

How to use an optocoupler input module



Article Overview

An optocoupler input module allows you to safely transfer signals between circuits of different voltage levels while electrically isolating them.

Understanding the Module

An optocoupler module, such as the PC817-based HY-M154, contains an infrared LED on the input side and a phototransistor on the output side. When the input signal is applied, the LED emits light, which activates the phototransistor, allowing current to flow on the output side without a direct electrical connection between the circuits . This isolation protects sensitive devices like microcontrollers from high-voltage spikes .

Wiring the Module

- **Connect Input Signal:** Attach the voltage signal you want to monitor to the module's input pin. Ensure the input voltage is within the module's specified range.
- **Set Jumper for Isolation:** Most modules have a jumper that connects or separates the input and output grounds. Remove the jumper for full isolation between input and output circuits .
- **Connect Output:** The output side can be connected to a microcontroller or other logic device. The output is typically open-collector, meaning it requires a pull-up resistor to the output voltage rail if not already included on the module .
- **Power Supply:** Ensure the input and output sides have their respective power supplies if full isolation is used. Do not connect the VCC/GND of input and output together, as this defeats isolation .

Article Content

ANO007 | Understanding Phototransistor Optocouplers

The output resistor R2 as well as the bias voltage Vdd are both set as in the end application circuit where the optocoupler is used,

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

Arduino Tutorial: HY-M154 / 817 / PC817 Optocoupler

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

Isolated inputs and outputs with Arduino and optocoupler

We use an optocoupler to galvanically isolate the inputs or outputs of Arduino and be able to connect them safely to higher power

AN-3001 Optocoupler Input Drive Circuits

Optocoupler Input Drive Circuits An optocoupler is a combination of a light source and a photosensitive detector. In

How to Use Optocoupler: Examples, Pinouts, and Specs

Learn how to use the Optocoupler with detailed documentation, including pinouts, usage guides, and example projects. Perfect for

Optoelectronics: Optocouplers

In this simple circuit, the input is 5VDC and output is Vcc. There is a voltage shift from the input to the value of Vcc. In a

Interfacing PC817 4-Channel Optocoupler Module with

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

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

An optocoupler, also known as an opto-isolator or photocoupler, transfers electrical signals between circuits using light.

Isolating Circuits From Your Arduino With Optocouplers

Isolating Circuits From Your Arduino With Optocouplers: A Optocoupler also called a photocoupler, optical isolator or opto-isolator is

How to Use Infrared Slotted Optical Optocoupler Module: Examples ...

Learn how to use the Infrared Slotted Optical Optocoupler Module with detailed documentation, including pinouts, usage guides, and

How to Use Optacoupler: Examples, Pinouts, and Specs

Arduino UNO-Based Optocoupler Control Circuit with Pushbutton Interface This circuit involves an Arduino

PC817 Optocoupler Module User Guide | Wiring & Setup

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

Opto Coupled Devices

The main function of an optocoupler, whatever type of signal is used, is to provide complete electrical isolation between the input and

Optocouplers, Part 1: Principles and usefulness FAQ

In this situation, the optocoupler is used as a solid-state relay to replace an electromechanical relay. In other cases,

How Optocouplers Work

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

What Is Optocoupler and Its Application with Examples

An optocoupler is a semiconductor device that transmits an electrical signal between two isolated circuits using light.

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

Optocoupler Tutorial and Optocoupler Application

BenefitsMechanismDesignDefinitionExampleEffectsTypesApplicationsConstructionAdvantagesAn optocoupler or opto-isolator consists of a light emitter, the LED and a light sensitive receiver which can be a single photo-diode, photo-transistor, photo-resistor, photo-SCR, or a photo-TRIAC with the basic operation of an optocoupler being very simple to understand.See more on electronics-tutorials.wsLearn about Electronics

Using Opto Couplers - Learn About Electronics

The start of the design process is to specify the input and output conditions the optocoupler is to link.

Optocoupler Input Circuits for PLCs

Technical overview of optocoupler input circuits for PLCs, explaining sourcing/sinking configurations and isolation techniques.

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

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

Optocoupler Circuits, Working, Characteristics, Interfacing

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

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

In the following, a very simple example is presented on how to use the board with an

Optocoupler Tutorial and Optocoupler Application

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

PC817 Optocoupler Module User Guide | Wiring & Setup

□□ Module Overview These PC817 optocoupler isolation modules provide a convenient, pre

Optocouplers Selection Guide: Types, Features, Applications

Like opto-isolated SCRs, triac optocouplers typically feature very high current-transfer ratios. A triac optocoupler used in a basic

Contact Us

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