

# Grove - Integrated Pressure Sensor Kit



Grove integrated pressure sensor suite (MPX5700AP), this module adopts advanced integrated silicon pressure sensor MPX5700AP, which has the advantages of high precision, good reliability and no calibration. It is very suitable for the construction of Arduino pressure measurement system, capable of measuring air pressure

in the range of 15Kpa to 700Kpa. We included a syringe and a rubber tube in the kit.

**Get One Now** 

[<https://www.seeedstudio.com/Grove-Integrated-Pressure-Sensor-Kit-MPX5700AP-p-4295.html>]

## Features

- 2.5% Maximum Error over 0° to 85°C
- Available in Absolute, Differential and Gauge Configurations
- Patented Silicon Shear Stress Strain Gauge
- Durable Epoxy Unibody Element



### Tip

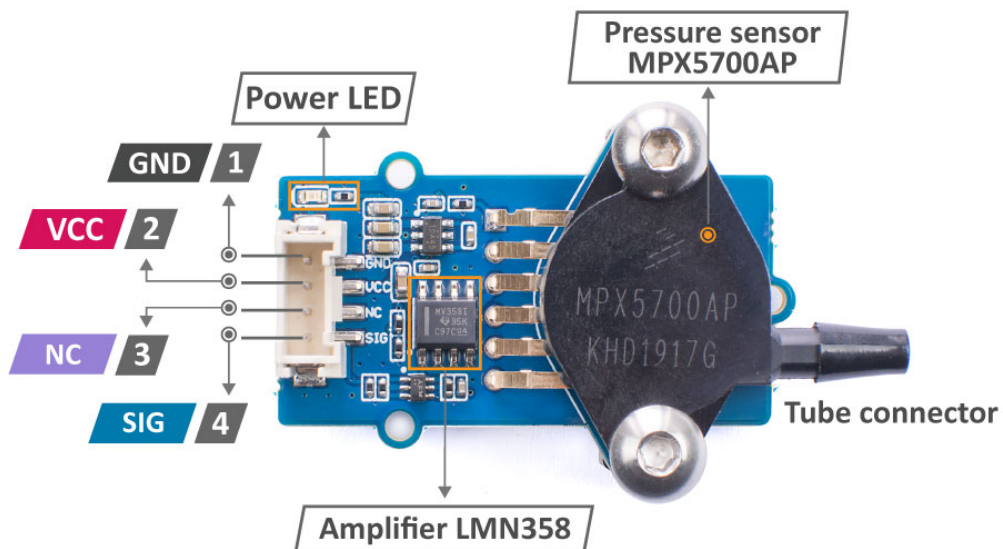
More details about Grove modules please refer to [Grove System](#)

[[https://wiki.seeedstudio.com/Grove\\_System/](https://wiki.seeedstudio.com/Grove_System/)]

## Specification

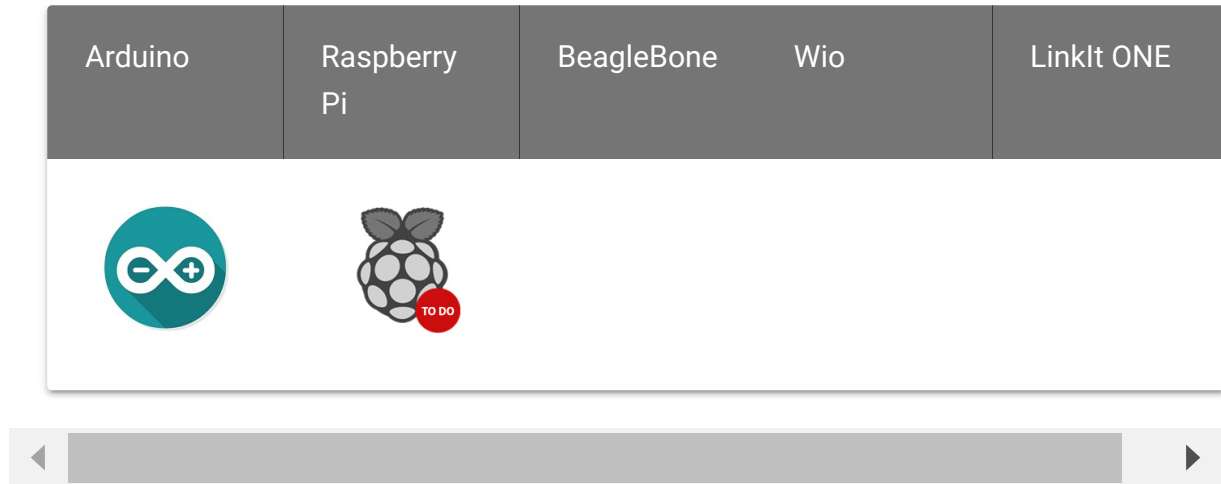
Parameter	Value/Range
Operating Voltage	3.3V/5V DC
output interface	analog
Measuring Range	15Kpa-700Kpa
Appearance size	<20*40mm

