

Grove - Oxygen Sensor Pro(GGC2330-O2)



Grove - Oxygen Sensor Pro(GGC2330-O2) is a kind of sensor to test the oxygen concentration in air, which is based on the principle of the electrochemical cell to the original work. When it starts to work, it will produce a current proportional to the concentration of oxygen,

then you can determine the concentration of oxygen by measuring the Current size.

Grove - Oxygen Sensor Pro(GGC2330-O2) is an enhanced version of Grove - Oxygen Sensor(GG2020-O2), Compared to the Grove - Oxygen Sensor(GG2020-O2), It has a built-in temperature sensor to make temperature compensation, which can correct the measurement error caused by the temperature difference and make the measurement more accurate. On top of that, it is equipped with a high-performance microprocessor, which allows it to have digital output and analog voltage output capabilities at the same time, making the sensor easier to use and calibrate and shorten the development period.

[Get One Now !\[\]\(0f848bbd71cef6b345273b16f905912a_img.jpg\)](#)

[<https://www.seeedstudio.com/Grove-Oxygen-Sensor-Pro-Pre-calibration-p-4896.html>]



Tip

We've released the [Seeed Gas Sensor Selection Guide](#)

[https://wiki.seeedstudio.com/Sensor_gas/], it will help you choose the gas sensor that best suits your needs.

Feature

- Pre-calibration(With build-in MCU and temperature sensor)
- High precision and resolution
- Long life, low power consumption
- Strong anti-interference ability

- Good stability
- UART signal output

**Tip**

More details about Grove modules please refer to [Grove System](https://wiki.seeedstudio.com/Grove_System/)
[https://wiki.seeedstudio.com/Grove_System/]

Specification

Items	Parameter
Target Gas	O2
Resolution	0.1%VOL
Measurement Range	0-25%VOL
ReOperating Voltage	DC 5±0.1V DC
Operating Current	< 10 mA
Output	Output UART(TTL electrical Level, 3V)Analog voltage(refer table 2 for sensor original amplifying signal)
Operating Conditions	-20 ~ 25°C/15 ~ 90%RH(no condensation)
Storage Conditions	-20 ~ 50°C/15 ~ 90%RH(no condensation)
Size	ø23.5mm*24.5mm
Life Expectancy	2 years(in air)



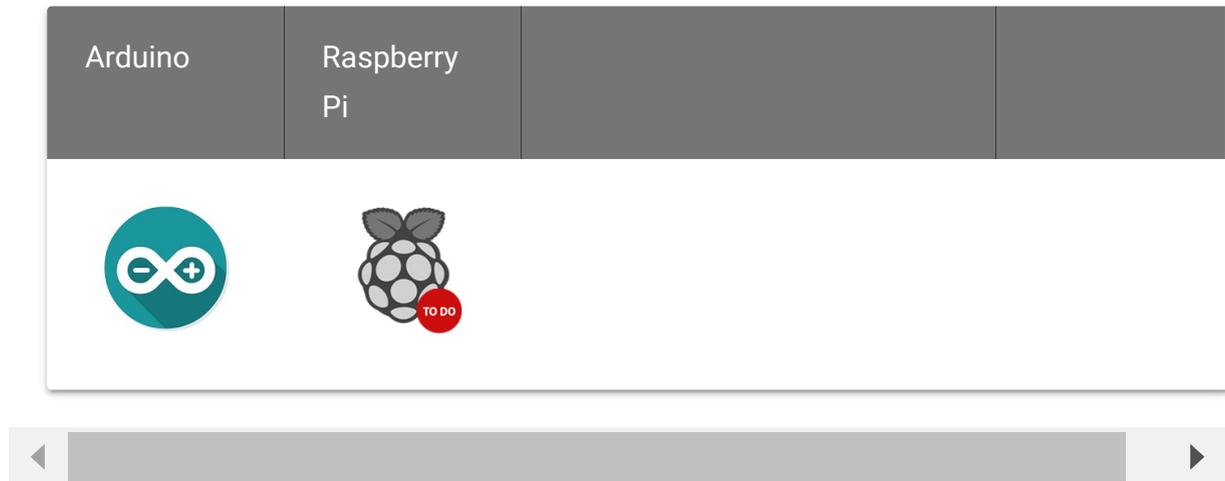
Note

The aging time of power-on is not less than 5min; Avoid long-term contact with organic volatile solvents; The use or storage environment cannot be an acid-base environment.

Applications

- Portable gas detector
- Fixed gas alarm and detector

Platforms Supported



Caution

The platforms mentioned above as supported is/are an indication of the module's software or theoretical compatibility. We only provide software library or code examples for Arduino platform in most cases. It is not possible to provide software library / demo code for all possible MCU platforms. Hence, users have to write their own software library.

Getting Started



Note

This chapter is based on Win10 and Arduino IDE 1.7.9

This new Grove - Oxygen Sensor Pro(GGC2330-O2) usage method is not used in the same way as the Grove - Oxygen

Sensor(GG2020-O2) [GG2020-O2](#)

[https://wiki.seeedstudio.com/Grove-Gas_Sensor-O2-MIX8410/].

