Teyleten Robot 1 Channel Relay Module

Teyleten Robot 1 Channel Relay Module 5V DC Instruction Manual

1. Introduction

This manual provides detailed instructions for the Teyleten Robot 1 Channel Relay Module 5V DC. It covers product features, specifications, setup, operation, maintenance, and troubleshooting to ensure safe and effective use of the module.

2. Product Overview

The Teyleten Robot 1 Channel Relay Module is designed to control various household appliances and high-current loads. It features a high-current relay (AC250V 10A, DC30V 10A) and optocoupler isolation for safe and reliable operation. The module has a standard interface, making it compatible with various development boards such as 51, AVR, and ARM platforms. It includes fixing screw holes for easy installation.

Figure 2.1: Top view of the Teyleten Robot 1 Channel Relay Module, showing the relay, input pins, and output terminals.

3. Features

- Supports control by various microcontrollers, suitable for industrial applications, PLC control, and home intelligent

control systems.

- Equipped with a high-current relay, rated for AC250V 10A and DC30V 10A.
- Features independent wiring for the contact part, ensuring safety and reliability.
- Standard interfaces allow for expansion on a variety of development boards.
- Includes fixed screw holes for easy and secure installation.

4. Specifications

Attribute	Value
Brand	Teyleten Robot
Item Weight	2.12 ounces
Package Dimensions	3.94 x 3.15 x 0.59 inches
Manufacturer	Teyleten Robot
ASIN	B0F4RJHM8D
Date First Available	April 14, 2025
Relay Voltage	5V DC
Relay Contact Rating	AC250V 10A, DC30V 10A
Trigger Level	Low Level Effective

5. Setup

Follow these steps to set up your 1 Channel Relay Module:

5.1 Identify Components

Familiarize yourself with the module's connection points:

- **VCC:** Power supply positive (5V DC).
- **GND:** Power supply ground.
- **IN:** Control signal input from microcontroller.
- **PWR LED:** Indicates power supply status.
- **SW LED:** Indicates relay switching status.
- **NO (Normally Open):** Relay contact that is open when the relay is de-energized.
- **COM (Common):** Common terminal for the relay contact.
- **NC (Normally Closed):** Relay contact that is closed when the relay is de-energized.

