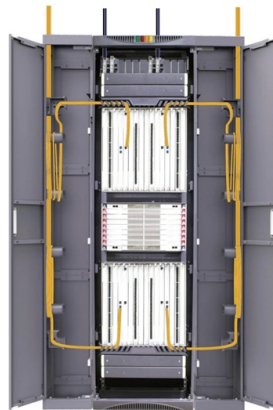


How to wire a four-wire optical control module



AI Overview

A four-wire optical control module is wired by connecting separate power, ground, signal, and reference/load wires while maintaining electrical isolation between input and output circuits. Understanding the Four Wires

A typical four-wire optical control module, such as a PC817 optocoupler or a 4-wire photo sensor, includes:

- Power (VCC):** Supplies voltage to the input side of the module.
- Ground (GND):** Provides a reference for the input circuit.
- Signal (Output):** Carries the electrical signal from the module to the control system.
- Reference/Common or Load:** Provides a return path or connects to the device being controlled, often isolated from the input power.

The input and output sides are electrically isolated, meaning do not connect the input VCC/GND to the output VCC/GND, as this defeats the isolation purpose.

Step-by-Step Wiring Guide

Gather Materials: You will need the optical module, appropriate wires, wire strippers, connectors, and a screwdriver.

Identify Wires: Check the module's datasheet or labeling. Common color codes for sensors are:

- Brown/Red:** Positive power (VCC)
- Blue/Black:** Ground (GND)
- Black/White:** Signal output
- Additional wire (often green or white):** Load or reference

Turn Off Power: Ensure all circuits are de-energized before wiring to prevent shocks or damage.

Strip and Prepare Wires: Strip a small section of insulation from each wire to allow secure connections.

Connect Input Side: Connect the VCC wire to the positive terminal of the power source. Connect the GND wire to the negative terminal of the power source.

Connect Output Side: Connect the signal wire to the input of the control device (PLC, microcontroller, or relay). Connect the reference/load wire to the common or load terminal of the device being controlled. If the module has a jumper for pull-up resistors, configure it according to whether your control device requires a pull-up on the output.

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Analog Output Module Wiring With 2, 3, and 4 Wire

2-Wire, 3-Wire, 4-Wire This refers to the number of wires the device will use and also how the device will connect to the PLC. A 2-wire analog device will

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Analog Output Module Wiring With 2, 3, and 4 Wire

The diagram shows a 2-wire connection to channel one and a 4-wire to channel zero. Both devices are wired using a shielded cable with the drain

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Electronic Sensor Outputs and Wiring

Three wire sensors have either a normally open or normally closed output; four wire sensors have complementary outputs (both a normally open and a normally

How to wire a 4 wire analog sensor: step-by-step wiring diagram

When connecting a 4 wire analog sensor, it is important to correctly identify and connect the different wires to ensure proper functionality. The wiring diagram below provides a detailed overview of the

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