

LDR (Light Dependent Resistor)

An **LDR (Light Dependent Resistor)**, also known as a **photoresistor**, is a passive electronic component whose **resistance decreases with increasing light intensity**. It is made from a **semiconductor material** like cadmium sulfide (CdS) that is sensitive to light. When the LDR is exposed to bright light, its resistance drops significantly, allowing more current to pass through. In darkness, its resistance increases, reducing the current flow.

LDRs are widely used in light-sensing applications such as:

- **Automatic street lighting**
- **Light meters**
- **Burglar alarms**
- **Solar garden lights**
- **Brightness control systems**

They are inexpensive, easy to use, and ideal for basic analog light detection tasks in microcontroller and sensor-based projects.