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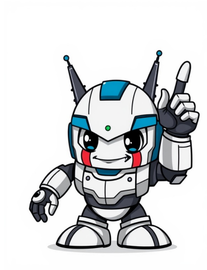

The Light Dependent Resistor: A Versatile and Affordable Solution for Lighting Applications ========== The Light Dependent Resistor (LDR), also known as a photoresistor, is a type of resistor that has no polarity and can be connected in any direction. It is a breadboard-friendly component that can be easily used on perf boards as well. The LDR symbol features inward arrows indicating the light signals, which are crucial for its operation. This component is widely used to sense light and is easy to integrate with microcontrollers or digital/analog ICs. LDR Features Easy to use on breadboard or perf board Easy to use with microcontrollers or normal digital/analog ICs Small, cheap, and easily available Available in PG5 ,PG5-MP, PG12, PG12-MP, PG20, and PG20-MP series Note: For more technical details and sample circuits, please refer to the LDR datasheet. Other Resistor-based Components Higher Power Resistor, Potentiometer (Variable Resistor), Thermistor. Where to use a LDR A photoresistor or LDR changes its resistance based on the light around it. When placed in a dark room, it has a high resistance, but as light is imposed on the sensor, its resistance decreases from mega ohms to few ohms. This property helps the LDR to be used as a light sensor, detecting the amount of light falling on it and predicting days and nights. It's an excellent choice for sensing light or distinguishing between days and nights. How to use a LDR Sensor Using an LDR is easy since it's one of the different types of resistors. There are many ways and circuits in which an LDR can be used, such as with microcontroller development platforms like Arduino, PIC, or normal analog ICs like Op-amps. A simple circuit using a potential divider is also effective. The setup involves a constant voltage applied across two resistors, with the lower resistor being the LDR and the output voltage measured from it. As the lamp is moved towards the resistor, the resistance value of the LDR decreases, resulting in a decreased voltage drop across it. This allows the sensor to detect changes in light intensity. Applications Automatic Street Light Detect Day or Night Automatic Head Light Dimmer Position sensor Used along with LED as obstacle detector Automatic bedroom Lights Automatic Rear view mirrorThe KY-018 LDR light sensor module is a versatile component that can be used in various applications, including automatic lighting systems, security systems, and weather monitoring stations. ========== The IC receives a Low voltage from the LDR, so it 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 (0). But if the resistance of the LDR increases then the maximum amount of voltage will be allocated across the LDR (R2). So, a High amount of voltage from the LDR is given to the Inverting input (2) 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 (1). ==========