

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 NH₃.

SPECIFICATIONS

A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
V _c	Circuit voltage	5V±0.1	AC OR DC
V _H	Heating voltage	5V±0.1	AC OR DC
R _L	Load resistance	can adjust	
R _H	Heater resistance	31Ω ±5%	Room Tem
P _H	Heating consumption	less than 800mw	

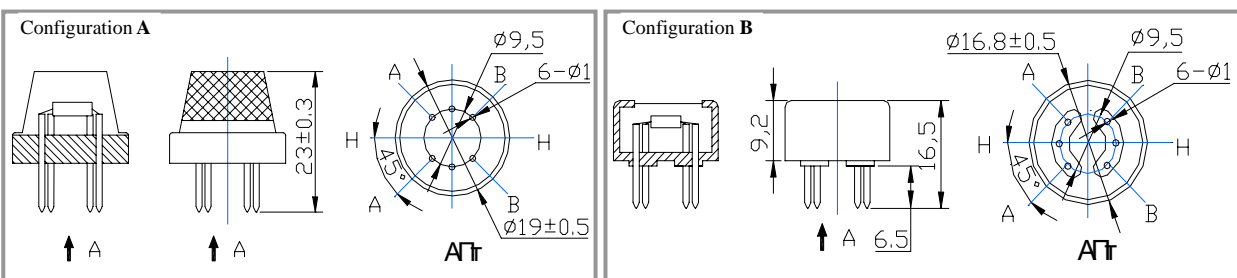
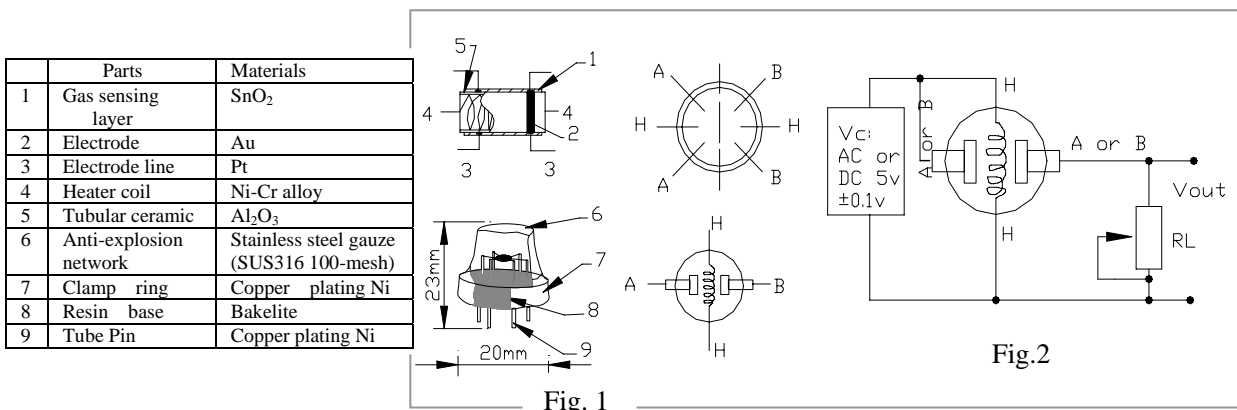
B. Environment condition

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
R _o	Sensing Resistance	900KΩ -4900KΩ (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℃ Humidity: 65%±5%	V _c :5V±0.1 V _h : 5V±0.1	
Preheat time	Over 24 hour		

D. Structure and configuration, basic measuring circuit



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

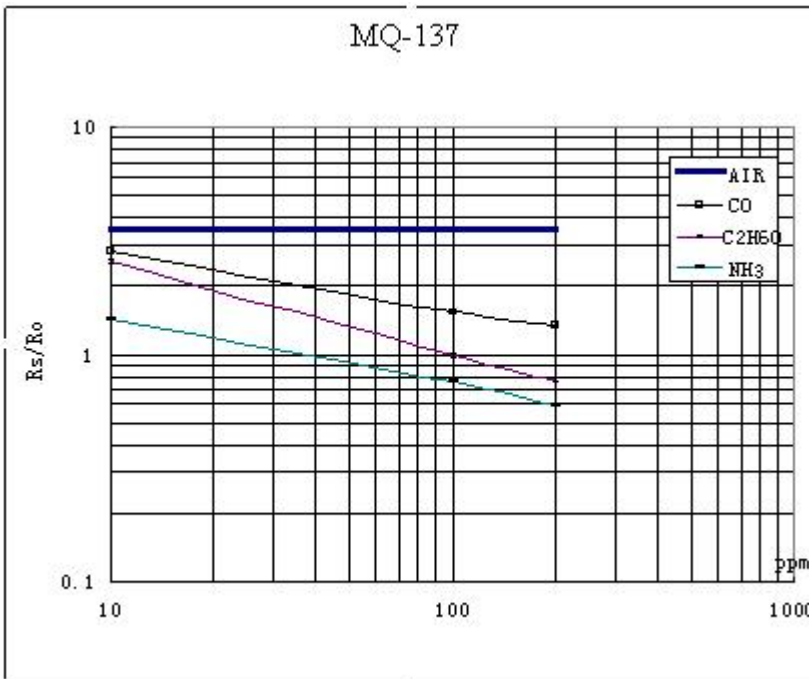


Fig.3 is shows the typical sensitivity characteristics of the MQ-137 for several gases.

in their: Temp: 20°C、
Humidity: 65%、
O₂ 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

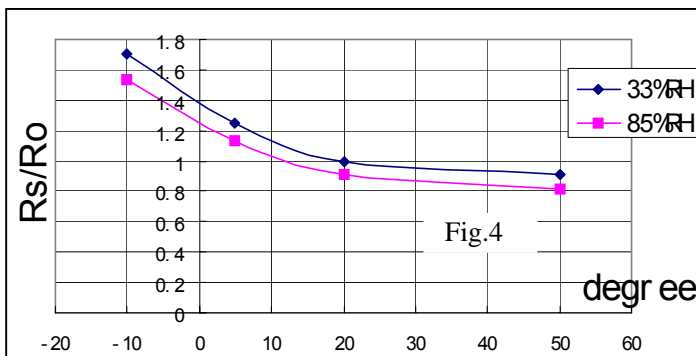


Fig.4 is shows the typical dependence of the MQ-137 on temperature and humidity.

Ro: sensor resistance at 10ppm of NH₃ at 33%RH and 20 degree.

Rs: sensor resistance at 20ppm of NH₃ at different temperatures and humidity.

SENSITIVITY 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 NH₃ concentration in air and use value of Load resistance that (RL) 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.