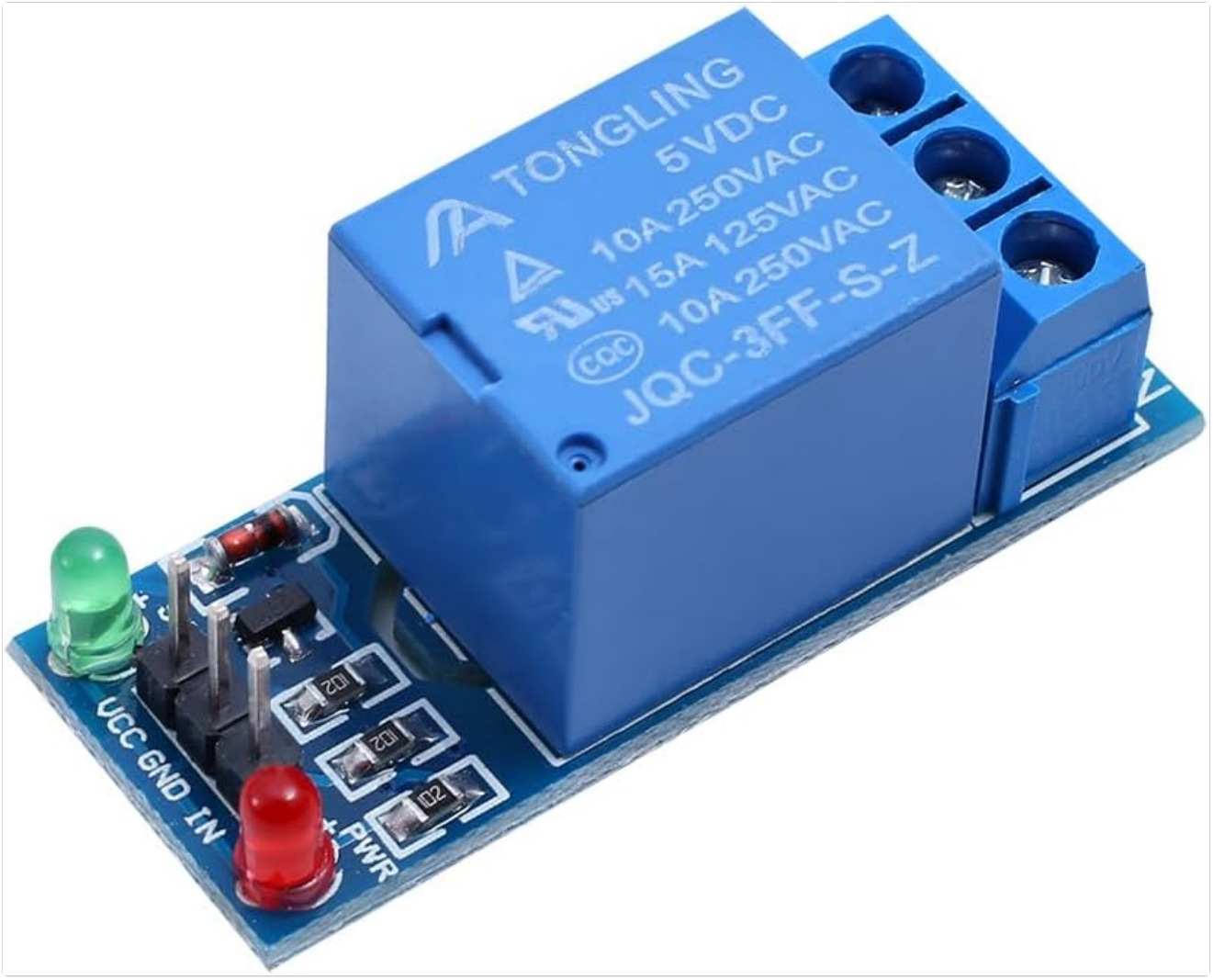

Figure 5.1: Input side of the relay module, showing VCC, GND, IN pins, and indicator LEDs.

Figure 5.2: Output side of the relay module, showing NO, COM, and NC terminals.

5.2 Power Connection

Connect a stable 5V DC power supply to the VCC and GND pins of the module. Ensure correct polarity. The PWR LED should illuminate when power is supplied.

5.3 Control Signal Connection

Connect the digital output pin of your microcontroller (e.g., Arduino, Raspberry Pi, AVR, 51, PIC) to the IN pin of the relay module. This module is designed for **low-level trigger**, meaning the relay will activate when the IN pin receives a low voltage signal (typically 0V or GND) and deactivate when it receives a high voltage signal (typically 5V or VCC).

