Analog Gas Sensor(MQ2) (SKU:SEN0127)

Contents

Introduction

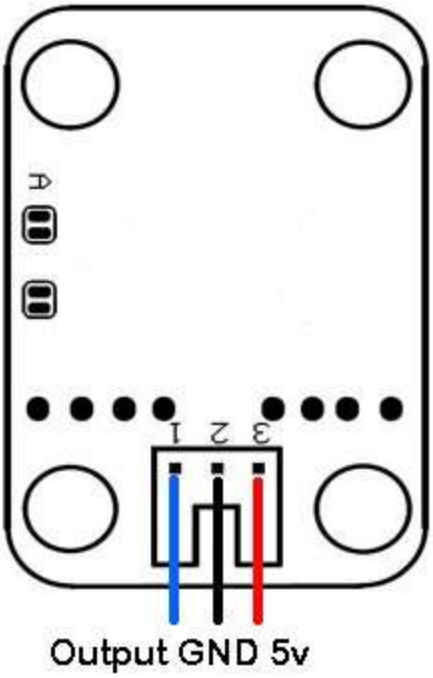
The analog gas sensor - MQ2 is used in gas leakage detecting equipments in consumer and industry markets, this sensor is suitable for detecting LPG, i-butane, propane, methane ,alcohol, Hydrogen, smoke.It has a high sensitivity and fast response time.And the sensitivity can be adjusted by the potentiometer.

Specification

- Power supply needs: 5V
- Interface type: Analog
- Pin Definition: 1-Output 2-GND 3-VCC
- Wide detecting scope
- Fast response and High sensitivity
- Simple drive circuit
- Stable and long life
- Size: 40x20mm

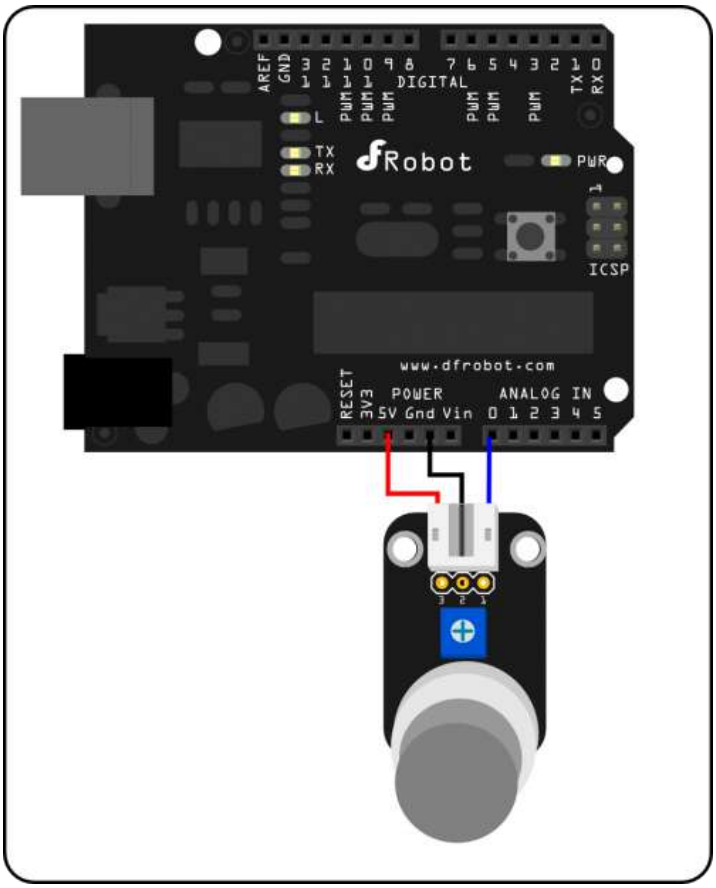
Pin Definition

1. Signal Output
2. GND
3. Power



Analog Sensor Pin Definition

Connection Diagram



Analog sensor connection diagram

Sample Code

```
///Arduino Sample Code

void setup()

{

  Serial.begin(9600); //Set serial baud rate to 9600 bps

}

void loop()

{

int val;

val=analogRead(0);//Read Gas value from analog 0

Serial.println(val,DEC);//Print the value to serial port

delay(100);

}
```

Values interpretation

The arduino is reporting analog voltage levels, represented by numbers ranging from 0 (0 VDC) to 1023 (5 VDC) in increments of 0.0049 VDC. (https://www.arduino.cc/en/Reference/analogRead)

If you want to get PPM, you will need to remap values from 0-1023 to the appropriate ppm.

According to the datasheet for the MQ2, it is sensitive to 300-10000 PPM.

A rough approximation would be the analog read value
(79, 100, 67, ...) * (10000-300)/1024.
Or, approximately analog read value * 9.5.

So given the values you reported, the estimated PPM of combustible gases is between 330 and 950 PPM.

The Lower Explosive Limit (LEL) of propane for example is 2.1%, or 21000 PPM, so you are well below that threshold.

However, the permissible exposure level is 1000 PPM, so I am almost certain that your potentiometer needs to be adjusted. How much is impossible to say.

To calibrate, you would need to enclose the sensor in some sort of chamber, and then introduce a known concentration of a gas into the chamber (dangerous if you don't know what you are doing).

The safer method is to compare readings with a known working meter, which provides a ppm readout (expensive).

Bear in mind, that without calibration, these values may be off.

These are cheap sensors, so quality control is questionable.
You should not rely on this for actual life safety. You should also be aware that the MQ2 is sensitive to several gases, so while propane has an LEL of 2.1%, methane has an LEL of 5%.

Note

Propane has a lower explosive limit (**LEL) of 2.1**% and an upper explosive limit (UEL) of 9.5% at room temperature