

## TECHNICAL DATA

## MQ-8 GAS SENSOR

## FEATURES

- \* High sensitivity to Hydrogen ( $H_2$ )
- \* Small sensitivity to alcohol, LPG,cooking fumes
- \* Stable and long life

## APPLICATION

They are used in gas leakage detecting equipments in family and industry, are suitable for detecting of Hydrogen ( $H_2$ ), avoid the noise of alcohol and cooking fumes, LPG,CO.

## SPECIFICATIONS

## A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
$V_c$	Circuit voltage	$5V \pm 0.1$	AC OR DC
$V_H$	Heating voltage	$5V \pm 0.1$	AC OR DC
$P_L$	Load resistance	$10K \Omega$	
$R_H$	Heater resistance	$31 \pm 5\%$	Room Tem
$P_H$	Heating consumption	less than 800mW	

## B. Environment condition

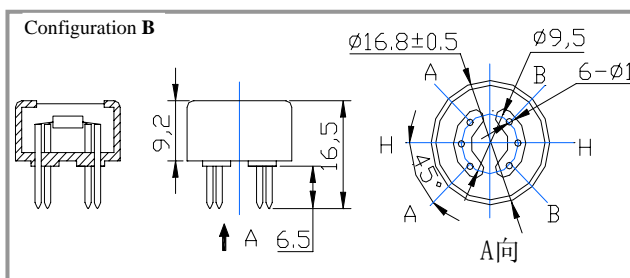
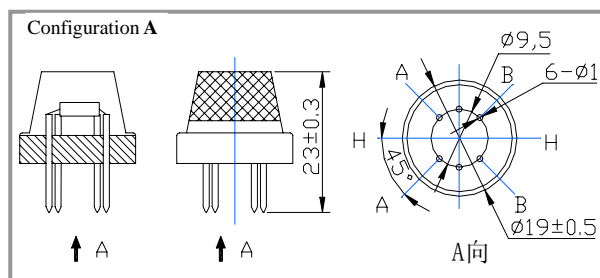
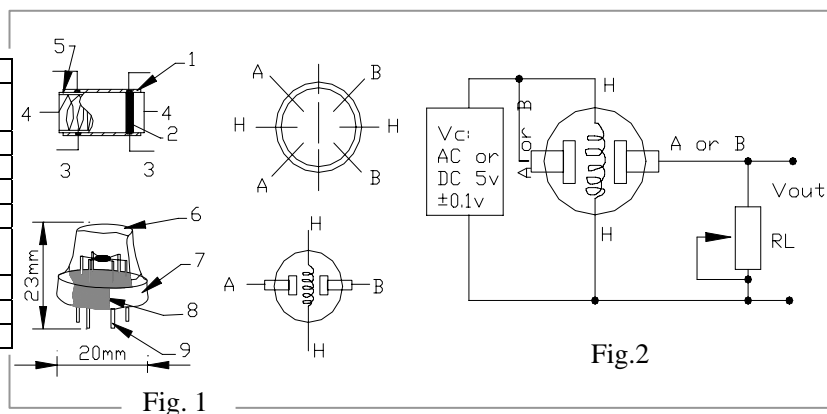
Symbol	Parameter name	Technical condition	Remarks
$T_{ao}$	Using Tem	$-10^\circ C - 50^\circ C$	
$T_{as}$	Storage Tem	$-20^\circ C - 70^\circ C$	
$R_H$	Related humidity	less than 95%Rh	
$O_2$	Oxygen concentration	21%(standard condition)Oxygen concentration can affect sensitivity	minimum value is over 2%

## C. Sensitivity characteristic

Performance Characteristics			
Symbol	Parameter name	Technical parameter	Ramark 2
Rs	Sensing Resistance	10K Ω - 60K Ω (1000ppm H <sub>2</sub> )	Detecting concentration scope: 100-10000ppm Hydrogen (H <sub>2</sub> )
α (1000ppm/ 500ppmH <sub>2</sub> )	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

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



Structure and configuration of MQ-8 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-8 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