## Hardware Overview



- 1** : Connected to the system GND
- 2** : Power supply from grove 5V/3.3V
- 3** : Not connected
- 4** : Analog signal output

# 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

### Play With Arduino



## Note

If this is the first time you work with Arduino, we firmly recommend you to see [Getting Started with Arduino](https://wiki.seeedstudio.com/Getting_Started_with_Arduino/) [https://wiki.seeedstudio.com/Getting\_Started\_with\_Arduino/] before the start.

## Materials required

Seeeduino V4.2

Grove-Integrated-Pressure-Sensor-Kit

**Get One Now**

[<https://www.seeedstudio.com/Seeeduino-V4.2-p-2517.html>]

**Get One Now**

[<https://www.seeedstudio.com/Grove-Integrated-Pressure-Sensor-Kit-MPX5700AP-p-4295.html>]

**Note**

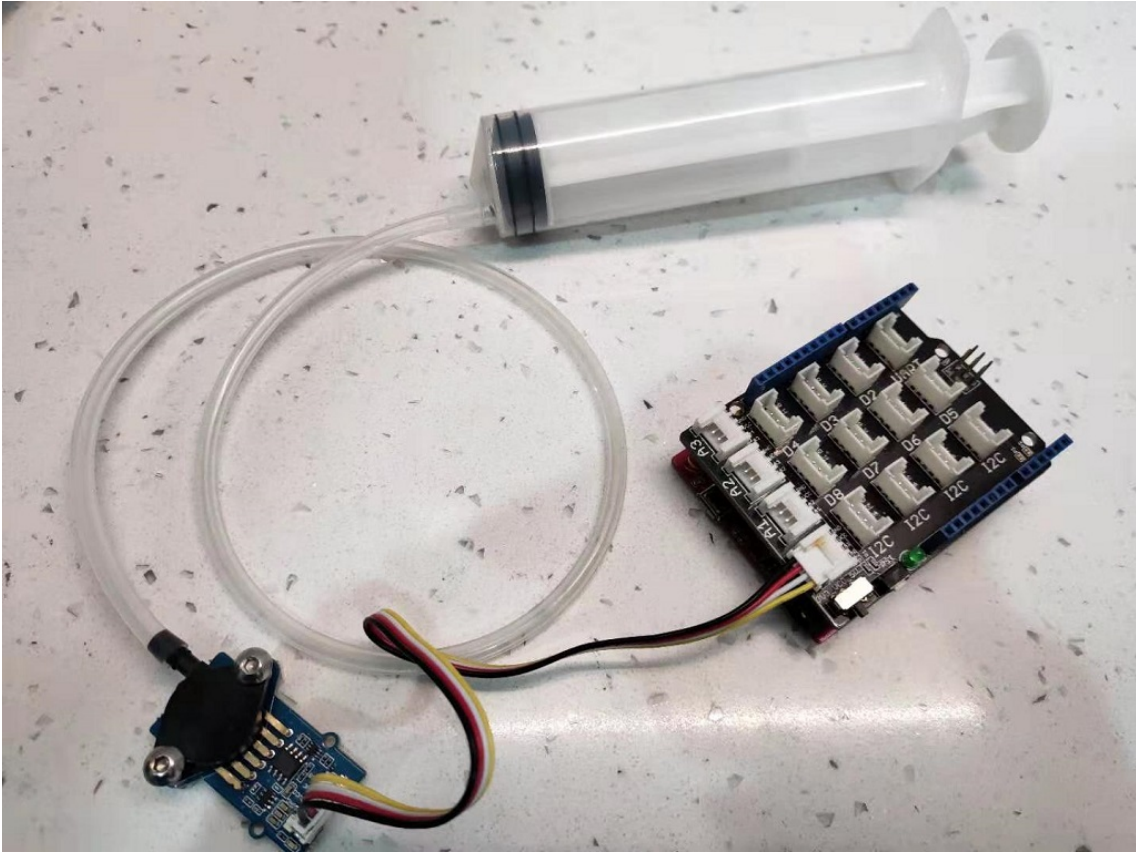
**1** Please plug the USB cable gently, otherwise you may damage the port. Please use the USB cable with 4 wires inside, the 2 wires cable can't transfer data. If you are not sure about the wire you have, you can click [here](https://www.seeedstudio.com/Micro-USB-Cable-48cm-p-1475.html) [<https://www.seeedstudio.com/Micro-USB-Cable-48cm-p-1475.html>] to buy

