Grove - Adjustable PIR Motion Sensor SKU:101020617

Grove - Adjustable PIR Motion Sensor is an easy to use Passive Infrared motion sensor, which can detect infrared object motion up to 3 meters. Any infrared object moves in its detecting range, the sensor outputs HIGH on its SIG pin. And you can adjust the SIG HIGH time up to 130s via the potentiometer, moreover, you can adjust the detect range via the other potentiometer.

https://www.youtube.com/embed/EhZ7uDvoALE

Version

Product Version	Changes	Released Date
Grove - Adjustable PIR Motion Sensor	Initial	Sep 2018

Features

- Built-in filter, high immunity to RFI
- Output time, sensitivity and detect range adjustable
- Low voltage, low power consumption

Specification

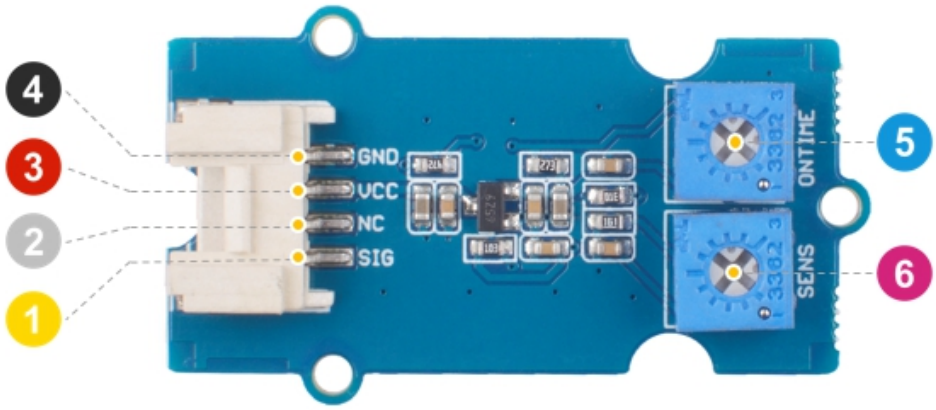
Item	Value
Operating Voltage	3.3V / 5V
Operating Temperature	-30℃ ~ 70℃
Viewing Angel	Horizontal placement 80° Vertical placement 55°
Detction Spectral Response(λ)	5nm ~ 14nm
Detction Distance	0 ~ 3m
High Level On Time	<130s
Interface	Digital
Size	L: 40mm W: 20mm H: 15mm
Weight	4.5g
Package size	L: 140mm W: 90mm H: 15mm
Gross Weight	10g

Typical applications

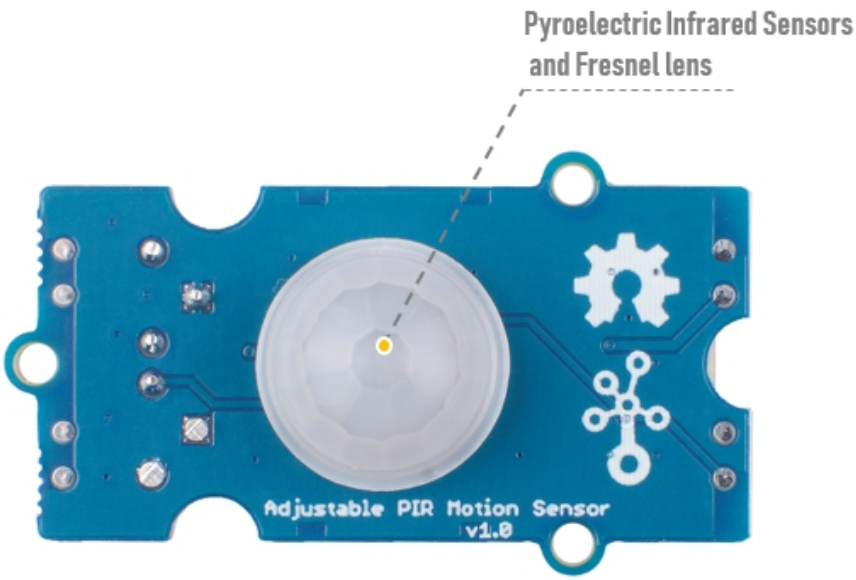
- PIR motion detection
- Intruder detection
- Occupancy detection
- Motion sensor lights
- Security system
- Automatic control

Hardware Overview

Pin Out



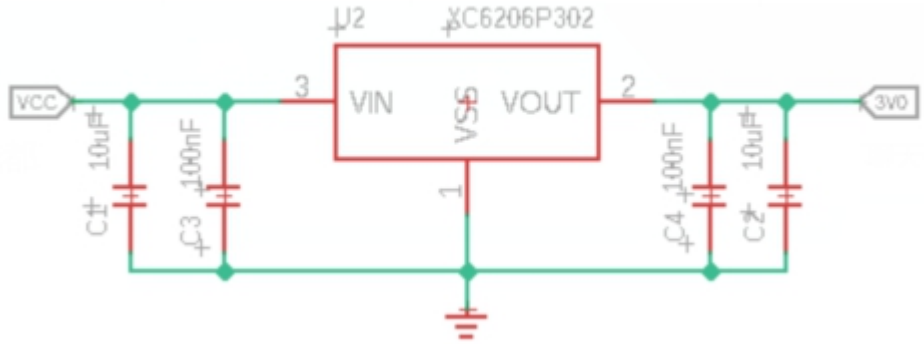
4 GND: connect this module to the system GND
3 VCC: you can use 5V or 3.3V for this module
2 NC: not connected
1 SIG: signal pin
5 ONTIME: trigger high level output time potentiometer
6 SENS: detect distance potentiometer



!!!Warning The Fresnel lens equipped with the module is a plastic piece and is prohibited from approaching high temperatures or open flames.

