



# Grove - Tilt Switch User Manual

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Wiki: [http://www.seeedstudio.com/wiki/Grove\\_-\\_Tilt\\_Switch](http://www.seeedstudio.com/wiki/Grove_-_Tilt_Switch)

Bazaar: [http://www.seeedstudio.com/depot/Grove-Tilt-Switch-p-771.html?cPath=25\\_26](http://www.seeedstudio.com/depot/Grove-Tilt-Switch-p-771.html?cPath=25_26)

## Document Revision History

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| Revision | Date         | Author | Description |
|----------|--------------|--------|-------------|
| 1.0      | Sep 22, 2015 | Loovee | Create file |
|          |              |        |             |

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*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.*

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## 1. Introduction

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The Grove-Tilt Switch is the equivalent of a button, and is used as a digital input. Inside the tilt switch is a pair of balls that make contact with the pins when the case is upright. Tilt the case over and the balls don't touch, thus not making a connection. It is wired to the SIG line, NC is not used on this Grove.



## 2. Feature

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- Grove Interface
- Easy to use
- Simple Grove module

### 3. Specification

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| Item             | Min  | Typical | Max  | Unit   |
|------------------|------|---------|------|--------|
| Voltage          | 4.75 | 5.0     | 5.25 | V      |
| Connecting Angle | 10   |         | 170  | Degree |
| Disconnect Angle | 190  |         | 350  | Degree |
| Electrical Life  |      | 100,000 |      | Cycle  |

## 4. Usage

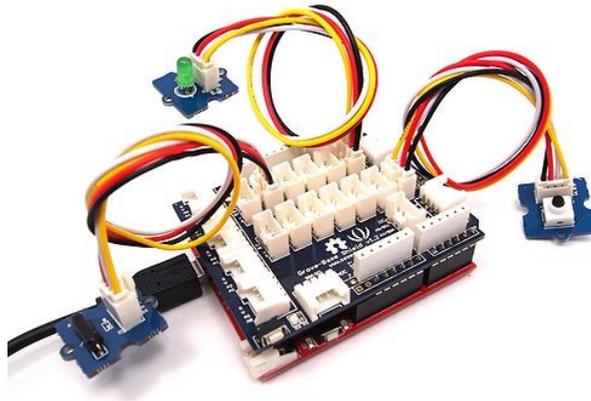
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### 4.1 With Arduino

The SIG pin of the Grove - Tilt Switch output LOW normally. When the Tilt Switch is upright, a pair of balls inside the tilt switch will contact with the pins and the SIG pin will output HIGH.

The following sketch demonstrates a simple application of using the Tilt Switch and Grove - Button to control the led.

- As the following picture indicates, the Tilt Switch is connected to digital port 5 of the [Grove - Basic Shield](#) and the [Grove-Button](#) to digital port 7. The LED is connected to digital port 2. The hardware installation is as follows:



- Copy and paste code below to a new Arduino sketch.

```
void setup()
{
  pinMode(1, OUTPUT);
  pinMode(5, INPUT);
  pinMode(7, INPUT);
}

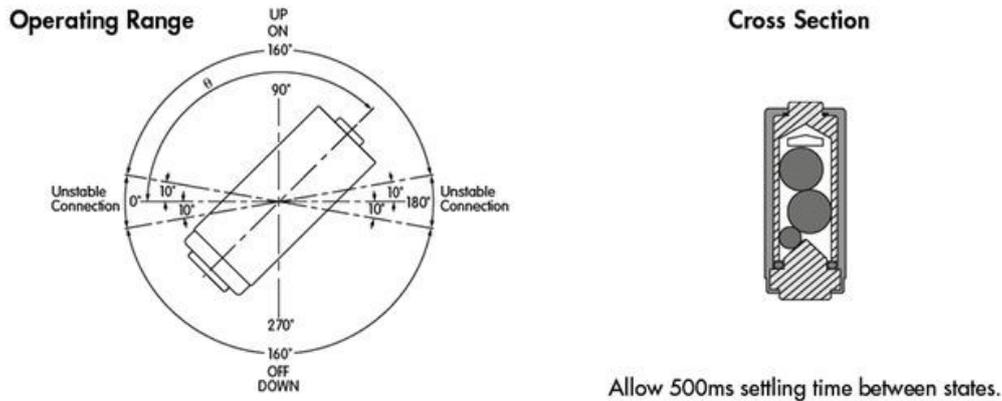
void loop()
{
  if (digitalRead(5)==HIGH)
  {
    digitalWrite(1, HIGH);
    delay(100);
    digitalWrite(1, LOW);
  }
}
```

```
if (digitalRead(7)==HIGH)
{
  digitalWrite(1, HIGH);
  delay(200);
  digitalWrite(1, LOW);
}
}
```

- Upload the code, please click [here](#) if you do not know how to upload.
- Then the LED will light when you press the button or activate the tilt-switch. Have a try!

## 5. Reference

The Operate angle of Grove-Tilt Switch as shown below:



**Note:** The logo J1 in the Grove is as reference terminal.

### 5.1 With Raspberry Pi

1. You should have got a raspberry pi and a grovepi or grovepi+.
2. You should have completed configuring the development enviroment, otherwise follow [here](#).
3. Connection

- Plug Tilt\_Switch into grovepi socket D3 by using a grove cable.

4. Navigate to the demos' directory:

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

- To see the code

```
nano grovepi_tilt_switch.py # "Ctrl+x" to exit #
import time
import grovepi

# Connect the Grove Tilt Switch to digital port D3
# SIG, NC, VCC, GND
tilt_switch = 3

grovepi.pinMode(tilt_switch, "INPUT")

while True:
    try:
        print grovepi.digitalRead(tilt_switch)
```

```
time.sleep(.5)
```

```
except IOError:  
    print "Error"
```

#### 5. Run the demo.

```
sudo python grove_tilt_switch.py
```

#### 6. Result Put the sensor upright by one side, the SIG pin will output HIGH.



```
pi@raspberrypi: ~/Desktop/GrovePi/Software/Python  
pi@raspberrypi ~/Desktop/GrovePi/Software/Python $ sudo python grove_tilt_switch.py  
0  
0  
0  
0  
0  
0  
1  
1  
1  
1  
1  
1  
1  
1  
1  
0  
0  
0  
█
```

## 6. Resource

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- [Grove - Tilt Switch v1.0 Eagle File](#)
- [Grove - Tilt Switch v1.1 PDF File](#)
- [Grove - Tilt Switch v1.1 Eagle File](#)
- [SW200D datasheet](#)

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