



# Grove - Slide Potentiometer

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Wiki: <http://www.seeedstudio.com/depot/Grove-Slide-Potentiometer-p-1196.html>

Bazaar: [http://www.seeedstudio.com/wiki/Sliding\\_Potentiometer](http://www.seeedstudio.com/wiki/Sliding_Potentiometer)

## Document Revision History

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

## Contents

Document Revision History	2
1. Introduction	2
2. Features	3
3. Specifications	4
3.1 Standalone	4
3.2 With Arduino	5
3.2.1 As a Voltage Divider	5
3.2.2 As an HID Device	6
3.3 With Raspberry Pi	7
4. Related Projects	9
4.1 Arduino BoomBox	9
4.2 Arduino BeatBox	10
5. Share Your Awesome Projects with Us	11
6. Resources	12
7. Availability	13

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## 1. Introduction

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The **Grove - Slide Potentiometer** module incorporates a linear variable resistor with a maximum resistance of 10K $\Omega$ . When you move the slider from one side to the other, its output voltage will range from 0 V to the Vcc you apply. It connects to the other Grove modules through a standard 4-Pin [Grove Cable](#). Three of the pins are connected to OUT (Pin 1), Vcc (Pin 3) and GND (Pin 4), while the fourth pin (Pin 2) is connected to an on-board green indicator LED. The LED is used to visually represent the resistance change on the potentiometer.

## 2. Features

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- 30 mm long slide length
- Linear resistance taper
- Grove compatible

### 3. Specifications

Item	Min	Typical	Max
Voltage (DC)	3.3V	5.0V	30V
Current	-	-	30mA
Dimension	24mm x60mm		
Net Weight	8.6g		
Rotational life	>15,000 cycles		
Total resistance	10KΩ		
Stroke length	30mm		
Total resistance tolerance	+/- 20%		

#### 3.1 Standalone

Follow these steps to build a sample Grove circuit using this module but without using any microcontroller board:

1. Connect the slide potentiometer module to the input side of your circuit (to the left of the power module). On the output side of the circuit, you may use a range of [User Interface](#) modules ([Grove - Red LED](#), [Grove - LED String Light](#), [Grove - Mini Fan](#), [Grove - Buzzer](#), [Grove - Recorder](#) etc.)
2. Power up the circuit when complete.
3. The slide potentiometer module can now be used to trigger an output. For example:
  - When used in conjunction with a [Grove - Red LED](#) output module, observe that the brightness of the LED increases as you move the slider from GND to Vcc. At Vcc, the resistance of the potentiometer is minimum and the LED burns the brightest. The same behavior can be seen when the slide potentiometer is used with the [Grove - LED String Light](#) module - the more voltage you apply by taking the slider towards the Vcc mark, the brighter the LED lights would become.
  - Similarly, you can use the slide potentiometer to vary the speed of your [Mini Fan](#) or the frequency with which your [Grove - Buzzer](#) module sounds
  - The slide potentiometer can also be used as an ON/OFF switch for any circuit. Take the slider to the Vcc position to switch it ON and move it down to GND to switch OFF a circuit.

In terms of choosing a power module, you can use either the [Grove - USB Power](#) module or the [Grove - DC](#)

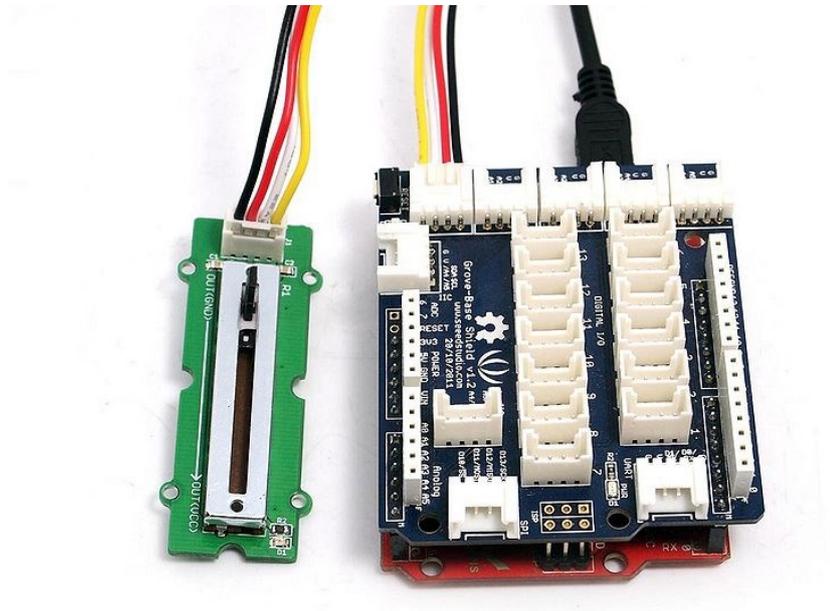
[Jack Power](#) module for building standalone Grove circuits.

