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TECHNICAL DATA

MQ-2 GAS SENSOR

FEATURES

Wide detecting scope
Stable and long life

Fast response and High sensitivity
Simple drive circuit

APPLICATION

They are used in gas leakage detecting equipments in family and industry, are suitable for detecting of LPG, i-butane, propane, methane ,alcohol, Hydrogen, 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
R _L	Load resistance	can adjust	
R _H	Heater resistance	33 Ω ± 5%	Room Tem
P _H	Heating consumption	less than 800mw	

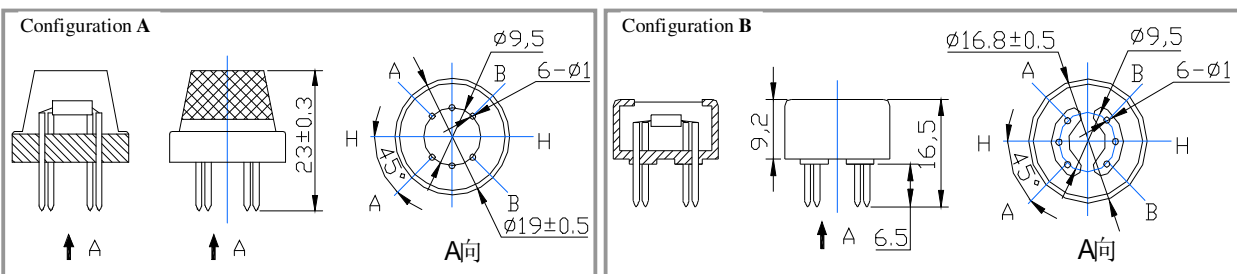
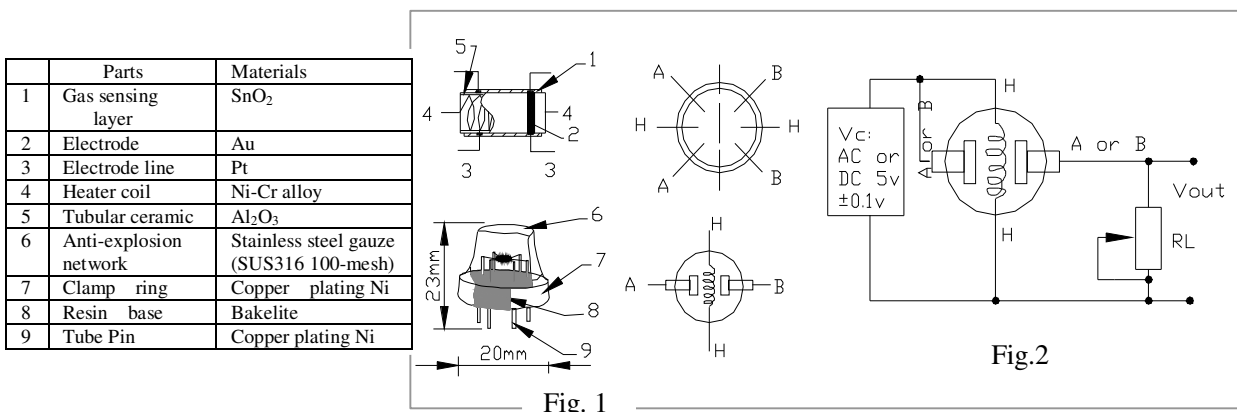
B. Environment condition

Symbol	Parameter name	Technical condition	Remarks
Tao	Using Tem	-20℃-50℃	
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	Remarks
R _s	Sensing Resistance	3K Ω -30K Ω (1000ppm iso-butane)	Detecting concentration scope: 200ppm-5000ppm LPG and propane 300ppm-5000ppm butane
α (3000/1000) isobutane	Concentration Slope rate	≤0.6	
Standard Detecting Condition	Temp: 20℃ ± 2℃ Humidity: 65%±5%	V _c :5V±0.1 V _H : 5V±0.1	5000ppm-20000ppm methane 300ppm-5000ppm H ₂
Preheat time	Over 24 hour		100ppm-2000ppm Alcohol

D. Structure and configuration, basic measuring circuit



Structure and configuration of MQ-2 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

MQ-4 Semiconductor Sensor for Natural Gas

Sensitive material of MQ-4 gas sensor is SnO₂, which with lower conductivity in clean air. When the target combustible gas exist, The sensor's conductivity is more higher along with the gas concentration rising. Please use simple electrocircuit, Convert change of conductivity to correspond output signal of gas concentration.

MQ-4 gas sensor has high sensitivity to Methane, also to Propane and Butane. The sensor could be used to detect different combustible gas, especially Methane, it is with low cost and suitable for different application.

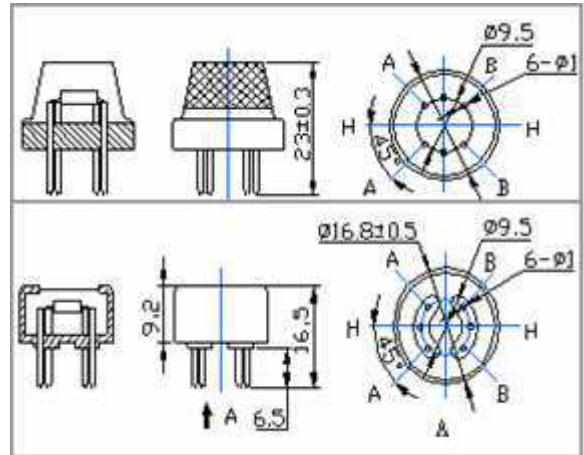
Character

- * Good sensitivity to Combustible gas in wide range
- * High sensitivity to Natural gas
- * Long life and low cost
- * Simple drive circuit

Application

- * Domestic gas leakage detector
- * Industrial Combustible gas detector
- * Portable gas detector

