

# KGS 102



KGS 102 气体传感器是氧化锡( $\text{SnO}_2$ ) 半导体式气体传感器。用于气体探测器、空气清净器, 自动换气系统, 微波炉等。传感器的电阻在洁净的空气中虽高, 但在大气中的气体或水蒸气的浓度增加, 传感器的电阻就减小. KGS 102 具有优异的稳定性, 快速响应恢复, 高灵敏度, 耐久性优秀的特点。

## Specifications

检测气体	大部分的可燃性及还原性气体	
功耗	$800 \pm 50 \text{ mW}$	
加热片电流	$160 \pm 10 \text{ mA}$	
加热片电压	AC 或 DC 5 V	
回路电压	AC 或 DC 12 V 以下 (推荐 用 DC 5V)	
负载电阻	可调	
使用温度及湿度	$-10^\circ\text{C} \sim 50^\circ\text{C}$ , 30~85%RH	
储存 温度	$-30^\circ\text{C} \sim 50^\circ\text{C}$	
灵敏度	Rs (air)	20~80 k $\Omega$ (在洁净空气中) $25^\circ\text{C}$ , 60% RH
	Gas	$\text{Rs}(\text{CH}_4 \text{ 1000ppm}) / \text{Rs}(\text{air}) < 1/3$

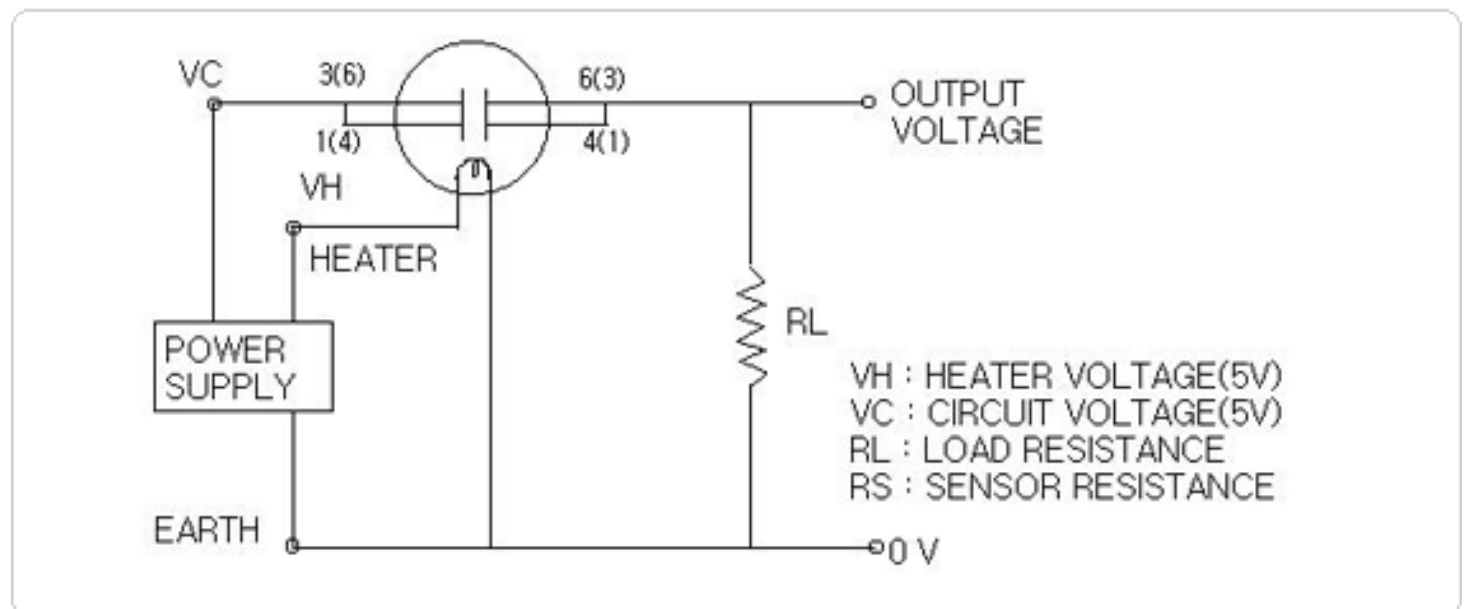
## Detectable Gases

Hydrocarbons	Methane, Propane, Butane, Hexane, Gasoline, Acetylene, Ethylene, Butylene, Benzene, Toluene, etc.
