

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<sub>3</sub>.

SPECIFICATIONS

A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
V <sub>c</sub>	Circuit voltage	5V±0.1	AC OR DC
V <sub>H</sub>	Heating voltage	5V±0.1	AC OR DC
R <sub>L</sub>	Load resistance	can adjust	
R <sub>H</sub>	Heater resistance	31 ± 5%	Room Tem
P <sub>H</sub>	Heating consumption	less than 800mw	

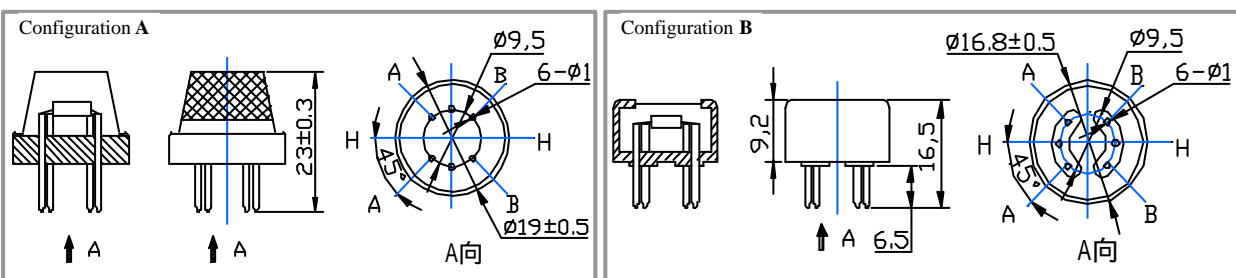
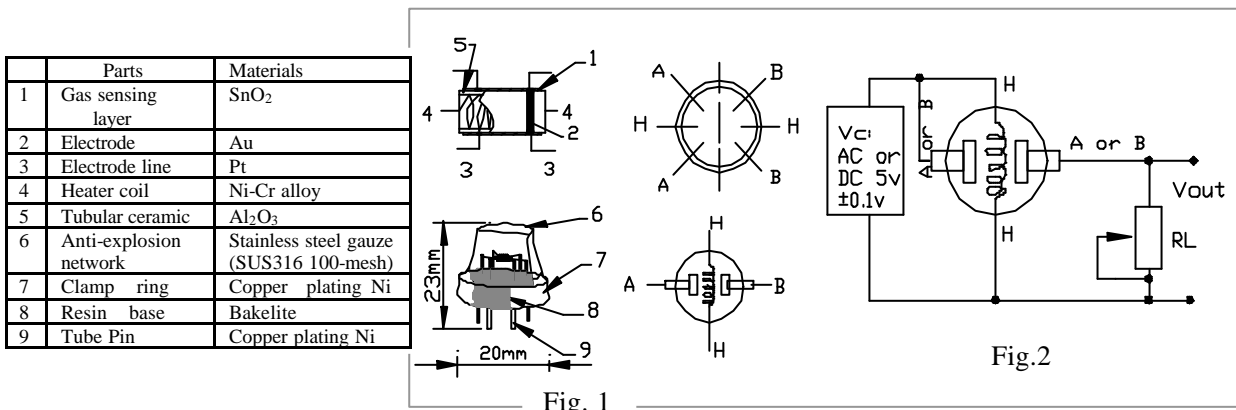
B. Environment condition

Symbol	Parameter name	Technical condition	Remarks
T <sub>ao</sub>	Using Tem	-10 -45	
T <sub>as</sub>	Storage Tem	-20 -70	
R <sub>H</sub>	Related humidity	less than 95%Rh	
O <sub>2</sub>	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 <sub>o</sub>	Sensing Resistance	900K -4900K ( in air )	Detecting concentration scope : 5-200ppm NH <sub>3</sub>
(20/10) NH <sub>3</sub>	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



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

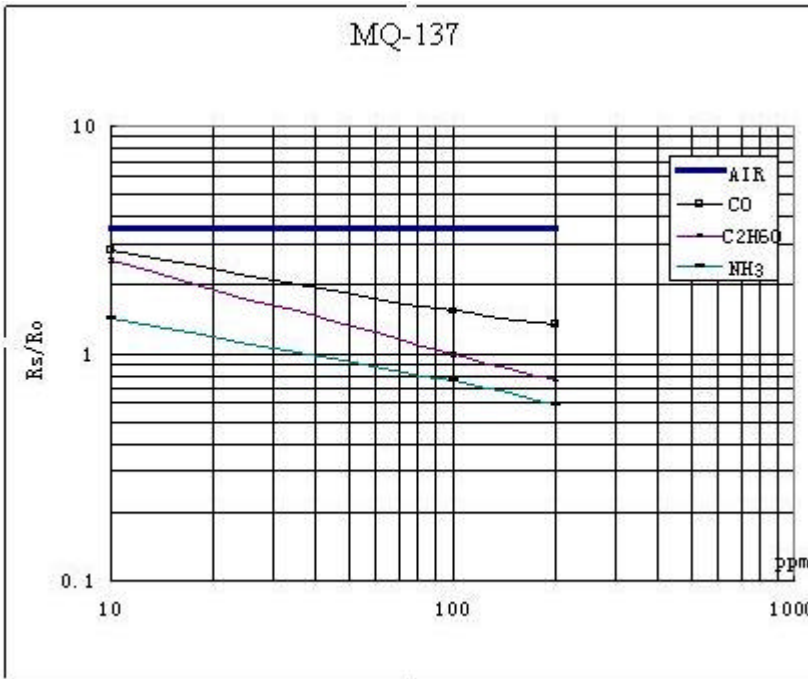


Fig.3 is shows the typical sensitivity characteristics of the MQ-137 for several gases.

in their: Temp: 20 °C  
 Humidity: 65%  
 O<sub>2</sub> concentration 21%  
 RL=47k  
 Ro: sensor resistance in the clean air.  
 Rs :sensor resistance at various concentrations of gases.

Fig.3 sensitivity characteristics of the MQ-137

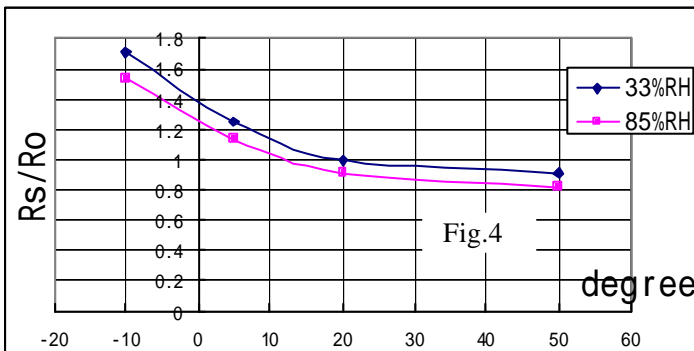


Fig.4 is shows the typical dependence of the MQ-137 on temperature and humidity.

Ro: sensor resistance at 10ppm of NH<sub>3</sub> at 33%RH and 20 degree.  
 Rs: sensor resistance at 20ppm of NH<sub>3</sub> 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 NH<sub>3</sub> concentration in air and use value of Load resistance that (RL) about 47 K (10K to 100K ).

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

