

Article Overview

Optocoupler relay modules combine mechanical relays with optical isolation to safely control high-voltage or high-current loads from low-voltage control circuits.

Overview

An optocoupler relay module integrates a mechanical relay with an optocoupler, which electrically isolates the control circuit (e.g., microcontroller) from the high-voltage switching circuit. This isolation protects sensitive electronics from voltage spikes, electrical noise, and back EMF generated by inductive loads, ensuring stable and safe operation .

Key Features

- o Channel Configurations: Modules are available in 1, 2, 4, 6, or 8 channels, allowing multiple devices to be controlled simultaneously .
- o Voltage Compatibility: Common operating voltages include 5V and 12V, compatible with Arduino, ESP32, Raspberry Pi, and other 5V/12V logic systems .
- o Triggering Options: High-level or low-level triggering can be selected via onboard jumpers, providing flexibility for different control boards .
- o Load Capacity: Typical modules can switch AC loads up to 250V/10A and DC loads up to 30V/10A, suitable for lights, motors, pumps, and solenoids .
- o Real-Time Indicators: Many modules include LED indicators for power and relay status, allowing easy monitoring of operation .
- o Mounting and Integration: Modules often feature mounting holes for secure installation and terminal connections for easy wiring .

Applications

- o Microcontroller Projects: Safely control high-voltage devices from Arduino, ESP32, or Raspberry Pi .
- o Home Automation: Switch lights, fans, or appliances remotely while protecting low-voltage control circuits .
- o Industrial Control: Interface PLCs or sensors with actuators, providing galvanic isolation and reliable signal switching .
- o DIY Electronics: Ideal for hobbyists and prototyping where multiple devices need controlled switching with electrical isolation .

Advantages

- o **Electrical Isolation:** Protects microcontrollers and sensitive electronics from high-voltage spikes.
- o **Stable Performance:** SMD optocouplers reduce interference and improve switching reliability .
- o **Versatility:** Compatible with AC and DC loads, multiple channels, and various trigger levels.
- o **Durability:** Mechanical relays provide robust switching, while optocouplers ensure long-term protection and noise-free operation . Optocoupler relay modules are essential components for safely bridging low-voltage control circuits with high-voltage devices, making them widely used in automation, industrial systems, and DIY electronics projects.

Microcontroller compatible board with 2 relays for max. 50V AC / 5A or 30V DC / 5A.

The 4-channel relay module with optocoupler is a popular choice for both DIY projects and industrial

This interfacing is possible thanks to ABB's relays and optocouplers ranges, which offer wide adaptation in both voltage (from 5 to

Introduction These 5V multi-channel relay modules are convenient devices for controlling

Find your relay module with optocoupler easily amongst the 3 products from the leading brands (WAGO, Ahlborn, ...) on

Relay modules play a important role in controlling high-voltage devices using low-voltage microcontrollers or digital circuits. They act

Learn how to use the Relay with optocoupler with detailed documentation, including pinouts, usage guides,

From relay sockets to pluggable relay and optocoupler modules - WAGO delivers versatile, high

Schematic, Amazon Relay Module: 1 Channel, Optocoupler Isolation Hi/Low Trigger A ham

The Optocoupler Protected Relay Module is an essential component in modern electrical and electronic systems, offering an efficient

This module allows microcontrollers to control high-voltage devices (AC or DC) using opto-isolated relays. Each

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

Optocoupler and Relay Combination Module

Learn how to use the 5V 30A 1- Channel Relay Module With Optocoupler High/Low Level Trigger with detailed documentation,

I have designed this module to operate with input voltages of 5V and 3.3V (common in most MCUs). Additionally, I

Hello guys I am trying to activate relays with optocoupler module i bought. I have attached the module picture with all

The 12V 8-Channel Relay Module with Optocoupler is designed to control multiple high-voltage devices using low

Web: <https://bssoda.pl>