Halogenized Hydrocarbons	Methyl Chloride(CH <sub>3</sub> Cl) , Ethyl Chloride, Vinyl Chloride, etc.
Alcohols	Methanol, Ethanol, Propanol, Butanol, etc.
Ethers	Methyl Ether, Ethyl Ether, etc.
Ketones	Acetone, Methyl Ethyl Ketone, etc.
Esters	Methyl Acetate, Ethyl Acetate, Butyl Acetate, etc.
Nitrogen Compounds	Nitro Methane, Methyl Amine, Ethyl Amine, etc.
Inorganic Gas & Others	Ammonia, Carbon Monoxide, Hydrogen, Hydrogen Sulphide, Smoke, etc.

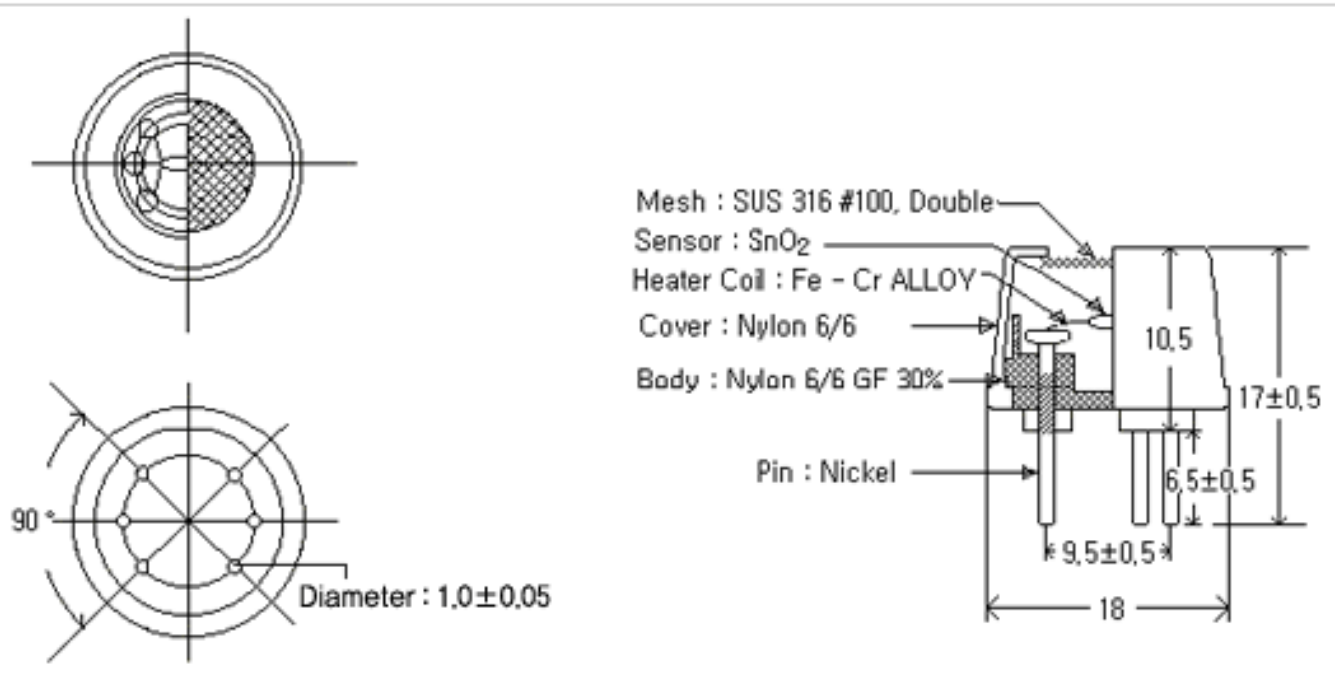
## Basic Measuring Circuit

The variation in resistance of the sensor( $R_s$ ) is measured as a change in the voltage across the load resistor( $R_L$ ). The sensor resistance ( $R_s$ ) is calculated from output voltage( $V_{RL}$ ) by the following formular.

