TECHNICAL DATA MQ-137 GAS SENSOR

FEATURES

Fast response and High sensitivity
Stable and long life Simple drive circuit

APPLICATION

They are used in air quality control equipments for buildings/factory, are suitable for detecting of NH_3.

SPECIFICATIONS

A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
Vc	Circuit voltage	5V± 0.1	AC OR DC
V_H	Heating voltage	5V± 0.1	ACOR DC
R_L	Load resistance	can adjust	
R_H	Heater resistance	31 Ω ± 5%	Room Tem
P_H	Heating consumption	less than 800mw	

B. Environment condition

Symbol	Parameter name	Technical condition	Remarks
Tao	Using Tem	-10℃-45℃	
Tas	Storage Tem	-20℃-70℃	
R_H	Related humidity	less than 95%Rh	
O_2	Oxygen concentration	21%(standard condition)Oxygen concentration can affect sensitivity	minimum value is over 2%

C. Sensitivity characteristic

Symbol	Parameter name	Technical parameter	Remarks
Ro	Sensing Resistance	900K Ω-4900K Ω (in air)	Detecting concentration scope: 5-200ppm NH_3
α (20/10) NH_3	Concentration Slope rate	≤0.65	
Standard Detecting Condition	Temp: 20℃ ±2℃ Vc:5V± 0.1 Humidity: 65%± 5% Vh: 5V± 0.1		
Preheat time	Over 24 hour		

D. Structure and configuration, basic measuring circuit

	Parts	Materials
1	Gas sensing layer	SnO_2
2	Electrode	Au
3	Electrode line	Pt
4	Heater coil	Ni-Cr alloy
5	Tubular ceramic	Al_2O_3
6	Anti-explosion network	Stainless steel gauze (SUS316 100-mesh)
7	Clamp ring	Copper plating Ni
8	Resin base	Bakelite
9	Tube Pin	Copper plating Ni

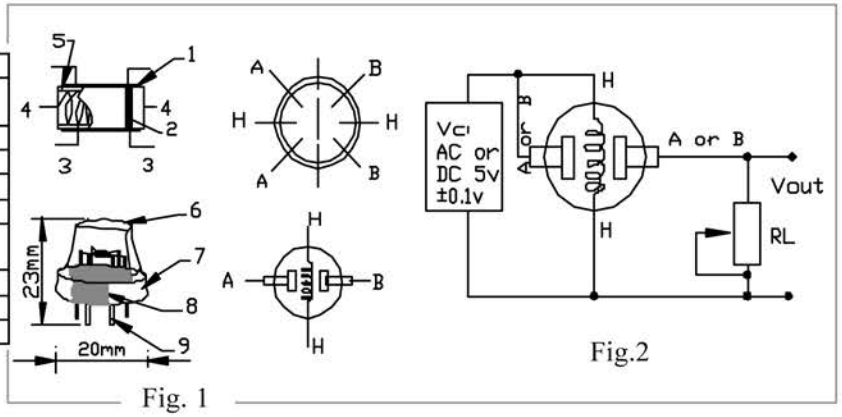
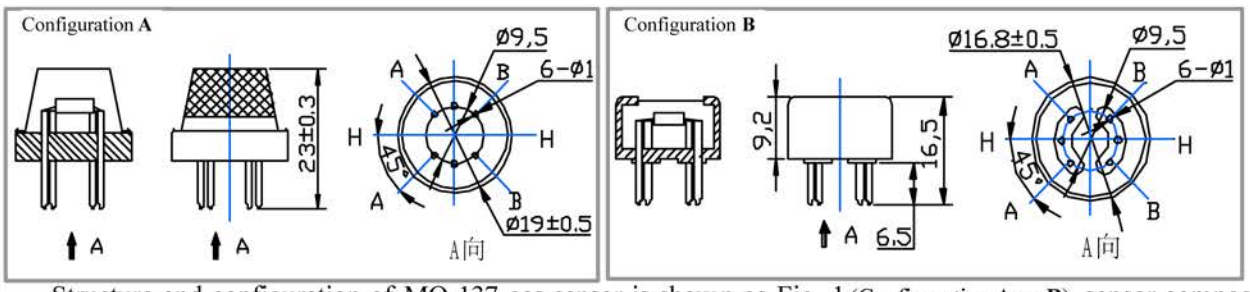


Fig. 1 Fig.2



Structure and configuration of MQ-137 gas sensor is shown as Fig. 1 (Configuration **A** or **B**), sensor composed by micro ceramic tube, sensitive layer, measuring electrode and heater are fixed into a crust made by plastic and stainless steel net. The heater provides necessary work conditions for work of sensitive components. The

enveloped MQ-137 have 6 pins, 4 of them are used to fetch signals, and other 2 are used for providing heating current.

