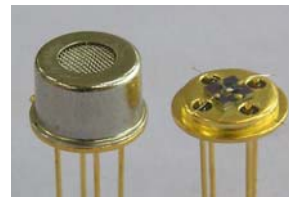
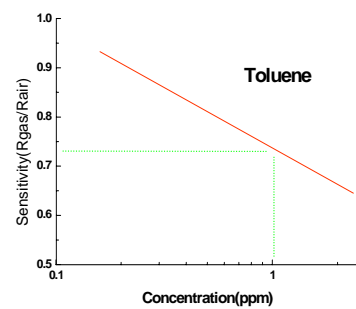
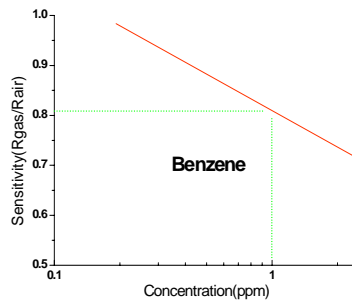
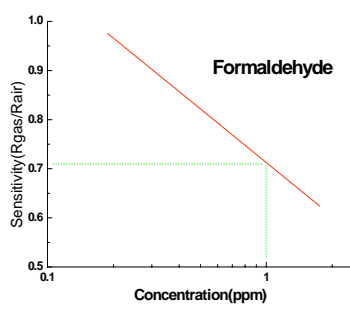


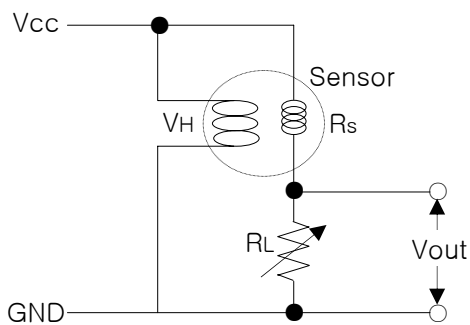
VOCs Sensor – for the detection of Formaldehyde, Toluene, Organic Solvent



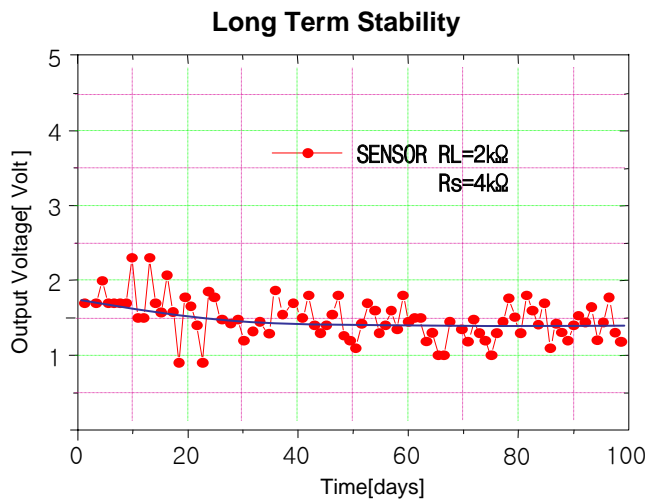
1. Sensitivity characteristic slope



2. Basic Measuring Circuit & Stability



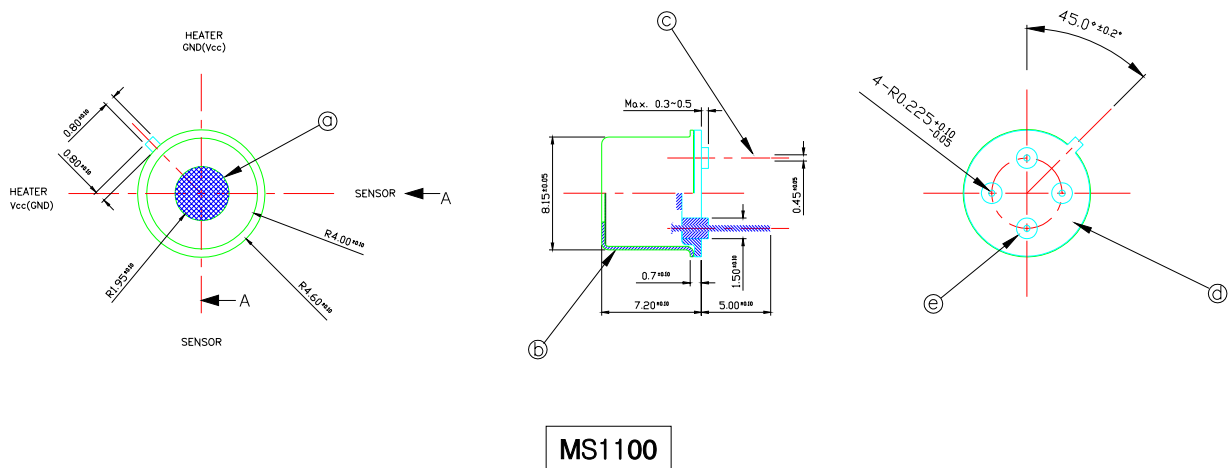
Vcc : Circuit Voltage(5V) VH : Heater Voltage(5V)
 RL : Load Resistance Rs : Sensor Resistance



