

Actual wiring of the optocoupler module



Article Overview

An optocoupler module is wired by connecting the input LED to a signal source with series resistor and the output phototransistor to a separate power domain, ensuring complete electrical isolation between input and output.

Input Side Wiring

The input side of the optocoupler contains an infrared LED. To wire it correctly:

- Connect the anode of the LED to the positive voltage of your input signal (VCC) through a current-limiting resistor to prevent overcurrent.
- Connect the cathode to the input ground (GND) of your signal source.
- The input is active LOW, meaning the LED turns on when the input pin is pulled to GND, causing the LED to emit infrared light and activate the output phototransistor.
- Many modules include an indicator LED that lights up when the input LED is active, helping with troubleshooting .

Output Side Wiring

The output side contains a phototransistor that responds to the LED light:

- The collector of the phototransistor connects to the output voltage (VCC) through a pull-up resistor if not already included on the module.
- The emitter connects to the output ground (GND).
- The output is typically open-collector, meaning it can only sink current when active. When the input LED is on, the phototransistor conducts, pulling the output LOW; wh...

Article Content

Jan 06, 2026

How Optocouplers Work

FREE COURSE!! Learn about optocouplers. We'll look at how they are used to control circuits, how they work and

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How to Build an Optocoupler Circuit

In this project, we will go over how to build an optocoupler circuit so that we can create electrical isolation of the input and output of a

Feb 24, 2026

Arduino Tutorial: HY-M154 / 817 / PC817 Optocoupler

This tutorial gives an introduction to the HY-M154 / 817 optocoupler module. Moreover, a

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How to Use Relay with optocoupler: Examples, Pinouts, and Specs

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

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Optocoupler Circuits, Working, Characteristics, Interfacing

The attached second design shows optocoupler module designed to respond to reflected IR signals. The IRED and

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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

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Optoelectronics: Optocouplers

Isolation refers to the separation between two systems or voltage levels, while insulation refers to the actual medium

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Optocoupler Tutorial for Beginners

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

Dec 12, 2025

What is Optocoupler and How it works?

What is Optocoupler and How It Works As we have already learnt about transistors, an ideal transistor will not allow

Apr 19, 2026

Optocoupler | Explore Our Workshop | Jameco Electronics

Understand what an optocoupler is and how it works at our electronics workshop at Jameco Electronics. Explore tutorials on how

Nov 20, 2025

Optocoupler Circuits | Nuts & Volts Magazine

Simply described, an optocoupler device is a sealed, self-contained unit that houses independently-powered optical (light) Tx and Rx

Jan 30, 2026

ANO007 | Understanding Phototransistor Optocouplers

In order to design a functionally robust and reliable application with optocouplers, it is essential to understand not only the device's

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What Is Optocoupler and Its Application with Examples

An optocoupler is a semiconductor device that transmits an electrical signal between two

Feb 13, 2026

The Ultimate Optocouplers Guide: Isolation, Types, and Applications

Our complete optocouplers guide covers what they are, how they work, the different types, and key applications.

Mar 12, 2026

How to Design Relay Module using Optocoupler || Relay Module Circuit

"In this video, you'll learn how to design a relay module using an optocoupler, perfect for

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Optocouplers Guide: Understanding Types, Applications, and ...

By understanding these benefits, you can see why optocouplers are a vital part of any optocoupler design guide. They

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Optocoupler Tutorial and Optocoupler Application

What is an Optocoupler? An optocoupler (also called an opto-isolator, photo-coupler, or optical isolator) is a solid

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Arduino Tutorial: 2-Channel Optocoupler Relay Module

The optocoupler is extensively utilized in computer terminals, thyristor control devices, measuring

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Optocoupler Operation

Module 5.1 Optocoupler Operation What you'll learn in Module 5.1 After studying this section, you should be able to: Describe

May 09, 2026

PC817 Optocoupler Module User Guide | Wiring & Setup

Complete PC817 optocoupler isolation module guide. Covers 3.6V–30V wiring, jumper

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Optocoupler Isolation Board DST-1R4P-N (+ Arduino

There are two terminal block to wire GND and VCC to the board. Moreover, next to the

Dec 28, 2025

Interfacing PC817 4-Channel Optocoupler Module with

Learn How to interface a PC817 4-Channel Optocoupler Module with Arduino. using PC817

Feb 18, 2026

Optocoupler Tutorial and Optocoupler Application

Optocoupler Tutorial about how Optocouplers and Opto-isolators use light to electrical isolate its input signal from its

Jul 21, 2026

Optocouplers in Electrical Isolation and Signal Transmission

Overview: This article explores optocouplers, which are important for electrically isolating circuits and enabling signal

May 15, 2026

Using Opto Couplers

The main purpose of an optocoupler interface is to completely isolate the input circuit from the output circuit, which normally means

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Optocoupler Circuits, Working, Characteristics, Interfacing

Optocouplers become an effective replacement for relays, and for transformers for interfacing digital circuits stages.

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How to Use an Optocoupler to Pass Signals Between Controllers at ...

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

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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

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How to make the connections to the 1 channel optocoupler relay module?

I want to light a bulb connected to the socket by using an 1 Channel Optocoupler Relay Module which accepts an input of 5V. From

Contact Us

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