Description:

ADIY LDR sensor module is used to detect the intensity of light. It is associated with both analog output pin and digital output pin labelled as AO and DO respectively on the `board. When there is light, the resistance of LDR will become low according to the intensity of light. The greater the intensity of light, the lower the resistance of LDR. The sensor has a potentiometer knob that can be adjusted to change the sensitivity of LDR towards light.

Features:

1. Can detect ambient brightness and light intensity
2. Adjustable sensitivity (via blue digital potentiometer adjustment)
3. Output type: Analog and Digital
4. With fixed bolt hole for easy installation

Specification:

- Maximum power dissipation is 200mW

- The maximum voltage at 0 lux is 200V

- The peak wavelength is 600nm

- Minimum resistance at 10lux is 1.8kΩ

- Maximum resistance at 10lux is 4.5kΩ

- Typical resistance at100lux is 0.7kΩ

- Dark resistance after 1 sec is 0.03MΩ

- Dark resistance after 5 sec is 0.25MΩ

How it works:
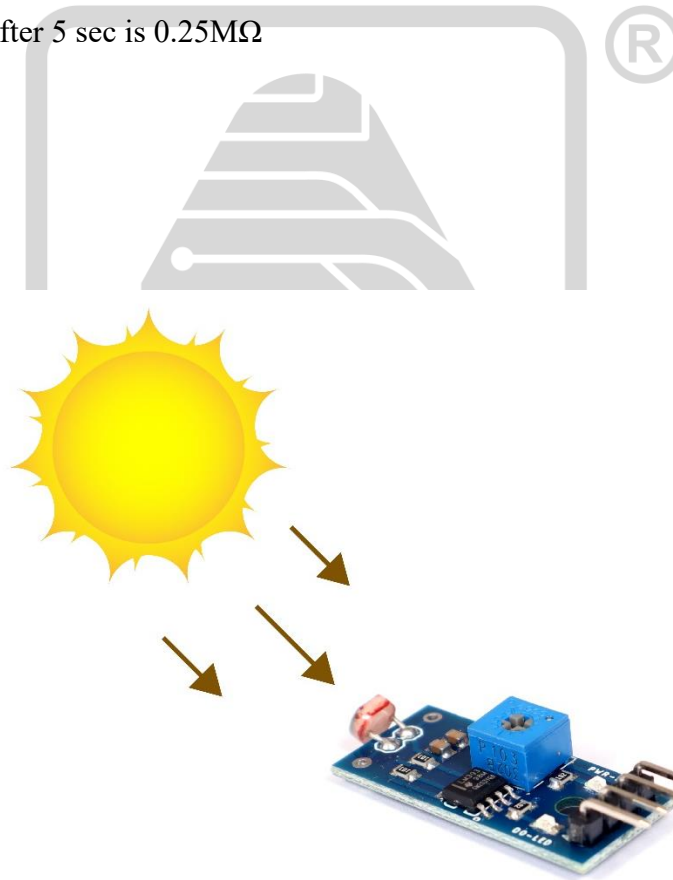
First of all, we need to connect the LDR sensor module to a 5v power supply. Then set the threshold voltage at the Non-Inverting input of the IC according to the present light intensity by rotating the preset knob for setting the sensor sensitivity.

When light intensity increase on the surface of the LDR then the resistance of the LDR decreases. Then the maximum amount of voltage will be allocated across the resistor. So, a Low amount of voltage from the LDR is given to the Inverting input of the IC. Then the Comparator IC compares

this voltage with the threshold voltage. In this condition, this input voltage is less than the threshold voltage, so the sensor output goes LOW.

In contrast, when light intensity decrease (low/dark) on the surface of the LDR then the resistance of the LDR increases. Then the maximum amount of voltage will be allocated across the LDR. So, a High amount of voltage from the LDR is given to the Inverting input of the IC. Then the Comparator IC compares this voltage with the threshold voltage. In this condition, this input voltage is greater than the threshold voltage, so the sensor output goes high.

Pin Configuration:
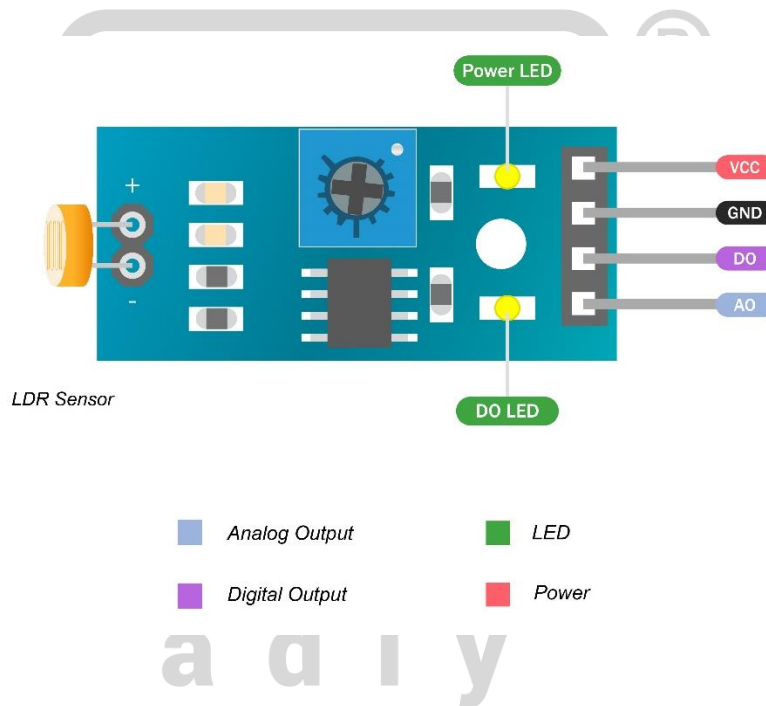
VCC: 5V Power supply

GND: Ground

DO: Digital Output

AO: Analog Output

Advantages:

- Sensitivity is High
- Simple & Small devices
- Easily used
- Inexpensive
- There is no union potential.
- The light-dark resistance ratio is high.
- Its connection is simple

Applications:

- Light sensitive devices
- Light intensity meter
- Burglar alarm circuit