

NOx Sensor – for the detection of NOx

NOx 가 가 가 . 가 가 . 가 가 . 가 가 . NOx 가 . NOx 가 . NOx 가 .

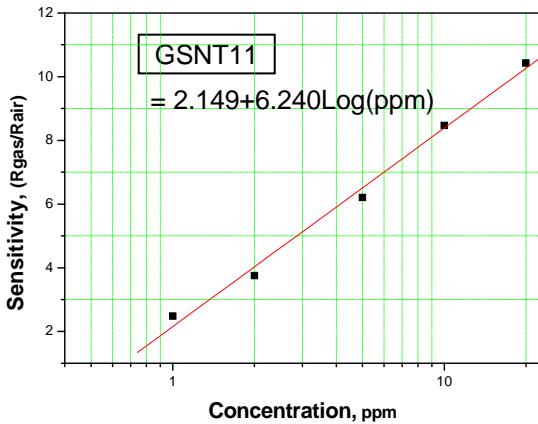


<GSNT11>

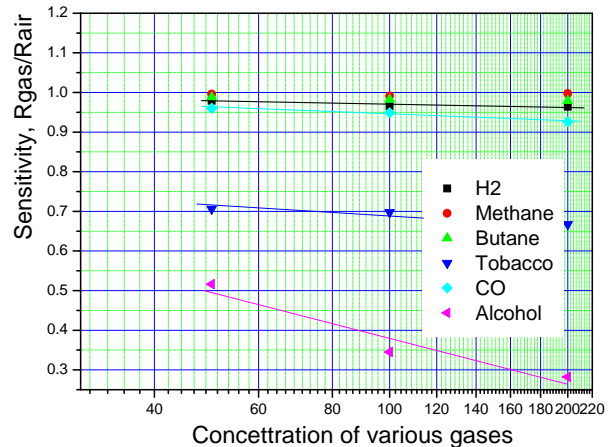


<GSNT11-P1XX>

1. Sensitivity characteristic slope

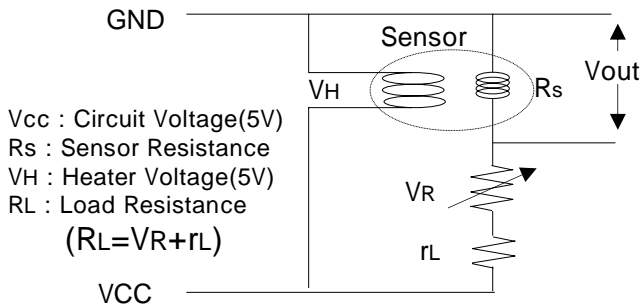


- * 1. NO2 NO 가 NO 가
(가 가 가
2. Alcohol CO, Tobacco 가



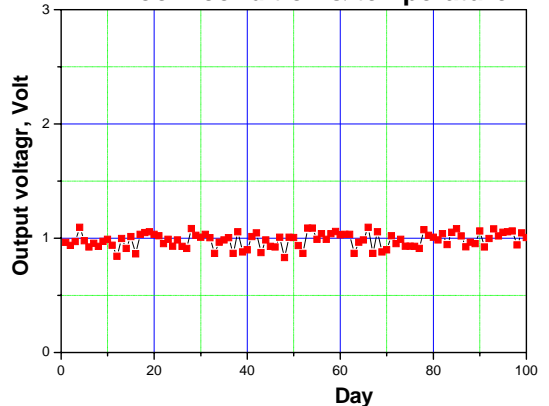
sensor 가

2. Basic Measuring Circuit & Stability



Long Term Stability

- Room condition & temperature



3. Specifications

3.1 Package (sensor)

a.

