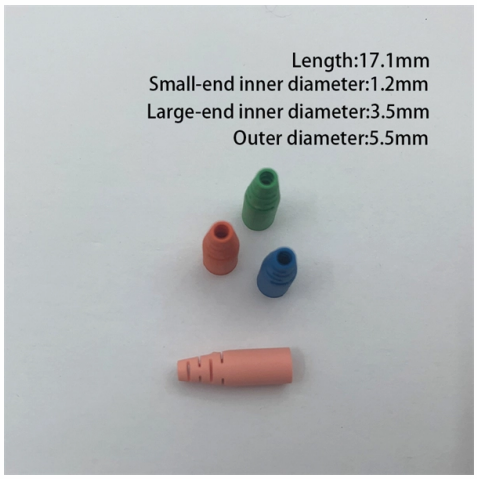
Circular light sensor module



Overview

LM393 Light Detection Sensor Module Tutorial: Analog You will learn how the module works internally, how to wire it correctly, how to tune the sensitivity.

Key Takeaways

A circular light sensor module detects ambient light and provides both analog and digital outputs, which can be read by microcontrollers like Arduino to measure light intensity or trigger events.

Understanding the Module

A typical circular light sensor module combines a photoresistor (LDR) with a comparator such as the LM393.

The LD

R changes resistance based on light intensity: more light decreases resistance, less light increases it. The module provides two outputs: Analog Output (AO): Continuous voltage proportional to light intensity, useful for measuring brightness levels. Digital Output (DO): ON/OFF signal based on a threshold set by an onboard potentiometer, ideal for triggering events like turning on a light when it gets dark.

Wiring the Sensor

Power Connections: Connect VCC to 5V and GND to ground on your microcontroller. Output Connections: AO to an analog input pin (e.g., A0 on Arduino) to read light levels.

D

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O to a digital input pin if you want threshold-based detection. Optional Pull-down Resistor: If the digital output fluctuates in low light, add a pull-down resistor to stabilize the signal. Using with ArduinoAnalog Reading: CppCopyint sensorValue = analogRead(A0); // Read AO pinSerial.println(sensorValue); // Print value to Serial Monitor The value ranges from 0 (dark) to 1023 (bright), allowing you to determine relative light levels.

Digital Reading: CppCopyint lightState = digitalRead(2); // Read DO pinif(lightState == HIGH){ // Light detected above threshold} else { // Light below threshold} Adjust the onboard potentiometer to set the threshold for day/night detection.

Practical Tips

Avoid exposing the sensor to direct sunlight or very intense light to prevent saturation. Use the analog output for projects requiring gradual light measurement, like dimming LEDs. Use the digital output for simple event triggers, such as automatic lighting or alarms.

Calibrate the sensor by testing in your environment and adjusting the potentiometer for reliable detection. By following these steps, you can integrate a circular light sensor module into your projects to measure ambient light or automate responses based on light conditions.

Article Content

LM393 Light Detection Sensor Module Tutorial: Analog

You will learn how the module works internally, how to wire it correctly, how to tune the sensitivity, and how to use it reliably with Arduino. This tutorial is a

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5pcs LM393 Light Sensor Module, Photosensitive

LM393 Light Sensor Module: Equipped with LM393 voltage comparator chip for accurate light intensity detection and reliable signal output.

LDR sensor module | How LDR Sensor Works

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LDR sensor module is a low-cost digital sensor as well as analog sensor module, which is capable to measure and detect light intensity. This sensor also is known as the Photoresistor sensor.

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Light Sensor including Photocell and LDR Sensor

In this tutorial about Light Sensors, we have looked at several examples of devices that are classed as Light Sensors. This includes those with and those without PN

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LDR Sensor Module with NodeMCU ESP8266

In this article we will learn how to implement LDR sensor module with NodeMCU ESP8266 and Arduino. If your are new to Internet of Things (IoT), learn about IoT by visiting our

Getting Started with Light Sensor Module (SN-LIGHT-MOD)

INTRODUCTION SN-LIGHT-MOD is a photosensitive resistor module, suitable to detect environmental light intensity and ambient brightness. Its sensitivity can be tuned with an on board

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