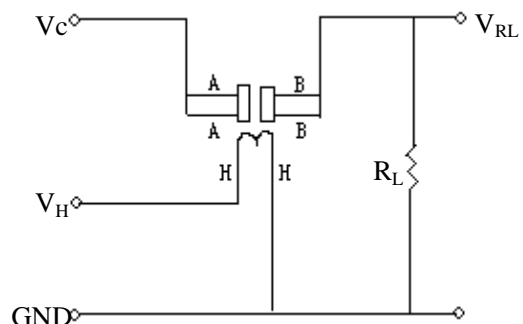
Configuration



Technical Data

Model No.		MQ-4	
Sensor Type		Semiconductor	
Standard Encapsulation		Bakelite (Black Bakelite)	
Detection Gas		Natural gas/ Methane	
Concentration		300-10000ppm (Natural gas / Methane)	
Circuit	Loop Voltage	V _c	≤24V DC
	Heater Voltage	V _H	5.0V±0.2V AC or DC
	Load Resistance	R _L	Adjustable
Character	Heater Resistance	R _H	28.5Ω±3Ω (Room Tem.)
	Heater consumption	P _H	≤900mW
	Sensing Resistance	R _s	2KΩ-20KΩ(in 5000ppm CH ₄)
	Sensitivity	S	R _s (in air)/R _s (5000ppm CH ₄)≥5
	Slope	α	≤0.6(R _{5000ppm} /R _{3000ppm} CH ₄)
Condition	Tem. Humidity	20°C±2°C; 65%±5%RH	
	Standard test circuit	V _c :5.0V±0.1V; V _H : 5.0V±0.1V	
	Preheat time	Over 48 hours	

Basic test loop



The above is basic test circuit of the sensor. The sensor need to be put 2 voltage, heater voltage(V_H) and test voltage(V_C). V_H used to supply certified working temperature to the sensor, while V_C used to detect voltage (V_{RL}) on load resistance (R_L) whom is in series with sensor. The sensor has light polarity, V_c need DC power. V_C and V_H could use same power circuit with precondition to assure performance of sensor. In order to make the sensor with better performance, suitable R_L value is needed: Power of Sensitivity body(P_s):

$$P_s = V_c^2 \times R_s / (R_s + R_L)^2$$

$$\text{Resistance of sensor}(R_s): R_s = (V_c / V_{RL} - 1) \times R_L$$

Sensitivity Characteristics

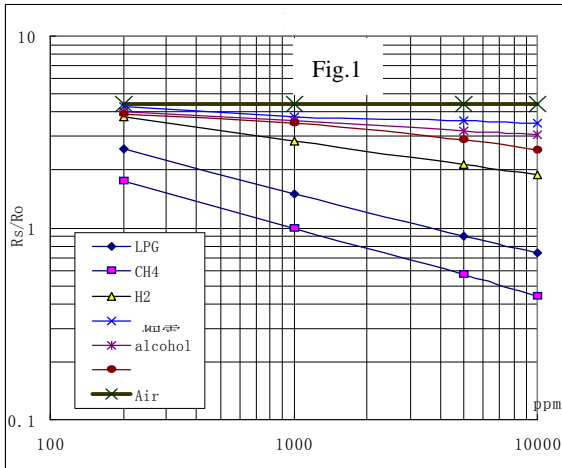


Fig.1 shows the typical sensitivity characteristics of the MQ-4, ordinate means resistance ratio of the sensor (R_s/R_o), abscissa is concentration of gases. R_s means resistance in different gases, R_o means resistance of sensor in 1000ppm Methane. All test are under standard test conditions.

P.S.: Sensitivity to smoke is ignite 10pcs cigarettes in $8m^3$ room, and the output equals to 200ppm Methane

Influence of Temperature/Humidity

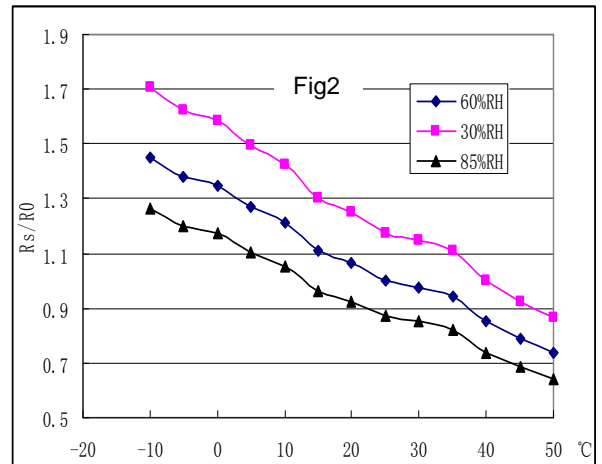
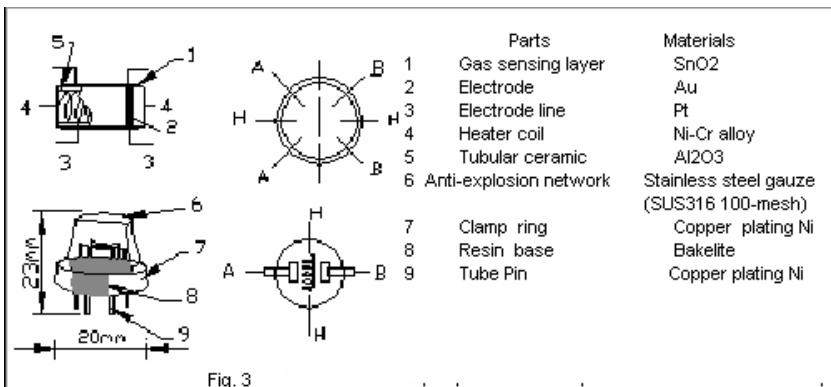


Fig.2 shows the typical temperature and humidity characteristics. Ordinate means resistance ratio of the sensor (R_s/R_o), R_s means resistance of sensor in 1000ppm Methane under different tem. and humidity. R_o means resistance of the sensor in environment of 1000ppm Methane, $20^{\circ}C/65\%RH$

Structure and configuration



Structure and configuration of MQ-4 gas sensor is shown as Fig. 3, 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-4 have 6 pin, 4 of them are used to fetch signals, and other 2 are used for providing heating current.

