

**Part 2**

**Lesson**

**19**

**Sound Sensor  
Module**

## Overview

In this lesson, you will learn how to use a sound sensor module. This module has two outputs:

AO: analog output, real-time output voltage signal of microphone

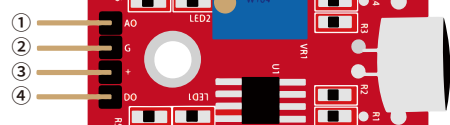
DO: when the intensity of the sound reaches a certain threshold, the output is a high or low level signal. The threshold sensitivity can be achieved by adjusting the potentiometer.

To make sure the microphone can detect your voice normally, please try to change its sensitivity by turning the blue precise potentiometer on the module. Given to its preciseness, you need to turn 10 times 360 degrees the potentiometer to start seeing some change.

### Component Required:

- (1) x Elegoo Uno R3
- (1) x Sound sensor module
- (4) x F-M wires (Female to Male DuPont wires)

- 1.AO:analog output
- 2.GND:groundDC
- 3.VCC:3.3V-5V
- 4.DO:digital output



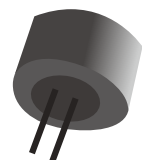
## Component Introduction

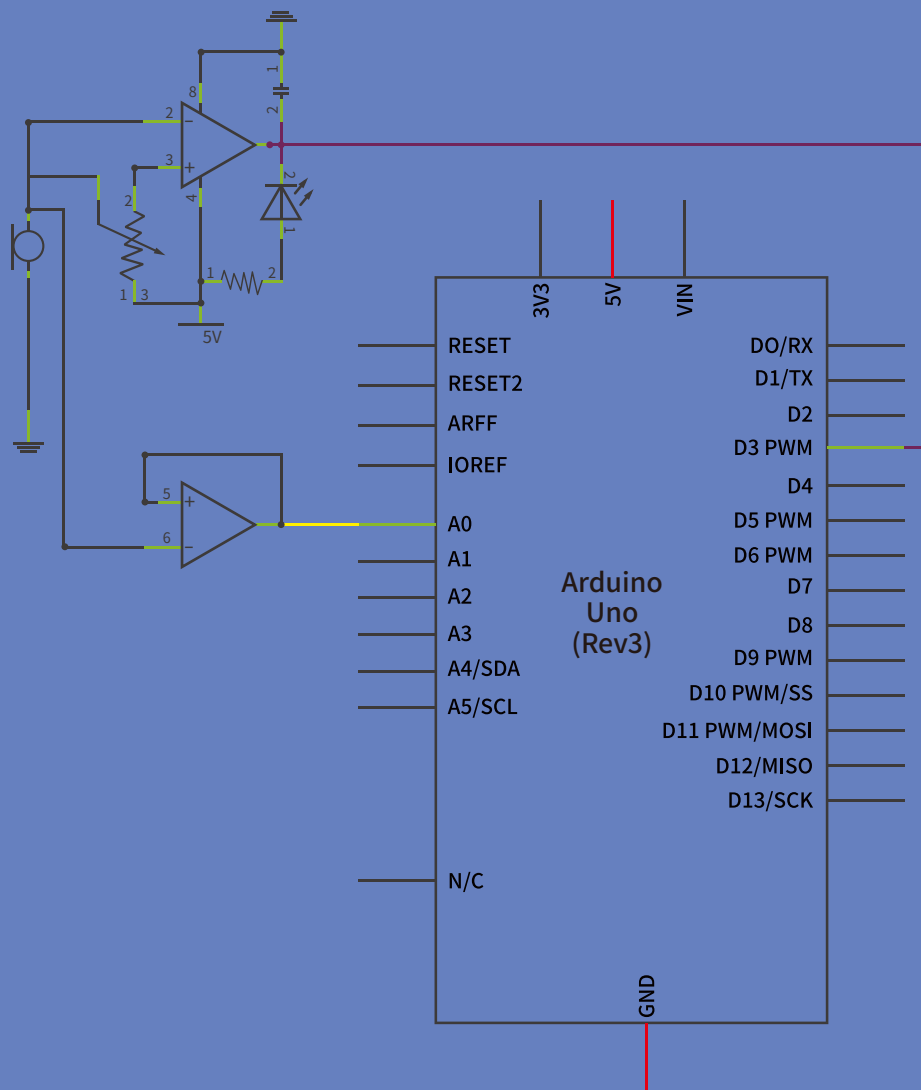
### Sound sensor:

**The** sound sensor module provides an easy way to detect sound and is generally used for detecting sound intensity. This module can be used for security, switch, and monitoring applications. Its accuracy can be easily adjusted for the convenience of usage. It uses a microphone which supplies the input to an amplifier, peak detector and buffer. When the sensor detects a sound, it processes an output signal voltage which is sent to a microcontroller then performs necessary processing.