**2** Each Grove module comes with a Grove cable when you buy. In case you lose the Grove cable, you can click [here](https://www.seeedstudio.com/Grove-Universal-4-Pin-Buckled-20cm-Cable-%285-PCs-pack%29-p-936.html) [<https://www.seeedstudio.com/Grove-Universal-4-Pin-Buckled-20cm-Cable-%285-PCs-pack%29-p-936.html>] to buy.

## Hardware Connection

- **Step 1.** Connect Grove Integrated Pressure Sensor to port **A0** of Grove-Base Shield.
- **Step 2.** Plug Grove - Base Shield into Seeeduino.

- **Step 3.** Connect Seeduino to PC via a USB cable.



#### Note

If we don't have Grove Base Shield, We also can directly connect Grove-Integrated-Pressure-Sensor-Kit to Seeduino as below.

Seeduino	Grove-Integrated-Pressure-Sensor-Kit
5V	Red
GND	Black
Not Conencted	White
A0	Yellow

## Software



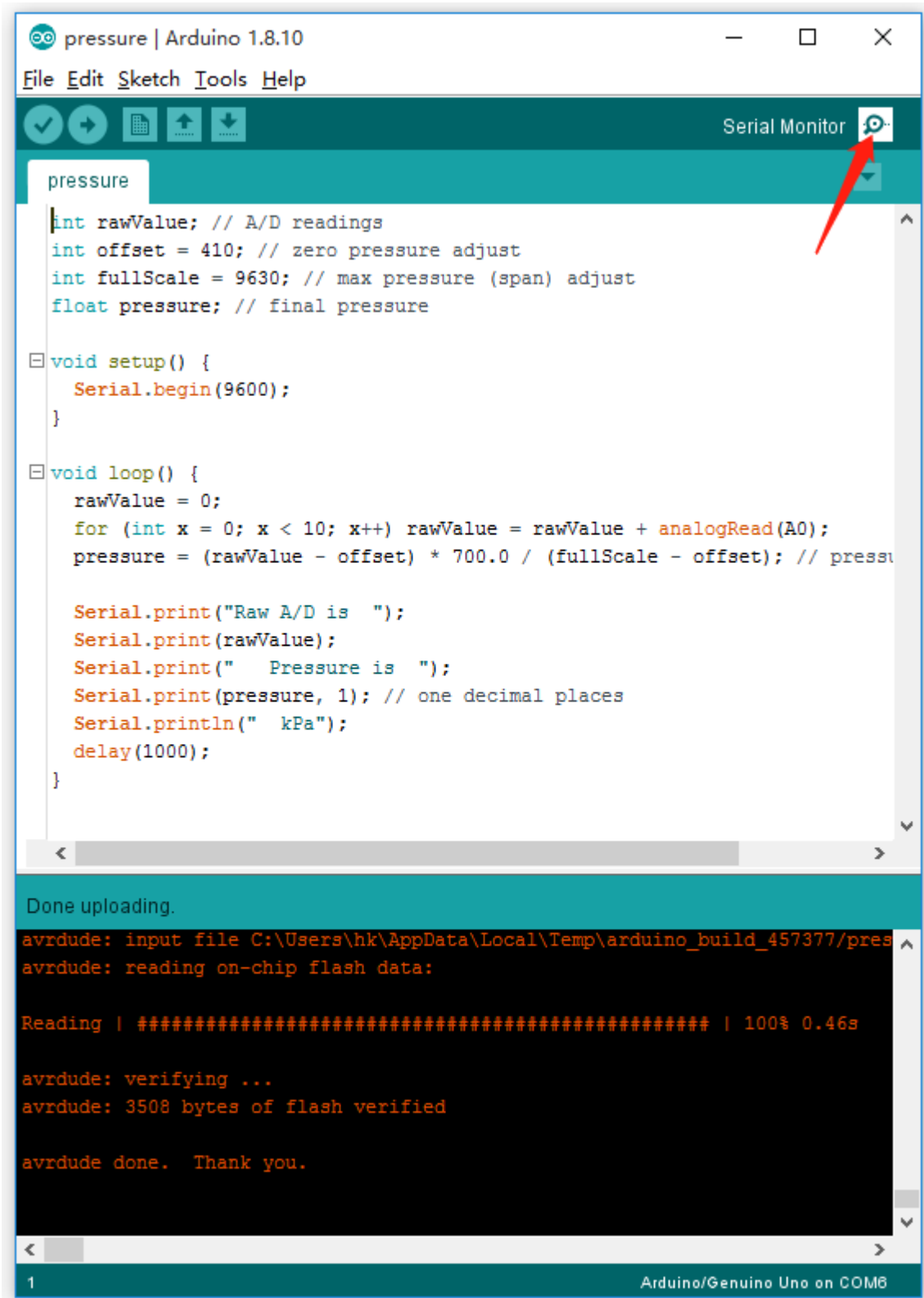
### Attention

If this is the first time you work with Arduino, we strongly recommend you to see [Getting Started with Arduino](https://wiki.seeedstudio.com/Getting_Started_with_Arduino/) [https://wiki.seeedstudio.com/Getting\_Started\_with\_Arduino/] before the start.

- **Step 1.** Copy the code below into Arduino IDE and upload. If you do not know how to upload the code, please check [how to upload code](https://wiki.seeedstudio.com/Upload_Code/) [https://wiki.seeedstudio.com/Upload\_Code/].

