Project 10: PIR Motion Sensor

Description

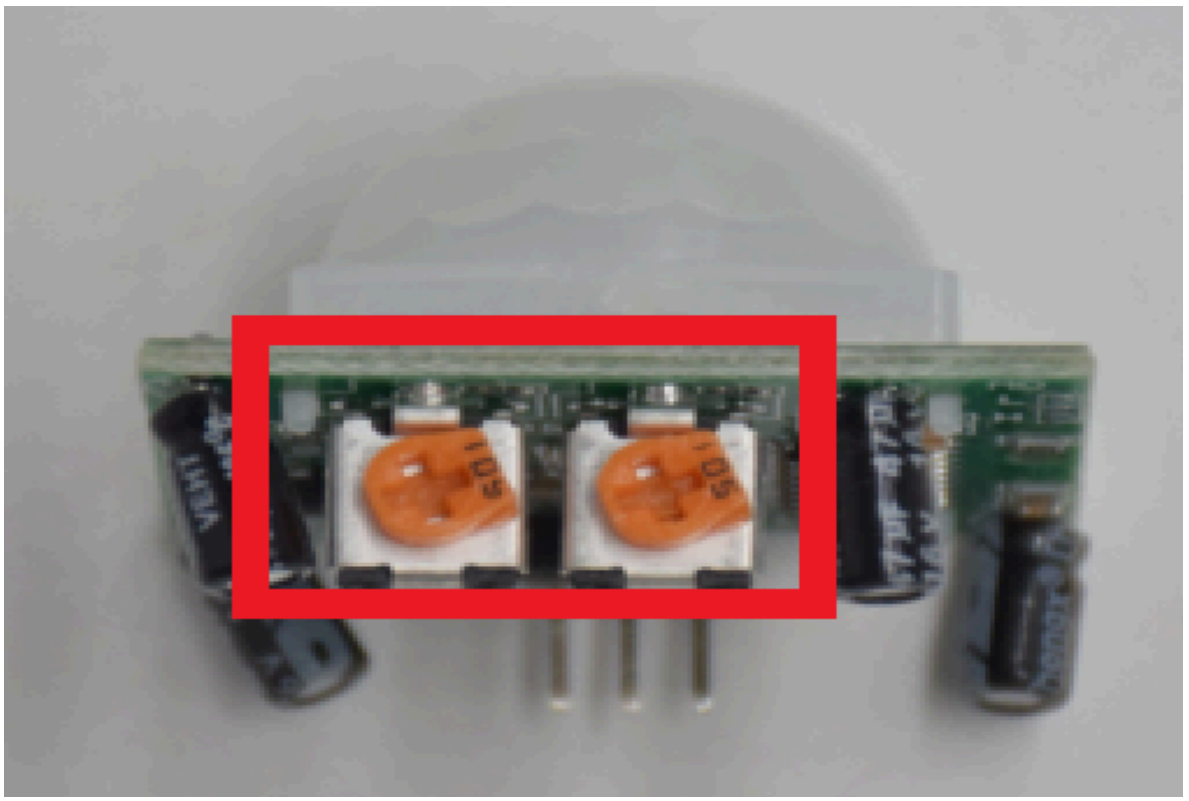
The human body infrared motion sensor can detect infrared signals from moving people or animals, and output switching signals. It can be applied to various occasions to detect human movement. The conventional pyroelectric infrared sensor has a larger volume, a complicated circuit and a lower reliability. Now, we have introduced a human body infrared motion sensor specially designed for Arduino. The sensor integrates an integrated digital pyroelectric infrared sensor and connection pins. It has higher reliability, lower power consumption and simpler peripheral circuits.

Specifications:

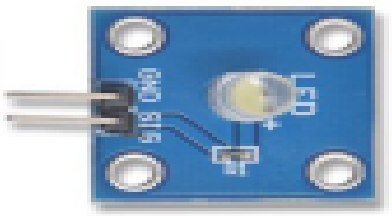
- Input voltage: DC 5V
- Working current: 15uA
- Working temperature: -20 ~ 85 degrees Celsius
- Output voltage: high 3 V, low 0 V
- Detection angle: about 140 °
- Detection distance: 3-4 meters
- Pin limit current: 100mA

Special note:

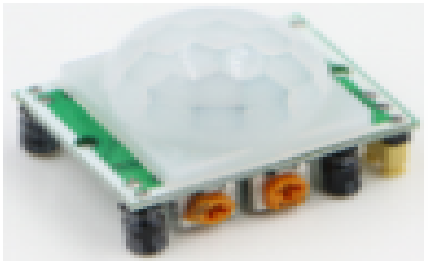
- 1. The maximum distance is 4-5 meters during testing.
- 2. When testing, the sensor needs to be covered with white lens, otherwise it will affect the distance.
- 3.Uncover the white cap to see the port label
- 4. The distance is best at 25℃, and the detection distance is shortened when it exceeds 30℃.
- 5. Done powering up and uploading the code, you need to wait 5-10 seconds then start testing, otherwise it is not sensitive.
- 6.Use a screwdriver to adjust the human body induction potentiometer according to the figure below



Equipment:

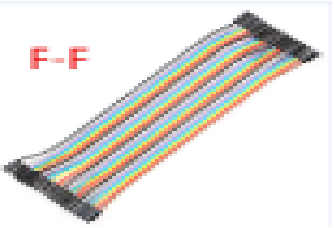
UNO R3 control Board	
Sensor Shield V5.0	
White LED Module	

