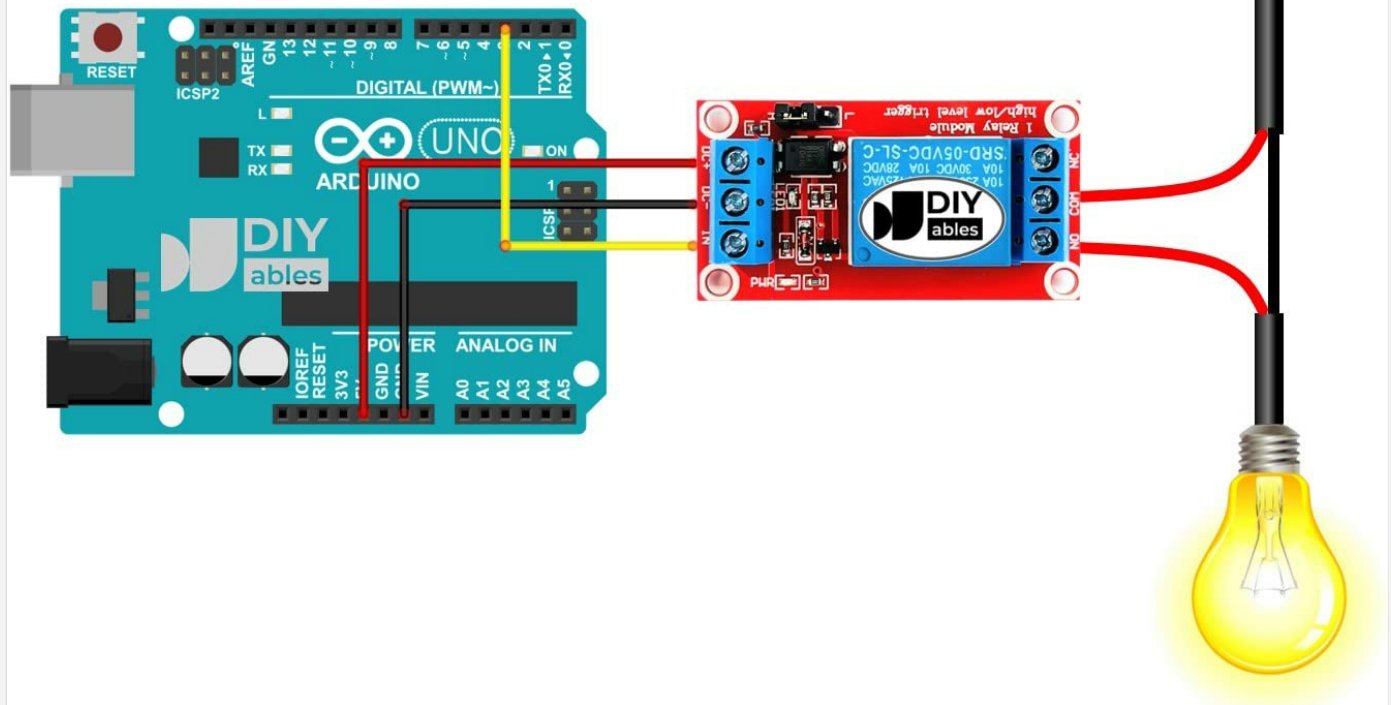


Image 4.1: Wiring diagram for connecting the relay module to an Arduino. The relay controls a light bulb, demonstrating a typical application.

