

## Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

[manuals.plus](#) /

› [JBtek](#) /

› [JBtek 4 Channel DC 5V Relay Module Instruction Manual](#)

## JBtek 4450182

# JBtek 4 Channel DC 5V Relay Module Instruction Manual

Model: 4450182

## 1. PRODUCT OVERVIEW

---

The JBtek 4 Channel DC 5V Relay Module is an interface board designed to control various appliances and equipment that require higher current or voltage than a microcontroller can directly provide. It features four independent relays, each capable of switching AC250V 10A or DC30V 10A. This module is compatible with a wide range of microcontrollers, including Raspberry Pi, Arduino, 8051, AVR, PIC, DSP, and ARM platforms.

Key features include:

- Equipped with high-current relays (AC250V 10A; DC30V 10A).
- Each channel requires 50-60mA driver current.
- Capable of controlling various appliances and equipment with large current requirements.
- Supports all MCU control, suitable for industrial, PLC, and smart home applications.
- Indication LEDs for relay output status.

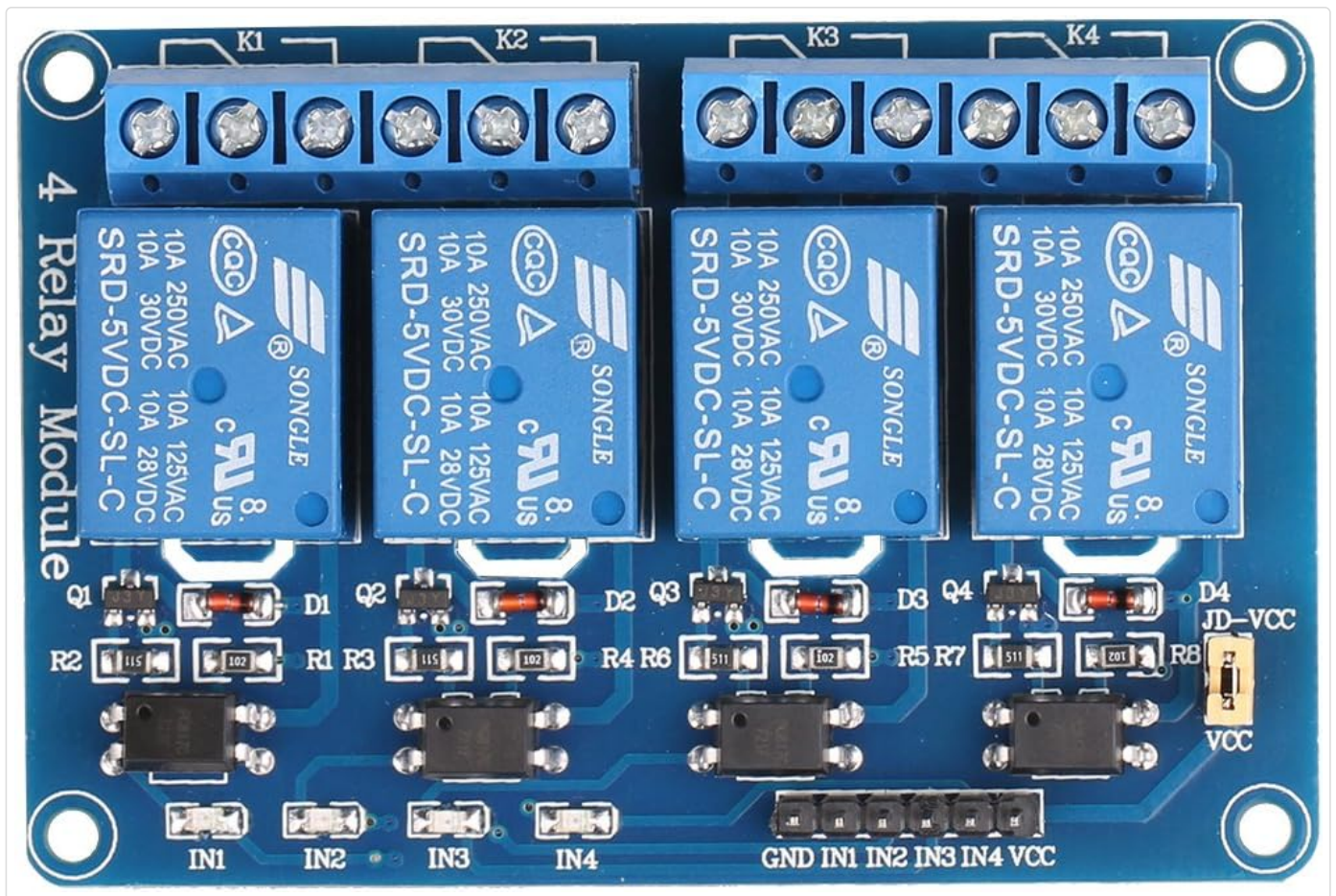


Figure 1: Top-down view of the JBtek 4 Channel DC 5V Relay Module, showing the four blue relays, screw terminals, and input pins.

