

# The PIR Motion Detector Alarm

## What is it?

If you have an alarm in your home odds are that this alarm is using a PIR motion sensor. PIR stands for “passive infrared” this means that the alarm is detecting temperature changes in the room i.e. moving warm or cold objects. It is often accidentally triggered by pets as they too have warm bodies.

## How to make it the basic version?

*Components:* buzzer, Arduino, PIR sensor, buzzer, LED

**Step 1:** Identify the (+), (-) and out pins from the picture on the right

**Step 2:** connect (+) pin of the PIR sensor to pin 7 on the Arduino

**Step 3:** connect the middle pin (output) of the PIR sensor to pin 8 on the Arduino

**Step 4:** connect (-) pin of the PIR sensor to pin 7 on the Arduino

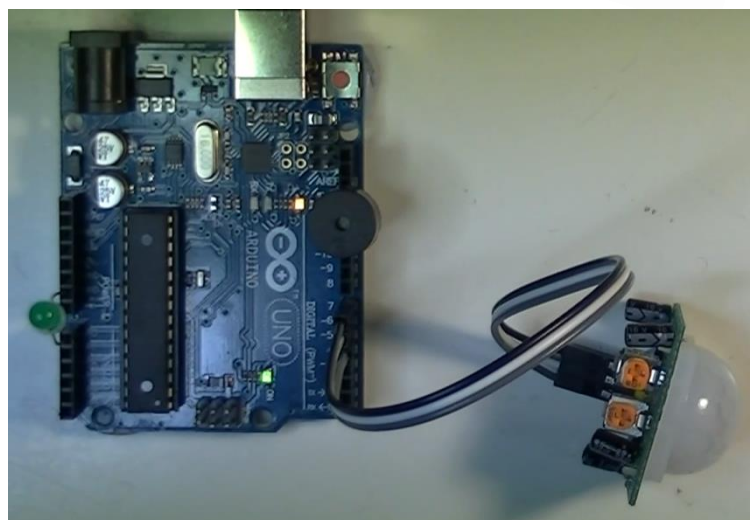
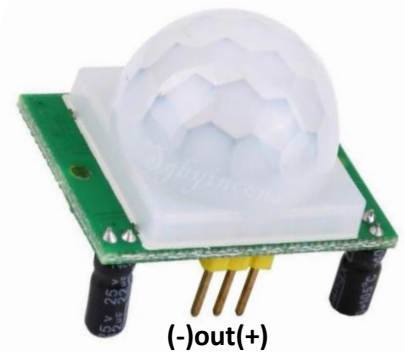
**Step 5:** connect the short leg of the LED into the blue ground rail on the breadboard.

**Step 6:** Place an LED with long leg in A0 and short leg in GND (make sure it's a large LED!)

**Step 7:** Place a buzzer with long leg in pin 11 and short leg in GND

**Step 8:** Upload program called “2min PIR Alarm or 2min PIR Alarm Advanced”

**NOTE :** Alarm takes around 5 minutes to warm up and start functioning well



To make your PIR Alarm go off more easily make the number circled in red less than 50. To make your alarm very difficult to trigger increase the number close to 200

```
int ledPin = A0; // will turn the LED on as an alarm
int buzzerPin = 11;
int powerPin = 7; // reads whether PIR sensor detected motion
int pirPin = 6; // reads whether PIR sensor detected motion
int gndPin = 5; // reads whether PIR sensor detected motion
int i = 0;
int x = 0;

void setup() {
  // put your setup code here, to run once:
  pinMode(ledPin, OUTPUT);
  pinMode(buzzerPin, OUTPUT);
  pinMode(powerPin, OUTPUT);
  pinMode(gndPin, OUTPUT);
  pinMode(pirPin, INPUT);

  digitalWrite(gndPin,LOW);
  digitalWrite(powerPin,LOW);
  delay(200);
  digitalWrite(powerPin,HIGH);
  Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
  delay(500);
  digitalWrite(ledPin,LOW); // start with the alarm off
  digitalWrite(buzzerPin,LOW); // start with the alarm off
  x = 0;
  for(int i=0; i<200; i++){
    if(digitalRead(pirPin)==HIGH){ // check if motion detected
      x = x+1;
      delay(10);
    }
    Serial.print("yo");
    Serial.println(x);
  }
  if(x>150){
    digitalWrite(ledPin,HIGH); // turn the LED on!
    digitalWrite(buzzerPin,HIGH); // turn the LED on!
    delay(1000); // keep LED on one second (1000 milliseconds)
  }
}
```