

MQ135 Air Quality Inspection Module Manual

This module is used a simple circuit to convert the change in conductivity into a voltage signal corresponding to the gas concentration. This sensor can be sensitive and monitoring to ammonia, sulfide, benzene high, smoke and other gas-laden. It can detect a variety of harmful gases.

Application for: home air pollution alarm, industrial air pollution alarm and portable air pollution detector.

Specification:

Working Current	DC24V ± 0.25V	
Operating Voltage	<150mA	
Detection of Gas	Ammonia, sulfide, benzene and other harmful gases	
Detection of concentration	10-1000 ppm (ammonia, toluene, hydrogen)	
Warm-up time	> 30 minutes	
Response time	≤ 1S	
Recovery Time	≤ 30S	
output method (Analog voltage)	0-5V (non-linear)	
	0-10V (non-linear)	
jobs	temperature	- 10~50°C
surroundings	humidity	<95%RH
Size	65mm*45mm*28mm	



Precautions:

1. Please be attention to the polarity and voltage of the power supply before the module is powered on, so as to avoid excessive voltage or damage to the sensor.
2. The module's analog output for the non-linear output, connected with the microcontroller, the microcontroller should be connected to the ADC interface.
3. The data given in the routine is only a general routine, not necessarily suitable for the sensor, user can be modify.
4. The relationship between the resistance ratio and the concentration of logarithmic relationship, please see "MQ135 probe" PDF data in Figure 3.

According to the output voltage to calculate the resistance ratio is as follows:

The sensor in the relatively clean air for more than half an hour, After measuring the output voltage of Aout :

$$R_0 = \frac{V_{CC} \times R_L}{V_{RL}} - R_L, V_{CC} \text{ power supply voltage DC5V, } R_L \text{ for the load resistance, } V_{RL} = A_{out}.$$

When the sensor detects the gas, measured Aout value, It can be calculate the RS value.

$$R_S = \frac{V_{CC} \times R_L}{V_{RL}} - R_L, \text{ the } V_{RL} \text{ value at this time is the } A_{out} \text{ value after the gas is detected, and the value of the above formula is different from the above formula.}$$

Note that the VCC value and the RL value are the same as above. Get R0 and RS value, you can Figure 3 by the RS / R0 value of the gas into the specific concentration value.

(0-10V output is 0-5V output through the circuit to enlarge 2 times, so the calculation method is the same as the VCC is based on the 5V.)

Wiring diagram:

24V and GND for the power interface, D1 is power indicator.

Aout is for the analog output interface, VR2 signal trimmer potentiometer.

VR1 for the magnification (through this potentiometer can be freely adjusted 0-5V and 0-10V output). R7 and RP2 potentiometer components of the load resistance of the sensor in parallel(can be changed), Sensors are different, the parameters used are also different. Parameters to PCB board as the standard. The schematic is for reference only.

Please read this manual carefully before using the module. If you have any questions, please contact our technical staff in time. If you have any damage caused by the above operation, the company will not be responsible.