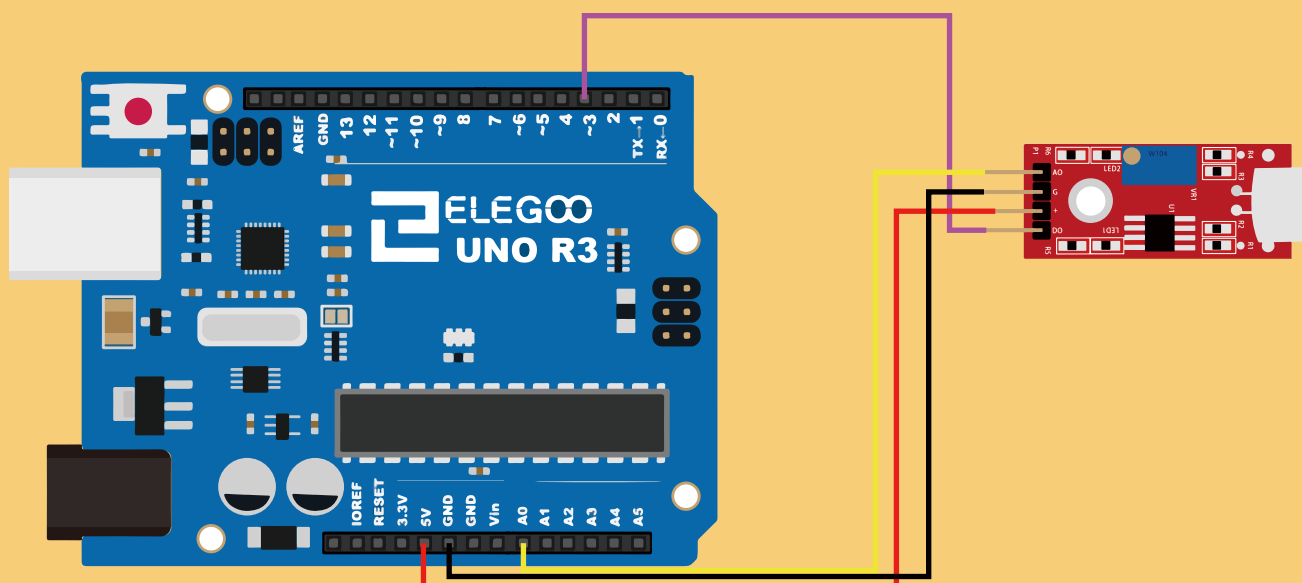
**These** microphones are widely used in electronic circuits to detect minor sounds or air vibrations which in turn are converted to electrical signals for further use. The two legs as shown in the image above are used to make electrical connection with the circuit.

**A** solid conducting metal body encapsulates the various parts of the microphone. The top face is covered with a porous material with the help of glue. It acts as a filter for the dust particles. The sound signals/air vibrations pass through the porous material and falls on the diaphragm through the hole shown in the image above.





Connection Schematic



Wiring diagram

## Code

After wiring, please open the program in the code folder **Sound\_Sensor\_Example** and click UPLOAD to upload the program.

See Lesson 5 in part 1 for details about program uploading if there are any errors.

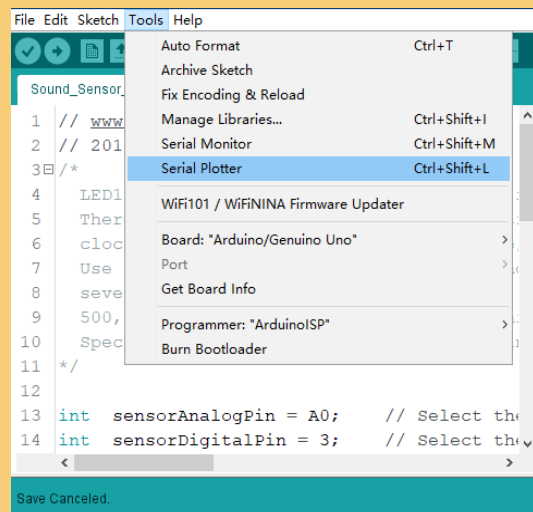
High-sensitive Voice Sensor has two output:

**AO**: analog output, real-time output voltage signal of microphone.

**DO**: digital output when the intensity of the sound reach a certain threshold, the sensor outputs high and low level signal, the threshold-sensitivity can be achieved by potentiometer adjustment period.

Please note that you need to spin the screw counterclockwise by a screwdriver until the LED 2 goes out, and then use the screwdriver to adjust the 10K potentiometer.

Open the display, and you can see the following data:  
click the "serial port" button to open the serial port.  
The basic knowledge of serial port will be introduced in detail in Lesson 4 of Part Two:



## Serial Plotter Example:

When you speak into the microphone or inflate, you can observe that our waveforms have changed

