

TECHNICAL DATA

MQ-5 GAS SENSOR

FEATURES

- * High sensitivity to LPG, natural gas , town gas
- * Small sensitivity to alcohol, smoke.
- * Fast response . * Stable and long life * Simple drive circuit

APPLICATION

They are used in gas leakage detecting equipments in family and industry, are suitable for detecting of LPG, natural gas , town gas, avoid the noise of alcohol and cooking fumes and cigarette smoke.

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
P _L	Load resistance	20KΩ	
R _H	Heater resistance	31 ± 10%	Room Tem
P _H	Heating consumption	less than 800mw	

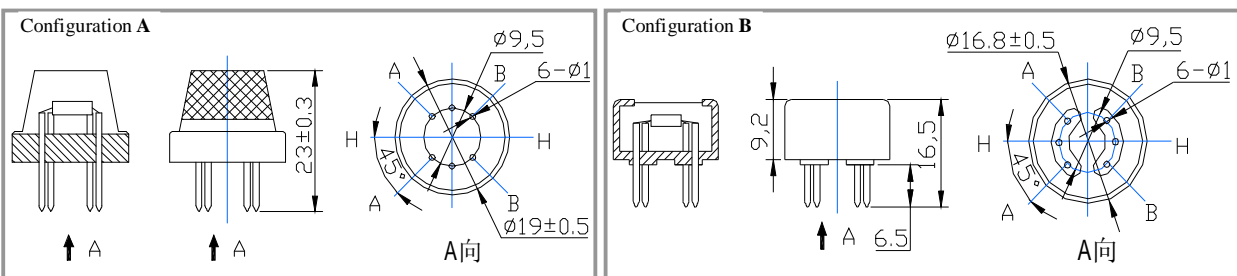
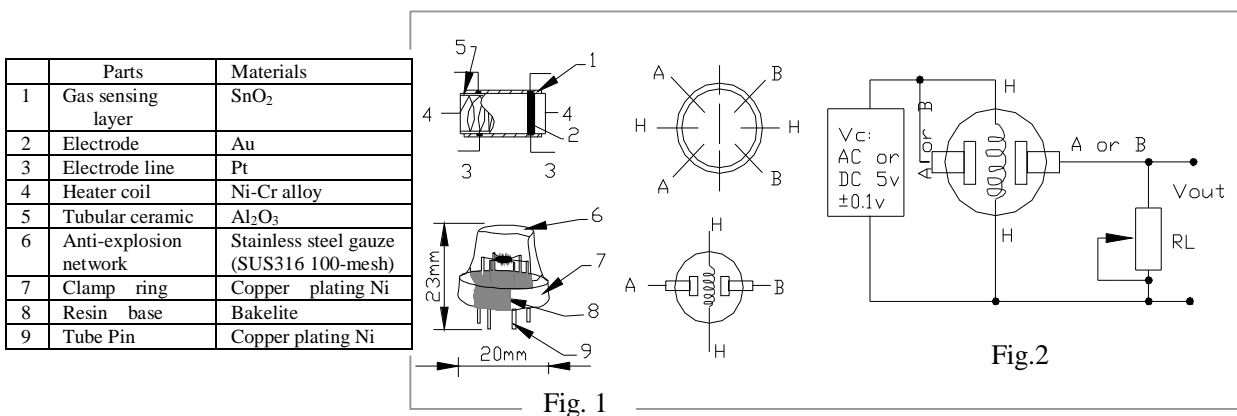
B. Environment condition

Symbol	Parameter name	Technical condition	Remarks
T _{ao}	Using Tem	-10°C-50°C	
T _{as}	Storage Tem	-20°C-70°C	
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 _s	Sensing Resistance	10KΩ - 60KΩ (5000ppm methane)	Detecting concentration scope: 200-10000ppm LPG,LNG Natural gas, iso-butane, propane Town gas
α (5000ppm/1000ppm CH ₄)	Concentration slope rate	≤0.6	
Standard detecting condition	Temp: 20°C ± 2°C Humidity: 65% ± 5%	V _c :5V±0.1 V _h : 5V±0.1	
Preheat time	Over 24 hour		

