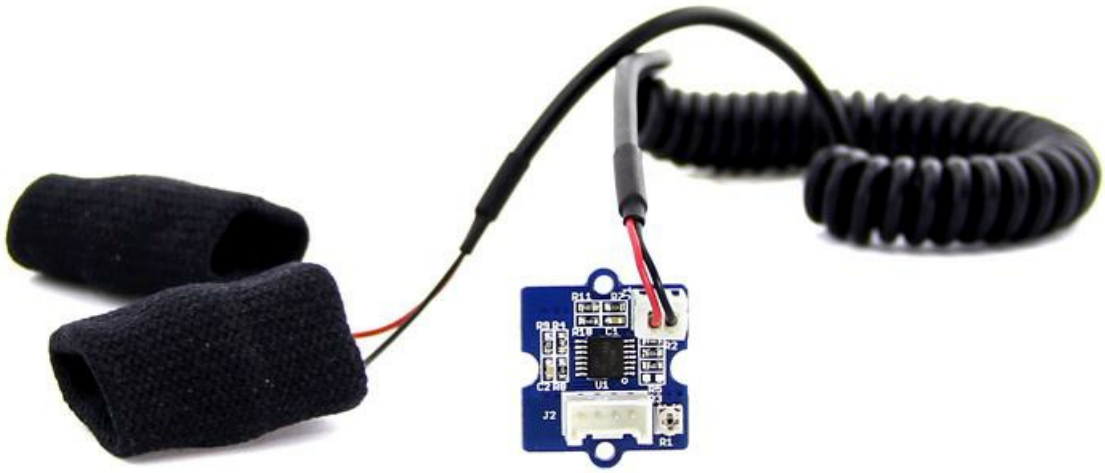
Grove - GSR Sensor



GSR stands for galvanic skin response, is a method of measuring the electrical conductance of the skin. Strong emotion can cause stimulus to your sympathetic nervous system, resulting more sweat being secreted by the sweat glands. Grove - GSR allows you to spot such strong emotions by simple attaching two electrodes to two fingers on one hand. It is an interesting to create emotion related projects like sleep quality monitor.

!!!Warning
Grove-GSR Sensor measures the resistance of the people, NOT Conductivity!

Version

Product Version	Changes	Released Date
Grove - GSR_Sensor V1.0	Initial	June 19, 2013
Grove - GSR_Sensor V1.2	Add C3 100nf between M324PW-TSSOP14 and GND	July 31, 2014

Specification

Parameter	Value/Range
Operating voltage	3.3V/5V
Sensitivity	Adjustable via a potentiometer
Input Signal	Resistance, NOT Conductivity
Output Signal	Voltage, analog reading
Finger contact material	Nickel

