

TECHNICAL DATA

MQ-135 GAS SENSOR

FEATURES

Wide detecting scope
Stable and long life

Fast response and High sensitivity
Simple drive circuit

APPLICATION

They are used in air quality control equipments for buildings/offices, are suitable for detecting of NH₃,NO_x, alcohol, Benzene, smoke,CO₂,etc.

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 | ACOR DC |
| R _L | Load resistance | can adjust | |
| R _H | Heater resistance | 33Ω ±5% | Room Tem |
| P _H | Heating consumption | less than 800mw | |

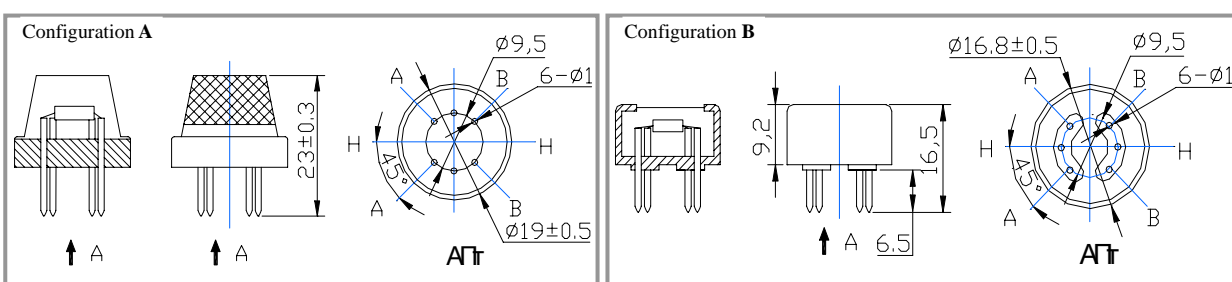
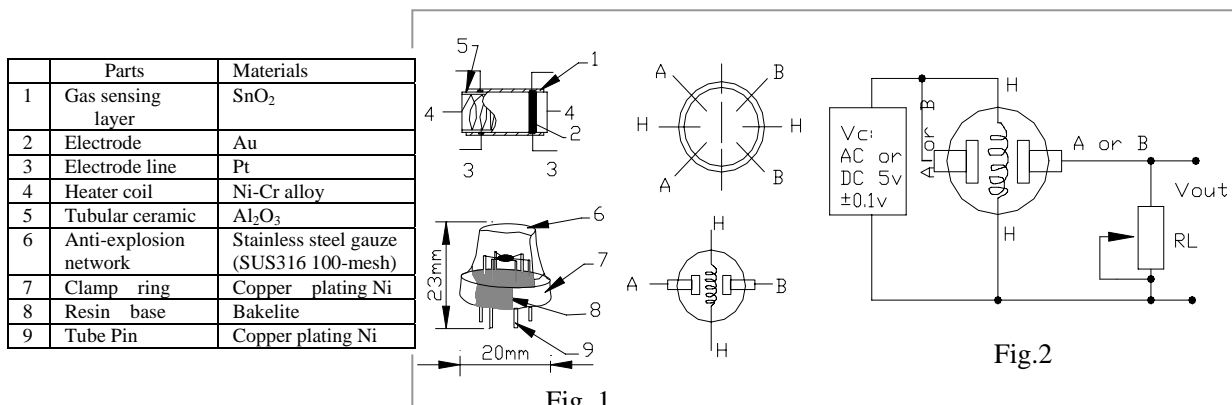
B. Environment condition

| Symbol | Parameter name | Technical condition | Remarks |
|----------------|----------------------|--|--------------------------|
| Tao | Using Tem | -10℃...+45℃ | |
| Tas | Storage Tem | -20℃...+70℃ | |
| R _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 | Remark 2 |
|----------------------------------|-----------------------------------|---|--|
| R _s | Sensing Resistance | 30KΩ -200KΩ (100ppm NH ₃) | Detecting concentration scope : 10ppm-300ppm NH ₃ 10ppm-1000ppm Benzene 10ppm-300ppm Alcohol |
| α (200/50) NH ₃ | Concentration Slope rate | ≤ 0.65 | |
| Standard Detecting Condition | Temp: 20℃ ±2℃ Humidity: 65%±5% | V _c :5V±0.1 V _h : 5V±0.1 | |
| Preheat time | Over 24 hour | | |