WIRING DIAGRAM TO ESP32

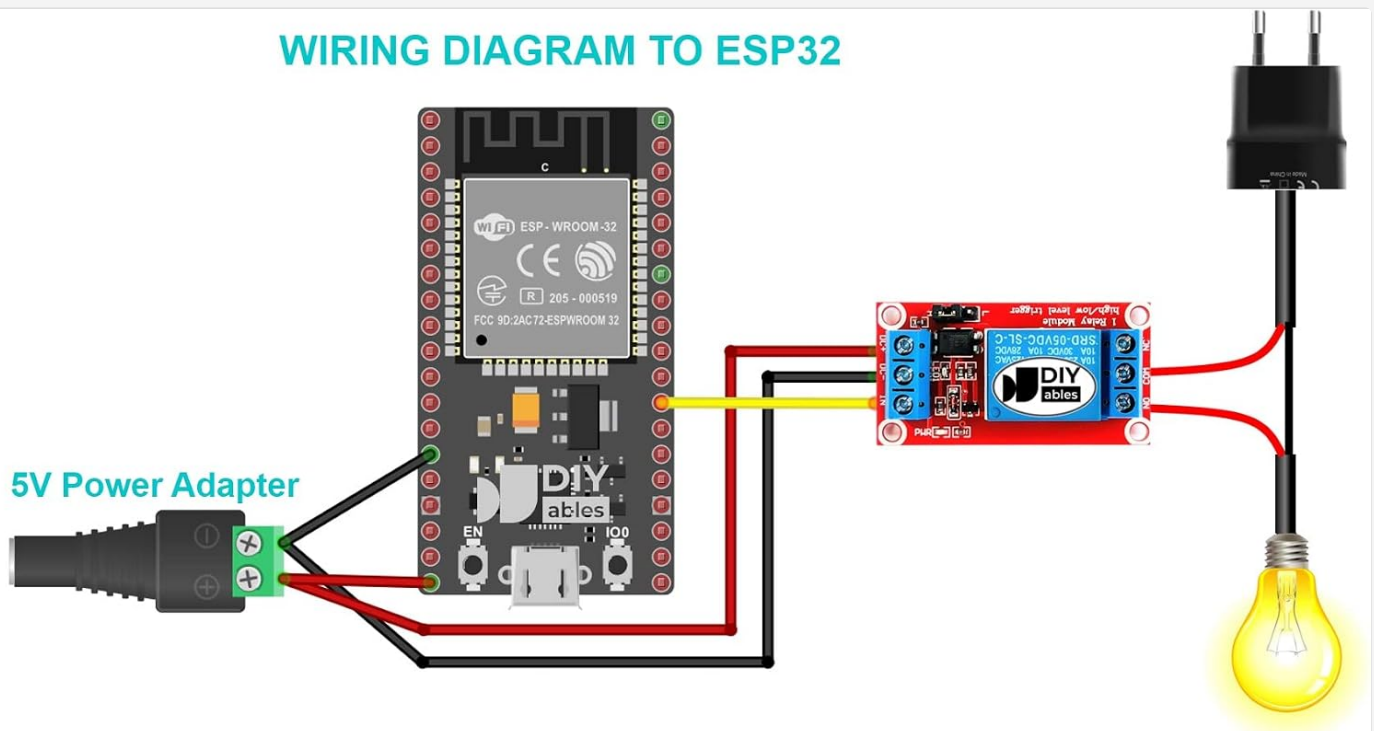


Image 4.2: Wiring diagram for connecting the relay module to an ESP32. This setup also shows the relay controlling a light bulb.

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Video 4.1: Demonstration of the DIYables 5V 1-channel relay module. This video shows the physical module and its basic functionality when connected to a microcontroller.

5. MAINTENANCE

The DIYables 5V 1-Channel Relay Module is designed for reliable operation and generally requires minimal maintenance. Keep the module clean and free from dust and moisture. Ensure all connections are secure to prevent intermittent operation. Avoid exposing the module to extreme temperatures or corrosive environments.

6. TROUBLESHOOTING

- **Relay not activating:**

- Verify the 5V power supply is correctly connected to DC+ and DC-.
- Check the signal input (IN) from your microcontroller. Ensure it's providing the expected voltage (3.3V-5V).
- Confirm the trigger selection jumper (High/Low Level) is set correctly for your microcontroller's output logic.
- Check the wiring for continuity and correct pin assignments.

- **Relay activating unexpectedly:**

- Re-check the trigger selection jumper. An incorrect setting can cause inverse behavior.
- Ensure the signal from the microcontroller is stable and not fluctuating.

- **LED indicators not working:**

- If the green power LED is off, check the 5V power supply connection.
- If the red status LED is not changing, verify the input signal and relay functionality.

- **Device not switching:**

- Ensure the load device is correctly wired to the NO/NC and COM terminals.
- Verify the load device's power supply is connected and functional.
- Check that the load's voltage and current do not exceed the relay's maximum ratings (AC 250V/10A, DC 30V/10A).

7. WARRANTY AND SUPPORT

Warranty information for this product is not explicitly provided in the product details. For specific warranty inquiries, please contact the manufacturer directly.

For additional tutorials and support resources related to using this relay module with Arduino, ESP32, ESP8266, and Raspberry Pi, please visit the official DIYables store page on Amazon or search for "DIYables 5V relay" on the product page.

[Visit the DIYables Store for more resources](#)

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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