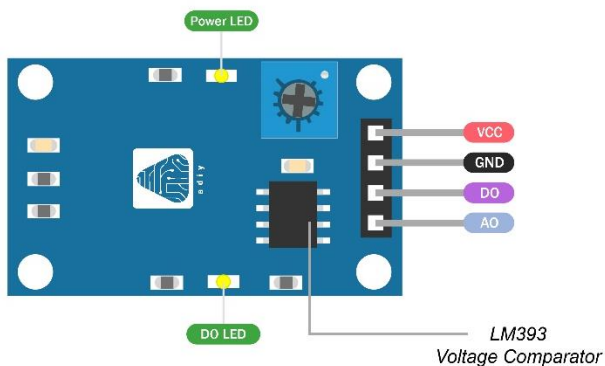## Description:

The MQ-5 Sensor is popular among beginners since it detects combustible gases in most Arduino projects. Likewise, these are low-cost, easy-to-use sensors with a wide detection range that may be reduced to modify sensitivity.

Pin Description:

There are four pins on the MQ-5 Sensor Module, two of which are for VCC and GND. Like the other basic sensor modules, the other two can produce analog and digital data simultaneously. Because the module's operating voltage range is 5V with a 0.1 percent precision, we're using the Arduino's 5V pin to power the circuit. As seen in the illustration, the module has two built-in

LEDs. The power LED turns on when the board is powered up, and the DO LED turns on when the potentiometer's trigger value is reached. The entering analog signal from the gas sensor is converted to a digital signal by an OP-Amp comparator on this board.

How Does the MQ-5 Sensor Module Work?

To effectively detect combustible Gas, the MQ-5 Sensor requires a heating element. Putting a heating source close to combustible Gas, on the other hand, may be harmful. As a result, the Sensor has an anti-explosion network made up of two thin layers of stainless steel mesh, as seen in the illustration below. A heating element is included in this stainless steel mesh.


Only gaseous components from the environment travel through this mesh structure, which protects against dust and other suspended particles. We can see that the Sensor comprises two main components when we disassemble it. The heating element is composed of nichrome wire, while the detecting element is platinum wire with a tin dioxide covering. The mesh decapped from the real Sensor is shown below.
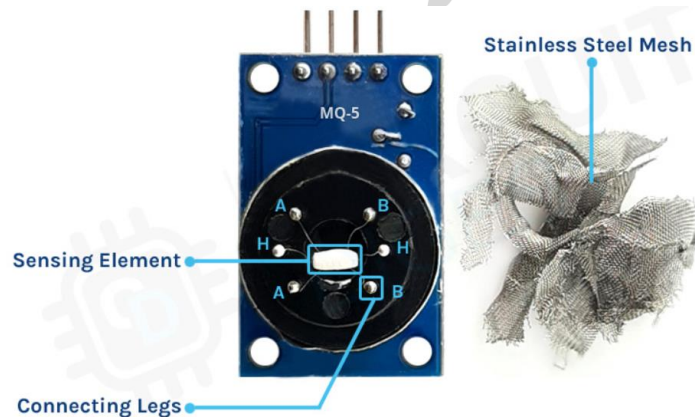
This is what the Sensor looks like when the mesh is removed. As you can see in the above image, we cut the stainless steel mesh and positioned it on the side of the Sensor. The previously mentioned sensing feature is now evident as well. The star-shaped pins on the Sensor are made by attaching the actual detecting and heating element to the Sensor's six legs. The black Bakelite base of the Sensor, which promotes heat conductivity, can also be observed.

Pin Configuration:
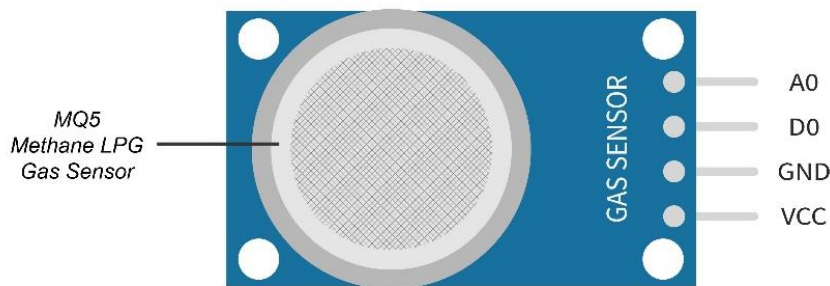
VCC: To +ve of power supply

GND: To -ve of power supply

DO: Sensor data output in digital form

AO: Sensor data output in analog form

Applications:

- Home applications
- Industry applications