Grove - Digital PIR Sensor

PIR sensor is an IR sensor to detect human motions. This Grove Digital PIR Sensor is the cheapest PIR sensor in the PIR families, however, it is able to give a quick response and generate a high signal from the "sig" Pin.

With the Grove interface, the Grove digital PIR Sensor is easy to be plugged and played. And it doesn't need any Arduino Library.

Get One Now 🛒 [https://www.seeedstudio.com/Grove-Digital-PIR-Motion-Sensor-p-4524.html]

Features

- Budget-friendly: less than 3 dollars

- Intuitive: detect motion and output with only 'high' and 'low' digital signals

- Simple: no external arduino library required

- Interface: Grove

Specification

Item	Value
Voltage range	3V−5V
Detecting angle	100 degree
Detecting distance	3.2m-12m
Response time	< 1s
Working temp	-20-85 C
Interface	Grove
Dimensions	20mm * 20mm * 11.5mm
Weight	3g
Battery	Exclude

Platform Supported

Arduino	Raspberry Pi		
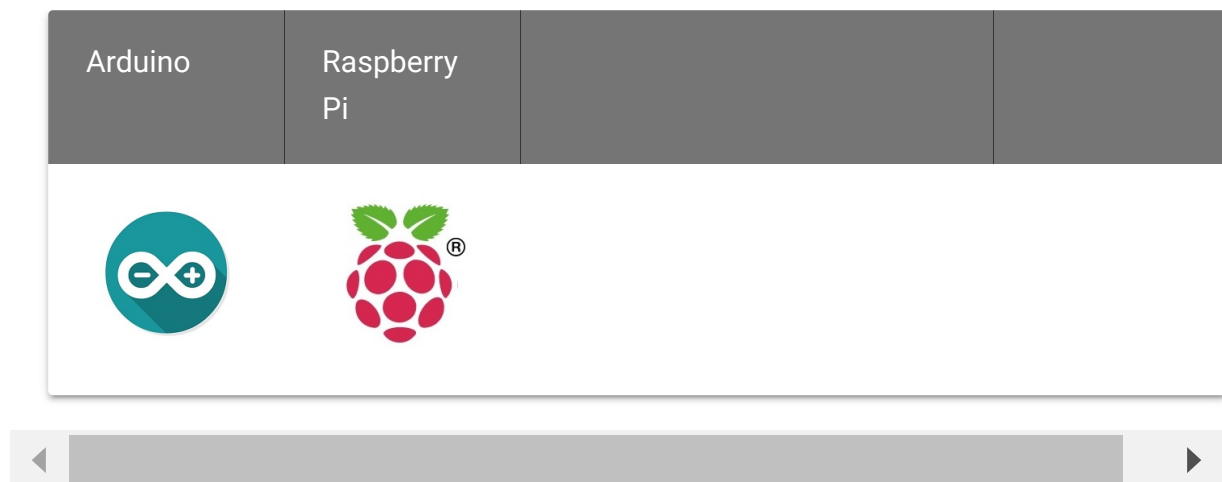
Getting Started

Getting Started with Arduino

Materials Required

