

How to wire the optical coupler module



Overview

An optocoupler (or opto-isolator) is a component that transfer signals between circuits using light.

Key Takeaways

Wire the PC817 optocoupler module by connecting the input signal to the LED side and the output to the phototransistor side, keeping input and output grounds isolated unless a jumper is used.

Understanding the Module

A PC817 optocoupler module transfers signals between two isolated circuits using light. The input side has an LED that emits infrared light when current flows, and the output side has a phototransistor that conducts when it detects light. This allows electrical isolation between circuits, protecting sensitive components from voltage spikes or noise.

Pinout and Connections

Each channel typically has four pins: Input pins: IN (signal) and GND (input ground) Output pins: OUT (collector) and VCC (output voltage) Wiring Steps Input Side: Connect the signal source to the IN pin. Connect the input ground to the GND pin. The input is active LOW, meaning the LED turns on when the IN pin is pulled to GND.

Output Side: Connect the OUT pin to the device or microcontroller input. Connect the output VCC to the voltage required by the output circuit. The output is open-collector, so it may require a pull-up resistor if not already included on the module.

Jumpers: Some modules have a jumper connecting input and output grounds. Remove the jumper for full isolation between input and output circuits. Keep the jumper if you want the grounds connected for simpler interfacing with low-voltage circuits.

Using with Microcontrollers The module can safely interface high-voltage signals to low-voltage microcontrollers like Arduino or ESP32. Ensure the output current does not exceed the PC817 maximum (50 mA). For higher currents, use a transistor or relay driver.

Each channel has an LED indicator that lights up when the input is active, helping with troubleshooting.

Important Precautions

Do not connect input and output VCC/GND directly unless using the jumper intentionally. Verify the input voltage is within the module's rating to avoid damaging the LED. Use proper current-limiting resistors if the module does not include them internally.

By following these steps, you can wire the PC817 optocoupler module correctly, maintain electrical isolation, and safely interface different voltage circuits.

Article Content

PC817 Optocoupler Module User Guide | Wiring & Setup

Complete PC817 optocoupler isolation module guide. Covers 3.6V–30V wiring, jumper settings, resistor selection, Arduino/ESP32/PLC hookup

Optocoupler Tutorial for Beginners

An optocoupler (or opto-isolator) is a component that transfer signals between circuits using light. In this guide, you'll learn how they work and how you

Optocoupler Tutorial and Optocoupler Application

What is an Optocoupler? An optocoupler (also called an opto-isolator, photo-coupler, or optical isolator) is a solid-state semiconductor device that transfers electrical signals between two

Fiber Coupler Tutorials

The coupling ratio is calculated from the measured insertion loss. Coupling ratio (in %) is the ratio of the optical power from each output port (ports 2 and 3) to the sum of the total power of both output ports

Interfacing Optocoupler with Arduino

Today in this tutorial we will see the interfacing optocoupler with Arduino (4N35 or MCT2E). Optocoupler is also called an optoisolator. But before that let's see what an optoisolator or

Using Opto Couplers

The main purpose of an optocoupler interface is to completely isolate the input circuit from the output circuit, which normally means there will be two completely separate power supplies, one for the input

Arduino Tutorial: 2-Channel Optocoupler Relay Module

The optocoupler is extensively utilized in computer terminals, thyristor control devices, measuring instruments, copiers, automatic ticketing systems, and household appliances like fans and heaters

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Moving forward, expect to see more connectorized solutions, such as Nvidia's detachable modules or startups providing "plug-and-play" optical socket chiplets. WDM is the current method to

Legrand AV | C2G | USB-C Docking Stations, HDMI, HDBaseT,

CG28845 Connect a USB-C enabled device for video, wired network connectivity, and data transfer while simultaneously charging a smartphone or tablet.

Optocoupler Tutorial for Beginners

An optocoupler uses light to transfer signals from one circuit over to another. This guide shows you how they work and how to use them.

Interfacing PC817 4-Channel Optocoupler Module with

PC817 Optocoupler Module Features An Optocoupler, is an electronic component that interconnects two separate electrical circuits by

Everything You Need to Know About Optocouplers in Electronics

This optical coupling allows the input and output circuits to remain electrically isolated from each other, protecting against high voltages and electrical noise." Here, I would like to add a

Catalyst Systems SMTTC1310/1550-1x8 SC/APC Fiber Optic Coupler

Rack-chassis coupler modules like this one allow high-density fiber distribution within a standard 19-inch equipment rack, commonly used in data centers, telecom central offices, and campus fiber

How Optocouplers Work and How to Use Them

In this episode, we look at the optocoupler, or optoisolator, as it's also known. This little device is great at isolating voltage and noise from one circuit to another, and it can even be used to ...

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Fiber Couplers – optical fiber

Fiber couplers are fiber devices for coupling light from one or several input fibers to one or several output fibers, or from free space into a fiber.

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