PIR Motion Sensor

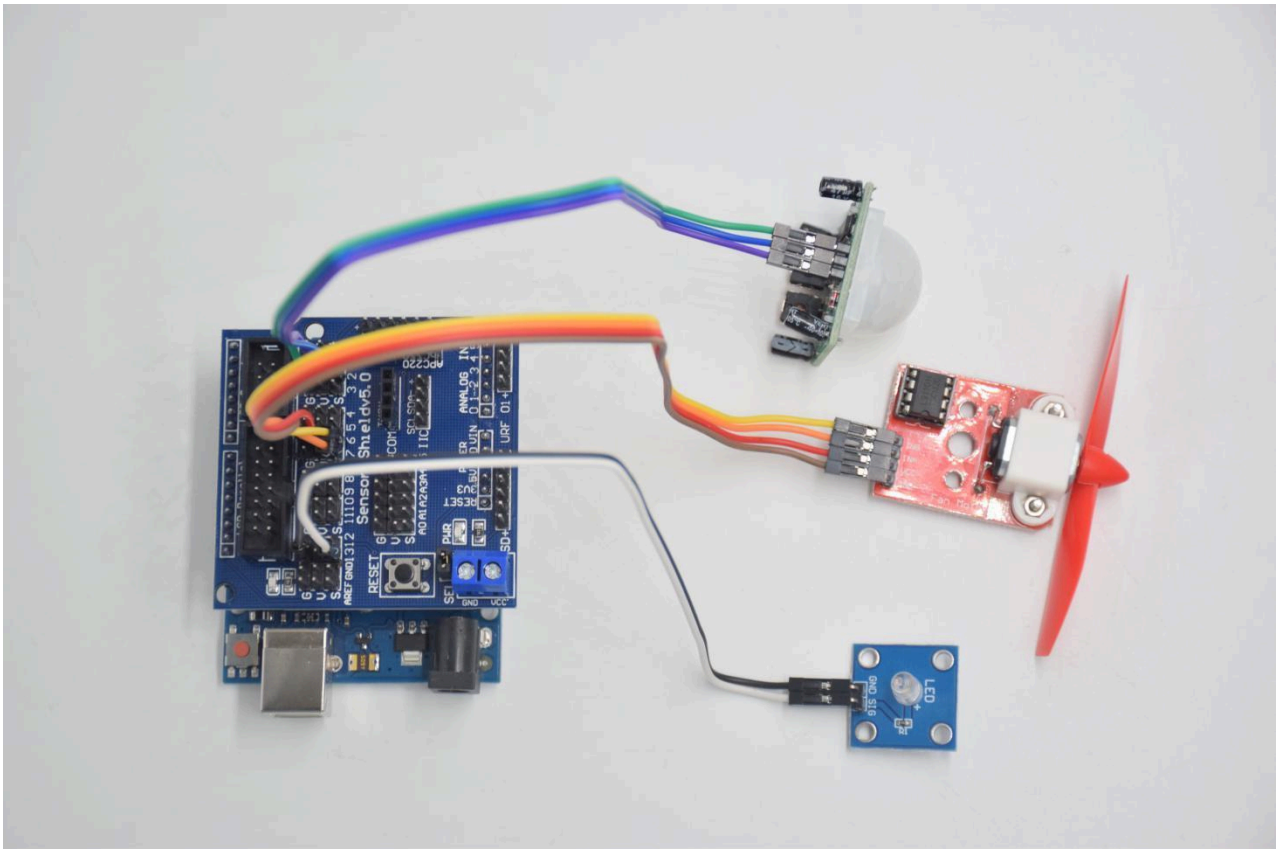


Fan Module

Female to Female
Dupont wire



Connection Diagram:



Human body induction: **Motor fan module:** **LED:**

GND -- GND **INB -- D6** **GND -- GND**

OUT -- D2 **INA -- D7** **SIG -- D13**

VCC -- 5V VCC -- 5V

GND -- GND

Test Code:

```
void setup () {
  Serial.begin (9600); // open serial port, and set baud rate at 9600bps
  pinMode (2, INPUT); // Define PIR as input in D2
  Serial.begin (9600);
  pinMode (13, OUTPUT); // Define LED as output in D13
  pinMode (7, OUTPUT); // Define D7 as output
  pinMode (6, OUTPUT); // Define D6 as output
}

void loop () {
  Serial.println (digitalRead (2));
  delay (500); // Delay 500ms
  if (digitalRead (2) == 1) // If someone is detected walking
 {
    digitalWrite (13, HIGH); // LED light is on
    digitalWrite (7, HIGH);
    analogWrite (6,150); // Fan rotates

  } else // If no person is detected walking
{
    digitalWrite (13, LOW); // LED light is not on
    digitalWrite (7, LOW);
    analogWrite (6,0); // The fan does not rotate
  }}
```

Test Result:

Upload the test code, open the serial monitor, and set the baud rate to 9600. If the human infrared sensor detects people around, the serial monitor displays "1", D13 and the white LED indicator light up at the same time, and the fan rotates. If there is no one around, the serial monitor displays "0" and the D13 indicator and white LED are off. The fan stopped spinning.