Schemaitc

Power



The typical voltage of L221D is 3.3V, so we use the XC6206P332MR chip to provide a stable 3.3V. The input of XC6206P33 ranges from 1.8V to 6.0V, so you can use this module with your Arduino both in 3.3V and 5V.

Platforms Supported

Arduino	Raspberry Pi	BeagleBone	Wio	LinkIt ONE
				

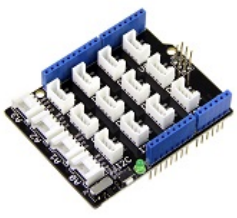
!!!Caution The platforms mentioned above as supported is/are an indication of the module's software or theoritical compatibility. We only provide software library or code examples for Arduino platform in most cases. It is not possible to provide software library / demo code for all possible MCU platforms. Hence, users have to write their own software library.

Getting Started

Play With Arduino

Hardware

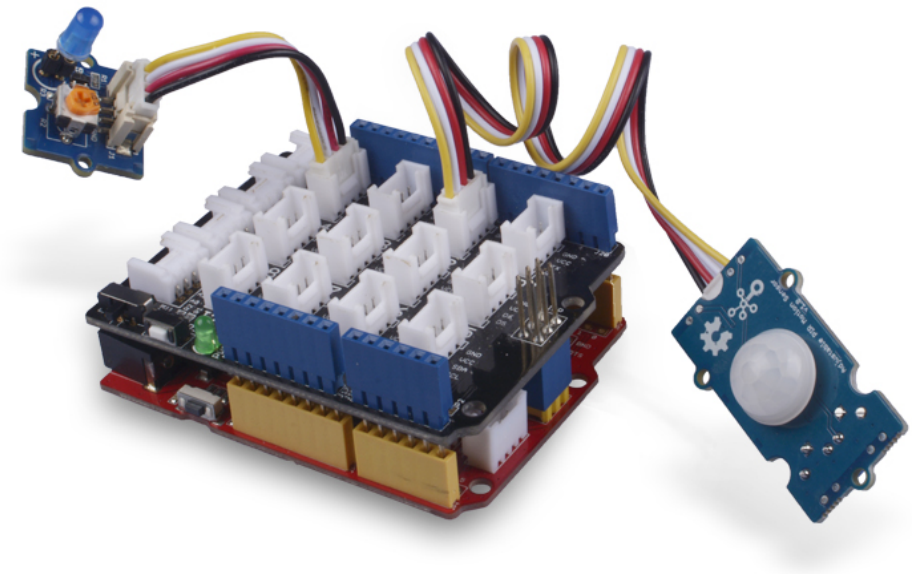
Materials required

Seeeduino V4.2	Base Shield	Adjustable PIR Motion Sensor	Grove - Blue LED
			

!!!note **1** Please plug the USB cable gently, otherwise you may damage the port. Please use the USB cable with 4 wires inside, the 2 wires cable can't transfer data. If you are not sure about the wire you have, you can click

here to buy. **2** Each Grove module comes with a Grove cable when you buy. In case you lose the Grove cable, you can click here to buy.

- **Step 1.** Connect the Grove - Adjustable PIR Motion Sensor to port **D2** of Grove-Base Shield, connect the Grobe - Blue LED to the **D4** port of the Grove-Base Shield.
- **Step 2.** Plug Grove - Base Shield into Seeeduino.
- **Step 3.** Connect Seeeduino to PC via a USB cable.



!!!Note If we don't have Grove Base Shield, We also can directly connect this module to Seeeduino as below.

Seeeduino	**Grove Cable**	**Grove - Adjustable PIR Motion Sensor**
GND	Black	GND
5V or 3.3V	Red	VCC
NO connection	White	NC
D2	Yellow	SIG

Seeeduino	**Grove Cable**	**Grove - Blue LED**
GND	Black	GND
5V or 3.3V	Red	VCC

Seeeduino	Grove Cable	Grove - Blue LED
NO connection	White	NC
D4	Yellow	SIG

Software

!!!Attention If this is the first time you work with Arduino, we strongly recommend you to see Getting Started with Arduino before the start.

- **Step 1.** Just click the icon in upper right corner of the code block to copy the following code into a new sketch in the Arduino IDE.

```
/*macro definitions of PIR motion sensor pin and LED pin*/
#define PIR_MOTION_SENSOR 2//Use pin 2 to receive the signal from the module
#define LED     4//the Grove - LED is connected to D4 of Arduino

void setup()
{
        pinsInit();
}

void loop()
{
        if(isPeopleDetected())//if it detects the moving people?
                turnOnLED();
        else
                turnOffLED();
}
void pinsInit()
{
        pinMode(PIR_MOTION_SENSOR, INPUT);
        pinMode(LED,OUTPUT);
}
void turnOnLED()
{
        digitalWrite(LED,HIGH);
}
void turnOffLED()
{
        digitalWrite(LED,LOW);
}
/*********************************************************/
/*Function: Detect whether anyone moves in it's detecting range*/
/*Return:-boolean, ture is someone detected.*/
boolean isPeopleDetected()
{
        int sensorValue = digitalRead(PIR_MOTION_SENSOR);
        if(sensorValue == HIGH)//if the sensor value is HIGH?
        {
                return true;//yes,return ture
```

```
        }
        else
        {
                return false;//no,return false
        }
}
```

- **Step 2.** Upload the demo. If you do not know how to upload the code, please check How to upload code.

!!!success If every thing goes well, When someone approaches this sensor or when you approach this sensor with your hand, the LED will light up.

Resources

- **[Zip]** Grove - Adjustable PIR Motion Sensor Eagle Files
- **[PDF]** Datasheet L221D

Tech Support

Please do not hesitate to submit the issue into our forum