Title:

Rotary Potentiometer

Sensor/Indicator/Actuator:

Sensor

Features:

Measures the Angle of its Dial

Connection:

Analog

Summary:

A button is great for on or off inputs. Sometimes you need more control or resolution. Volume knobs and radio tuners both use some form of angle detection to achieve better control or resolution. So when you need some more than a simple button press to express a number or setting look no further than the Rotary Potentiometer.

Example Code

The following code example prints the angle of the potentiometer

```
// The Grove Rotary Angle Sensor is connected to A0
#define ROTARY_ANGLE_SOCKET A0
// The Grove - LED is connected to D6 of Arduino
#define LED_SOCKET 6

// Reference voltage of ADC is 5v.If the Vcc switch on the seeeduino
// board switches to 3V3, the ADC_REF should be 3.3
#define ADC_REF 5
//VCC of the grove interface is normally 5v
#define GROVE_VCC 5

// Full value of the rotary angle is 300 degrees
#define FULL_ANGLE 300

void setup()
```

```
{
  Serial.begin(9600);
  pinMode(ROTARY_ANGLE_SOCKET, INPUT);
  pinMode(LED_SOCKET, OUTPUT);
}

void loop()
{
  int degrees;
  degrees = getDegree();
  // The angle between the mark and the starting position
  Serial.print("Angle: ");
  Serial.println(degrees);

  int brightness;
  // The degrees is 0~300, should be converted to be 0~255 to control the
  // brightness of LED
  brightness = map(degrees, 0, FULL_ANGLE, 0, 255);
  analogWrite(LED_SOCKET, brightness);
  Serial.println(brightness);

  delay(10);
}

// Returns the angle between the mark and starting position of the potentiometer
int getDegree()
{
  int sensor_value = analogRead(ROTARY_ANGLE_SOCKET);
  float voltage;
  voltage = (float)sensor_value * ADC_REF / 1023;
  float degrees = (voltage * FULL_ANGLE) / GROVE_VCC;
  return degrees;
}
```