Notification

1 Following conditions must be prohibited

1.1 Exposed to organic silicon steam

Organic silicon steam cause sensors invalid, sensors must be avoid exposing to silicon bond, fixture, silicon latex, putty or plastic contain silicon environment

1.2 High Corrosive gas

If the sensors exposed to high concentration corrosive gas (such as H_2S , SO_x , Cl_2 , HCl etc), it will not only result in corrosion of sensors structure, also it cause sincere sensitivity attenuation.

1.3 Alkali, Alkali metals salt, halogen pollution

The sensors performance will be changed badly if sensors be sprayed polluted by alkali metals salt especially brine, or be exposed to halogen such as fluorin.

1.4 Touch water

Sensitivity of the sensors will be reduced when splattered or dipped in water.

1.5 Freezing

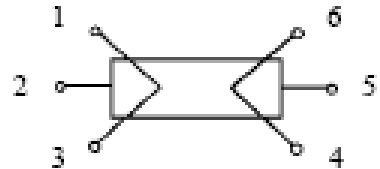
Do avoid icing on sensor's surface, otherwise sensor would lose sensitivity.

1.6 Applied voltage higher

Applied voltage on sensor should not be higher than stipulated value, otherwise it cause down-line or heater damaged, and bring on sensors' sensitivity characteristic changed badly.

1.7 Voltage on wrong pins

For 6 pins sensor, if apply voltage on 1、3 pins or 4、6 pins, it will make lead broken, and without signal when apply on 2、4 pins



2 Following conditions must be avoided

2.1 Water Condensation

Indoor conditions, slight water condensation will effect sensors performance lightly. However, if water condensation on sensors surface and keep a certain period, sensor' sensitivity will be decreased.

2.2 Used in high gas concentration

No matter the sensor is electrified or not, if long time placed in high gas concentration, if will affect sensors characteristic.

2.3 Long time storage

The sensors resistance produce reversible drift if it's stored for long time without electrify, this drift is related with storage conditions. Sensors should be stored in airproof without silicon gel bag with clean air. For the sensors with long time storage but no electrify, they need long aging time for stbilty before using.

2.4 Long time exposed to adverse environment

No matter the sensors electrified or not, if exposed to adverse environment for long time, such as high humidity, high temperature, or high pollution etc, it will effect the sensors performance badly.

2.5 Vibration

Continual vibration will result in sensors down-lead response then repture. In transportation or assembling line, pneumatic screwdriver/ultrasonic welding machine can lead this vibration.

2.6 Concussion

If sensors meet strong concussion, it may lead its lead wire disconnected.

2.7 Usage

For sensor, handmade welding is optimal way. If use wave crest welding should meet the following conditions:

2.7.1 Soldering flux: Rosin soldering flux contains least chlorine

2.7.2 Speed: 1-2 Meter/ Minute

2.7.3 Warm-up temperature: $100\pm 20^{\circ}C$

2.7.4 Welding temperature: $250\pm 10^{\circ}C$

2.7.5 1 time pass wave crest welding machine

If disobey the above using terms, sensors sensitivity will be reduced.

crust made by plastic and stainless steel net. The heater provides necessary work conditions for work of sensitive components. The enveloped MQ-2 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

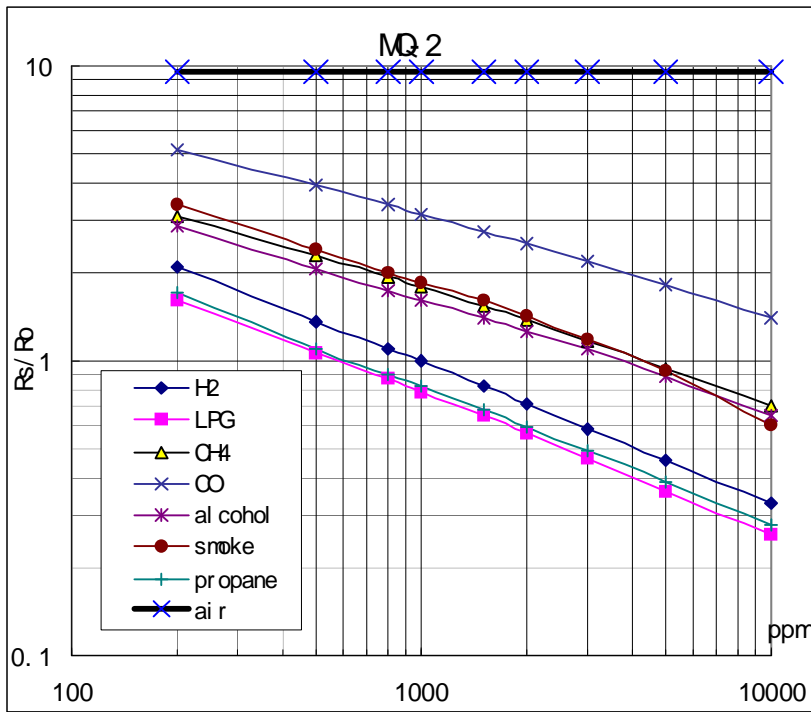


Fig.2 sensitivity characteristics of the MQ-2

Fig.3 is shows the typical sensitivity characteristics of the MQ-2 for several gases.

in their: Temp: 20°C、
Humidity: 65%、
O₂ concentration 21%
RL=5k Ω

Ro: sensor resistance at 1000ppm of H₂ in the clean air.
Rs:sensor resistance at various concentrations of gases.

