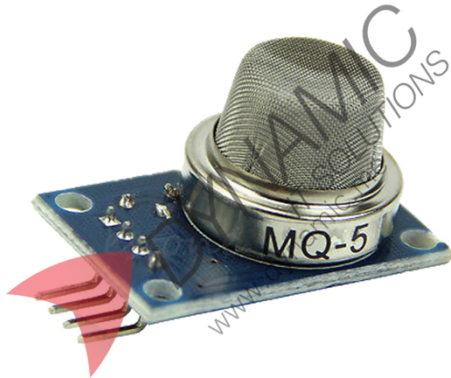


MQ-5 Natural Gas Sensor



Features:

The MQ-5 is a semiconductor sensor designed for detecting flammable gases, especially LPG (propane), methane, and butane. It operates by increasing conductivity as gas concentration rises, with output easily read through a basic circuit. The sensor offers strong sensitivity across a wide range of gases, particularly propane, and maintains reliable performance in varying conditions. With long service life, low cost, and a simple drive circuit, it is ideal for both fixed and portable gas detection systems in home and industrial environments.

Specifications	
Model	MQ-5
Sensor Type	Semiconductor
Encapsulation	Bakelite with metal cap
Detection Gases	LPG (propane), methane (CH ₄), butane (C ₃ H ₈)
Concentration Range	300–10000 ppm (CH ₄ , C ₃ H ₈)
Loop Voltage (Vc)	<= 24 V DC
Heater Voltage (Vh)	5.0 V +/- 0.1 V (AC or DC)
Load Resistance (RL)	Adjustable
Heater Resistance (Rh)	26 Ohm +/- 3 Ohm at room temperature
Heater Power Consumption	<= 950 mW
Sensitivity	R_s (in air) / R_s (in 2000 ppm C ₃ H ₈) >= 5
Output Voltage (Vs)	2.5 V – 4.0 V (in 2000 ppm C ₃ H ₈)
Concentration Slope (alpha)	<= 0.6 (R _{3000ppm} / R _{1000ppm} C ₃ H ₈)
Standard Operating Temp	20 +/- 2 °C
Standard Humidity	55% +/- 5% RH
O₂ Concentration	21% (must be >= 18% for reliable performance)
Standard Test Voltages	Vc: 5.0 V +/- 0.1 V, Vh: 5.0 V +/- 0.1 V
Preheat Time	Not less than 48 hours
Use Cases	Home gas leak alarms, industrial flammable gas detectors, portable LPG/methane sensors

Pinouts:

Pin Name	Type	Description
VCC	Power Input	Power supply input (5 V recommended)
GND	Power Ground	Common ground
AO	Analog Output	Analog voltage output proportional to gas concentration
DO	Digital Output	Digital signal output when gas level exceeds threshold (if comparator is present)

