

# TECHNICAL DATA

# MQ-136 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/offices, are suitable for detecting of H<sub>2</sub>S.

## 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

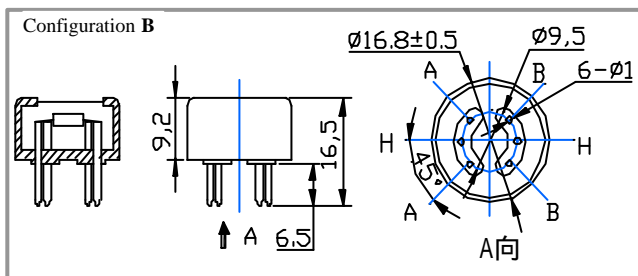
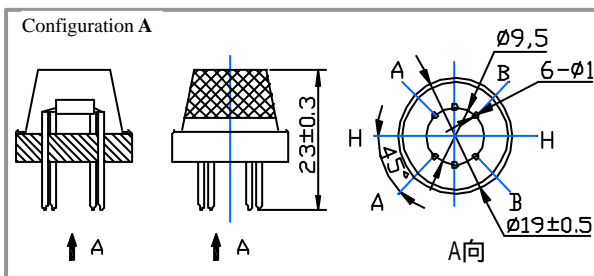
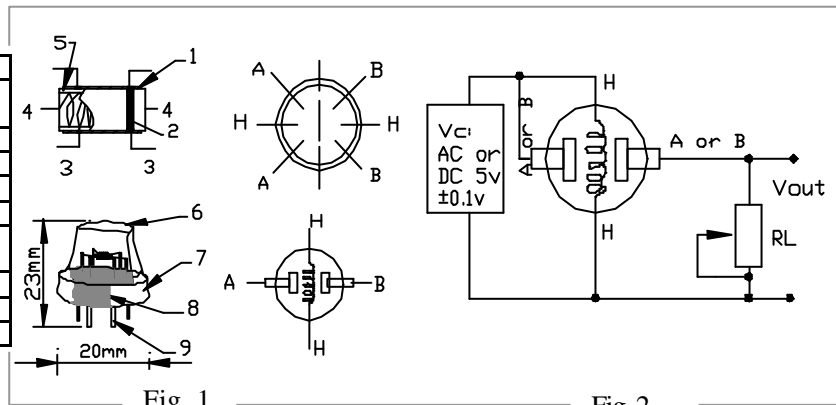
Symbol	Parameter name	Technical condition	Remarks
Tao	Using Tem	-10 -45	
Tas	Storage Tem	-20 -70	
R <sub>H</sub>	Related humidity	less than 95%Rh	
O <sub>2</sub>	Oxygen concentration	21%(standard condition)Oxygen concentration can affect sensitivity	minimum value is over 2%

### C. Sensitivity characteristic

Symbol	Parameter name	Technical parameter	Remark 2
R <sub>s</sub>	Sensing Resistance	30K -200K (10ppm H <sub>2</sub> S)	Detecting concentration scope : 1-100ppm H <sub>2</sub> S
(20/5) H <sub>2</sub> S	Concentration Slope rate	0.65	
Standard Detecting Condition	Temp: 20 ± 2 Humidity: 65%± 5%	V <sub>c</sub> :5V±0.1 V <sub>H</sub> : 5V±0.1	
Preheat time	Over 24 hour		

### D. Structure and configuration, basic measuring circuit

Parts	Materials
1 Gas sensing layer	SnO <sub>2</sub>
2 Electrode	Au
3 Electrode line	Pt
4 Heater coil	Ni-Cr alloy
5 Tubular ceramic	Al <sub>2</sub> O <sub>3</sub>
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-136 gas sensor is shown as Fig. 1 (Configuration A or B), sensor composed by micro Al<sub>2</sub>O<sub>3</sub> ceramic tube, Tin Dioxide (SnO<sub>2</sub>) 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-136 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

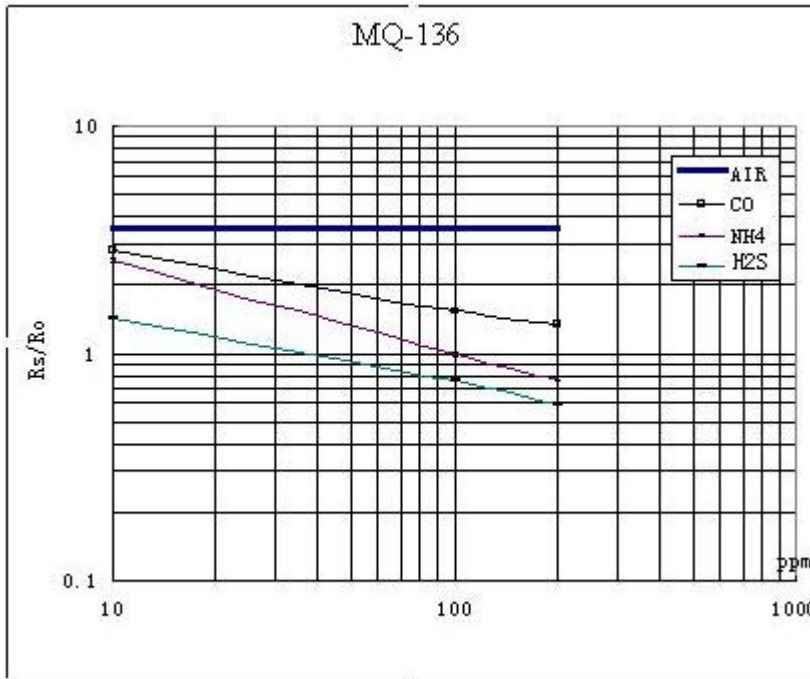


Fig.3 is shows the typical sensitivity characteristics of the MQ-136 for several gases.

in their: Temp: 20 °C  
 Humidity: 65%、  
 O<sub>2</sub> concentration 21%  
 RL=20k  
 Ro: sensor resistance at 10ppm of H<sub>2</sub>S in the clean air.  
 Rs: sensor resistance at various concentrations of gases.

Fig.3 sensitivity characteristics of the MQ-136

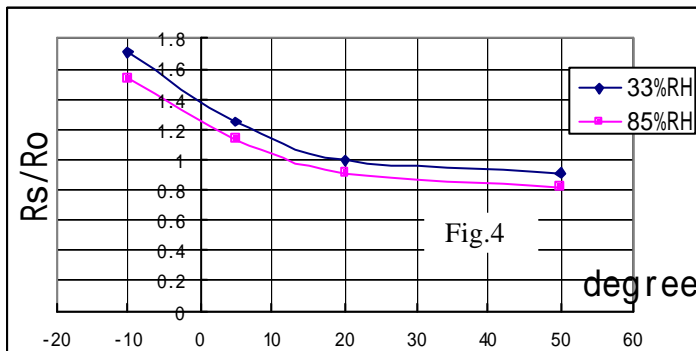


Fig.4 is shows the typical dependence of the MQ-136 on temperature and humidity.

Ro: sensor resistance at 10ppm of H<sub>2</sub>S at 33%RH and 20 degree.  
 Rs: sensor resistance at 10ppm of H<sub>2</sub>S at different temperatures and humidity.

SENSITIVITY ADJUSTMENT

Resistance value of MQ-136 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 H<sub>2</sub>S concentration in air and use value of Load resistance that ( $R_L$ ) about 20 K (10K to 47 K ).

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