- Heater input voltage : 5volt±1%
Resistance : 33.0 ±0.5

- Power consumption : 450mW

- Sensor input Voltage : 1 ~ 12Volt

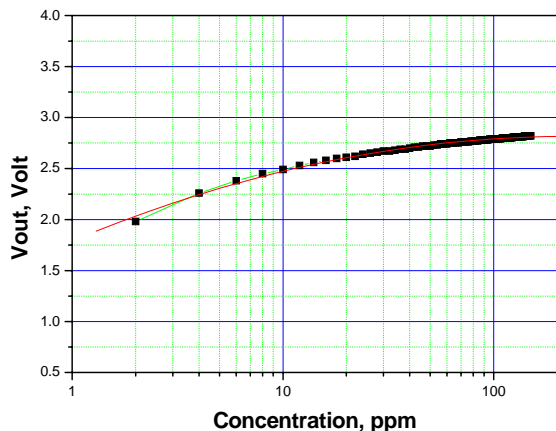
b.

가

→ RL : 16kΩ, Sensor resistance : 4kΩ

Vout,air : 4.0volt (가 5volt)

Nitrogen Dioxide



(ppm)	(Volt)	(ppm)	(Volt)	(ppm)	(Volt)	(ppm)	(Volt)
0	0.77	24	2.64	46	2.72	70	2.76
2	1.98	26	2.65	48	2.72	72	2.76
4	2.26	28	2.66	50	2.72	74	2.76
6	2.38	30	2.67	52	2.73	76	2.76
8	2.45	32	2.67	54	2.73	78	2.77
10	2.49	34	2.68	56	2.74	80	2.77
12	2.53	36	2.69	58	2.74	82	2.77
14	2.56	38	2.69	60	2.74	84	2.77
16	2.58	40	2.70	62	2.75	86	2.78
18	2.60	42	2.71	64	2.75	88	2.78
20	2.61	44	2.71	66	2.75	90	2.78
22	2.62	46	2.72	68	2.75	92	2.78

3.2 OP Module (GSNT11-P1xx), MOQ :



a. Characteristics

Index		Spec. & Test condition
Circuit Voltage	Vc	Module input Voltage : 5 ± 0.1 Volt
	PH	Power consumption : 460mW , Inrush current : Less than 140mA
Guarantee		- 2years over - Calibration interval 1years recommended
Worm up Time (T90)		- Less then 300sec
Reaction time(T90)		- Reaction Time(T90) : Less then 5sec - Recovering Time(T90) : Less then 30sec

b. 가 data sheet : $\pm 10\%$ (,)

- Max. Range : 200ppm
(GSNT11-P11X)

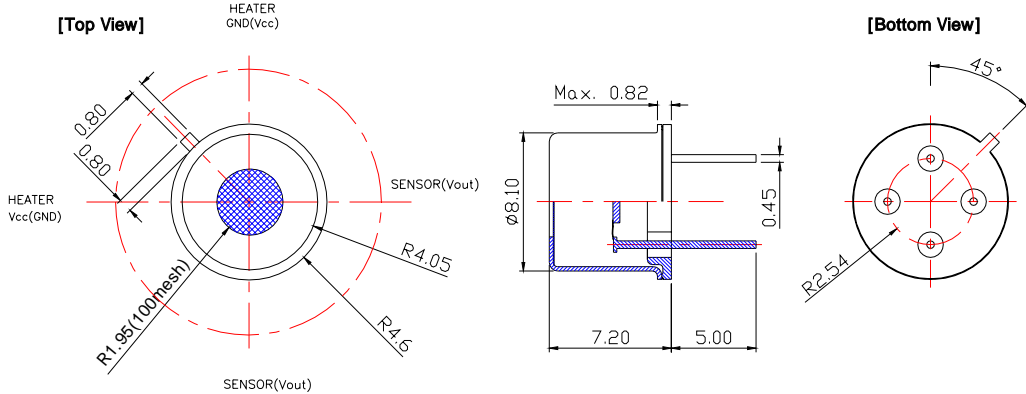
(ppm)	(Volt)	(ppm)	(Volt)	(ppm)	(Volt)
0	1.00	25	2.82	90	4.64
1	1.13	30	2.87	95	4.73
2	1.15	35	3.24	100	4.82
3	1.25	40	3.42	110	4.98
4	1.36	45	3.58		
5	1.47	50	3.73		
6	1.57	55	3.86		
7	1.67	60	3.99		
8	1.76	65	4.12		
9	1.84	70	4.23		
10	1.93	75	4.34		
15	2.28	80	4.45		
20	2.58	85	4.54		