## 2. SETUP AND CONNECTIONS

Proper connection is crucial for the safe and effective operation of the relay module. Ensure all power is disconnected before making any connections.

### 2.1 Power Supply Connections

- **VCC:** Connect to the +5V power supply of your microcontroller or external power source.
- **GND:** Connect to the ground (0V) of your microcontroller or external power source.
- **JD-VCC:** This pin is typically jumpered to VCC for the relay coil power. If you need to isolate the relay coil power from the control logic power, remove the jumper and provide a separate 5V supply to JD-VCC.

### 2.2 Control Signal Connections

- **IN1, IN2, IN3, IN4:** These are the control input pins for each of the four relays. Connect these to the digital output pins of your microcontroller (e.g., Arduino GPIO, Raspberry Pi GPIO).
- The module typically uses a low-level trigger, meaning a LOW signal (0V) on an IN pin activates the corresponding relay, and a HIGH signal (5V) deactivates it. Refer to the Operating section for more details.

### 2.3 Load Connections

Each relay has three terminals for connecting the load:

- **Common (COM):** This is the common terminal for the relay switch.
- **Normally Open (NO):** The circuit between COM and NO is open when the relay is inactive and closes when the relay is activated.
- **Normally Closed (NC):** The circuit between COM and NC is closed when the relay is inactive and opens when the relay is activated.

Connect your load (e.g., light, motor) to the appropriate COM and NO/NC terminals based on your application's requirements. Ensure the load's voltage and current ratings do not exceed the relay's maximum ratings (AC250V 10A; DC30V 10A).

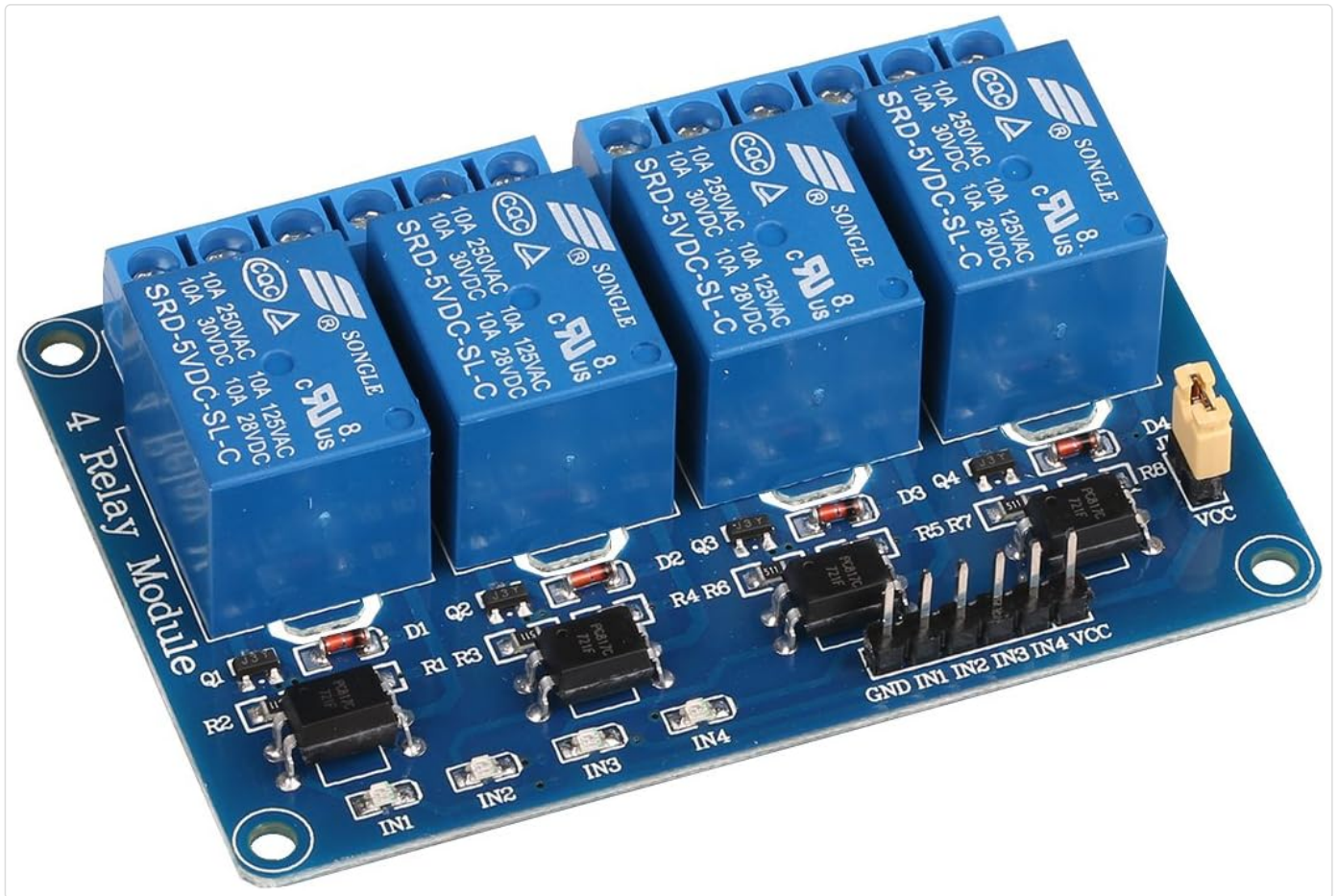


Figure 2: Angled view of the relay module, showing the connection points for power, control signals, and loads.