D. Structure and configuration, basic measuring circuit



Structure and configuration of MQ-135 gas sensor is shown as Fig. 1 (Configuration A or B), sensor composed by micro AL₂O₃ ceramic tube, Tin Dioxide (SnO₂) 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-135 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.2 sensitivity characteristics of the MQ-135

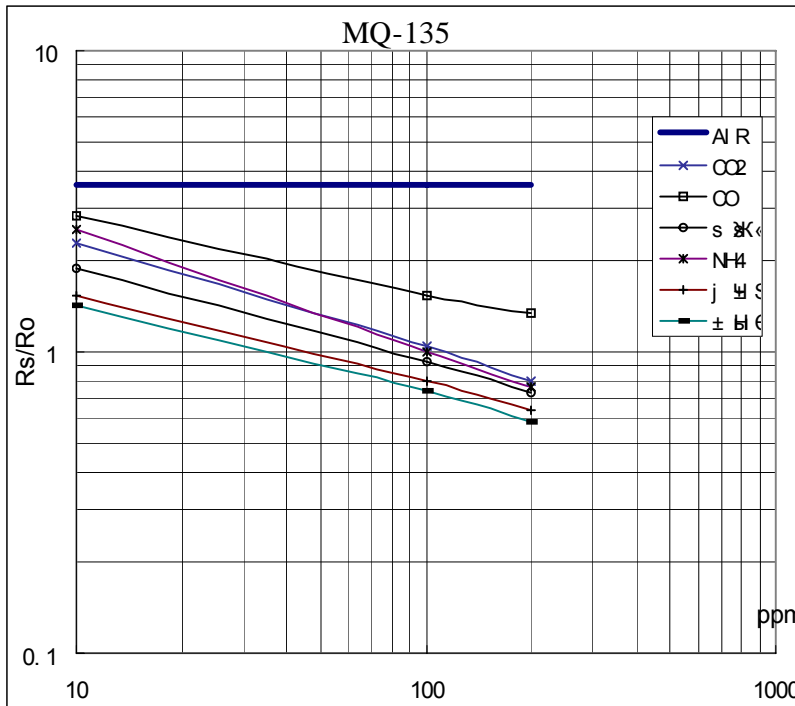


Fig.3 is shows the typical sensitivity characteristics of the MQ-135 for several gases.

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

Ro: sensor resistance at 100ppm of NH₃ in the clean air.

Rs: sensor resistance at various concentrations of gases.

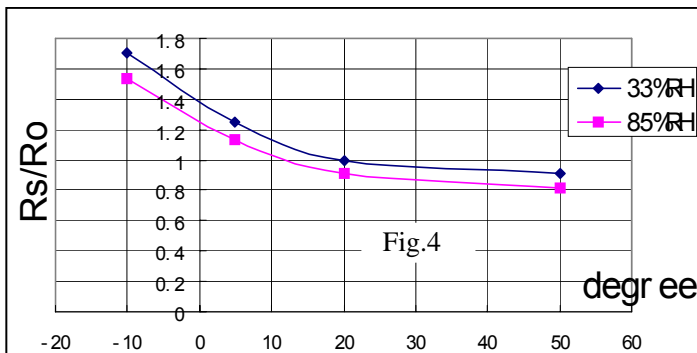


Fig.4 is shows the typical dependence of the MQ-135 on temperature and humidity.

Ro: sensor resistance at 100ppm of NH₃ in air at 33%RH and 20 degree.

Rs: sensor resistance at 100ppm of NH₃ at different temperatures and humidities.

SENSITIVITY ADJUSTMENT

Resistance value of MQ-135 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 100ppm NH₃ or 50ppm Alcohol concentration in air and use value of Load resistancethat(R_L) about 20 KΩ (10KΩ to 47 KΩ).

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