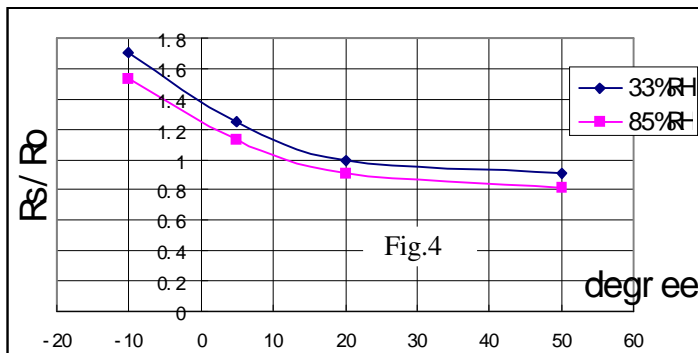


Fig.4 is shows the typical dependence of the MQ-2 on temperature and humidity.

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

Rs: sensor resistance at 1000ppm of H₂ at different temperatures and humidities.

SENSITIVITY ADJUSTMENT

Resistance value of MQ-2 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 liquified petroleum gas<LPG>,or 1000ppm iso-butane<i-C₄H₁₀>concentration in air and use value of Load resistance that(R_L) about 20 K Ω (5K Ω to 47 K Ω).

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

MQ-5 Semiconductor Sensor for Combustible Gas

Sensitive material of MQ-5 gas sensor is SnO₂, which with lower conductivity in clean air. When the target combustible gas exist, The sensor's conductivity is more higher along with the gas concentration rising. Please use simple electrocircuit, Convert change of conductivity to correspond output signal of gas concentration.

MQ-5 gas sensor has high sensitivity to Methane, Propane and Butane, and could be used to detect both Methane and Propane. The sensor could be used to detect different combustible gas especially Methane, it is with low cost and suitable for different application.

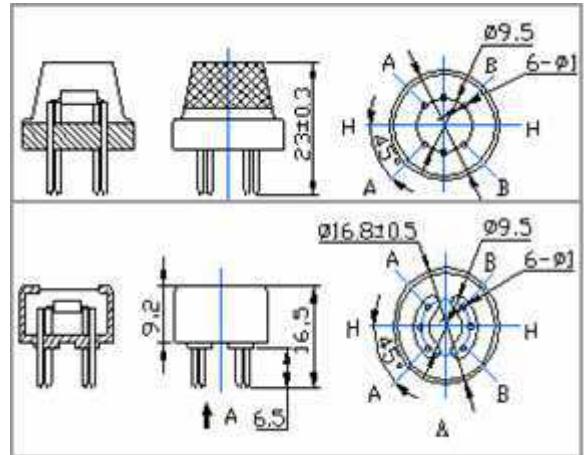
Character

- * Good sensitivity to Combustible gas in wide range
- * High sensitivity to Methane, Butane and Propane
- * Long life and low cost
- * Simple drive circuit

Application

- * Domestic gas leakage detector
- * Industrial Combustible gas detector
- * Portable gas detector

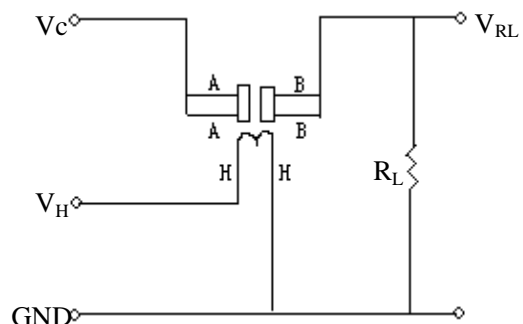
Configuration



Technical Data

Model No.		MQ-5	
Sensor Type		Semiconductor	
Standard Encapsulation		Bakelite (Black Bakelite)	
Detection Gas		LPG, Methane, coal gas	
Concentration		300-10000ppm(Methane, Propane, Butane, H ₂)	
Circuit	Loop Voltage	V _c	≤24V DC
	Heater Voltage	V _H	5.0V±0.2V AC or DC
	Load Resistance	R _L	Adjustable
Character	Heater Resistance	R _H	31Ω±3Ω (Room Tem.)
	Heater consumption	P _H	≤900mW
	Sensing Resistance	R _s	2KΩ-20KΩ(in 2000ppm C ₃ H ₈)
	Sensitivity	S	R _s (in air)/R _s (1000ppm C ₃ H ₈)≥5
	Slope	α	≤0.6 (R _{1000ppm} /R _{500ppm} H ₂)
Condition	Tem. Humidity	20°C±2°C; 65%±5%RH	
	Standard test circuit	V _c :5.0V±0.1V; V _H : 5.0V±0.1V	
	Preheat time	Over 48 hours	

Basic test loop



The above is basic test circuit of the sensor. The sensor need to be put 2 voltage, heater voltage(V_H) and test voltage(V_C). V_H used to supply certified working temperature to the sensor, while V_C used to detect voltage (V_{RL}) on load resistance (R_L) whom is in series with sensor. The sensor has light polarity, V_c need DC power. V_C and V_H could use same power circuit with precondition to assure performance of sensor. In order to make the sensor with better performance, suitable R_L value is needed: Power of Sensitivity body(P_s):

$$P_s = V_c^2 \times R_s / (R_s + R_L)^2$$

Resistance of sensor (R_s): $R_s = (V_c / V_{RL} - 1) \times R_L$

Sensitivity Characteristics

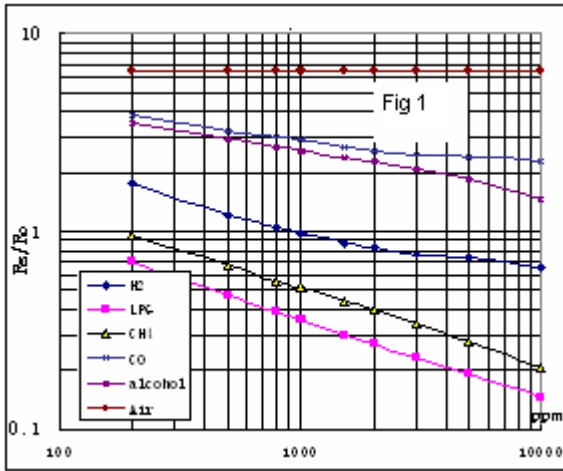


Fig.1 shows the typical sensitivity characteristics of the MQ-5, ordinate means resistance ratio of the sensor (R_s/R_0), abscissa is concentration of gases. R_s means resistance in different gases, R_0 means resistance of sensor in 1000ppm H₂. All test are under standard test conditions.