## 3.2 With [Arduino](#)

### 3.2.1 As a Voltage Divider

Follow these simple steps to make the slide potentiometer module function as a voltage divider:

1. When using the module in conjunction with an [Arduino](#) or a [Seeeduino](#), use the [Grove - Base Shield](#) and connect the Grove - Slide Potentiometer module to the shield using a designated Grove Interface (e.g., Analog Port 0 as shown below):

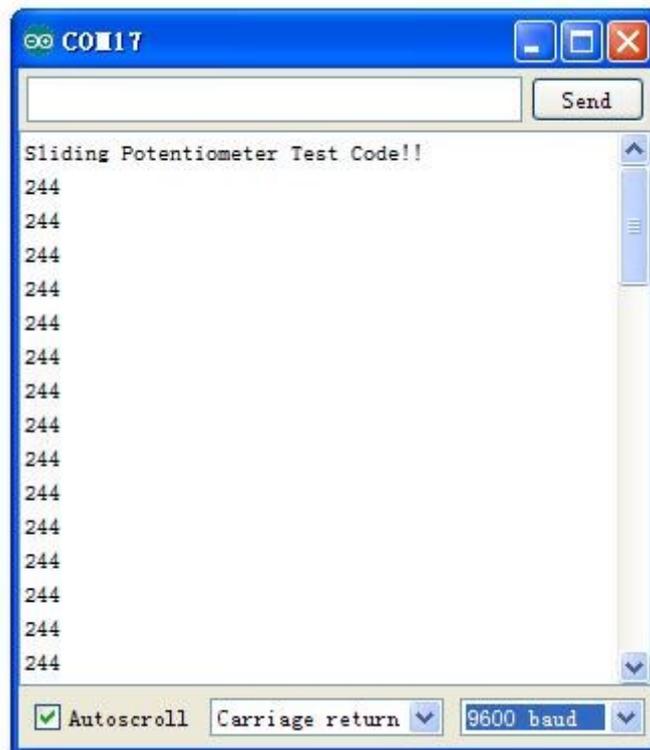


2. Connect the board to PC using USB cable
3. Upload the following sample sketch:

```
int adcPin = A0; // select the input pin for the potentiometer
int ledPin = A1; // select the pin for the LED
int adcIn = 0; // variable to store the value coming from the sensor
void setup()
{
  Serial.begin(9600); // init serial to 9600b/s
  pinMode(ledPin, OUTPUT); // set ledPin to OUTPUT
  Serial.println("Sliding Potentiometer Test Code!!");
}
void loop()
{
  // read the value from the sensor:
```

```
adcIn = analogRead(adcPin);  
if(adcIn >= 500) digitalWrite(ledPin,HIGH); // if adc in > 500, led  
light  
else digitalWrite(ledPin, LOW);  
Serial.println(adcIn);  
delay(100);
```

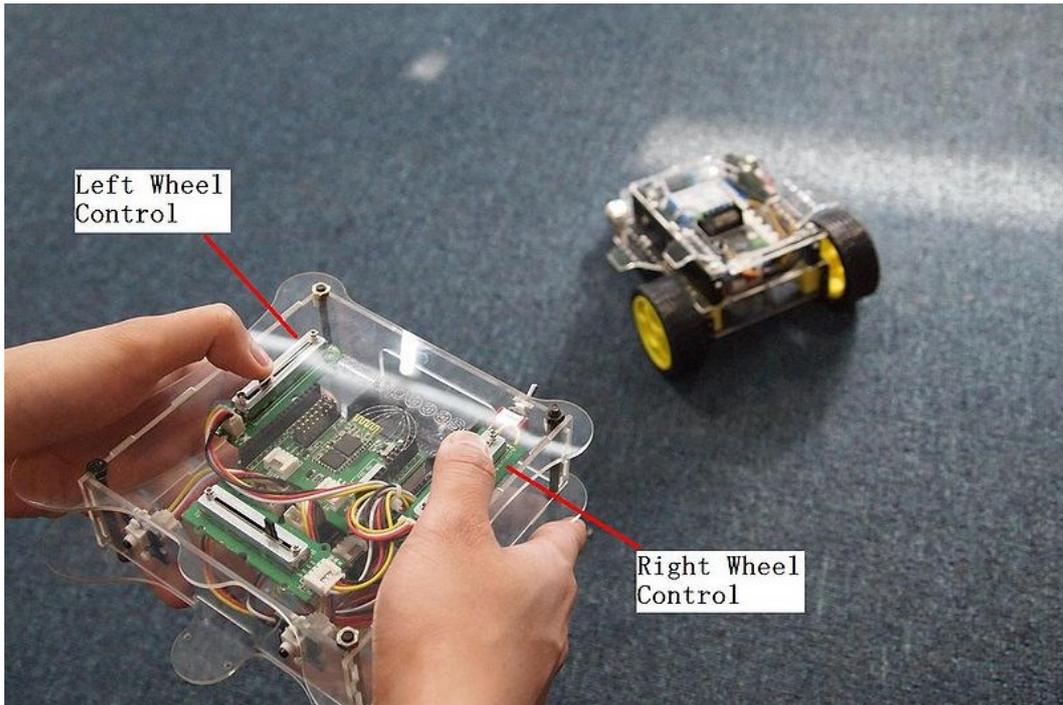
4. Open the serial monitor. You should see some data from ADC.