!!!Tip

More details about Grove modules please refer to Grove System

Platforms Supported

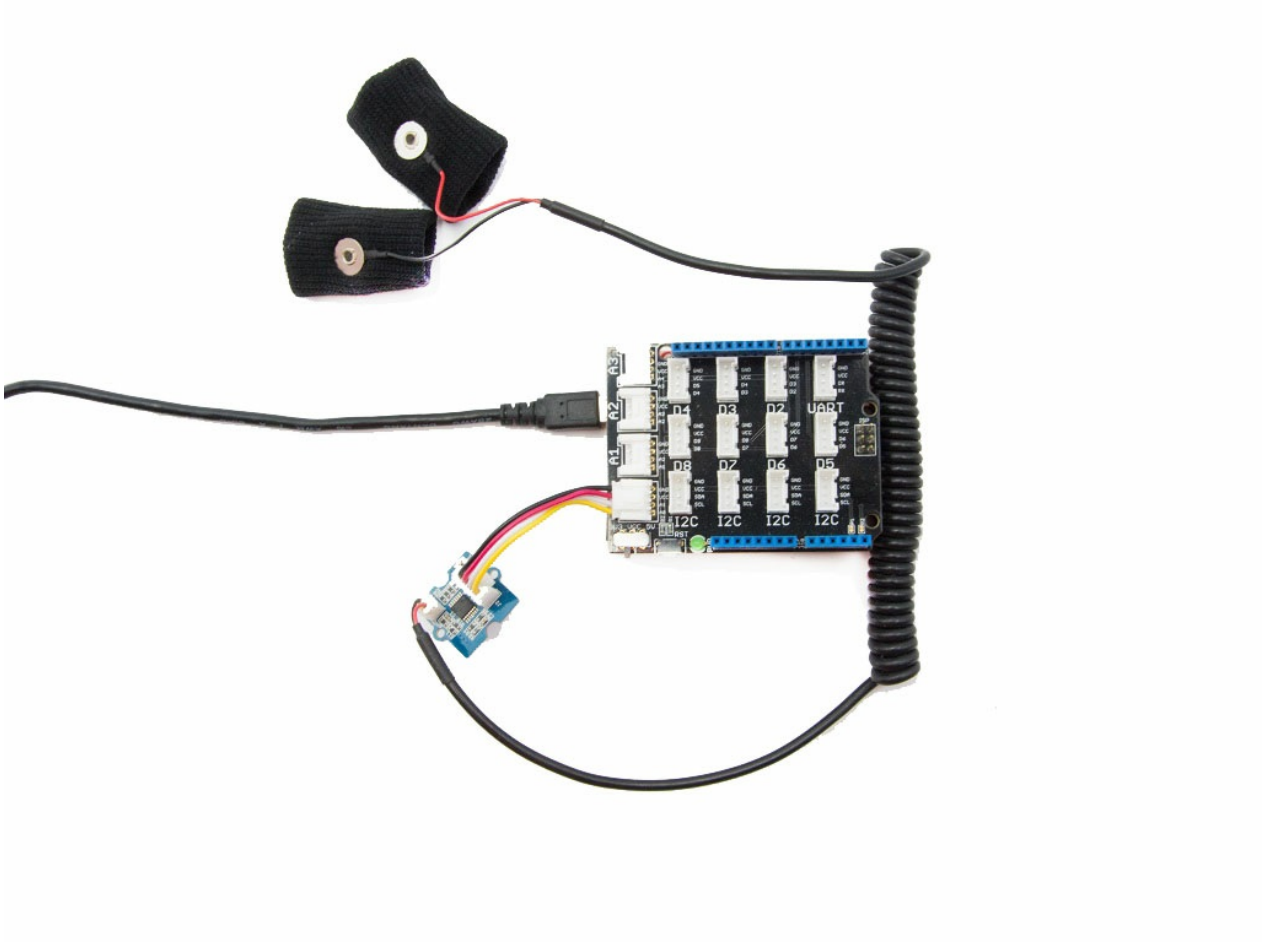
Getting Started

Hardware

- Step 1. We need to prepare the below stuffs:

Seeeduino V4.2	Base Shield	Grove - GSR
		
Get ONE Now	Get ONE Now	Get ONE Now

- Step 2. Connect the Grove-GSR to **A0** on Base Shield.
- Step 3. Plug the base Shield into Seeeduino-V4.2.
- Step 4. Connect Seeeduino-V4.2 to PC by using a USB cable.



!!!Note
If we don't have a Base Shield, don't worry, the sensor can be connected to your Arduino directly. Please follow below tables to connect with Arduino.

