TECHNICAL DATA MP-7 Flat Surfaced GAS SENSOR

MP-7 adopt advanced planar construction production technics, using MOS material formed by micro AL2O3 ceramic tube and heater, electro-down-lead be fetched out, and are fixed into a metal base and cover. Adopting low and high temperature circling detection: when low temperature （VH=1.5V）, it detects CO, Conductance of sensor bigger along with CO concentration in air; When high temperature（VH=5.0V）, clean other gases, using simple circuit could change the conductance, change it to be output signal which relatively to the gas concentration.

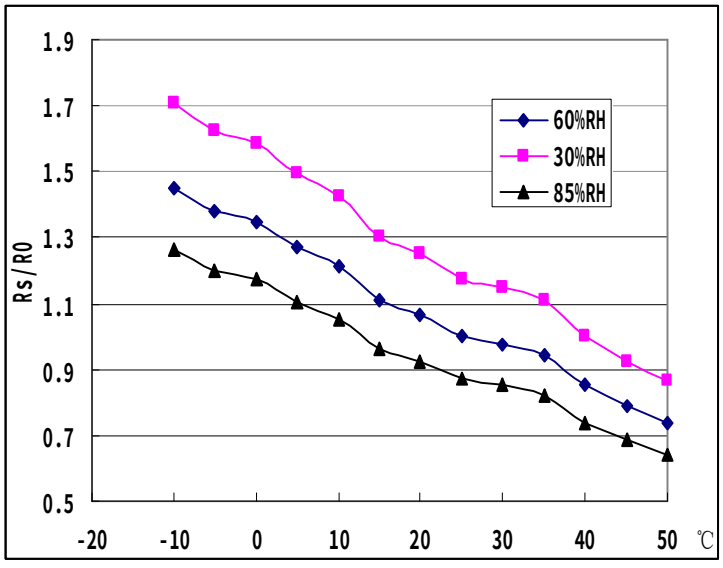
Character

* High Sensitivity to CO
* Mini Size
*1.5V/5V changeable voltage, low power consumption
* Fast response and resume character
* Excellent Stability and long life

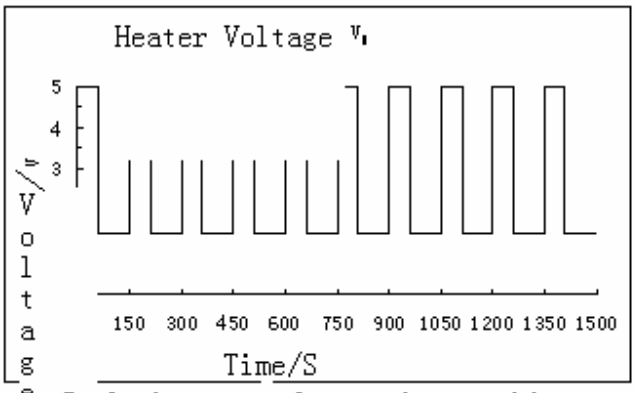
APPLICATION

* They are used in gas leakage detecting equipments in family, industry and commercial field , fire resistance/ safety detection system.
* CO gas leakage alarm and detector

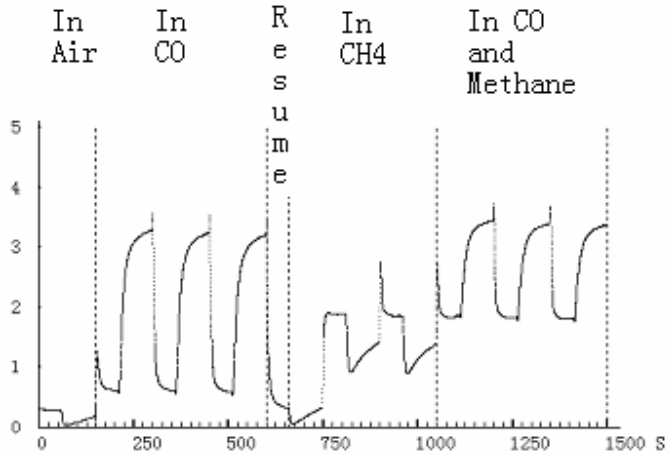
SENSITIVITY CHARACTERISTICS



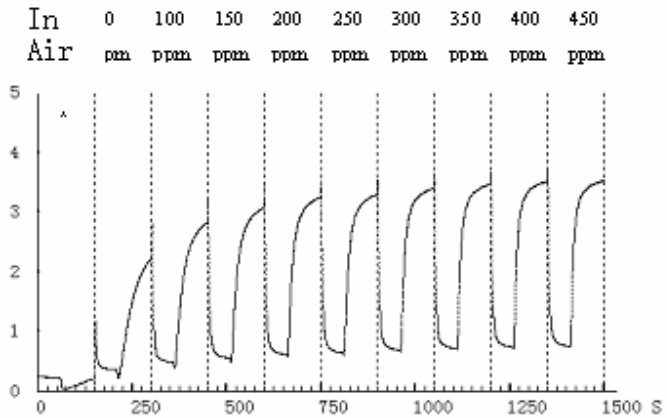
Typical Curve show sensor affected by humidity and temperature （Rs means resistance value at 150ppmCO and different temperature and humidity; Ro means resistance value in 150ppmCO、20℃/65%RH）



Cycle heater voltage when working
(Test voltage is 5V)



Output signal for gas sensor in 150ppm CO and 5000ppm CH4
(Remark: Test data for typical sensor)



Output signal for gas sensor within different CO concentration
(Remark: Test data for typical sensor)

Specification:

A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
Vc	Circuit voltage	≤24V	DC
V_H	Heating voltage	1.5V±0.2V /5.0V±0.2V	AC or DC
R_L	Load resistance	adjustable	
R_H	Heater resistance	90Ω±10Ω	Room Tem.
P_H	Heating consumption	≤250mW	

B. Environment condition

Symbol	Parameter name	Technical condition	Remark
Tao	Using Temperature	-10℃－＋50℃	
Tas	Storage Temperature	-20℃－＋70℃	
R_H	Related humidity	less than 95%Rh	
O_2	Oxygen concentration	21%(standard condition)Oxygen concentration can affect sensitivity	minimum value >2%

C. Sensitivity characteristic

Symbol	Parameter name	Technical parameter	Ramark
Rs	Sensing Resistance	0.5KΩ-10KΩ (150ppm CO)	Detecting concentration scope: 10-500ppm CO
α	Concentration slope rate	≤0.6	
Standard working condition	Vc:5.0V±0.2V V_H: 1.5V±0.2V /5.0V±0.2V Temp: 20℃±2℃ Humidity: 65%±5%		
Preheat time	Over 48 hour		

Formula of sensitivity power consumption: $Ps=Vc^2\times Rs/(Rs+R_L)^2$

Formula of sensor resistance: $Rs=(Vc/V_{RL}-1)\times R_L$

D. Structure and configuration

Structure and configuration of MP-7 gas sensor is shown as Fig. 4, sensor composed by micro AL2O3 ceramic tube, Tin Dioxide (SnO2), sensitive layer, measuring electrode and heater are fixed into a crust made by metal net. The heater provides necessary work conditions for sensitive components. The enveloped MP-7 have 4pins, 2 of them（3#、4#）are used to fetch signals, and other 2（1#、2#）are used for providing heating current.