Détecteur de gaz GPL HS133 réf : REHS133

Electronique-Diffusion http://www.elecdif.com

1.Characteristics

1.1 High sensitive, good selectivity to fume and alcohol.
1.2 Long period using life and reliable stability.

2. Application

2.1 Gas leakage detecting in family and industry
2.2 Suitable for detecting equipments of LPG、isobutane、propane、methane.

3. Structure

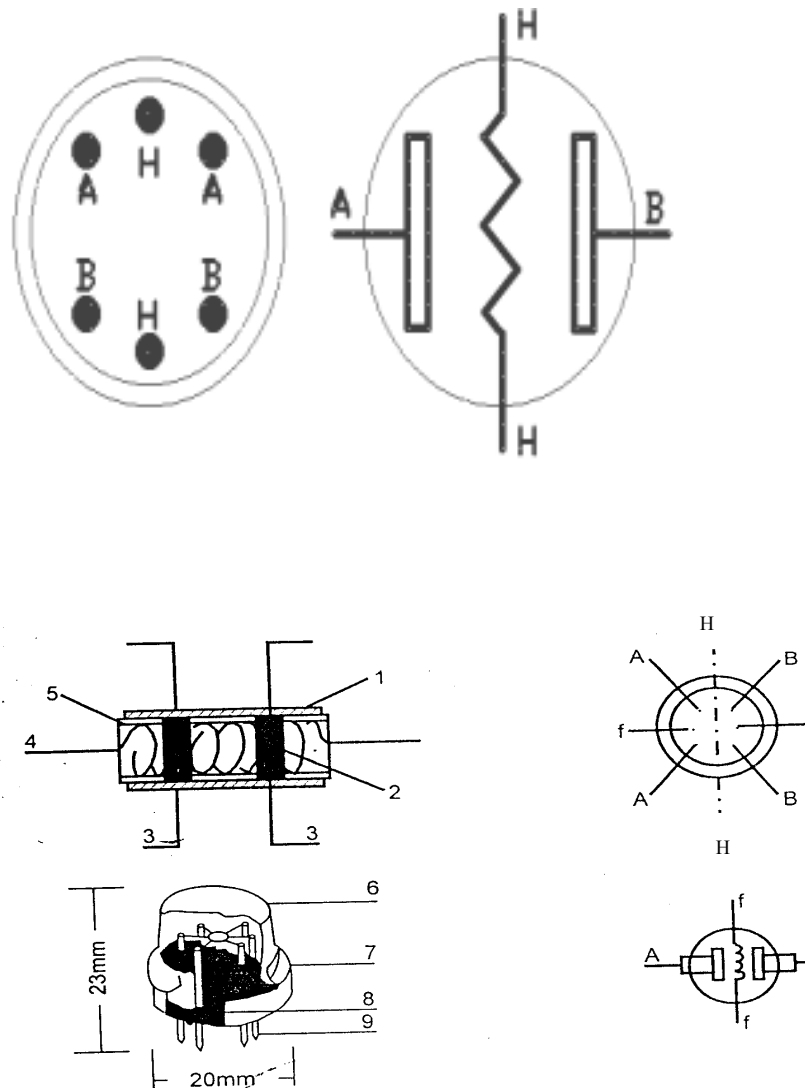3.1 Structure and configuration of HS-133 as below Fig. 1

Fig.1

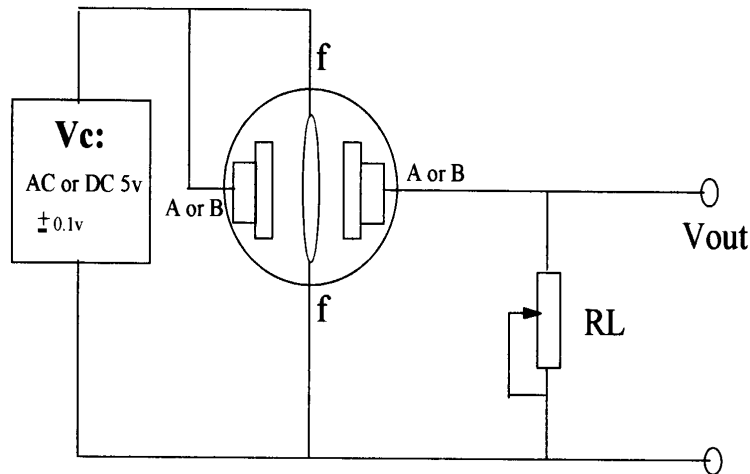| series	Parts	Materials
1	gas sensing layer	SnO_2
2	measurement electrode	Au
3	measurement electrode ignited line	Pt
4	Heater	Ni-Cr alloy
5	tubular ceramic basic body	Al_2O_3
6	anti-explosion network	100 dual layer atainless steel (SUS316)
7	clamp ring	materials valcanized Ni
8	basic seat	bakelite
9	tube foot	materils valcanized Ni