5. Move the lever back and forth. The serial data will change correspondingly. When the output resistance exceeds a certain preset value, the on-board indicator LED will also light up.

### 3.2.2 As an HID Device

Slide Potentiometer can be an effective Human Interface Device (HID) and can be used, for example, in the radio controller of a Radio Controlled toy car. The picture below shows two Slide Potentiometers on the control panel - one to control the speed of the left wheel, and the other to control the speed of the right wheel of the toy car respectively. Now you can change the speeds of both motors and see the behavior. You will see that if you make the right wheel spin faster than the left wheel, the car will turn rightwards, and if you make the left wheel spin faster than the right wheel, the car will turn leftwards.



### 3.3 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 D4 by using a grove cable.
4. Navigate to the demos' directory:

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

To see the code

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

```
import time
import grovepi

# Connect the Grove Slide Potentiometer to analog port A0
# OUT,LED,VCC,GND
slide = 0 # pin 1 (yellow wire)

# The device has an onboard LED accessible as pin 2 on port A0
# OUT,LED,VCC,GND
led = 1 # pin 2 (white wire)

grovepi.pinMode(slide,"INPUT")
```

```
grovepi.pinMode(led,"OUTPUT")
time.sleep(1)

while True:
    try:
        # Read sensor value from potentiometer
        sensor_value = grovepi.analogRead(slide)

        # Illuminate onboard LED
        if sensor_value > 500:
            grovepi.digitalWrite(led,1)
        else:
            grovepi.digitalWrite(led,0)

        print "sensor_value =", sensor_value

    except IOError:
        print "Error"}
```

##### 5. Run the demo.

```
sudo python grove_slide_potentiometer.py
```

## 4. Related Projects

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The best way to learn something, is to create a project with it.

[Recipe Community](#) is a place which gathers a lot of amazing projects with step-by-step tutorials. Makers in the community have made a lot of awesome projects with the Grove - Slide Potentiometer, check this out!

### 4.1 Arduino BoomBox



Take an ordinary shoebox and convert it into an Arduino Boombox! DIY your own MP3 player with Arduino Uno and our [Grove components](#). The Grove - Slide Potentiometer is used for the volume control in this project.

[I want to make it.](#)

## 4.2 Arduino BeatBox



I've got to say that, our maker [ArduinoBasics](#) in the Recipe community, this guys must be born with a musical turn of mind, after the [Arduino BoomBox](#), once again he made this Arduino BeatBox with some basic [Grove components](#), which really impressed us.

[I want make one!](#)

Find out even more awesome projects on [Recipe](#).

## 5. Share Your Awesome Projects with Us

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Born with the spirit of making and sharing, that is what we believe makes a maker.

And only because of this, the open source community can be as prosperous as it is today.

It does not matter what you are and what you have made, hacker, maker, artist and engineers, as long as you start sharing your works with others, you are being part of the open source community and you are making your contributions.

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Get more information about Core User please email to: [recipe@seeed.cc](mailto:recipe@seeed.cc)

## 6. Resources

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[Sliding Potentiometer Eagle File](#)

[Sliding Potentiometer in PDF](#)

[Sliding Potentiometer datasheet](#)

## 7. Availability

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This [Grove](#) module is available as part of the following [Grove Kit Series](#):

[Grove Mixer Pack V2](#)

[Grove - Mixer Pack](#)

Alternatively, it can be bought stand-alone [here](#) at the [Seeed Studio Bazaar](#).

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