Electric parameter measurement circuit is shown as Fig.2

E. Sensitivity characteristic curve

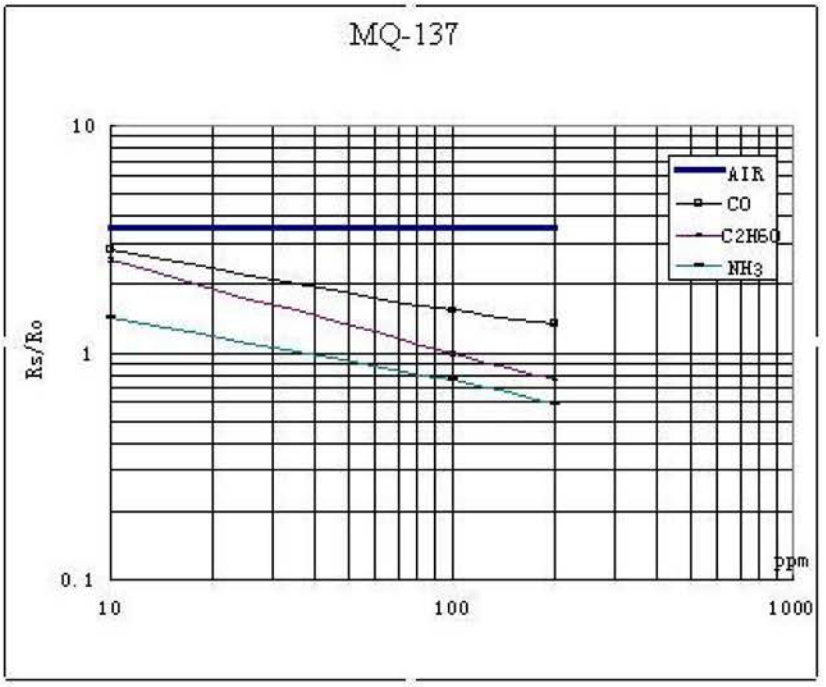


Fig.3 is shows the typical sensitivity characteristics of the MQ-137 for several gases.
in their: Temp: 20℃、
Humidity: 65%、
O_2 concentration 21%
RL=47kΩ
Ro: sensor resistance in the clean air.
Rs :sensor resistance at various concentrations of gases.

Fig.3 sensitivity characteristics of the MQ-137

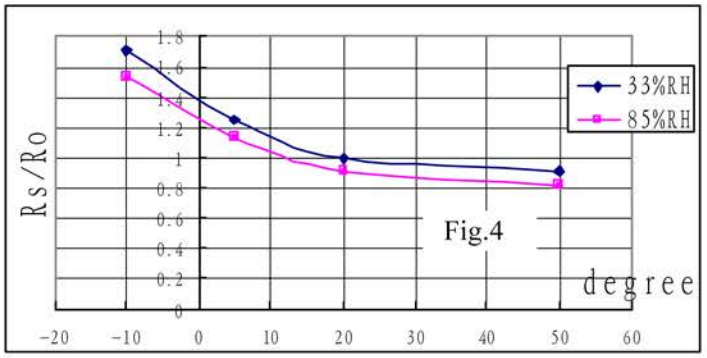


Fig.4 is shows the typical dependence of the MQ-137 on temperature and humidity.
Ro: sensor resistance at 10ppm of NH_3 at 33%RH and 20 degree.
Rs: sensor resistance at 20ppm of NH_3 at different temperatures and humidity.

SENSITVITY ADJUSTMENT

Resistance value of MQ-137 is difference to various kinds and various concentration gases. So, When using this components, sensitivity adjustment is very necessary. we recommend that you calibrate the detector for 10ppm NH_3 concentration in air and use value of Load resistance that(R_L) about 47 KΩ(10KΩ to 100KΩ).

When accurately measuring, the proper alarm point for the gas detector should be determined after considering the temperature and humidity influence.