MC series catalytic (hot wire) gas sensor

TOTAL catalytic bead sensor operate on the catalytic combustion principle, the gas sensor consists of an active element and a reference element with the same resistance, At the heart of each element is a heated platinum coil whose resistance varies with temperature, in the presence of the gas, the active element will burn the gas on its surface, raising the temperature of the platinum coil, a differential is created in the resistances of the two elements. When both elements are placed in a wheatstone bridge circuit, this differential acts to throw the bridge out of balance, producing a signal which is proportional to the gas concentration.

FEATURES

linear output signal for gas concentration.

Virtually unaffected by temperature and humidity, remarkable reproducibility and accuracy.

APPLICATIONS

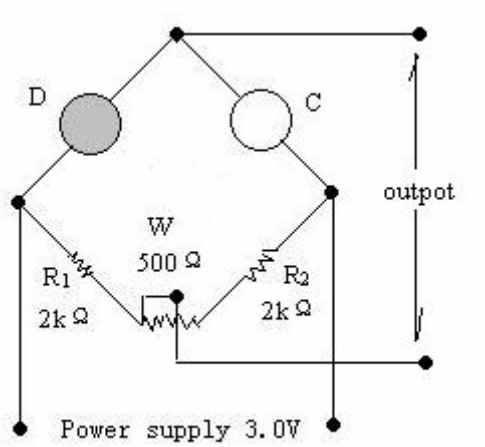
Domestic and industrial gas detecting for combustible gas, natural gas, LPG, coal gas, alkane etc and organic solvent steam like gasoline, alcohol, ketone, benzene and so forth.