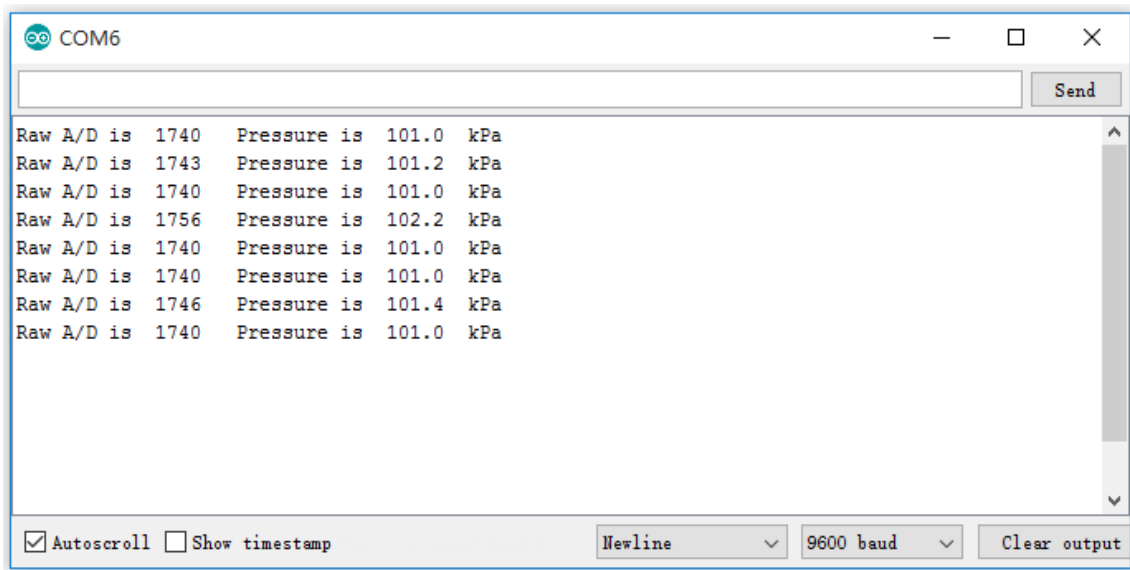
```
1  int rawValue; // A/D readings
2  int offset = 410; // zero pressure adjust
3  int fullScale = 9630; // max pressure (span) adjust
4  float pressure; // final pressure
5  #define SERIAL Serial
6
7  void setup() {
8      SERIAL.begin(9600);
9  }
10
11 void loop() {
12     rawValue = 0;
13     for (int x = 0; x < 10; x++) rawValue = rawValue + analogRead(A0);
14     pressure = (rawValue - offset) * 700.0 / (fullScale - offset);
15
16     SERIAL.print("Raw A/D is ");
17     SERIAL.print(rawValue);
18     SERIAL.print("    Pressure is ");
19     SERIAL.print(pressure, 1); // one decimal places
20     SERIAL.println("    kPa");
21     delay(1000);
22 }
```

- **Step 2.** Open the **Serial Monitor** of Arduino IDE by click **Tool->Serial Monitor**. Or tap the `Ctrl + Shift + M` key at the same time. Set the baud rate to **9600**.





- **Step 3.** Now you can use this sensor, and the output will be like this:



The screenshot shows a serial terminal window titled "COM6". The window contains a text area with the following output:

```
Raw A/D is 1740 Pressure is 101.0 kPa
Raw A/D is 1743 Pressure is 101.2 kPa
Raw A/D is 1740 Pressure is 101.0 kPa
Raw A/D is 1756 Pressure is 102.2 kPa
Raw A/D is 1740 Pressure is 101.0 kPa