Seeeduino	Grove-GSR Sensor

GND	Black
5V	Red
NC	White
A0	Yellow

Software

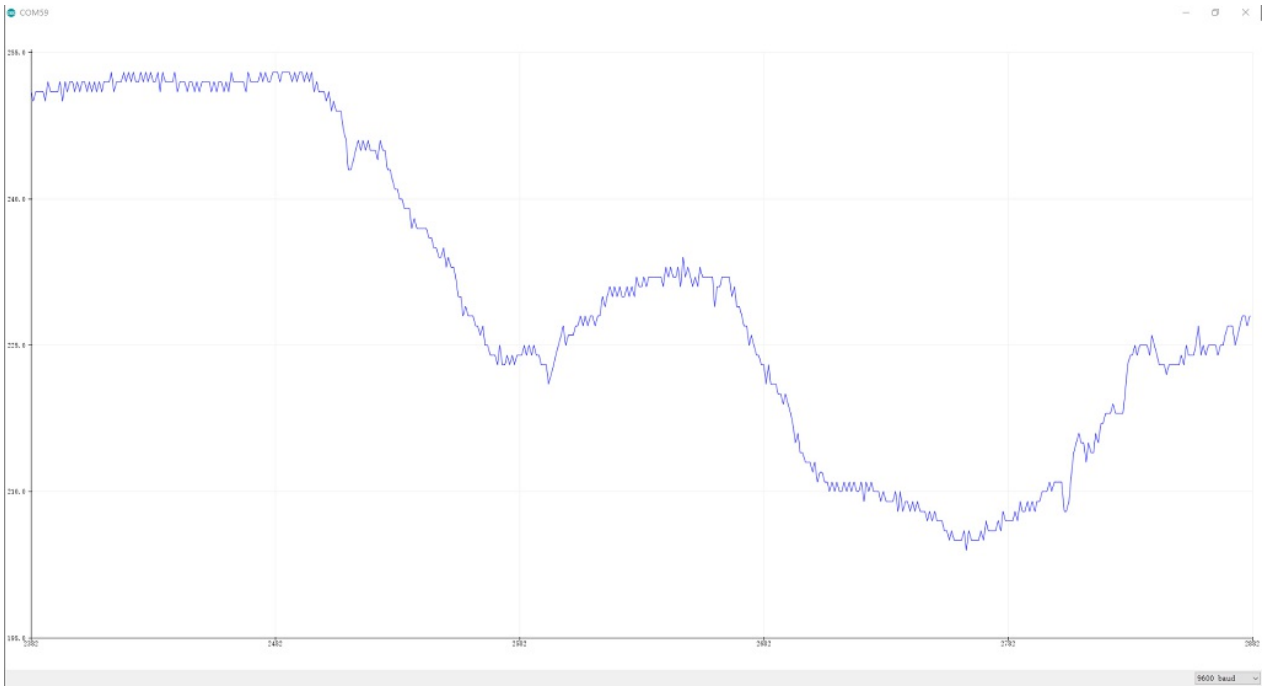
- Step 1. Copy the code into Arduino IDE and upload.

```
const int GSR=A0;
int sensorValue=0;
int gsr_average=0;

void setup(){
  Serial.begin(9600);
}

void loop(){
  long sum=0;
  for(int i=0;i<10;i++)           //Average the 10 measurements to remove the glitch
      {
      sensorValue=analogRead(GSR);
      sum += sensorValue;
      delay(5);
      }
   gsr_average = sum/10;
   Serial.println(gsr_average);
}
```

- Step 2. Wear the GSR sensor
- Step 3. Click the Tools-> Serial Plotter from Arduino IDE
- Step 4. We will see the below graph. Please deep breath and see the trends.



Human Resistance = (1024+2*Serial_Port_Reading)*10000/(512-Serial_Port_Reading), unit is ohm, Serial_Port_Reading is the value display on Serial Port(between 0~1023)

FAQ

Please click here to see all Grove - GSR sensor FAQs.

Resources

- **[PDF]** Dow nload Wiki PDF
- **[PDF]** Grove-GSR v1.0 Sch
- **[PDF]** Grove-GSR v1.0 PCB
- **[PDF]** Grove-GSR v1.2 Sch
- **[PDF]** Grove-GSR v1.2 PCB
- **[Eagle]** Grove - GSR v1.0 Eagle File
- **[Eagle]** Grove - GSR v1.2 Eagle File
- **[Datasheet]** LM324 datasheet