Combustible gas leak alarm

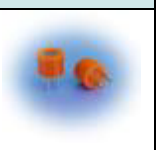
Combustible gas detector

Gas densitometers

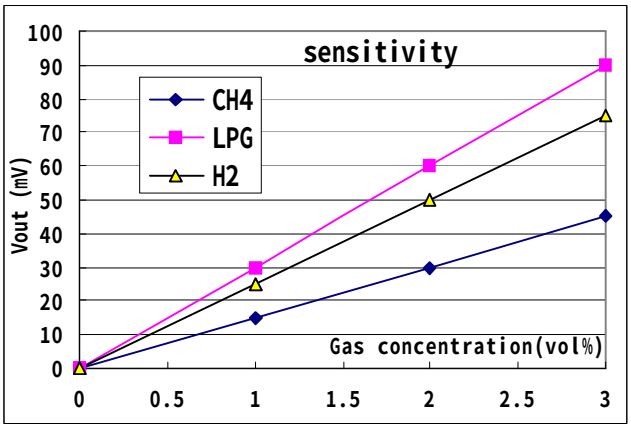
BASIC TESTING CIRCUIT

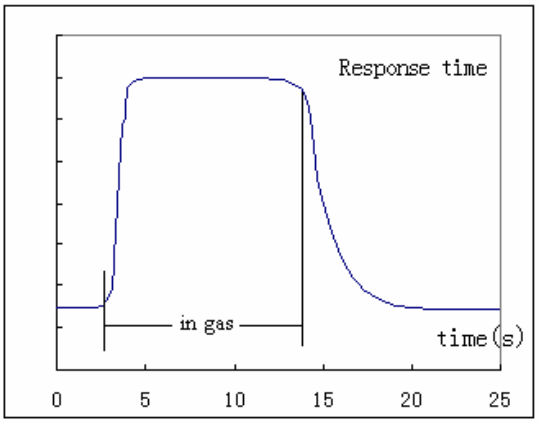


SPECIFICATIONS

Model	MC101	MC108	MC112	MC115	MC116	MC105
Picture						
Detecting scope	~100%LEL	~100%LEL	~100%LEL	~100%LEL	~100%LEL	~100%LEL
Working Voltage	3.0±0.1 V	5.0V±0.1 V	3.0±0.1 V	3.0±0.1 V	2.5±0.1 V	2.5±0.1 V
Working current	≦140mA	≦120mA	≦140mA	≦140mA	≦180mA	≦180 mA
PH(Heater Consumption)	≦420mW	≦600mW	≦420mW	≦420mW	≦450mW	≦450mW
sensitivity mV	>25mV/ 10000ppm CH4	>50mV/ 10000ppm CH4	>20mV/ 10000ppm CH4	>20mV/ 10000ppm CH4	>20mV/ 10000ppm CH4	>20mV/ 10000ppm CH4
linearity %	0－4	0－5	0－5	0－5	0－5	0－5
Response time	<10s					<10s
Resume time	<30s					<30s
size mm	D12×H10	D19×H24	10×14×18	D6×H7.5	D8×H10	D12×H10
housing/configuration	single	single	single	separateness	separateness	single
	Nylon 66	metal	Metallurgy powder	metal	metal	Nylon 66
	Configuration A	Configuration B	Configuration C	Configuration D	Configuration E	Configuration A
Using environment	-20－+50℃ Humidity: less than 95%RH					
Storage environment	-30—+70℃ Humidity: less than 70%RH					

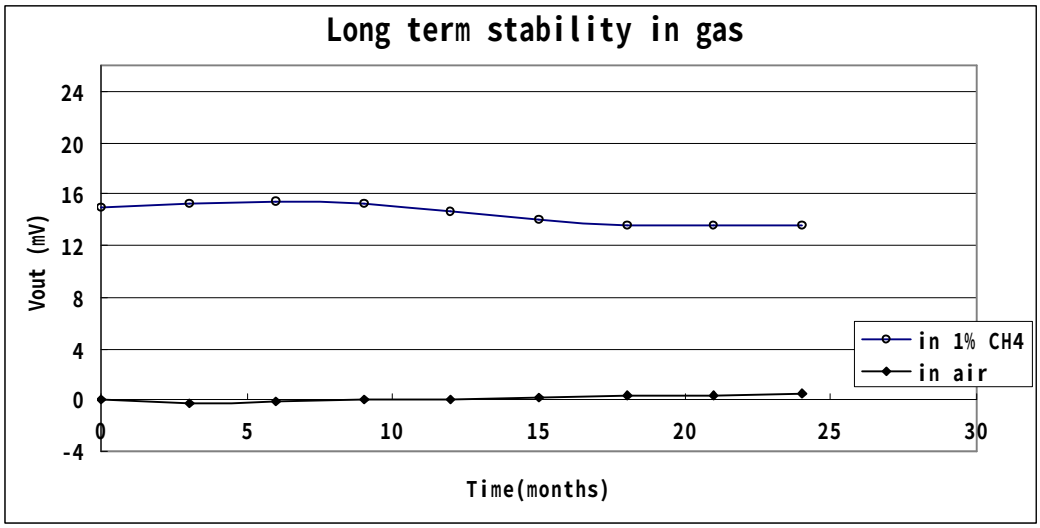
Gas sensitivity characteristics Response characteristics