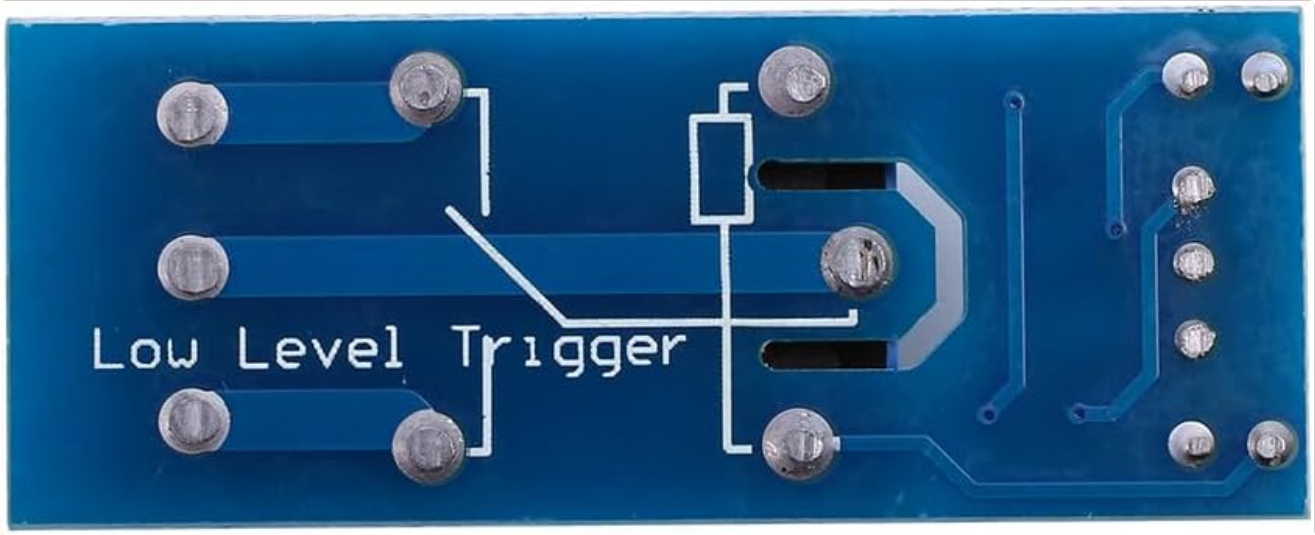

Figure 5.3: Bottom view of the relay module, indicating its low-level trigger characteristic.

5.4 Load Connection

Connect the device or load you wish to control to the NO, COM, and NC terminals. The choice of NO or NC depends on whether you want the load to be ON or OFF when the relay is de-energized (IN pin is HIGH).

- For a load that is **OFF** when the relay is de-energized and **ON** when energized: Connect one side of the load to **COM** and the other side to **NO**.
- For a load that is **ON** when the relay is de-energized and **OFF** when energized: Connect one side of the load to **COM** and the other side to **NC**.

Ensure that the current and voltage ratings of your load do not exceed the relay's specifications (AC250V 10A, DC30V 10A).

6. Operating Instructions

Once the module is correctly wired and powered, you can control the relay by sending appropriate signals to the IN pin from your microcontroller:

- **To Activate the Relay (Switch ON):** Send a **LOW** signal (0V or GND) to the IN pin. The SW LED should illuminate, and you may hear a click as the relay switches. The COM and NO terminals will connect, and COM and NC terminals will disconnect.
- **To Deactivate the Relay (Switch OFF):** Send a **HIGH** signal (5V or VCC) to the IN pin. The SW LED should turn off, and you may hear a click as the relay switches back. The COM and NO terminals will disconnect, and COM and NC terminals will connect.

The optocoupler provides electrical isolation between the control circuit (microcontroller) and the load circuit, enhancing safety and protecting the microcontroller from high voltages or current spikes from the load.

7. Maintenance

The Teyleten Robot 1 Channel Relay Module is designed for durability. To ensure its longevity and optimal performance, consider the following maintenance guidelines:

- **Keep Dry:** Protect the module from moisture and liquids to prevent short circuits and corrosion.
- **Temperature Control:** Operate the module within its specified temperature range. Avoid extreme heat or cold.
- **Cleanliness:** Keep the module free from dust and debris. Use a soft, dry brush or compressed air for cleaning if

necessary.

- **Connection Checks:** Periodically inspect all wiring connections to ensure they are secure and free from damage.
- **Avoid Overload:** Do not exceed the maximum current and voltage ratings of the relay contacts to prevent damage to the module and connected devices.

8. Troubleshooting

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

- **Module Not Powering On (PWR LED Off):**
  - Check the 5V DC power supply connection to VCC and GND.
  - Verify the power supply is providing the correct voltage and current.
  - Ensure correct polarity of the power connection.
- **Relay Not Activating (SW LED Off, No Click):**
  - Confirm the IN pin is receiving a LOW signal (0V) from the microcontroller when activation is desired.
  - Check the connection between the microcontroller and the IN pin.
  - Ensure the microcontroller's output pin is configured correctly.
- **Load Not Switching:**
  - Verify the load is correctly wired to the COM and NO/NC terminals.
  - Check if the load's power supply is active and correctly connected.
  - Ensure the load's current and voltage requirements do not exceed the relay's specifications.
  - Confirm the relay is physically clicking and the SW LED is changing state.

9. Warranty and Support

For warranty information or technical support regarding your Teyleten Robot 1 Channel Relay Module, please contact the manufacturer or your point of purchase. Refer to the product packaging or the official Teyleten Robot website for contact details.