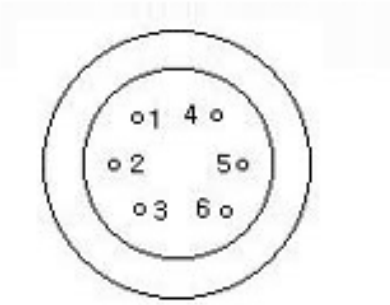
$$R_s = (V_c / V_{RL} - 1) \times R_L$$



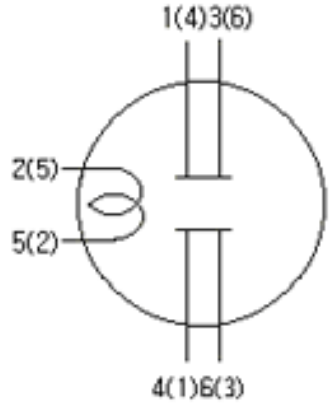
# Structure and Materials



BOTTOM PIN CONNECTION



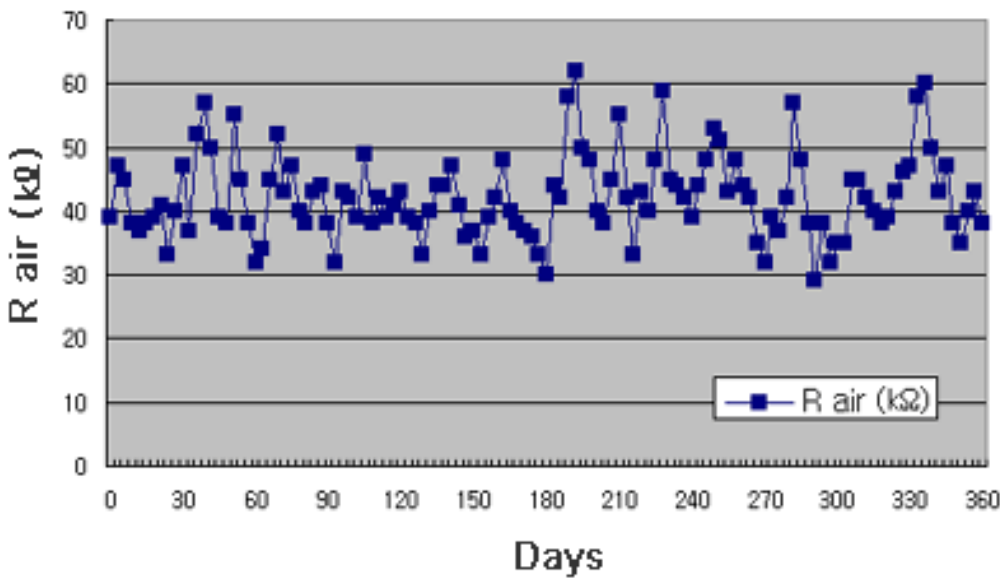
ELECTRICAL DIAGRAM



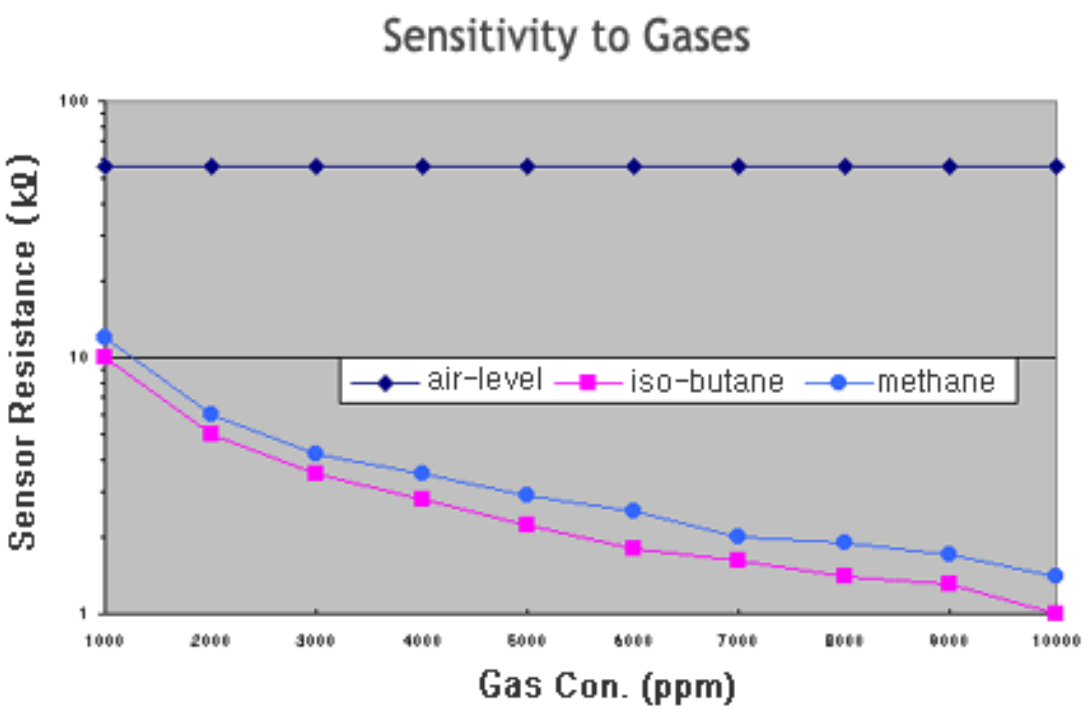