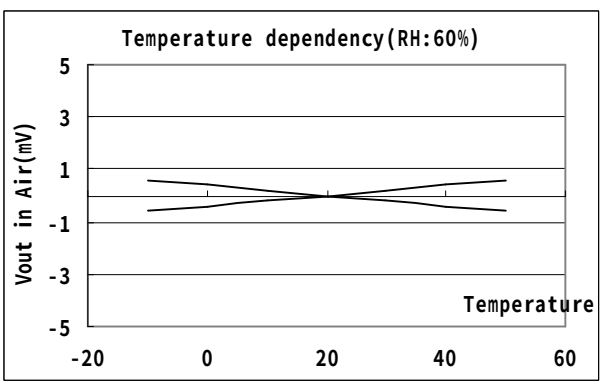


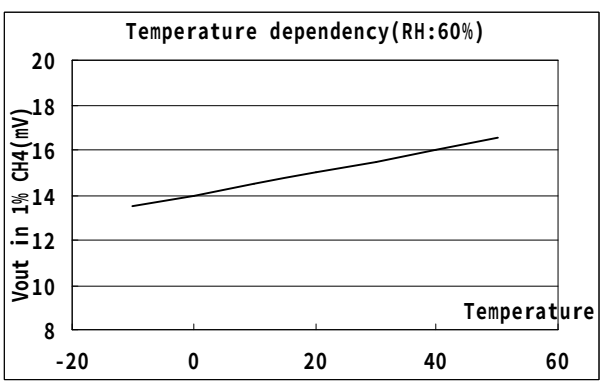
MC Series Long term stability

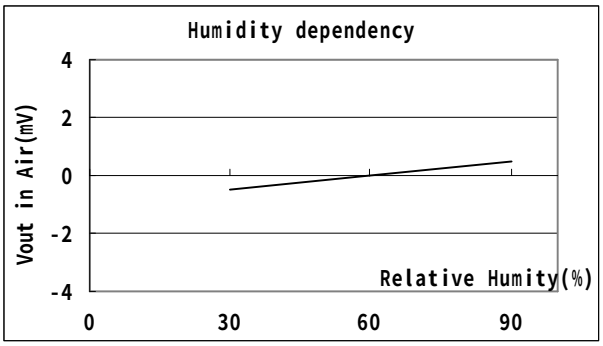
The drift in air per year is less than 1 mV, in 1% CH4 gas is less than 2Mv. for a short period storage (in 2 weeks), the sensor need 30mins' preheating to stabilize, for more than one year storage, it need more than 5 hours' preheating.

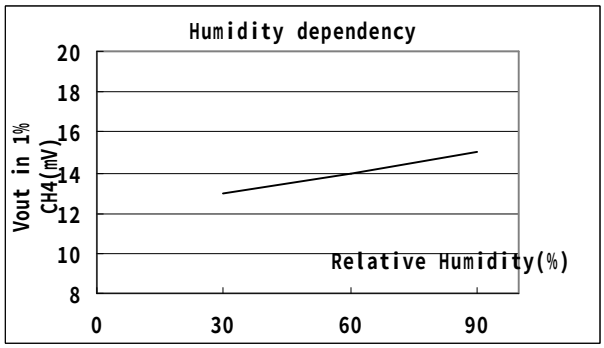


MC Series output signal dependency on environmental humidity and temperature

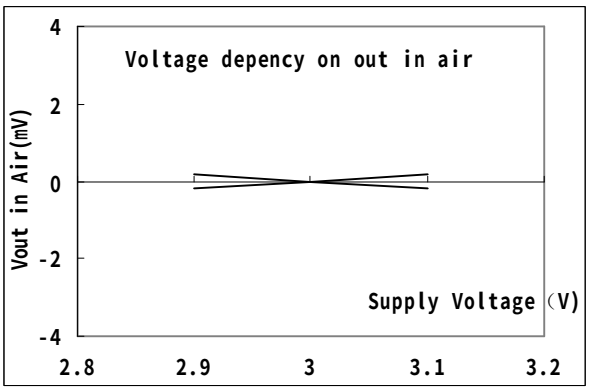


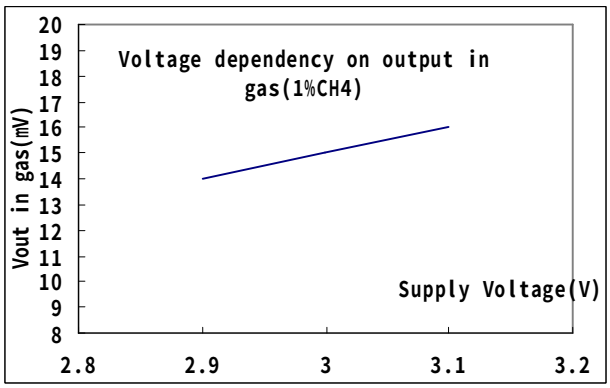






MC series output singnal dependency on working voltage





Note

△ The sensor sensitivity need to calibrate termly。

△ Try to avoid meeting the combustible gas up to 15%concentration. If happened accidentally, please recalibrate.

△ When debugging, should strict to control the heating voltage or current, do not exceed rated voltage to burn the sensor.

△ For long period storage, do not put it in wet and corrosive environment.

△ Shocking, falling, and mechanical destroying is prohibited