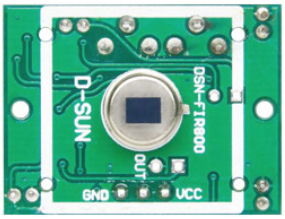
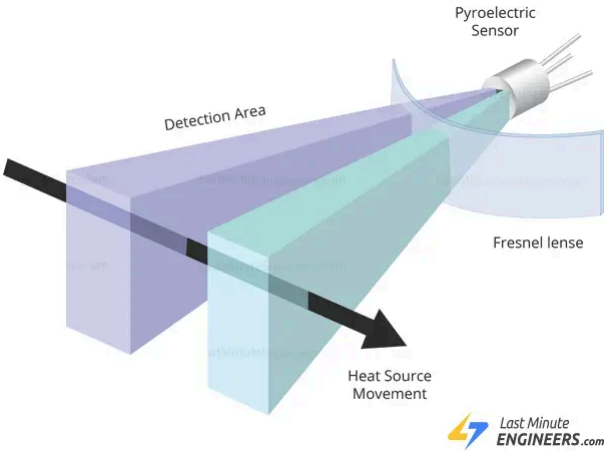
Principle

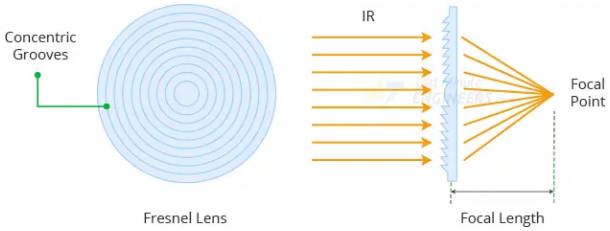
- All objects, including the human body, at temperatures above absolute zero (0 Kelvin / -273.15 °C) emit heat energy in the form of infrared radiation.
- The hotter an object is, the more radiation it emits.
- This radiation is not visible to the human eye because it is emitted at infrared wavelengths.
- The PIR sensor is specifically designed to detect such levels of infrared radiation.



Pyroelectric Sensor



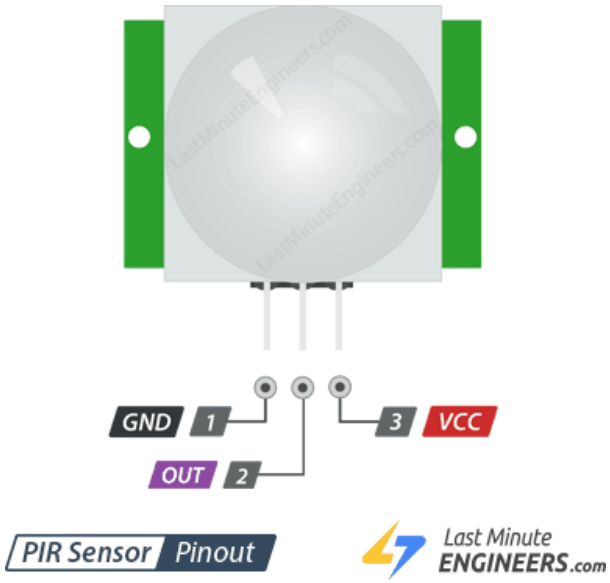
Fresnel Lens



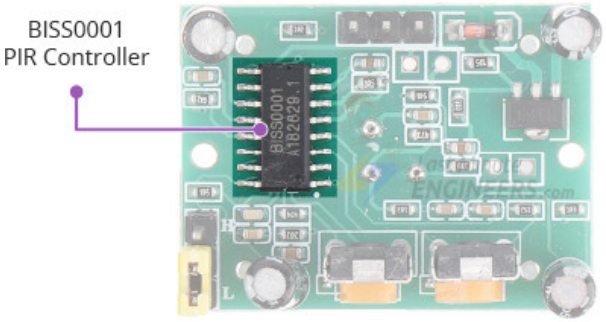
Hardware

Module

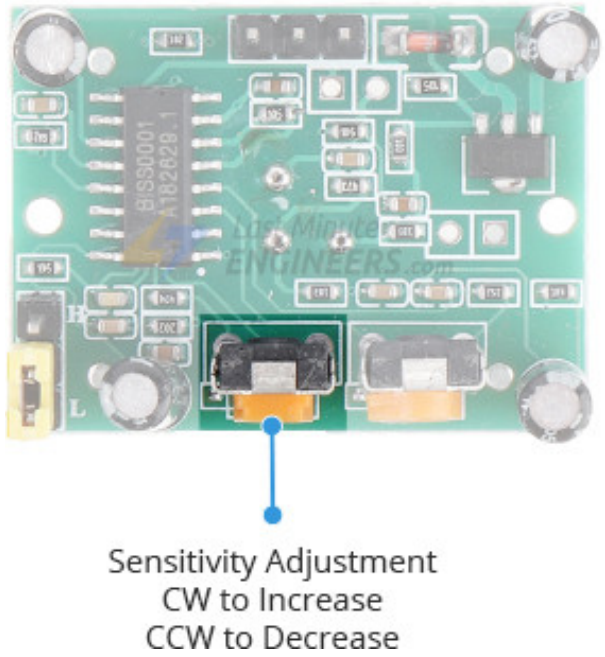
Open the Fresnel cover to make sure if the wiring is correct.