D. Strucyure and configuration, basic measuring circuit



Structure and configuration of MQ-5 gas sensor is shown as Fig. 1 (Configuration A or B), sensor composed by

micro Al_2O_3 ceramic tube, **Tin Dioxide** (SnO_2) 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-5 have 6 pin ,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.2 sensitivity characteristics of the MQ-5

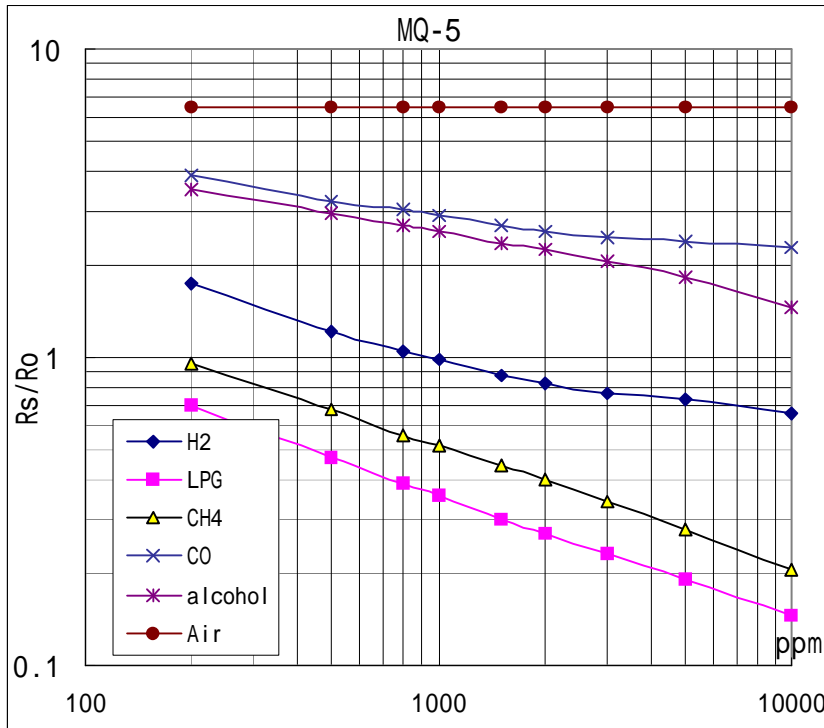


Fig.3 is shows the typical sensitivity characteristics of the MQ-5 for several gases.

in their: Temp: 20°C、
Humidity: 65%、
O₂ concentration 21%
RL=20k Ω

R₀: sensor resistance at 1000ppm of H₂ in the clean air.

R_s:sensor resistance at various concentrations of gases.

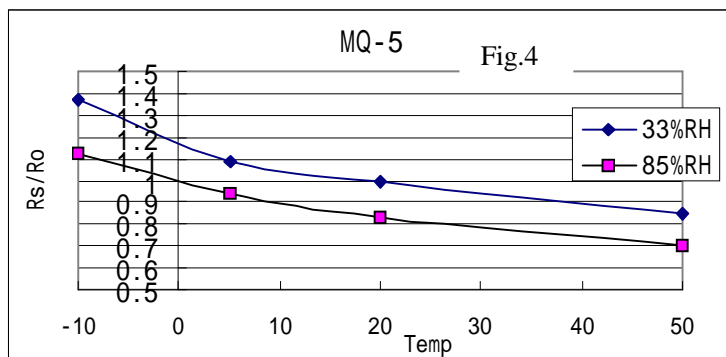


Fig.4 is shows the typical dependence of the MQ-5 on temperature and humidity.

R₀: sensor resistance at 1000ppm of H₂ in air at 33%RH and 20 degree.

R_s: sensor resistance at different temperatures and humidities.

SENSITIVITY ADJUSTMENT

Resistance value of MQ-5 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 1000ppm H₂ or LPG concentration in air and use value of Load resistance (R_L) about 20 K Ω (10K Ω to 47K Ω).

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