Fig:2

3.2 HS-133 have 6 pins, 4 of them are used to catch signals, and other 2 are used for providing heating current. Electric parameter measurement circuit is shown as Fig.2

4. Property

4.1 Standard work condition

Symbol	Parameter name	Technical condition	Remarks
Vc	circuit voltage	5V	AC OR DC
V_H	Heating voltage	5V	ACOR DC
P_L	load resistance	can be adjustable	Ps <25mW
R_H	heater resistance	$33\,\Omega \pm 5\%$	room Tem
P_H	heating consumption	less than 800mw	

4.2 Environment condition

Symbol	Parameter name	Technical condition	Remarks
Tao	Uaing Tem	-20℃-50℃	
Tas	storage Tem	-20℃-70℃	
RH	related humidity	less than 95%Rh	

O₂	oxygen concentration	21%(standard condition)Oxygen co-ncentration can affect sensitivity		minimum value is over 2%

4.3 Sensitivity characteristic

Symbol	Parameter name	Technical parameter		Remark
Rs	sensing body resistance	$2k\Omega$ -$20k\Omega$ (2000ppm isobutane)		Detecting concentration scope:
α (5000/1000) isobutane	concentration slope rate	≤0.6		300ppm-10000ppm isobutane or LPG
standard detecting condition	Temp: 20℃±2℃ Vc:5V±0.1 Humidity: 65%±5% Vh: 5V±0.1			
preheat time	over 24 hour			

4.4 Machinary characteristic

Project	Condition	Property
Vibration	frequency 100cpm	Should be conformed to given sensitivity characteristic
	vertical vibrating amplitude	
	time 1 hour	
Punch	Acceleration 100G	
	punch times 5	

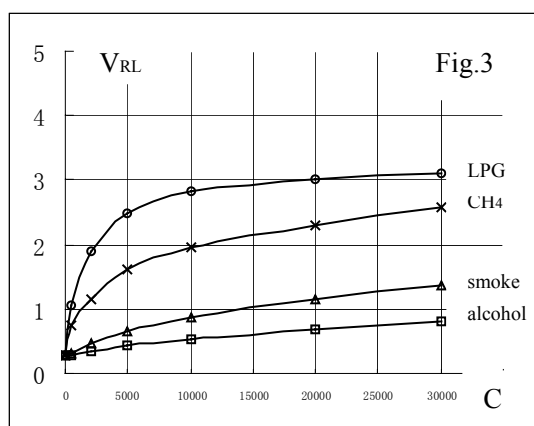# 5. Sensitivity characteristic curve of HS-133

Fig 3 is relation curve of V_{RL} and gas concentration.
in their: Temp: 20℃、   Humidity: 65%、 O₂ concentration 21%   RL =$5k\Omega$
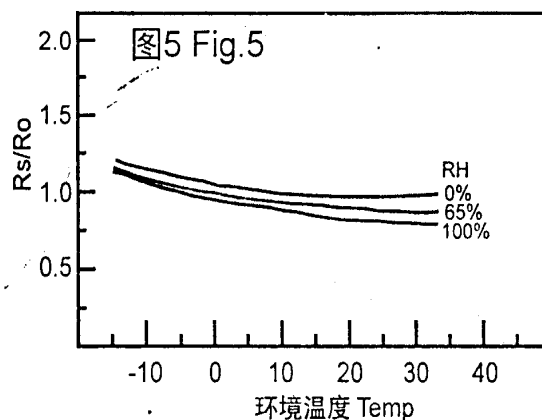
Fig 4 is relation curve between surface resistance of HS-133 and environment related humidity.
Under the conditions of:
R_o = 20℃,   RH= 0% in 2000ppmLPG
Rs = resistance value in other Temp.

6. Sensitvity adjustment

Resistance value will be changing in the different spices and different concentration gas.
So, when user operating the components, sensitivity adjustment is necessary.
We suggest that use 300ppm-2000ppm isobutane<i-C_4H_{10} >or LPG as standard sensitivity adjustment concentration gas.

Adjustment steps:
  a. Input HS-133 to application circuits.
  b. Before test the long storage HS-133 we suggest the pre-heating time should not be shorter than 24 hours in order to guarantee HS-133 property can reach stability completely.
  c. In the detecting gas concentration, adjust the load resistance RL until suitable signal output.

7. Application circuit which have temperature compensation function.