Influence of Temperature/Humidity

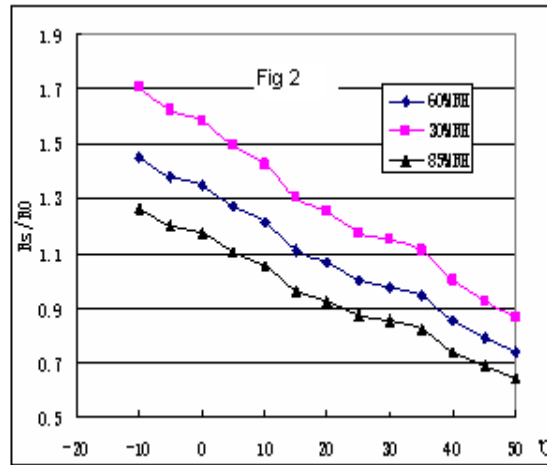
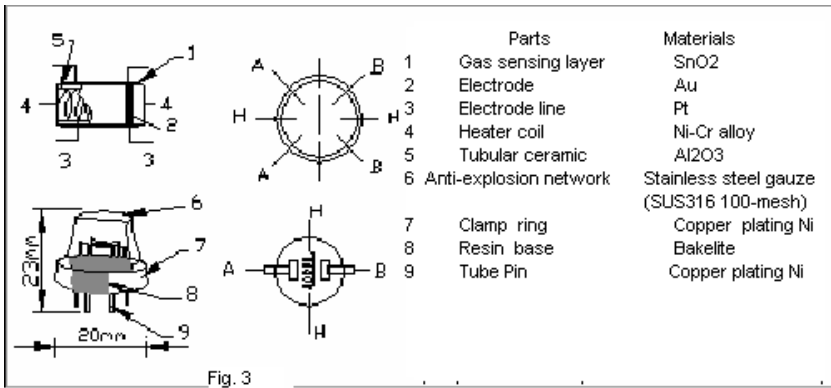


Fig.2 shows the typical temperature and humidity characteristics. Ordinate means resistance ratio of the sensor (R_s/R_0), R_s means resistance of sensor in 1000ppm Propane under different tem. and humidity. R_0 means resistance of the sensor in environment of 1000ppm Propane, 20°C/65%RH

Structure and configuration



Structure and configuration of MQ-5 gas sensor is shown as Fig. 3, 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-4 have 6 pin, 4 of them are used to fetch signals, and other 2 are used for providing heating current.

Notification

1 Following conditions must be prohibited

1.1 Exposed to organic silicon steam

Organic silicon steam cause sensors invalid, sensors must be avoid exposing to silicon bond, fixture, silicon latex, putty or plastic contain silicon environment

1.2 High Corrosive gas

If the sensors exposed to high concentration corrosive gas (such as H_2S , SO_x , Cl_2 , HCl etc), it will not only result in corrosion of sensors structure, also it cause sincere sensitivity attenuation.

1.3 Alkali, Alkali metals salt, halogen pollution

The sensors performance will be changed badly if sensors be sprayed polluted by alkali metals salt especially brine, or be exposed to halogen such as fluorin.

1.4 Touch water

Sensitivity of the sensors will be reduced when splattered or dipped in water.

1.5 Freezing

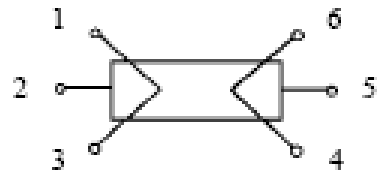
Do avoid icing on sensor's surface, otherwise sensor would lose sensitivity.

1.6 Applied voltage higher

Applied voltage on sensor should not be higher than stipulated value, otherwise it cause down-line or heater damaged, and bring on sensors' sensitivity characteristic changed badly.

1.7 Voltage on wrong pins

For 6 pins sensor, if apply voltage on 1、3 pins or 4、6 pins, it will make lead broken, and without signal when apply on 2、4 pins



2 Following conditions must be avoided

2.1 Water Condensation

Indoor conditions, slight water condensation will effect sensors performance lightly. However, if water condensation on sensors surface and keep a certain period, sensor' sensitivity will be decreased.

2.2 Used in high gas concentration

No matter the sensor is electrified or not, if long time placed in high gas concentration, if will affect sensors characteristic.

2.3 Long time storage

The sensors resistance produce reversible drift if it's stored for long time without electrify, this drift is related with storage conditions. Sensors should be stored in airproof without silicon gel bag with clean air. For the sensors with long time storage but no electrify, they need long aging time for stbilty before using.

2.4 Long time exposed to adverse environment

No matter the sensors electrified or not, if exposed to adverse environment for long time, such as high humidity, high temperature, or high pollution etc, it will effect the sensors performance badly.

2.5 Vibration

Continual vibration will result in sensors down-lead response then repture. In transportation or assembling line, pneumatic screwdriver/ultrasonic welding machine can lead this vibration.

2.6 Concussion

If sensors meet strong concussion, it may lead its lead wire disconnected.

2.7 Usage

For sensor, handmade welding is optimal way. If use wave crest welding should meet the following conditions:

2.7.1 Soldering flux: Rosin soldering flux contains least chlorine

2.7.2 Speed: 1-2 Meter/ Minute

2.7.3 Warm-up temperature: $100\pm 20^{\circ}C$

2.7.4 Welding temperature: $250\pm 10^{\circ}C$

2.7.5 1 time pass wave crest welding machine

If disobey the above using terms, sensors sensitivity will be reduced.

