Lab: 6
Arduino Sensing- *MQ-2 Smoke Sensor*

In this Lab, you will read the sensor analog output voltage, and when the smoke reaches a certain level, it will make sound a buzzer and a red LED will turn on. A green LED will be on when the output voltage is below that level.

What is an MQ-2 Smoke Sensor?
The MQ-2 smoke sensor is sensitive to smoke and to the following flammable gases:

- LPG

- Butane

- Propane

- Methane

- Alcohol

- Hydrogen

The resistance of the sensor is different depending on the type of the gas.

The smoke sensor has a built-in potentiometer that allows you to adjust the sensor sensitivity according to how accurate you want to detect gas.
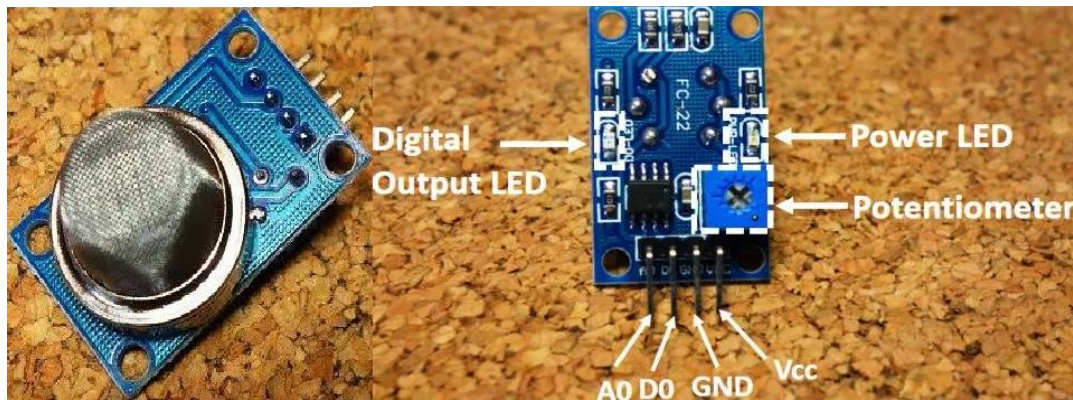

How does it Work?

The voltage the sensor outputs changes according to the smoke/gas level in the atmosphere. The sensor outputs a voltage that is proportional to the concentration of smoke/gas. In other words, the relationship between voltage and gas concentration is the following:

- The greater the gas concentration, the greater the output voltage

- The lower the gas concentration, the lower the output voltage

The output can be an analog signal (A0) that can be read with an analog input of the Arduino or a digital output
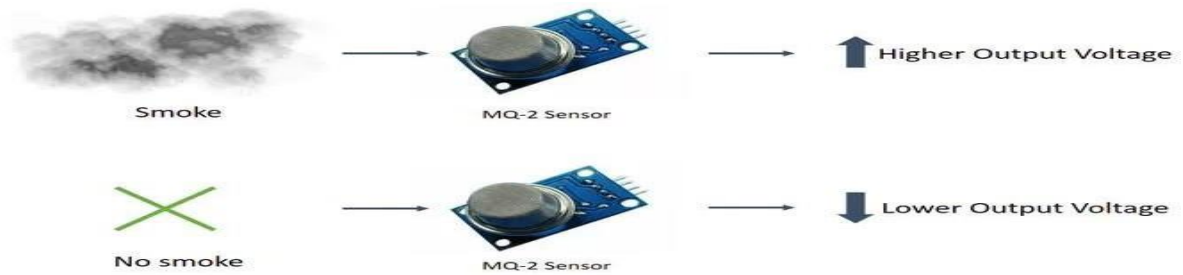
(D0) that can be read with a digital input of the Arduino.

Componenets required

- Arduino uno.
- MQ-2 Smoke detection sensor.
- Male and Female jumper wires.
- 2 leds
- Buzzer
- Resistors.(220)

Pin Wiring

The MQ-2 sensor has 4 pins.

Pin---------------------------------- Wiring to Arduino Uno

A0 ----------------------------------Analog pins

D0 ----------------------------------Digital pins

GND -------------------------------- GND

VCC----------------------------------V