



Grove - Collision Sensor

Release date : 9/20/2015

Version : 1.0

Wiki: [http://www.seeedstudio.com/wiki/Grove - Collision Sensor](http://www.seeedstudio.com/wiki/Grove_-_Collision_Sensor)

Bazaar: <http://www.seeedstudio.com/depot/Grove-Collision-Sensor-p-1132.html>

Document Revision History

| Revision | Date | Author | Description |
|----------|--------------|-----------|-------------|
| 1.0 | Sep 21, 2015 | Victor.He | Create file |
| | | | |

Contents

| | |
|---------------------------|---|
| Document Revision History | 2 |
| 1. Introduction | 2 |
| 2. Specification | 3 |
| 3. Demonstration | 4 |
| 3.1 With Arduino | 4 |
| 3.2 With Raspberry Pi | 6 |
| 4. Resources | 7 |

Disclaimer

For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.

Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

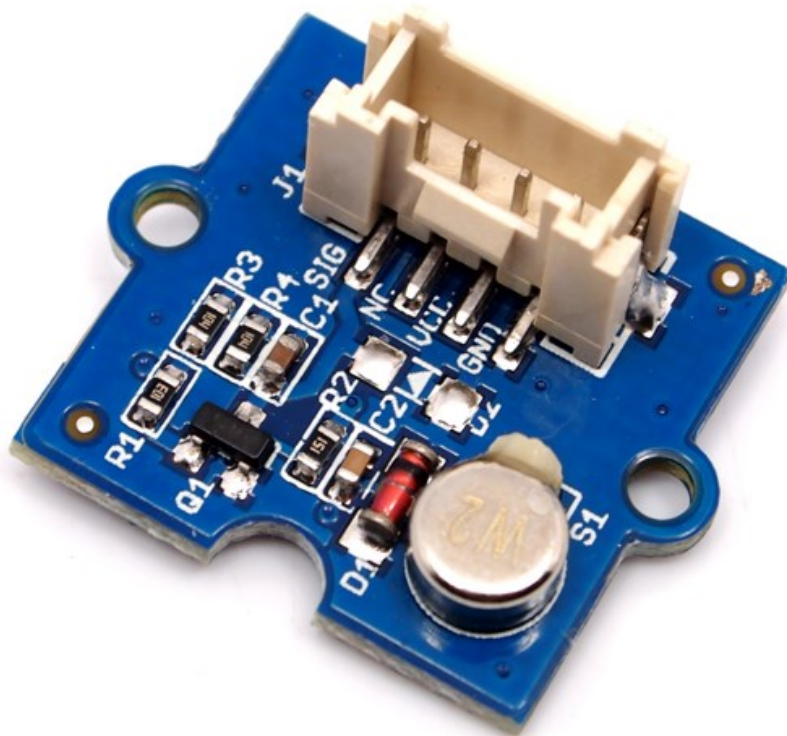
Copyright

The design of this product (including software) and its accessories is under tutelage of laws. Any action to violate relevant right of our product will be penalized through law. Please consciously observe relevant local laws in the use of this product.

1. Introduction

Grove - Collision Sensor can detect whether any collision movement or vibration happens. It will output a low pulse signal when vibration is detected. To make the output signal more reliable and neat, we added a necessary exterior circuit to reduce the noise impact. So, normal shaking will not cause any output. The sensor has a high sensitivity, then you can use it to apply to your project, such as automatic wake-up and power-down for battery management.

Its working voltage is 5v which make it compatible with standard Arduino/Seeeduino 5V system.



2. Specification

- Voltage: 3.3/5V

3. Demonstration

3.1 With [Arduino](#)

Based on the output signal will change when a collision happens, we design this demo: each time the sensor detects collision, the LED will light up. Here the LED is as a managed device, and you can refer to the demo to control your device, such as bicycle light.

The procedure is as follows:

1. Connect the collision sensor to the Digital port 2 of Grove - Basic Shield using a Grove cable and connect an LED to Pin 13.
2. Plug the Grove - Basic Shield into Arduino.
3. Connect Arduino/Seeeduno to PC by using a USB cable.
4. Copy and paste code below to a new Arduino sketch. And upload it to your Arduino.

```
/*
*****
// Function: Monitor if there is any collision
// Hardware: Grove - Collision Sensor
// Arduino IDE: Arduino-1.0
// by www.seeedstudio.com
//
// This library is free software; you can redistribute it and/or
// modify it under the terms of the GNU Lesser General Public
// License as published by the Free Software Foundation; either
// version 2.1 of the License, or (at your option) any later version.
//
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
// Lesser General Public License for more details.
//
// You should have received a copy of the GNU Lesser General Public
// License along with this library; if not, write to the Free Software
// Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
//
*****
#define LED 13 //the onboard LED of Arduino or Seeeduno
#define COLLISION_SENSOR 2//collision sensor is connected with D2 of Arduino
void setup()
{
  pins_init();
}
```

```

}

void loop()
{
  if(isTriggered())
  {
    turnOnLED();
    delay(2000);
  }
  else turnOffLED();
}

void pins_init()
{
  pinMode(LED,OUTPUT);
  turnOffLED();
  pinMode(COLLISION_SENSOR,INPUT);
}

boolean isTriggered()
{
  if(!digitalRead(COLLISION_SENSOR))
  {
    delay(50);
    if(!digitalRead(COLLISION_SENSOR))
      return true;//the collision sensor triggers
  }
  return false;
}

void turnOnLED()
{
  digitalWrite(LED,HIGH);//the LED is on
}

void turnOffLED()
{
  digitalWrite(LED,LOW);//the LED is off
}

```

5. Now you can check the status of LED. The LED should light up every time you drum fingers on the table. You can adjust the sensor sensitivity by changing the function delay(50) in code.

```

if(!digitalRead(COLLISION_SENSOR))
{
  return true;//the collision sensor triggers
}

```



```
}  
return false;
```

3.2 With [Raspberry Pi](#)

1. You should have got a raspberry pi and a grovepi or grovepi+.
2. You should have completed configuring the development environment, otherwise follow [here](#).
3. Connection. Plug the sensor to grovepi socket D2 by using a grove cable. Navigate to the demos' directory:

```
cd yourpath/GrovePi/Software/Python/
```

To see the code

```
nano grove_collision_sensor.py # "Ctrl+x" to exit #
```

```
import time  
import grovepi  
  
# Connect the Grove Collision Sensor to digital port D2  
# SIG,NC,VCC,GND  
collision_sensor = 2  
  
grovepi.pinMode(collision_sensor,"INPUT")  
  
while True:  
    try:  
        print grovepi.digitalRead(collision_sensor)  
        time.sleep(.5)  
  
    except IOError:  
        print "Error"
```

5. Run the demo.

```
sudo python grove_collision_sensor.py
```

4. Resources

[Grove - Collision Sensor Eagle File](#)

[MVS0608.02 datasheet](#)

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9