MQ-6 Semiconductor Sensor for Combustible gas

Sensitive material of MQ-6 gas sensor is SnO₂, which with lower conductivity in clean air. When the target combustible gas exist, The sensor's conductivity is more higher along with the gas concentration rising. Please use simple electrocircuit, Convert change of conductivity to correspond output signal of gas concentration.

MQ-6 gas sensor has high sensitivity to Propane, Butane and LPG, also response to Natural gas. The sensor could be used to detect different combustible gas, it is with low cost and suitable for different application.

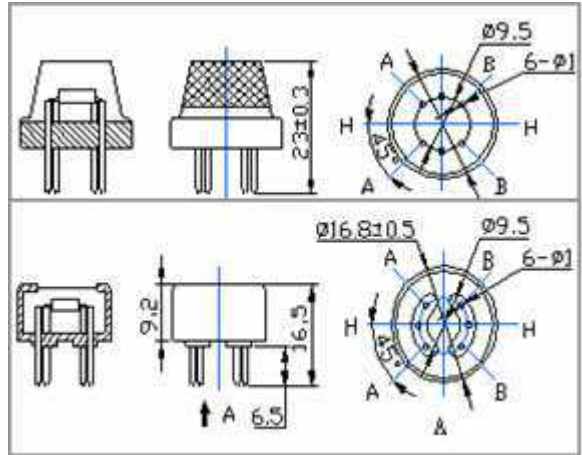
Feature

- * Good sensitivity to Combustible gas in wide range
- * High sensitivity to Propane, Butane and LPG
- * Long life and low cost
- * Simple drive circuit

Application

- * Domestic gas leakage detector
- * Industrial Combustible gas detector
- * Portable gas detector

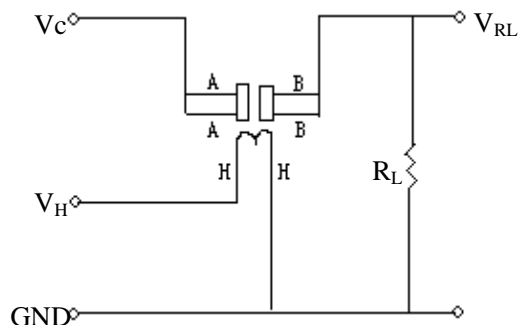
Configuration



Technical Data

Model No.		MQ-6	
Sensor Type		Semiconductor	
Standard Encapsulation		Bakelite (Black Bakelite)	
Detection Gas		Isobutane, Butane, LPG	
Concentration		300-10000ppm (Butane, Propane, LPG)	
Circuit	Loop Voltage	V _c	≤24V DC
	Heater Voltage	V _H	5.0V±0.2V AC or DC
	Load Resistance	R _L	Adjustable
Character (under the standard testing condition)	Heater Resistance	R _H	31Ω±3Ω (Room Tem.)
	Heater consumption	P _H	≤900mW
	Sensing Resistance	R _s	2KΩ-20KΩ(in 2000ppm C ₃ H ₈)
	Sensitivity	S	R _s (in air)/R _s (1000ppm C ₄ H ₁₀)≥5
	Slope	α	≤0.6(R _{2000ppm} /R _{1000ppm} LPG)
Condition	Tem. Humidity	20°C±2°C; 65%±5%RH	
	Standard test circuit	V _c :5.0V±0.1V; V _H : 5.0V±0.1V	
	Preheat time	Over 48 hours	

Basic test loop



The above is basic test circuit of the sensor. The sensor need to be put 2 voltage, heater voltage (V_H) and test voltage (V_C). V_H used to supply certified working temperature to the sensor, while V_C used to detect voltage (V_{RL}) on load resistance (R_L) whom is in series with sensor. The sensor has light polarity, V_c need DC power. V_C and V_H could use same power circuit with precondition to assure performance of sensor. In order to make the sensor with better performance, suitable R_L value is needed:

$$\text{Power of Sensitivity body}(P_s): P_s = V_c^2 \times R_s / (R_s + R_L)^2$$

$$\text{Resistance of sensor}(R_s): R_s = (V_c / V_{RL} - 1) \times R_L$$

Sensitivity Characteristics

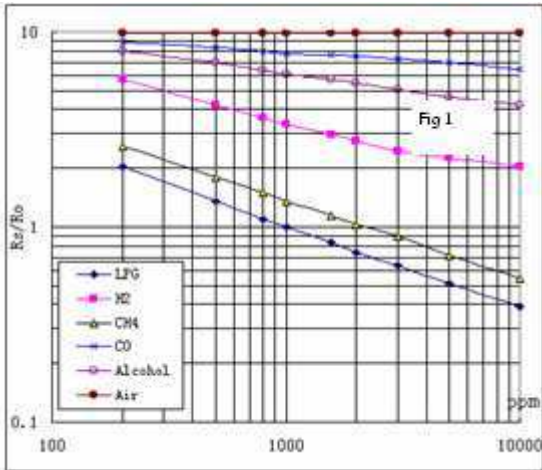


Fig.1 shows the typical sensitivity characteristics of the MQ-6, ordinate means resistance ratio of the sensor (R_s/R_o), abscissa is concentration of gases. R_s means resistance in different gases, R_o means resistance of sensor in clean air. All test are under standard test conditions.