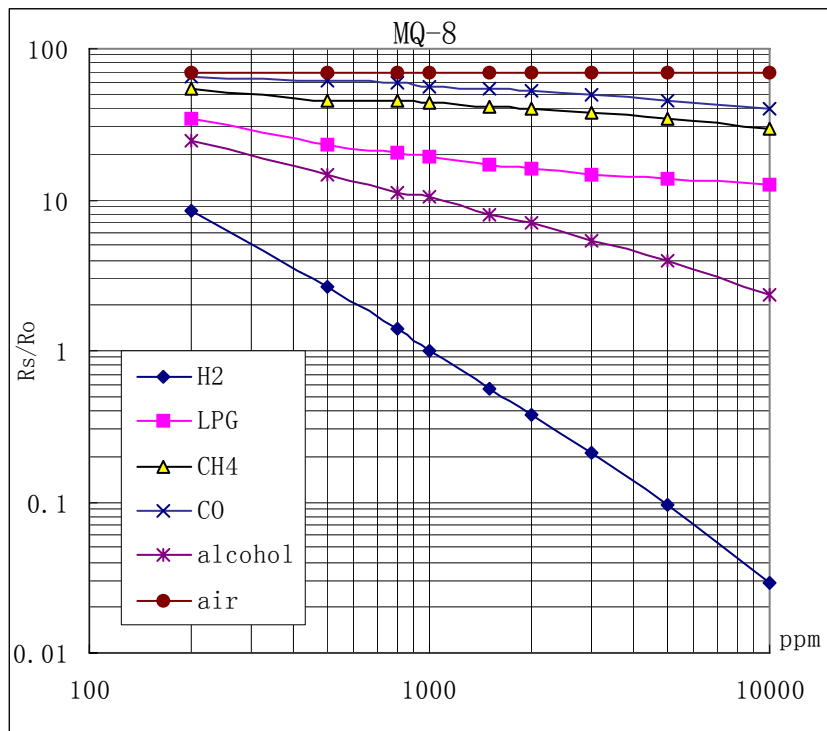


Fig.3 is shows the typical sensitivity characteristics of the MQ-8 for several gases.

in their: Temp: 20°C,  
Humidity: 65%  
O<sub>2</sub> concentration 21%  
RL=10k  $\Omega$

Ro: sensor resistance at 1000ppm H<sub>2</sub> in the clean air.

Rs: sensor resistance at various concentrations of gases.

Fig.2 sensitivity characteristics of the MQ-8

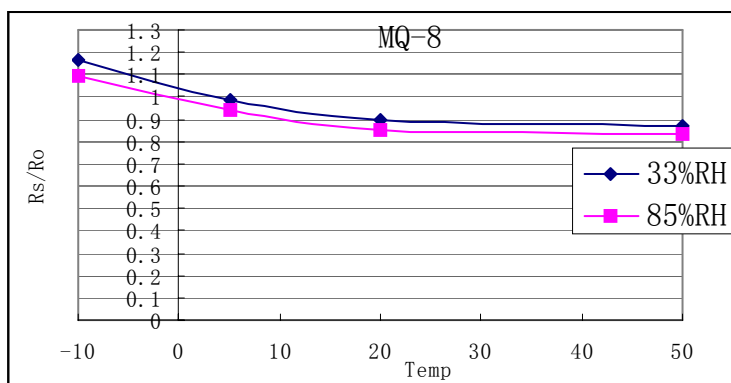


Fig.4 is shows the typical dependence of the MQ-8 on temperature and humidity.

Ro: sensor resistance at 1000ppm of H<sub>2</sub> in air at 33%RH and 20 degree.

Rs: sensor resistance at 1000ppm of H<sub>2</sub> in air at different temperatures and humidities.

#### SENSITIVITY ADJUSTMENT

Resistance value of MQ-8 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 H<sub>2</sub> concentration in air and use value of Load resistance ( $R_L$ ) about 10 K  $\Omega$  (5K  $\Omega$  to 33 K  $\Omega$ ).

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

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