TECHNICAL DATA MQ-214 GAS SENSOR

FEATURES

Wide detecting scope — Fast response and High sensitivity
Stable and long life — Simple drive circuit

APPLICATION

They are used in gas leakage detecting equipment in family and industry, are suitable for detecting of methane LPG, i-butane, propane.

SPECIFICATIONS

A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
Vc	Circuit voltage	6V±0.1	AC OR DC
R_L	Load resistance	50Ω	
P_H	Heating consumption	less than 100mw	@20mA

B. Environment condition

Symbol	Parameter name	Technical condition	Remarks
Tao	Using Tem	0℃-50℃	
Tas	Storage Tem	0℃-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
Rs	Sensing Resistance	50Ω-200Ω (5000ppm methane)	Detecting concentration scope: 3000ppm-20000ppm methane 500ppm-10000ppm LPG and propane 500ppm-10000ppm butane
α (3000/1000) isobutane	Concentration Slope rate	≤0.6	
Standard Detecting Condition	Temp: 20℃±2℃ Vc:6V±0.1 Humidity: 65%±5% RL=50Ω		
Preheat time	Over 24 hour		

D. Structure and configuration, basic measuring circuit

Structure and Dimensions:

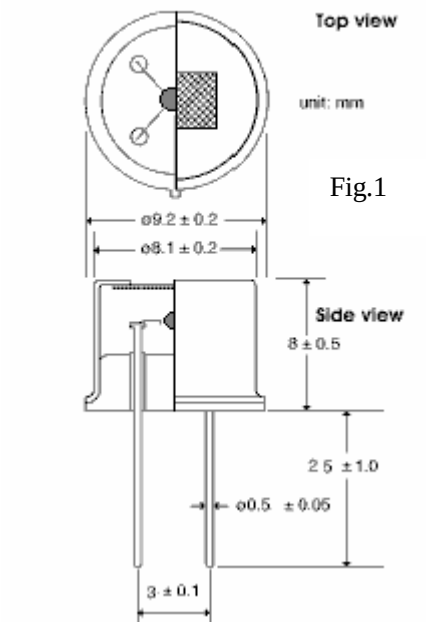

Fig.1

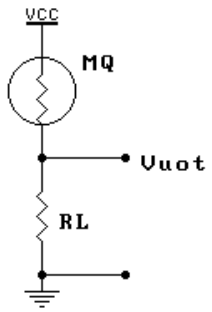

Fig.2

Structure and configuration of MQ-214 gas sensor is shown as Fig. 1, micro Tin Dioxide (SnO_2) sensitive bead with measuring electrode are fixed into a crust composed of plastic and stainless steel gauze, Without the heater providing necessary working conditions for sensitive components. The enveloped MQ-214 have 2 pin , they are used to fetch signals.

Electric parameter measurement circuit is shown as Fig.2

E. Sensitivity characteristic curve

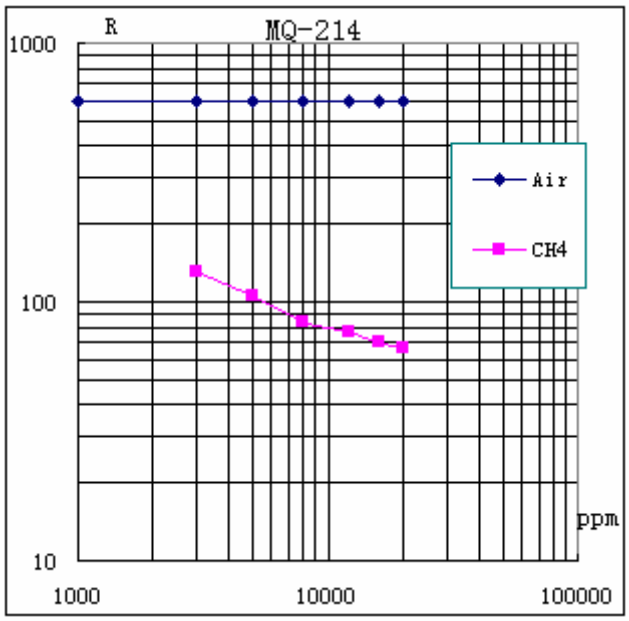

Fig.3 is shows the typical sensitivity characteristics of the MQ-214 for several gases.
in their: Temp: 20℃、
Humidity: 65%、
O_2 concentration 21%
RL=50Ω
R: sensor resistance at various concentrations of CH_4 gases.

Fig.3 sensitivity characteristics of the MQ-2 14

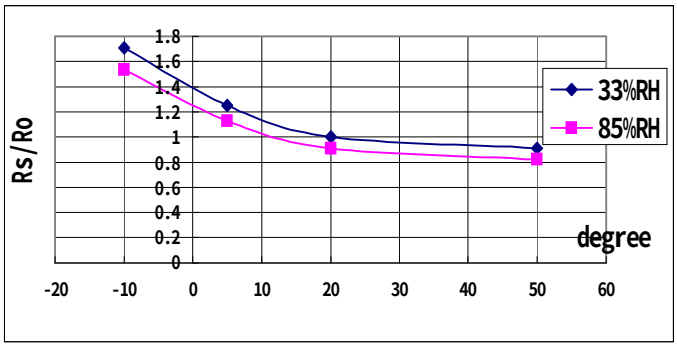

Fig.4 is shows the typical dependence of the MQ-214 on temperature and humidity.
Ro: sensor resistance at 1000ppm of i-butane in air at 33%RH and 20 degree.
Rs: sensor resistance at 5000ppm of CH_4 at different temperatures and humidities.

SENSITVITY ADJUSTMENT

Resistance volume of MQ-214 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 3000ppm CH_4 concentration in air .

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

Notifications: When the sensor in preheating or working, do not connect VC on the two pins, it need one resistor of 50-100Ω in series, otherwise, it will destroy the sensor.

Basic application circuit