Influence of Temperature/Humidity

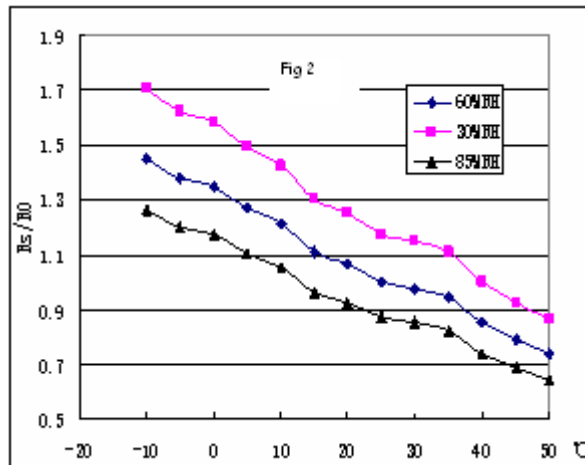
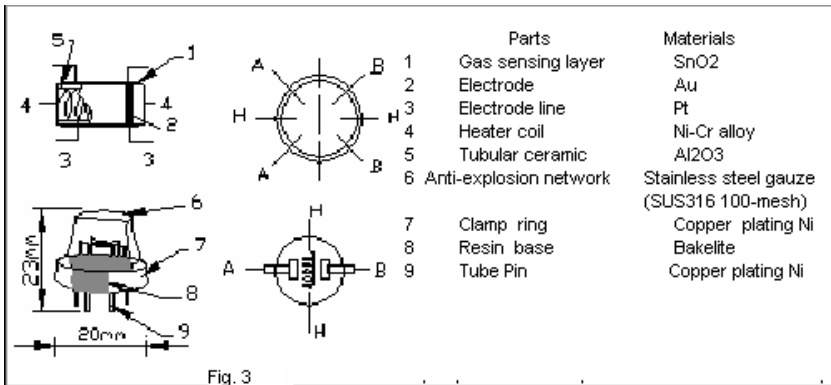


Fig.2 shows the typical temperature and humidity characteristics. Ordinate means resistance ratio of the sensor (R_s/R_o), R_s means resistance of sensor in 1000ppm Methane under different temperature and humidity. R_o means resistance of the sensor in environment of 1000ppm Propane, 20°C/65%RH

Structure and configuration



Structure and configuration of MQ-6 gas sensor is shown as Fig. 3, sensor composed by micro Al₂O₃ ceramic tube, Stannum 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-6 have 6 pin, 4 of them are used to fetch signals, and other 2 are used for providing heating current.

Notification

1 Following conditions must be prohibited

1.1 Exposed to organic silicon steam

Organic silicon steam cause sensors invalid and beyond retrieve, sensors must be avoid exposing to silicon bond, fixature, silicon latex, putty or plastic contain silicon environment

1.2 High Corrosive gas

If the sensors exposed to high concentration corrosive gas (such as H₂S, SO_x, Cl₂, HCl etc), it will not only result in corrosion of sensors structure, also it cause sincere sensitivity attenuation.

1.3 Alkali, Alkali metals salt, halogen pollution

The sensors performance will be changed badly if sensors be sprayed polluted by alkali metals salt especially brine, or be exposed to halogen such as fluorin.

1.4 Touch water

Sensitivity of the sensors will be reduced when spattered or dipped in water.

1.5 Freezing

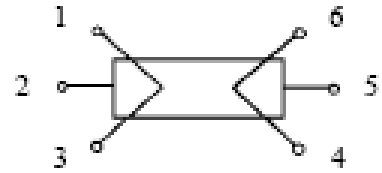
Do avoid icing on sensor's surface, otherwise sensor would lose sensitivity.

1.6 Applied voltage higher

Applied voltage on sensor should not be higher than stipulated value, otherwise it cause down-line or heater damaged, and bring on sensors' sensitivity characteristic changed badly.

1.7 Voltage on wrong pins

For 6 pins sensor, if apply voltage on 1、3 pins or 4、6 pins, it will make lead broken, and without signal when apply on 2、4 pins



2 Following conditions must be avoided

2.1 Water Condensation

Indoor conditions, slight water condensation will effect sensors performance lightly. However, if water condensation on sensors surface and keep a certain period, sensor' sensitivity will be decreased.

2.2 Used in high gas concentration

No matter the sensor is electrified or not, if long time placed in high gas concentration, it will affect sensor's characteristic.

2.3 Long time storage

The sensors resistance produce reversible drift if they are stored for long time without electrify, this drift is related with storage conditions. Sensors should be stored in airproof without silicon gel bag with clean air. For the sensors with long time storage but no electrify, they need long aging time for stability before using.

2.4 Long time exposed to adverse environment

No matter the sensors electrified or not, if they exposed to adverse environment for long time, such as high humidity, high temperature, or high pollution etc, it will effect the sensors performance badly.

2.5 Vibration

Continual vibration will result in sensors down-lead response then repture. In transportation or assembling line, pneumatic screwdriver/ultrasonic welding machine can lead this vibration.

2.6 Concussion

If sensors meet strong concussion, it may lead its lead wire disconnected.

2.7 Usage

For sensor, handmade welding is optimal way. If use wave crest welding should meet the following conditions:

2.7.1 Soldering flux: Rosin soldering flux contains least chlorine

2.7.2 Speed: 1-2 Meter/ Minute

2.7.3 Warm-up temperature: $100\pm 20^{\circ}\text{C}$

2.7.4 Welding temperature: $250\pm 10^{\circ}\text{C}$

2.7.5 1 time pass wave crest welding machine

If disobey the above using terms, sensors sensitivity will be reduced.

TECHNICAL DATA

MQ-8 GAS SENSOR

FEATURES

- * High sensitivity to Hydrogen (H₂)
- * 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 (H₂), 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±0.1	AC OR DC
V _H	Heating voltage	5V±0.1	ACOR DC
P _L	Load resistance	10K Ω	
R _H	Heater resistance	31 ± 5%	Room Tem
P _H	Heating consumption	less than 800mW	