Raw A/D is 1740 Pressure is 101.0 kPa
Raw A/D is 1746 Pressure is 101.4 kPa
Raw A/D is 1740 Pressure is 101.0 kPa
```

At the bottom of the window, there are several controls: a checked checkbox for "Autoscroll", an unchecked checkbox for "Show timestamp", a dropdown menu set to "Newline", a dropdown menu set to "9600 baud", and a "Clear output" button.

## Schematic Online Viewer



## Resources

- **[ZIP]** [Grove Integrated Pressure Sensor schematic diagram](https://files.seeedstudio.com/wiki/Grove-Integrated-Pressure-Sensor-Kit-MPX5700AP/res/Grove-Integrated-Pressure-Sensor-Kit-(MPX5700AP).zip)  
[https://files.seeedstudio.com/wiki/Grove-Integrated-Pressure-Sensor-Kit-MPX5700AP/res/Grove-Integrated-Pressure-Sensor-Kit-(MPX5700AP).zip]
- **[PDF]** [LMV358 Datasheet](https://files.seeedstudio.com/wiki/Grove-Integrated-Pressure-Sensor-Kit-MPX5700AP/res/LMV358_datasheet.pdf)  
[https://files.seeedstudio.com/wiki/Grove-Integrated-Pressure-Sensor-Kit-MPX5700AP/res/LMV358\_datasheet.pdf]

- **[PDF] MPX5700AP Datasheet**

[[https://files.seeedstudio.com/wiki/Grove-Integrated-Pressure-Sensor-Kit-MPX5700AP/res/MPX5700AP\\_datasheet.pdf](https://files.seeedstudio.com/wiki/Grove-Integrated-Pressure-Sensor-Kit-MPX5700AP/res/MPX5700AP_datasheet.pdf)]

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