**NOTE**  
 Heater Coil : 2 & 5  
 Sensor : 1 & 3, 4 & 6  
 Internally Connected

\* All dimensions in millimeters

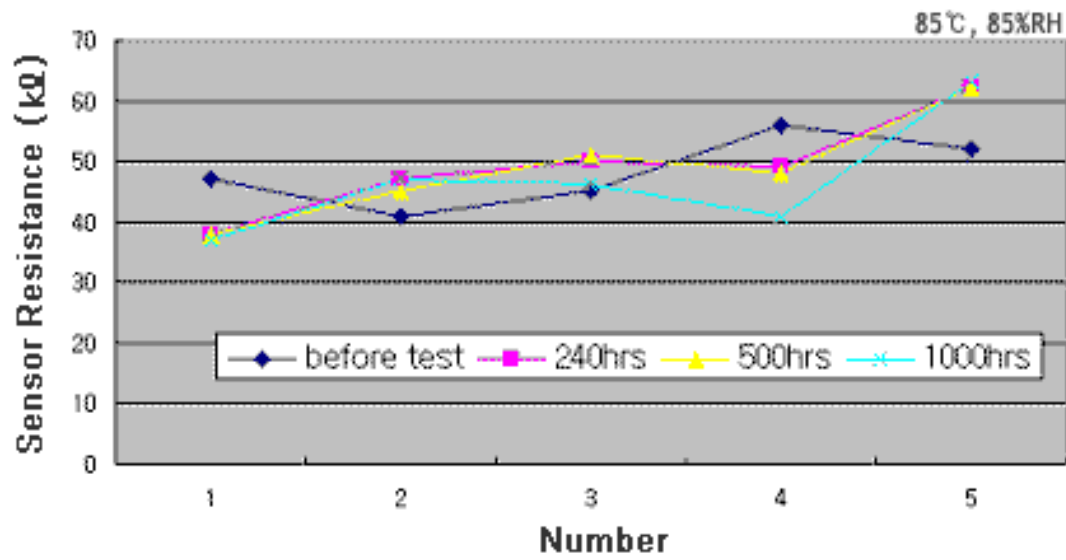
# R air Variation with Aging Time



# Characteristics Data



## High Temp. High Humidity Test



## Thermal Shock Test