B. Environment condition

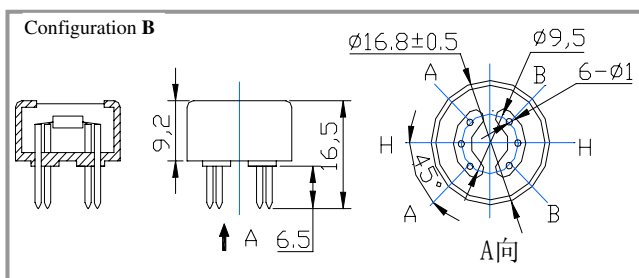
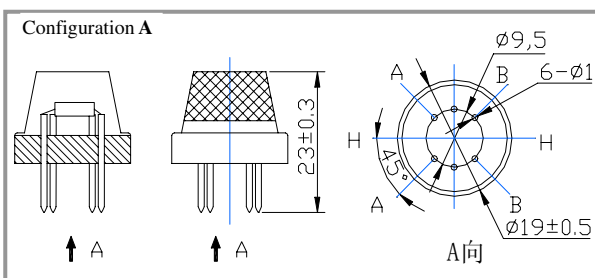
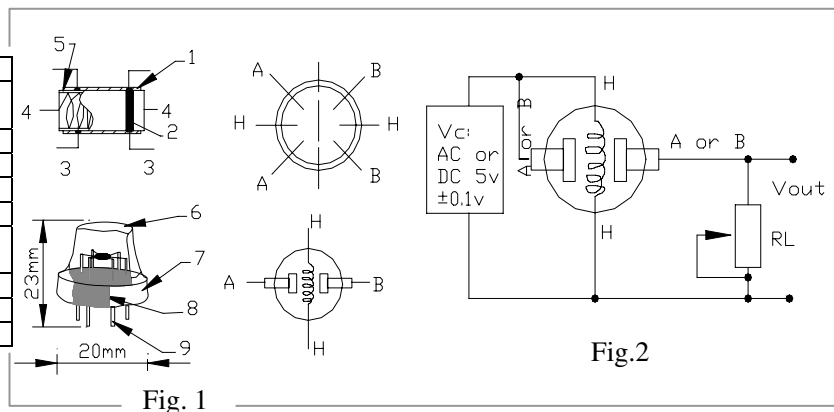
Symbol	Parameter name	Technical condition	Remarks
T _{ao}	Using Tem	-10°C-50°C	
T _{as}	Storage Tem	-20°C-70°C	
R _H	Related humidity	less than 95%Rh	
O ₂	Oxygen concentration	21%(standard condition)Oxygen concentration can affect sensitivity	minimum value is over 2%

C. Sensitivity characteristic

Symbol	Parameter name	Technical parameter	Remark 2
R _s	Sensing Resistance	10K Ω - 60K Ω (1000ppm H ₂)	Detecting concentration scope: 100-10000ppm Hydrogen (H ₂)
α (1000ppm/ 500ppmH ₂)	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. 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 ₂ O 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

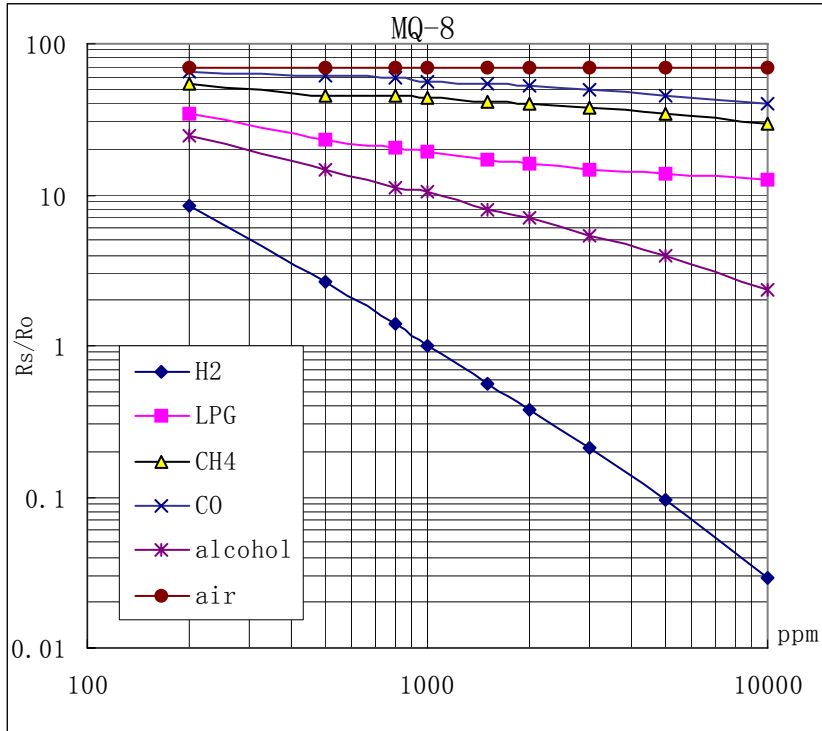


Fig.2 sensitivity characteristics of the MQ-8

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

in their: Temp: 20°C,
Humidity: 65%,
O₂ concentration 21%
RL=10k Ω

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

Rs: sensor resistance at various concentrations of gases.

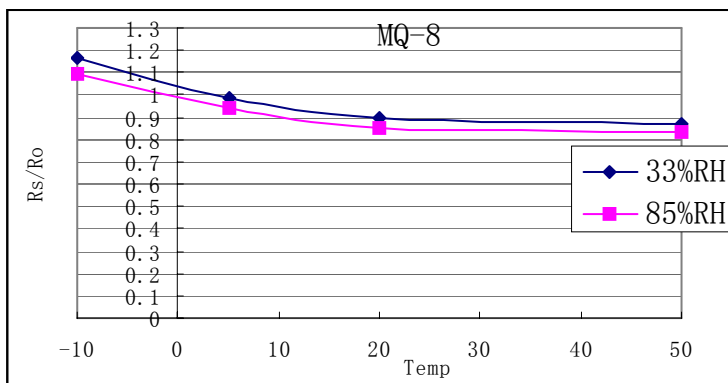


Fig.4 is shows the typical dependence of the MQ-8 on temperature and humidity.

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

Rs: sensor resistance at 1000ppm of H₂ 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 H₂ concentration in air and use value of Load resistance (R_L) about 10 K Ω (5K Ω to 33 K Ω).

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