Optocoupler Relay Module

AI Overview

An optocoupler relay module allows microcontrollers to safely control high-voltage or high-current devices by electrically isolating the control circuit from the load using an optocoupler.OverviewAn optocoupler relay module combines a relay with an optocoupler to provide electrical isolation between the low-voltage control side (e.g., Arduino, PIC, AVR, ARM) and the high-voltage load side. This prevents damage to sensitive microcontroller circuits while switching AC or DC loads safely .Key FeaturesVoltage and Current Ratings: Common modules operate at 5V for control and can switch loads up to AC 250V 10A or DC 30V 10A .Channel Options: Available in single-channel, dual-channel, 4-channel, or 8-channel configurations, allowing multiple devices to be controlled independently .Triggering: Modules can support high-level or low-level triggers, meaning the relay can be activated by applying a positive or zero voltage to the input pin .Indicators: Most modules include LED indicators to show relay status, enhancing safety during operation .Compatibility: Works with a wide range of microcontrollers and logic levels (1–5V), making them suitable for Arduino, Raspberry Pi, PIC, AVR, ARM, and PLC systems .ApplicationsHome Automation: Controlling lights, fans, and appliances remotely.Industrial Automation: Switching motors, solenoids, and other high-current devices.PLC and MCU Projects: Safe interfacing between microcontrollers and high-power loads.Smart Home Systems: Integration with sensors and IoT devices for automated control .Advantages of Using OptocouplersElectrical Isolation: Protects microcontrollers from voltage spikes and surges.Noise Reduction: Minimizes interference between control and load circuits.Safety: Reduces the risk of damage or electric shock when switching high-voltage devices .Example Modules4-Channel 5V 10A Relay Module: Can switch up to 4 high-current loads independently, compatible with 1–5V control signals .8-Channel 5V 10A Relay Module: Suitable for larger proje...

Article Content

Opto-isolator

Schematic diagram of an opto-isolator showing source of light (LED) on the left, dielectric barrier in the center, and sensor (phototransistor) on the right [note 1]

Arduino 4 channel relay module 5V control board with optocoupler Relay ...

This relay module is 5V active low. Relay output maximum contact is AC250V 10A and DC30V 10A. The standard interface can be directly connected with microcontrollers. Working status indicator lights are

NOYITO 6-Channel Relay Module with Optocoupler Isolation

Overview This relay module provides 6 individually controllable channels for switching AC or DC loads. It features optocoupler isolation for signal separation and supports high or low level trigger selection

Relay and Optocoupler Modules

The 859 Series Relay Modules with miniature switching relays and optocoupler modules are ideal for interface levels in all industrial applications. Their slim

Relay Module 2 Channel USB to CH340 Serial Control Relay Module ...

2. USB serial port control relay, newly upgraded and advanced version, with new optocoupler protection circuit to prevent interference and high-speed transmission 3. The output terminal of the relay can be

Yimeng 1-Channel 12V Relay Module with Optocoupler Isolation

This 1-channel 12V electromagnetic relay module features optocoupler isolation to protect microcontrollers when controlling various home appliance circuits.

5V Two 2 Channel Relay Module With optocoupler For PIC AVR DSP

5V Two 2 Channel Relay Module With optocoupler For PIC AVR DSP ARM Arduino TxHang Electronic (581962) 99.4% positive

ESP32 RS485 Modbus Wifi 2-Way Relay Module Optocoupler

1. ESP32, with Wi-Fi and 2. 2-channel input optocoupler isolation 3. Built-in CH340 serial port chip, can be programmed with one click 4. 7~24VDC...

Relays – QuartzComponents

Relays are important part of any electrical and electronic circuits. We use relays in control applications, switching applications, circuit protection applications and

Relay Module with Optocoupler (8 Channel/4 Channel

With a relay coil to absorb the diode protection. Standard interface that can be controlled directly by microcontroller (Arduino?, 8051, AVR, PIC, DSP, ARM,

Industrial isolated 8-Channel ESP32-S3 WiFi Relay Module RS485

ESP32-S3-ETH-8DI-8RO is an industrial-grade 8-channel WiFi network relay based on ESP32-S3 main controller and supports WiFi, Bluetooth, RS485, network port and other peripheral interfaces. It has

How to Connect a Relay through an Opto-Coupler

The following concepts show how a relay driver can be configured with an optocoupler using transistors. As shown in the following circuit diagrams, the

3.3V 5V 3 Channel Relay Module 5mA With

3.3V and 5V Compatible Operation This 3.3V 5V 3 Channel Relay Module supports dual voltage operation, making it ideal for various microcontroller systems like

ANMBEST 8-Channel 12V Relay Module with Optocoupler

Overview This relay module is designed for switching electrical loads using a 12V control signal. It includes an optocoupler for isolation between the control circuit and the relay outputs, and supports

3.3V 5V 3 Channel Relay Module 5mA With

3.3V/5V 3-channel relay module with optocoupler isolation, 5mA, DC power, sealed protection, low power contact load, compatible signal, 1 piece per pack, 11x11x3

2-relay module 5V with optocoupler low-level trigger compatible with ...

Thanks to an additional transistor, the module can be switched with most microcontrollers with little current. Equipped with transistors, diodes

DC 5V/9V/12V/24V 1 Channel Optocoupler Relay

2, Using SMD optocoupler isolation, driving ability, stable performance ; trigger current 5mA;. 1 x Relay Module with Optocoupler. 1, The

How to Use 1 Channel Relay module with Optocoupler:

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

How to Use Relay with optocoupler: Examples, Pinouts,

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

Arduino Tutorial: 2-Channel Optocoupler Relay Module

High-quality Songle relay featuring a single pole double throw (SPDT) configuration, with one common terminal, one normally open terminal, and one normally closed

Relay 1-Channel 5V — optocoupler-isolated switch

Relay 1-Channel 5V — optocoupler-isolated switch Sample sketch for the 1-Channel 5V Relay Module with Optocoupler, sold by Circuitrocks. Toggles a relay ON and OFF every 2 seconds. No external

Relay Module Optocoupler: Schematic and Working

This article shares the Relay Module Optocoupler Schematic and Working principle. Cheap DIY relay module project with guidance.

ESP32 RS485 Modbus Wifi 8-Way Relay Module Optocoupler

ESP32 RS485 Modbus Wifi 8-Way Relay Module Optocoupler Isolation 8 Channel Relay Module Tyep C and 7-24V Popis 1. ESP32, with Wi-Fi and 2. 8-channel input optocoupler isolation 3. Built-in CH340

16-CHANNEL 5V RELAY Module Control Board With Optocoupler

16-CHANNEL 5V RELAY Module Control Board With Optocoupler Protection For - £15.30. FOR SALE! Adopting the industry''s top quality isolated optocoupler, it has strong anti-interference ability

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