

FEATURES

- * High sensitivity to alcohol and small sensitivity to Benzine .
- * Fast response and High sensitivity
- * Stable and long life
- * Simple drive circuit

APPLICATION

They are suitable for alcohol checker, Breathalyser.

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	AC OR DC
R _L	Load resistance	200K	
R _H	Heater resistance	33 ± 5%	Room Tem
P _H	Heating consumption	less than 750mw	

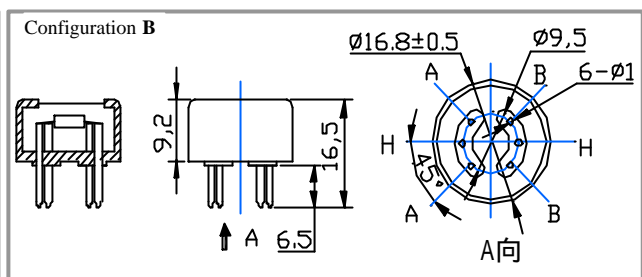
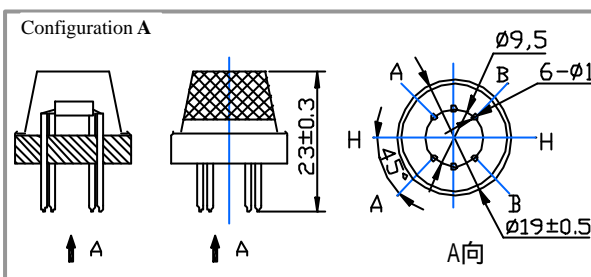
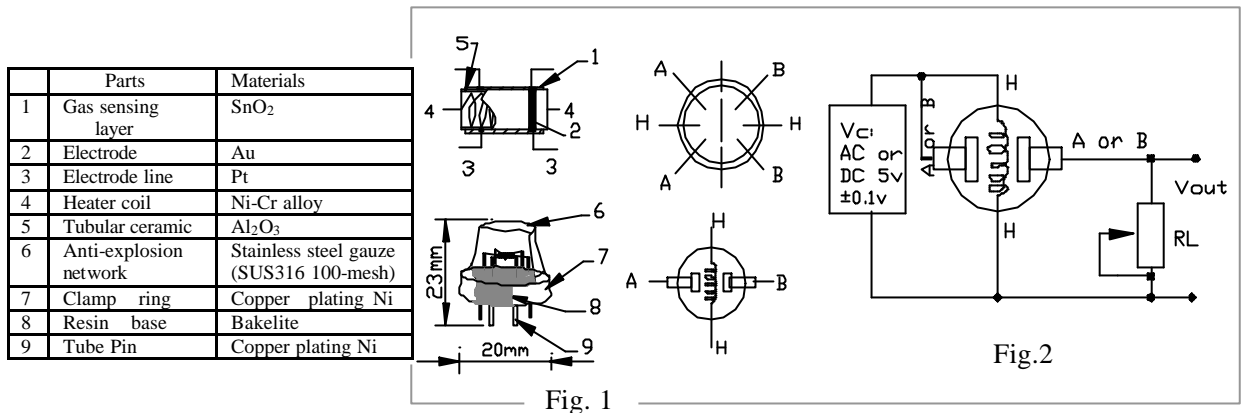
B. Environment condition

Symbol	Parameter name	Technical condition	Remarks
T _{ao}	Using Tem	-10 -50	
T _{as}	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 _s	Sensing Resistance	1M - 8 M (0.4mg/L alcohol)	Detecting concentration scope : 0.05mg/L—10mg/L Alcohol
(0.4/1 mg/L)	Concentration slope rate	0.6	
Standard detecting condition	Temp: 20 ±2 Humidity: 65%±5%	Vc:5V±0.1 Vh: 5V±0.1	
Preheat time	Over 24 hour		

D. Structure and configuration, basic measuring circuit



Structure and configuration of MQ-3 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-3 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

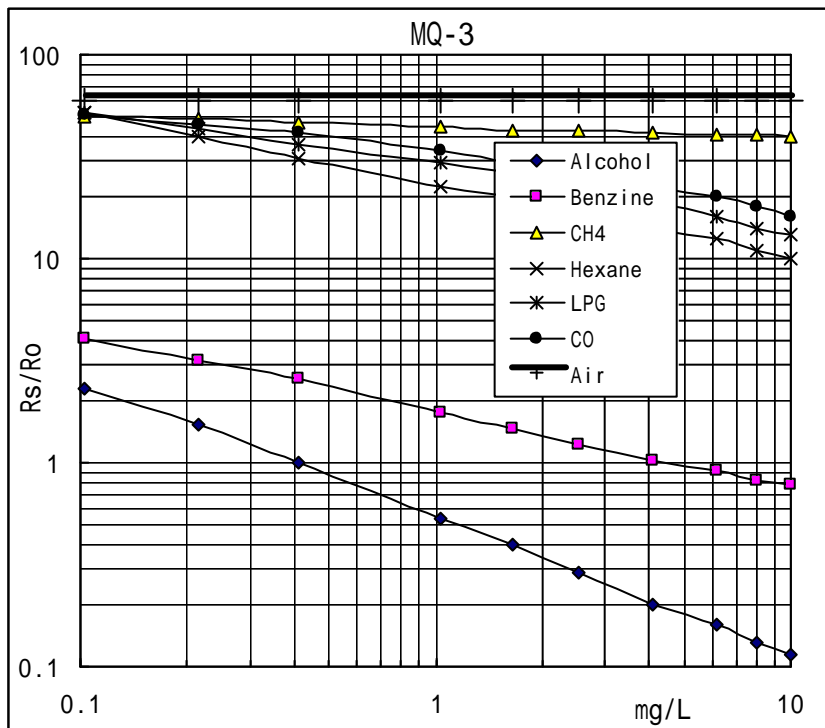


Fig.2 sensitivity characteristics of the MQ-3

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

in their: Temp: 20 °C
Humidity: 65%
O₂ concentration 21%
RL=200k

Ro: sensor resistance at 0.4mg/L of Alcohol in the clean air.
Rs: sensor resistance at various concentrations of gases.

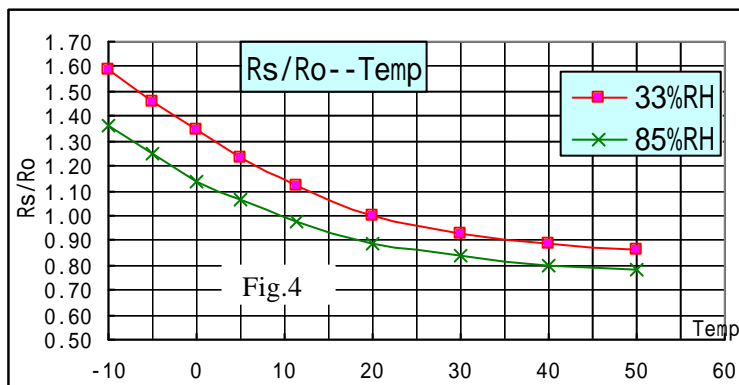


Fig.4 shows the typical dependence of the MQ-3 on temperature and humidity.

Ro: sensor resistance at 0.4mg/L of Alcohol in air at 33%RH and 20 °C
Rs: sensor resistance at 0.4mg/L of Alcohol at different temperatures and humidities.

SENSITIVITY ADJUSTMENT

Resistance value of MQ-3 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 0.4mg/L (approximately 200ppm) of Alcohol concentration in air and use value of Load resistance that(R_L) about 200 K (100K to 470 K).

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