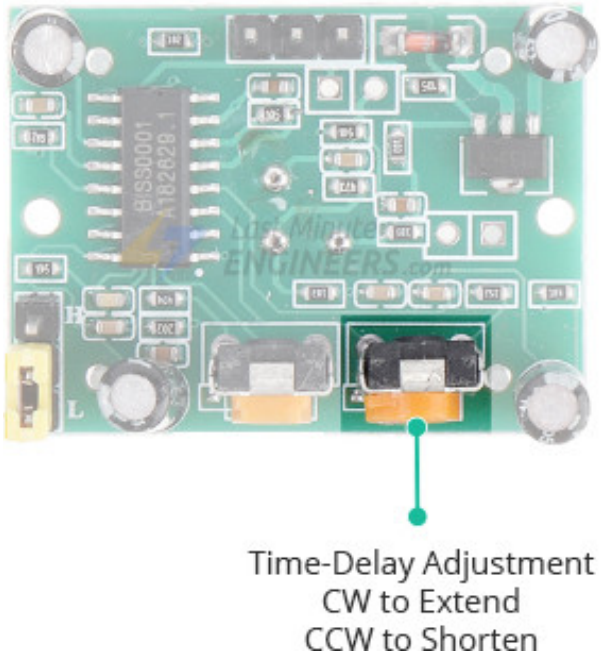
BISS0001 PIR Controller



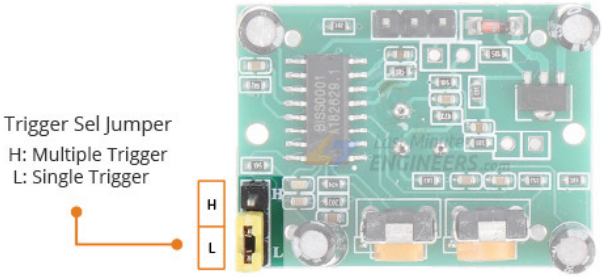
Sensitivity Adjustment



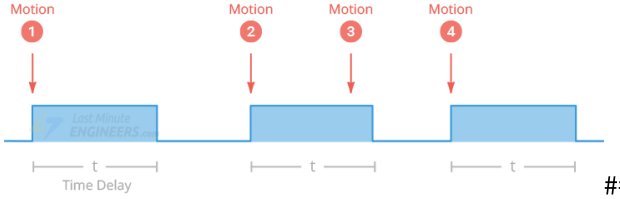
Time-delay Adjustment



Trigger Sel Jumper

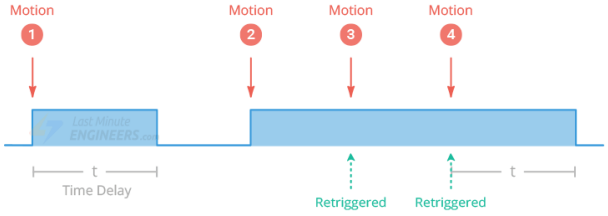


- L mode: Trigger - Wait action, Motion 3 is ignored

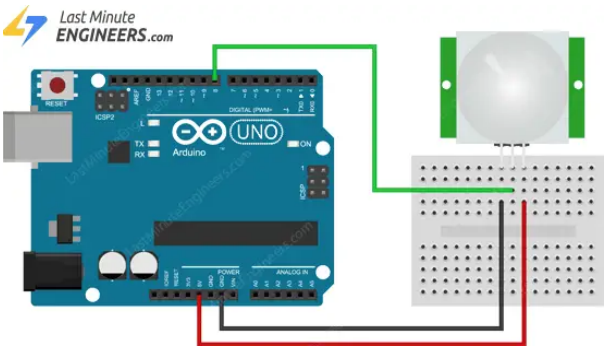


Schematic

- H mode: Retriggered within the time delay



Schematic



Software

```
void loop(){
        val = digitalRead(inputPin); // read input value
        if (val == HIGH) // check if the input is HIGH
        {
                digitalWrite(ledPin, HIGH); // turn LED ON
                if (pirState == LOW) {
                        Serial.println("Motion detected!");
                        pirState = HIGH;
                }
        }
        else
        {
                digitalWrite(ledPin, LOW); // turn LED OFF
                if (pirState == HIGH) {
                        Serial.println("Motion ended!"); // print on output change
                        pirState = LOW;
                }
        }
}
```

Links

- https://lastminuteengineers.com/pir-sensor-arduino-tutorial/