### 3. OPERATING THE MODULE

The JBtek 4 Channel DC 5V Relay Module is typically controlled by providing a digital signal to its input pins (IN1-IN4).

#### 3.1 Control Logic (Low-Level Trigger)

This module uses a low-level trigger. This means:

- When an **IN** pin receives a **LOW** signal (e.g., 0V from a microcontroller GPIO), the corresponding relay activates. The LED for that channel will illuminate, and the COM terminal will connect to the NO terminal.
- When an **IN** pin receives a **HIGH** signal (e.g., 5V from a microcontroller GPIO), the corresponding relay deactivates. The LED for that channel will turn off, and the COM terminal will connect to the NC terminal (if used).

Ensure your microcontroller's output logic matches this requirement. Most microcontrollers can be programmed to output either HIGH or LOW signals.

#### 3.2 Example Application

To control a 12V light bulb using an Arduino:

1. Connect Arduino 5V to Relay Module VCC.
2. Connect Arduino GND to Relay Module GND.
3. Connect an Arduino digital output pin (e.g., D2) to Relay Module IN1.
4. Connect the positive (+) terminal of the 12V power supply to the COM terminal of Relay 1.
5. Connect the NO terminal of Relay 1 to the positive (+) terminal of the 12V light bulb.

6. Connect the negative (-) terminal of the 12V light bulb to the negative (-) terminal of the 12V power supply.
7. In your Arduino code, set digital pin D2 to LOW to turn the light on, and HIGH to turn it off.

The integrated optocouplers provide isolation between the control circuit (microcontroller) and the relay coil, protecting your microcontroller from voltage spikes or noise from the load circuit.

Your browser does not support the video tag.

Video 1: An animation demonstrating the assembly of a relay board with a Raspberry Pi, showing how the relay module integrates with a single-board computer. This video is provided by the seller, Electronics-Salon.

Your browser does not support the video tag.

Video 2: A demonstration of a 5-24V relay module with optocoupler isolation, showing its functionality. This video is provided by the seller, Jessinie.

## 4. MAINTENANCE

---

The JBtek 4 Channel DC 5V Relay Module is designed for durability and reliability. Minimal maintenance is required.

- **Cleaning:** Keep the module free from dust and debris. Use a soft, dry brush or compressed air to clean the board if necessary. Avoid using liquids.
- **Environmental Conditions:** Operate the module within its specified temperature and humidity ranges. Avoid exposure to extreme temperatures, moisture, or corrosive environments.
- **Connection Integrity:** Periodically check all wire connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or damage.
- **Power Supply:** Ensure a stable 5V DC power supply is provided to the module. Fluctuations can affect performance and lifespan.

## 5. TROUBLESHOOTING

---

If you encounter issues with your JBtek 4 Channel DC 5V Relay Module, consider the following troubleshooting steps:

- **Relay Not Activating:**
  - Verify the 5V VCC and GND connections are correct and stable.
  - Check if the control signal (IN1-IN4) from your microcontroller is indeed LOW when you expect the relay to activate.
  - Ensure the JD-VCC jumper is in place or a separate 5V supply is connected to JD-VCC if isolation is desired.
  - Check the indication LED for the specific channel; if it's not lighting up, there might be an issue with the control signal or the relay itself.
- **Load Not Switching:**
  - Confirm the relay is activating (listen for a click, check the LED).
  - Check the connections to the COM, NO, and NC terminals. Ensure they are secure and correctly wired for your desired operation.
  - Verify 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.
- **Intermittent Operation:**
  - Check for loose wires or poor solder joints.
  - Ensure the power supply to the module is clean and stable, without excessive noise or voltage drops.
  - Consider adding decoupling capacitors near the module's power input if electrical noise is suspected.

## 6. SPECIFICATIONS

---

Feature	Specification
Brand	JBtek
Model Number	4450182
Channels	4
Coil Voltage	5V DC
Driver Current (per channel)	50-60mA
Contact Rating (AC)	AC250V 10A
Contact Rating (DC)	DC30V 10A
Contact Material	Silver, Copper, or Alloy
Contact Type	Form C or SPDT
Mounting Type	PCB Mount
Operation Mode	Automatic
Item Weight	0.32 ounces
Product Dimensions (LxWxH)	2.56 x 1.97 x 0.79 inches

## 7. WARRANTY AND SUPPORT

---

For warranty information or technical support, please refer to the product packaging or contact JBtek customer service directly. Keep your purchase receipt for any warranty claims.