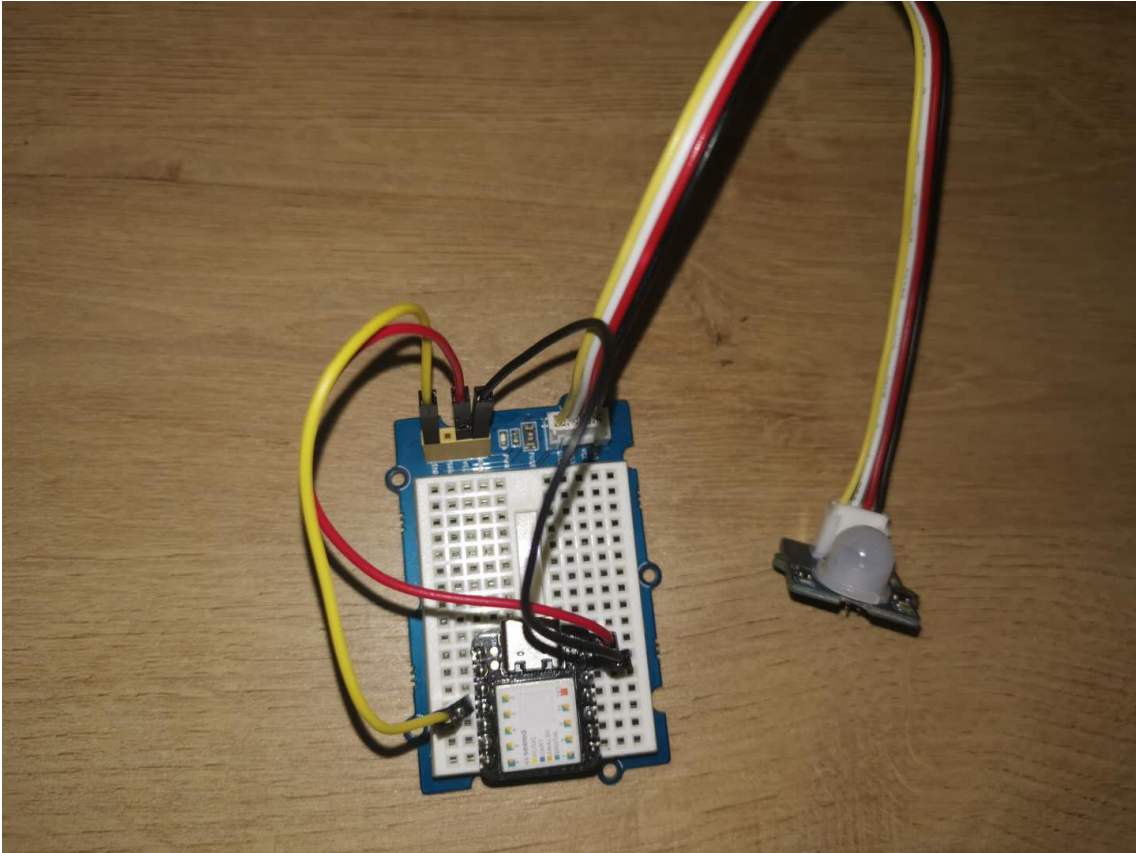| Seeeduino XIAO	Grove Breadboard
Get one now [https://www.seeedstudio.com/Seeeduino-XIAO-Arduino-Microcontroller-SAMD21-Cortex-M0+-p-4426.html]	Get one now [https://www.seeedstudio.com/Grov Breadboard-p-4034.html]

Hardware Connection

The Grove interface on the breadboard and on the Grove digital PIR Sensor are connected by the Grove cable.

Softwawre

- **Step1** Copy the code below to the Arduino IDE and upload. If you do not know how to update the code, please check How to upload code [https://wiki.seeedstudio.com/Upload_Code/].

```
1   #define digital_pir_sensor 5 // connect to Pin 5
2
3   void setup()
4   {
5       Serial.begin(9600);   // set baud rate as 9600
6       pinMode(digital_pir_sensor,INPUT); // set Pin mode
7   }
8
9   void loop()
```

```
10  {
11      bool state = digitalRead(digital_pir_sensor); // r
12      if (state == 1)
13      Serial.println("A Motion has occured");   // When t
14      else
15      Serial.println("Nothing Happened");   // Far from P.
16  }
```