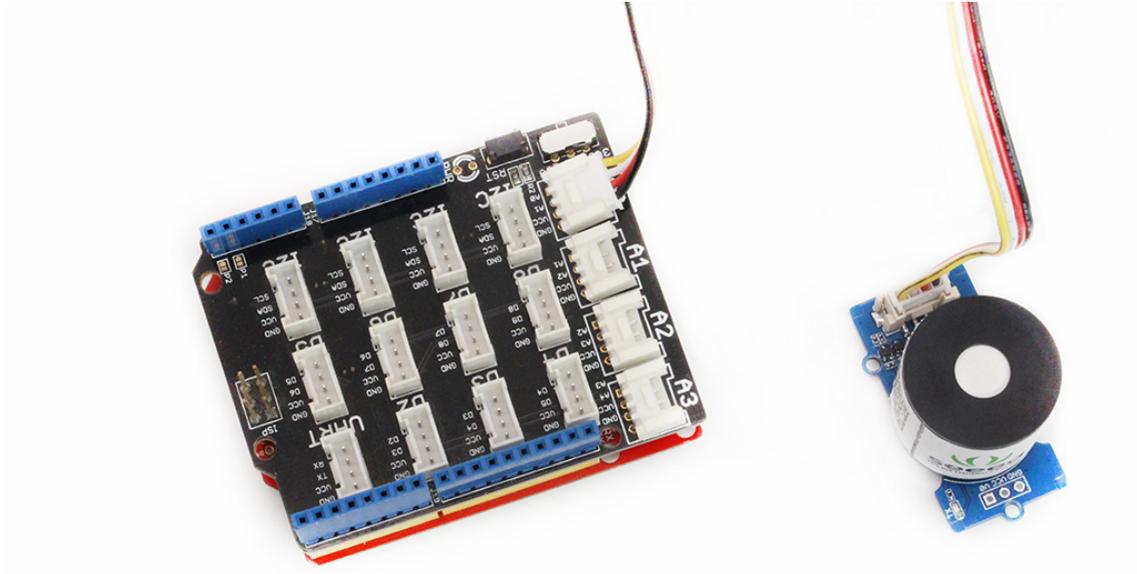
Here we will show you how this Grove - Oxygen Sensor Pro(GGC2330-O2) works via a simple demo. First of all, you need to prepare the below stuffs:

Seeeduino Cortex-M0+	Grove - Oxygen Sensor Pro(GGC2330-O2)
	
<p>Get ONE Now [https://www.seeedstudio.com/Seeeduino-V4.2-p-2517.html]</p>	<p>Get ONE Now [https://www.seeedstudio.com/Grove-Oxygen-Sensor-Pro-Pre-calibration-p-4896.html]</p>

Connection

Thanks to the benefit of Grove series modules, you don't need to make soldering or bread board, what you need to do is connect the modules to the right port of Base Shield. For this demo, we have only one Grove module.

- Grove - Oxygen Sensor Pro(GGC2330-O2) is an analog input module, we connect it to **UART** in this demo.



Upload the code to Arduino

Copy the below code to Arduino IDE.

```
1  void setup() {
2    Serial.begin(9600);
3    Serial2.begin(9600);
4  }
5  void loop() {
6    if (Serial2.available()){
7      uint8_t begin_code = Serial2.read();
8      delay(10);
9      uint8_t state_code = Serial2.read();
10     delay(10);
11     uint8_t high_code = Serial2.read();
12     delay(10);
13     uint8_t low_code = Serial2.read();
14     delay(10);
15     uint8_t check_code = Serial2.read();
16     delay(10);
```



```
17     uint8_t checkk_code = Serial2.read();
18     delay(10);
19     uint8_t checkkk_code = Serial2.read();
20     delay(10);
21     uint8_t checkkkk_code = Serial2.read();
22     delay(10);
23     uint8_t checkkkkk_code = Serial2.read();
24     delay(10);
25
26     if(begin_code == 255 && state_code == 134){
27
28         float O2_val = ((high_code * 256) + low_code) * 0.1;
29         Serial.print("O2: ");
30         Serial.print(O2_val);
31         Serial.println(" %");
32     }
33 }
34 while(Serial2.read()>=0);    //clear buffer
35 }
```

Then choose the right Board and COM port, and then click on the Upload button, this process take few seconds.