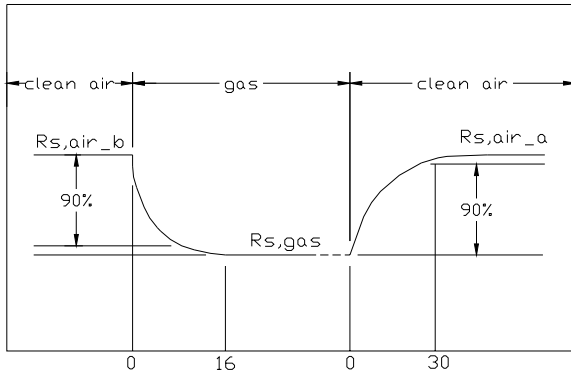
3. Specifications

Model number		MS1100	MS1100-111
Sensing element type		Semiconductor	←
Target gas		VOCs, HC, Smoke, Organic compounds	←
Electrical characteristics under standard Test conditions	R _H	Heater resistance	25.5Ω±0.2Ω
	V _H	Heater Voltage	5.0V±2%
	R _L	Road resistance	Variable
	P _H	Power consumption	Less than 420mW
	V _C	Circuit Voltage	Less than 12.0V
Sensitivity Characteristics $\beta = R_{s,gas}/R_{s,air}$ $\Delta V = V_{out,air} - V_{out,gas}$	R _{s,air} V _{out,air}	Sensor resistance	1.7kΩ to 24 kΩ (Refer to Rank Table)
	β ΔV	Toluene :5ppm Smoke:1,000ppm (ESSE, Korea)	0.4≤β≤0.6 β≤0.4
	Response time		Reaction : less than 5sec Recovery : less than 10sec
	* Standard test condition (balance gas : clean air, or special gas) • Temp. : 20℃±5℃, • Humidity : RH65%±10%, • Pressure : 1atm • Test chamber : more than 1ℓ/EA, • Pre-heating time : more than 1hr		
Environmental condition	* Operation temp. & Relative humidity : -10℃ to 60℃, less than dew point * storage temp. : -20℃ to 80℃ * Oxygen concentration : 21% ± 2%(The sensitivity characteristics are influenced by variation in oxygen concentration)		

4. Structure and Dimensions



5. Reaction time(T₉₀)



Reaction Time(T₉₀) : Less then 10sec
[Between Rs,air_b & Rs,gas]

Recovering Time(T₉₀) : Less then 20sec
[between Rs,gas & Rs,air_a]

Beginning stability time(T₉₀) : Less then 10 minute

Rs,air_b : Sensor Resistance without gases
Rs,gas : Sensor Resistance after blowing gases
Rs,air_a : Sensor Resistance removing gases

6. Characteristic of the other gases ($\beta = R_{gas}/R_{air}$)

	Smoke (HC)	Alcohol (C ₂ H ₅ OH)	Hydrogen (H ₂)	Butyl acid (C ₅ H ₁₀ O ₂)	비 고
Concentration	1,000ppm	50ppm	100ppm	1ppm	
Sensitivity	0.3	0.1	0.6	0.4	

* Sensitivity(β) = R_{gas}/R_{air}

* R_{gas} : 가스 주입 완료 후, 출력저항, R_{air} : 청정대기 상태에서의 출력저항

7. Rank Table(30)

Rank	Resistance	Rank	Resistance	Rank	Resistance
30A	1.7 ~ 2.0k Ω	30D	2.8 ~ 3.3k Ω	30G	4.7 ~ 5.7k Ω
30B	2.0 ~ 2.4k Ω	30E	3.3 ~ 3.9k Ω	30H	5.7 ~ 7.1k Ω
30C	2.4 ~ 2.8k Ω	30F	3.9 ~ 4.7 k Ω		

* R_L = 1k Ω

* R_{gas} : 가스 주입 완료 후, 출력저항, R_{air} : 청정대기 상태에서의 출력저항

8. Application

- * Air Purifier
- * Damper