Adjustable Infrared Sensor

The Adjustable Infrared Sensor is a set of transmitter and receiver in one of the photoelectric switch sensor. The sensor has a detection range of 3−80 cm. The effective detection range of it can be 80 cm. The detecting distance of obstacles can be adjusted through the knob of the potentiometer in the tail. The sensor can effectively avoid the interference of visible light. Because the infrared characteristics, different colors of objects, the maximum distance can be detected are also different. The farthest distance is white objects, and the nearest is black objects.

The Adjustable Infrared Sensor is small, easy to use, inexpensive and easy to assemble and can be widely used in robot to avoid obstacles, interactive media, industrial assembly line, and many other automation products. The switching signal output differs in accordance to the obstacles. It remains high when no obstacles and remains low when there are obstacles. There is a bright light behind the probe to detect the scope of 3−80 cm.

Technical Specifications

Operating Voltage: 5 V
Operating Current: 10 −15 mA
Output Current: 100 mA
Range: 3−80 cm adjustable (depends on object reflectivity)
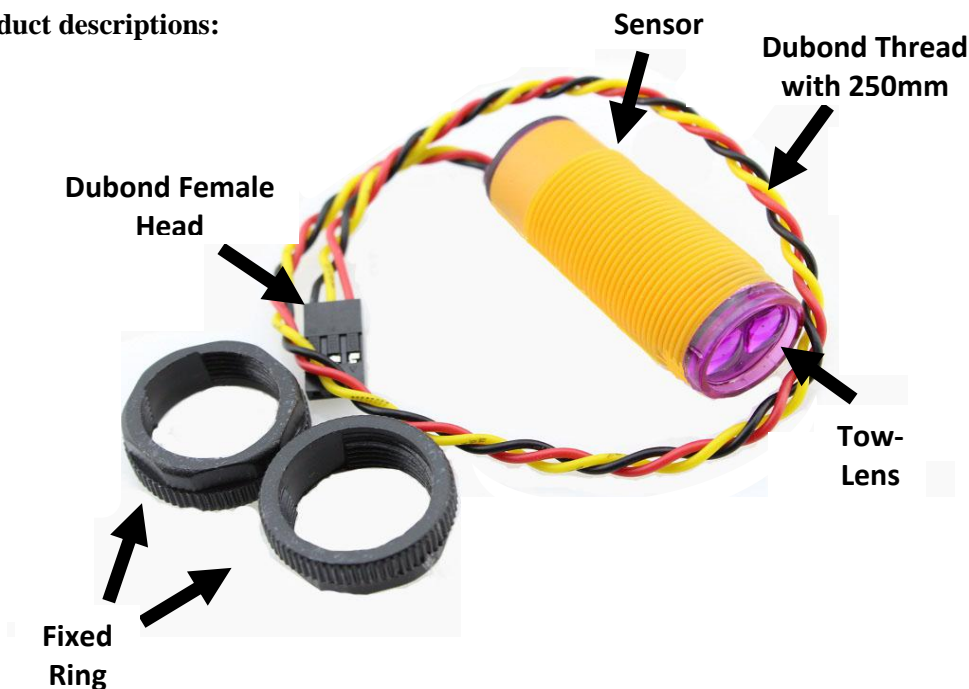**Response Time:** <2 ms
Operating Temperature: -25℃ to 55℃
Dimensions: 45mm L×18mm D
Weight: 20.0 g

Description, Wiring Diagram and Connection

Product descriptions:

Sensor
Dubond Thread with 250mm
Dubond Female Head
Tow-Lens
Fixed Ring

Wiring diagram:
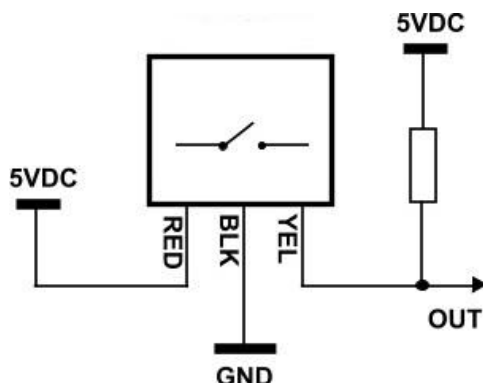
Connection:
- Red wire: +5V
- Black wire: GND
- Yellow wire: Digital Output

Mechanism

1. Sensitivity is adjusted by a small screw (potentiometer) at the back of the device which caters for 3−80 cm. Potentiometer clockwise will set the detection distance decrease, counterclockwise detection distance increase.
2. An LED indicates digital output.
3. The switching signal output is **HIGH** (1) when there are no obstacles in front of the sensor and **LOW** (0) when an object has been detected. The signal can be detected by single-chip microcomputer.
4. The sensor features LED in the back that turns ON when an object has been detected.

Testing your Sensor

Connect the red wire of the sensor to a 5V supply, black wire to ground and the yellow wire is not connected. Then, put your hand in the front of sensor, the LED lamp that indicates digital output in the back would light up. The detection distance can be adjusted using potentiometer.

Applications

1) Robot obstacle avoidance
2) Counting items on conveyer belt
3) Automatic assembly line
4) Interactive media

IMPORTANT NOTES

1. Make sure that the power supply terminal and a ground terminal connected correctly; otherwise the sensor may be permanent damage.
2. This sensor does not give an analog proximity value, only an on or off.