

Principle of 4n Optocoupler Relay Module



Overview

This module allows microcontrollers to control high-voltage devices (AC or DC) using opto-isolated relays. Each channel can be triggered by either HIGH or LOW logic, selectable via jumpers. This family includes the N25, 4N26, 4N27, 4N28. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sec. We will learn three methods, first method is by connecting relay directly with the optocoupler output pins, second method is by using external PNP transistors, and third method is by using external NPN transistors. Any standard optocoupler such PC817, TIL111, or MCT2E can be used in the discussed. The 4N25 Optocoupler (also known as an optoisolator) is an electronic component that allows electrical signals to be transmitted between two isolated circuits using light.



Article Content

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4N35 IC : PinOut, Datasheet & Its Working

4N35 Optocoupler IC Working 4N35 optocoupler IC working is straightforward because when the infrared LED in this IC is powered, the

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8-channel relay module, with optocoupler, low level, 5V

8-channel 5V relay module with optocoupler, low level actuation, for Arduino and automation. Switches up to 250VAC 10A, with NC NO COM terminals.

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The Basics of Optocoupler Relay

An optocoupler relay is a type of relay that operates based on opto-isolation technology, ensuring no direct electrical connection between the

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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 3.3V or 5V sources. The

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5V 2/4/8 Channel Relay Modules with Optocoupler

Relay Maximum Current: 10A Trigger Mode: Active Low Indicator LEDs: Power supply indicator and relay status indicators How to Operate the

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4 Channel 5V Relay Module with Optocoupler

Description 4 Channel 5V Relay Module with Optocoupler A 4x5V Opto-Isolated Relay Module is a board that contains 4 relays, each of which can be controlled

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A Complete Guide on OptoCoupler Relay

The optocoupler Relay circuits are used in various electronic projects. In this, we discuss the basics of Optocoupler Relay in detail What is Optocoupler

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What is 4N28 Optocoupler : Pin Configuration & Its

What is 4N28 Optocoupler? A 4N28 optocoupler device is an Industry type single channel-based Photo-transistor Coupler. There are different families of

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4N25 optocoupler pinout, working, examples and datasheet

4N25 Applications AC power mains detection. AC voltage measurement using a microcontroller Solid-state relay Switch-mode power supplies Logical common -

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4 Channel Relay Module with Optocoupler

A 4 Channel Relay Module with Optocoupler is an electronic board designed to allow a low-power control signal (typically from a microcontroller like Arduino,

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How Optocouplers work

In this video we learn how optocouplers work and also look at some simple electron circuits you can make yourself to understand how an optocoupler, opto-isolator, phototransistor, photocoupler works.

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Electronic Basics #32: Relays & Optocouplers

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4N25, 4N26, 4N27, 4N28

DESCRIPTION ototransistor coupler. This family includes the N25, 4N26, 4N27, 4N28. Each optocoupler consists of gallium arsenide infrared LED and a silic

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2 Channel 5V Relay Module

2 Channel 5V Relay Module This is a LOW Level 5V 2-channel relay interface board, and each channel needs a 15-20mA driver current. It can be used to control various appliances and equipment with

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Relay Module Optocoupler: Schematic and Working Explained

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

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OptoCoupler : how it works

Solid State Relay (SSR) Circuit using OptoCoupler : how it works ? The input circuit is one of the parts which composed a solid state relay. The input circuit is made

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Demystifying the 4N35: The Quintessential Optocoupler

learn more through Demystifying the 4N35: The Quintessential Optocoupler blogs, projects, educational articles and product reviews all in one

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Application Examples

INTRODUCTION Optocouplers are used to isolate signals for protection and safety between a safe and a potentially hazardous or electrically noisy environment. The interfacing of the optocoupler between

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4N25, 4N26, 4N27, 4N28

DESCRIPTION The 4N25 family is an industry standard single channel phototransistor coupler. This family includes the 4N25, 4N26, 4N27, 4N28. Each optocoupler consists of gallium arsenide infrared

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Optocoupler Relay Module Schematic | PDF | Chess

4 Channel DC 5V Relay Module With Optocoupler Schematic Diagram - Free download as PDF File (.pdf), Text File (.txt) or view presentation slides online.

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4 Channel 5V Relay Module

Principle From the picture below, you can see that when the signal port is at low level, the signal light will light up and the optocoupler 817c (it transforms electrical

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ANO007 | Understanding Phototransistor Optocouplers

In some applications like motor control, relays and communication interfaces, the optocoupler is used as an isolated electronic switch, where the phototransistor is driven into conduction and blocking states

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4-Channel Relay Driver Circuit and PCB Design

Connecting wire Relay Driver Circuit Explanation: In this 4-Channel Relay Driver Circuit we have used an optocoupler which is triggered by active

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How to Use an Optocoupler to Pass Signals Between

How to Use an Optocoupler to Pass Signals Between Controllers at Different Voltages: This tutorial makes use of the 4N25 optocoupler chip to allow for

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Relays and Optocouplers

This interfacing is possible thanks to ABB's relays and optocouplers ranges, which offer wide adaptation in both voltage (from 5 to 400 V) and current (from 10-7 to 16 A) as well as high isolation between

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4N25 Optocoupler Pinout, Working, Features,

Learn everything about the 4N25 Optocoupler — its pinout, internal working, features, equivalent components, and practical applications. Ideal for

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Optocoupler, Phototransistor Output, with Base Connection

These families include the 4N35, 4N36, 4N37, 4N38 couplers. Each optocoupler consists of gallium arsenide infrared LED and a silicon NPN phototransistor. These couplers are Underwriters

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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,

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Optocoupler Relay Basic, Comparison, and Developing

Optocoupler relays and traditional relays have significant differences in their working principles, structures, advantages and disadvantages, and

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5V 4 Channel Relay Module (with Optocoupler) -

Description It is 4 Channel Isolated 5V 10A Relay Module, A wide range of microcontrollers such as Arduino, AVR, PIC, ARM and so on can control it. It is

Sep 08, 2025

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, and

Aug 08, 2025

4N25 Optocoupler Application Guide | PDF | Electrical

The document describes the internal circuit structure and parameters of the 4N25 optocoupler, including that it has a light emitting diode input and phototransistor

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A Complete Guide on OptoCoupler Relay

What is Optocoupler Relay? A relay works on the opto-isolation principle, which means there is no direct or hardwire connection between the

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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. Each channel can be triggered by either HIGH or LOW logic, selectable

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4 Channel 5V Relay Module with Optocoupler

The 4 Channel 5V Relay Module with Optocoupler is a versatile electronic component designed to control high-voltage circuits with low-voltage microcontrollers. Equipped with optocouplers, it ensures

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DIY Relay Module Optocoupler Based || LOW Triggered 1 Channel Relay ...

This 1-channel Relay module comes with Optocoupler protection is an active low relay module which means that the relay will conduct when the input signal.LIK...

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4N25 Optocoupler Pinout, Working, Features,

When current flows through the LED, it emits infrared light that activates the phototransistor on the output side. This design provides galvanic

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Optocouplers Guide: Understanding Types,

You'll find them in projects ranging from simple relay modules to advanced power supply systems. Their versatility makes them a favorite among

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