

Relay Module Optical Coupler



Article Overview

An optical coupler relay module isolates the control circuit from the load circuit while enabling safe switching of high-voltage or high-current devices using low-voltage control signals.

Core Function

An optical coupler relay module combines an optocoupler (opto-isolator) with a relay, allowing a low-voltage input signal to control a high-voltage or high-current output while maintaining electrical isolation between the two circuits . The optocoupler uses a light-emitting diode (LED) to transmit signals optically to a phototransistor or photothyristor, which then activates the relay. This ensures that voltage spikes, noise, or faults on the load side do not affect the control side .

Working Principle

- **Input Signal Activation:** When a control signal is applied to the module's input (e.g., from a microcontroller), the LED inside the optocoupler emits light .
- **Optical Transmission:** The emitted light travels across a transparent insulating barrier to the photodetector, which is electrically isolated from the input .
- **Relay Switching:** The photodetector generates a current that drives the relay coil or solid-state switch, closing or opening the output circuit to control the connected load .
- **Protection Features:** Modules often include current-limiting resistors, flyback diodes, and indicator LEDs to protect the transistor and relay from back EMF and to signal operation

Article Content

Opto-Isolated Relay Switching Module

Circuit : Andy Collinson Email : Description A very simple dual channel optical isolated relay module. The input can be driven from

What's the point of optocouplers on relay boards?

I have been making relay modules a week, without the optocoupler the transient voltage will go up the signal line, all the opto does is

What is Optocoupler and How it works?

Opto TRIACs are more commonly known as solid state relays or SSLs. They basically act like regular relays but use

What is an optoisolator and how does it work?

What is an optoisolator (optical coupler or optocoupler)? An optoisolator (also known as an optical coupler,

Relay and Optocoupler Modules

From sockets to pluggable relays to optocoupler modules, WAGO relays and optocouplers can offer many

Optocoupler Relay Basic, Comparison, and Developing Trend

Optocoupler Relay Basic Basic Structure A optocoupler relay is a device that combines photocoupling technology with

Relays and solid-state relays

Relays and solid-state relays Discover our comprehensive selection of relays and solid-state relays, coupling relays,

Interface-Relais & Optokoppler| ABB

Interface-Relais und Optokoppler von ABB gewährleisten zuverlässige Spannungswandlung zwischen Prozessperipherie und

Interface relays and optocouplers

Environmentally friendly, cadmium-free and lead-free, ABB interface relays and optocouplers meet RoHS

Wiring a Opto-Isolated Relay to Arduino

NOTES: If you want complete optical isolation, connect "Vcc" to Arduino +5 volts but do NOT connect Arduino

4-Channel 5V Optical Isolated Relay Module - HandsOn Tech

This module is optically isolated from high voltage side for safety requirement and also prevent ground loop when interface to

How to Connect a Relay through an Opto-Coupler

The idea of operating a relay with an optocoupler is simple, it's all about providing an input DC from the source which needs to be

User's Guide: 12V 4-Channel Relay Module with Optocoupler

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

Optocoupler Relays

Optocoupler relays provide isolation between the control signal and the load. These compact DIN rail

Relay and Optocoupler Modules | WAGO

Explore WAGO's relay and optocoupler modules for efficient signal transmission and voltage minimization in various applications.

Opto-Isolated Relay Switching Module

An optically isolated relay module. 2 Channels and compatible with Arduino, ESP32, ESP8266, Orange Pi,

Relay Control Module, Optical coupler Isolated, H/L trigger

The module uses the Songle relay for control, AC voltage max at 250V, AC current max at 10A, DC voltage 30V DC current

Contact Us

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