- **Step2** Open the Serial port and you will see the value changing when you take a motion around the PIR sensor.
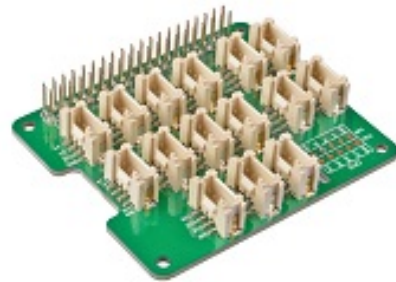
Getting Started with Raspberry Pi
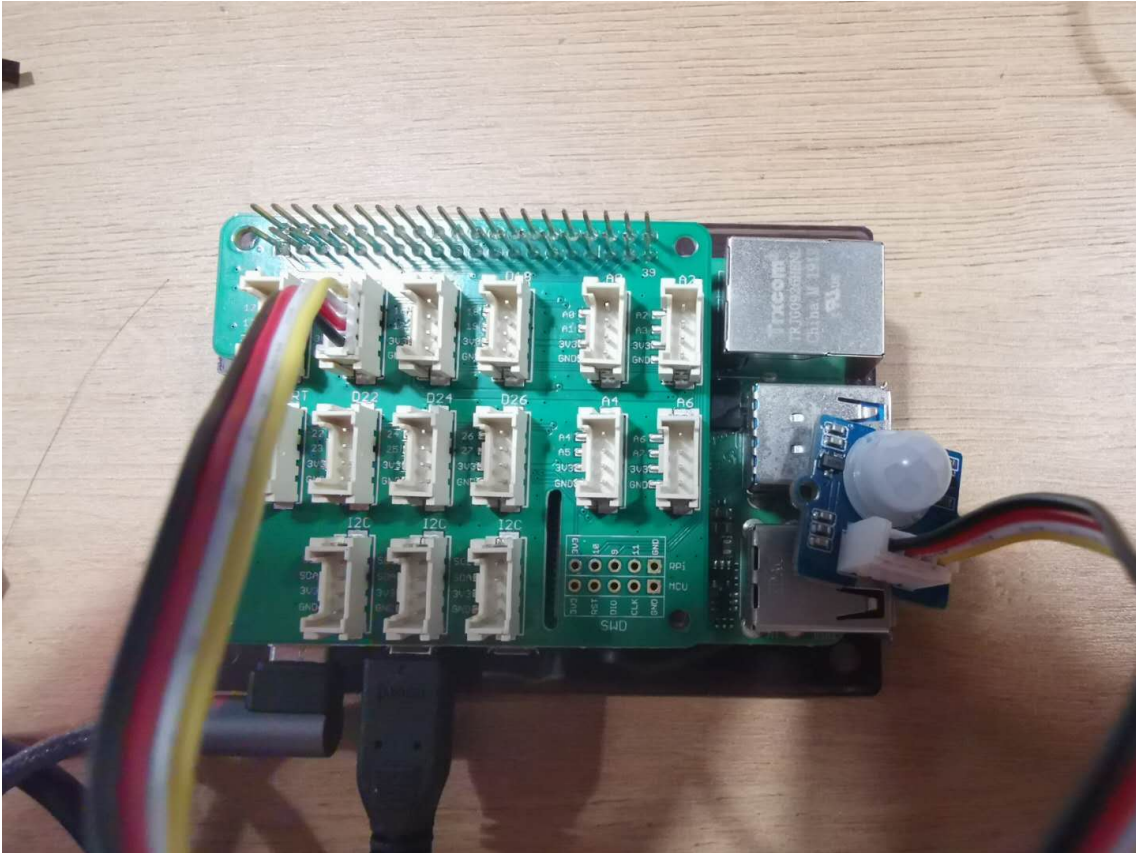
Materials Required

Raspberry Pi 4B(4GB)	Grove Base Hat for Raspberry Pi
Get one now [https://www.seeedstudio.com/Raspberry-Pi-4-Computer-Model-B-4GB-p-4077.html]	Get one now [https://www.seeedstudio.com/Grove-Base-Hat-for-Raspberry-Pi.html]

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Hardware Connection

Connect the PIR sensor with "D5" on the Grove Base Hat.

Code

- **Step 1** Update the system verion of Raspberry Pi.

```
sudo apt-get update
```

- **Step 2** Install the wiringPi.

```
sudo pip install wiringPi
```

If you use Pi 4, please select the version of wiringPi

```
sudo pip install wiringPi==2.52.0
```

- **Step 3** Get the right Pin you are connecting with.

```
gpio readall
```

here comes a table, find the Pim definition of the Pin 5 in wiring definition, in this demo, the pin definition is 21.

```
gpio read 21
```

You can read the value from the PIR sensor, when there is a motion, the value is "1", otherwise. the value is "0".

Schematic Online Viewer

Resource

- **[PDF]** BS312 Specification
  [https://files.seeedstudio.com/products/101020793/document
  /BS312规格书.pdf]

- **[PDF]** Hardware schematic
  [https://files.seeedstudio.com/products/101020793/document
  /Hardware_Schematic_SCH.pdf]

Tech Support

Please do not hesitate to submit the issue into our forum
[https://forum.seeedstudio.com/].

[https://www.seeedstudio.com/act-4.html?
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