

Article Overview

A single-channel optocoupler relay module allows a microcontroller to safely control high-voltage or high-current devices with electrical isolation between the control and load circuits.

Overview and Functionality

A single-channel optocoupler relay module is an interface board that enables low-voltage microcontrollers (like Arduino, ESP32, or Raspberry Pi) to switch high-power AC or DC loads. The optocoupler provides electrical isolation, protecting the microcontroller from voltage spikes and preventing ground loops, which enhances safety and reliability .

Key Specifications

- o Control Voltage: Typically 5V DC, configurable for high-level or low-level triggering via a jumper .
- o Relay Ratings: Can switch AC 250V at 10A or DC 30V at 10A, suitable for lamps, motors, and other appliances .
- o Terminals: Standard screw terminals for COM (common), NO (normally open), and NC (normally closed) connections .
- o Driver Current: Requires approximately 15-20mA from the microcontroller to activate the relay .
- o Indicators: Onboard LEDs indicate relay activation and power status .

Features and Advantages

- o Electrical Isolation: The optocoupler separates the low-voltage control side from the high-voltage load side, reducing risk of damage or shock .
- o Configurable Triggering: Can be set to activate on logic high or logic low, making it compatible with various microcontroller logic levels .
- o Ease of Use: Plug-and-play design with standard interfaces allows direct connection to microcontrollers without additional circuitry .
- o Versatility: Suitable for home automation, robotics, industrial control, and IoT projects .

Applications

- o Home Automation: Control lights, fans, or appliances remotely.
- o Industrial Automation: Switch motors, solenoids, or other high-power devices.
- o Robotics: Operate actuators or high-current components safely.
- o IoT Projects: Integrate with smart home systems for remote control and monitoring .

Single-channel optocoupler relay module

Usage Tips

- o Connect VCC to 5V and GND to the microcontroller ground.
- o Connect the control signal to the input pin, respecting the jumper setting for high/low trigger.
- o Connect the load to COM, NO, or NC terminals according to the desired switching behavior.
- o Ensure the load does not exceed the relay's rated voltage and current.
- o Use the onboard LED indicators to verify proper operation .

This module is ideal for beginners and students due to its simplicity, safety, and compatibility with common microcontrollers while providing reliable control of high-power devices.

Buy 1-Channel Relay Module with Optocoupler Isolation. Available in 5V, 12V, and 24V versions. Supports

High quality: The module adopts normally open interface, high quality relay, the maximum load of the relay module: AC 250V/10A,

Buy 1 channel 5V 10A Relay Control Board Module with Optocoupler and easily control your electronic

It is essentially an "automatic switch" that uses a smaller current to control a larger current. It is used to

The relay is safely driven by transistor BC547 hence your input device, such as Arduino, is protected from the relay circuit. The

Product description: 1. The module uses genuine quality relay, normally open interfaces Maximum load :

About this item The module uses genuine quality relay, normally open interfaces, Maximum load: AC

Learn how to use the One Channel Relay with Optocoupler with detailed documentation, including pinouts, usage guides, and

The 5V Single Channel Optocoupler Isolated Relay Module is a high-performance, ready-to-use control module that allows your low

Learn how to use the 1 Channel Relay module with Optocoupler with detailed

Learn how to use the Relay with optocoupler with detailed documentation, including pinouts, usage guides, and example projects.

This 1 Channel 24V Relay Module with Optocoupler meet the safety standard as control areas and load area

Single-channel optocoupler relay module

have the isolation

The 1 Channel Relay Module with Optocoupler (Manufacturer: Songle, Part ID: SRD-05VDC-SL-C) is a versatile electronic

12V 1-Channel Relay Module with Optocoupler by ADIY is a Bidirectional isolation type 1-Channel relay control module, according to

The single-channel relay module is much more than just a plain relay, it contains

The 1 Channel 5V Relay Module with Optocoupler is a compact and efficient solution for safely controlling high-voltage devices from

Web: <https://www.kremgroup.co.za>