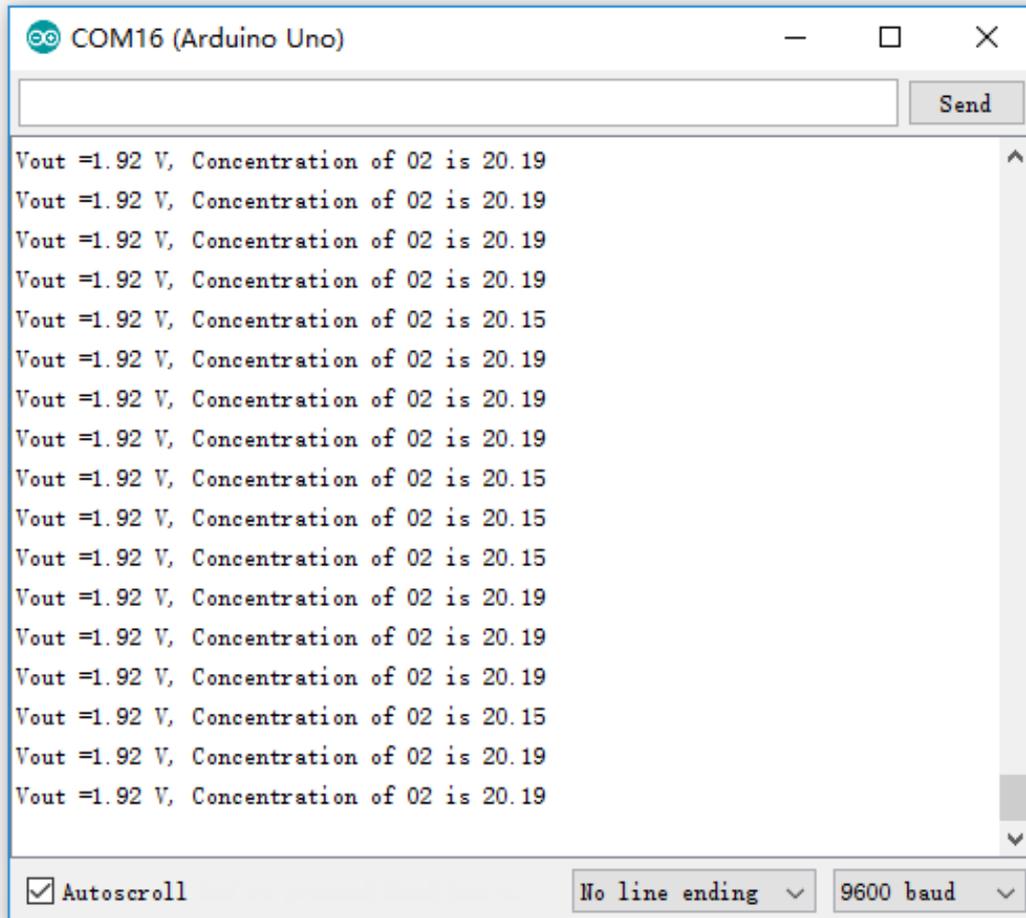
Get data

Open serial monitor of your Arduino IDE, and you will get the data now.



Warning

It need about 20~30 minutes to preheat the sensor, or you will get a larger value.



```
COM16 (Arduino Uno)
Vout =1.92 V, Concentration of O2 is 20.19
Vout =1.92 V, Concentration of O2 is 20.15
Vout =1.92 V, Concentration of O2 is 20.19
Vout =1.92 V, Concentration of O2 is 20.19
Vout =1.92 V, Concentration of O2 is 20.19
Vout =1.92 V, Concentration of O2 is 20.15
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Vout =1.92 V, Concentration of O2 is 20.15
Vout =1.92 V, Concentration of O2 is 20.19
Vout =1.92 V, Concentration of O2 is 20.19
```

Autoscroll No line ending 9600 baud

Schematic Online Viewer



Resources

- [Grove - Oxygen Sensor Pro Datasheet](https://files.seeedstudio.com/wiki/Grove_Oxygen_Sensor_Pro/res/GGC2330-O2-1.0.pdf)
[https://files.seeedstudio.com/wiki/Grove_Oxygen_Sensor_Pro/res/GGC2330-O2-1.0.pdf]
- [Schematic in Eagle File](http://files.seeedstudio.com/wiki/Grove_Oxygen_Sensor_Pro/res/Grove-OxygenSensorPro1.0.zip)
[http://files.seeedstudio.com/wiki/Grove_Oxygen_Sensor_Pro/res/Grove-OxygenSensorPro1.0.zip]

- [Github Repository of this Document](https://github.com/SeedDocument/Grove_Gas_Sensor_O2)
[https://github.com/SeedDocument/Grove_Gas_Sensor_O2]
- [PDF SCH](files.seeedstudio.com/wiki/Grove_Oxygen_Sensor_Pro/res/GroveOxygenSensorProv1.0sch.pdf)
[files.seeedstudio.com/wiki/Grove_Oxygen_Sensor_Pro/res/GroveOxygenSensorProv1.0sch.pdf]

Projects

LoRa IoT Tea: An automatic information collection system applied to tea plantation. It is part of intelligent agricultural information collection.



(<https://www.hackster.io/SeedStudio/seed-lora-iot-tea-solution-b5ee95>)

A Plant Box with Lighting and Raining You never seen such a way to water you plant.



(<https://www.hackster.io/team-seeed-ae/a-plant-box-with-lighting-and-raining-bfc59b>)

Tech Support

Please submit any technical issue into our [forum](https://forum.seeedstudio.com/) [<https://forum.seeedstudio.com/>].



[https://www.seeedstudio.com/act-4.html?utm_source=wiki&utm_medium=wikibanner&utm_campaign=newproducts]