- Max. Range : 1,000ppm
(GSNT11-P12X)

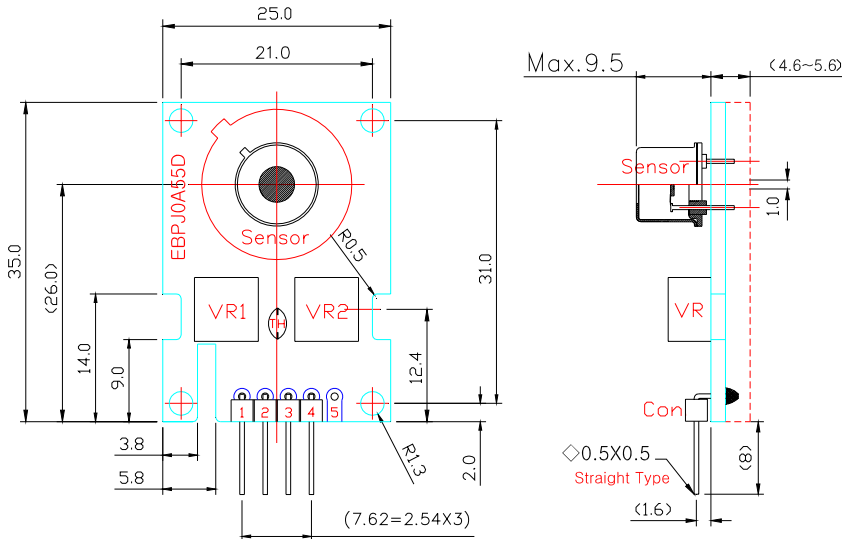
(ppm)	(Volt)	(ppm)	(Volt)	(ppm)	(Volt)
0		350		1000	
20		400		1100	
40		450		1200	
60		500		1300	
80		550		1400	
100		600		1500	
120		650		1600	
140		700		1700	
160		750		1800	
180		800		1900	
200		850		2000	
250		900		2100	
300		950		2200	

4. Structure and Dimensions

4.1 Package



4.2 Pack module



a. Data output

Vcc : 5.0volt

GND

Data(Vout, analogue signal)

Relay

b. Product code

GSNT11-P

1 2 3

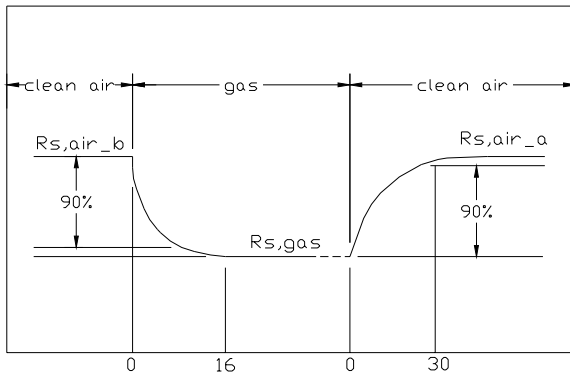
- (1) Division Circuit → 1:standard circuit
2:Precision grade
3:Micro-processor
- (2) Gas sensing range → 1:200 2:1,000ppm
- (3) Connector → 0:None 1:Straight
2:Angle 3:Opposite angle

c. Relay Output

Max. Output range 200ppm

: Hi(3.7volt) output at 0.6ppm(NO)

5. Reaction time(T90)



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

Recovering Time(T90) : Less then 30sec
[between Rs,gas & Rs,air_a]

Beginning stability time(T90) : Less then 5 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 (=Rgas/Rair)

	Smoke (HC)	Alcohol (C2H5OH)	Hydrogen (H2)	Carbon Oxide (CO)	
Concentration	2,000ppm	50ppm	200ppm	100ppm	
Sensitivity	0.8	0.8	0.8	0.8	±0.1

* Sensitivity() = Rgas/Rair

* Rgas : Out resistance in gas, Rair : Out resistance in clean air

7. Rank Table(40)

Rank	Resistance	Rank	Resistance	Rank	Resistance
40A	1.0~1.5k	40D	3.5~5.0k		
40B	1.5~2.2k	40E	5.0~7.8k		
40C	2.2~3.5k				

8. Application

* AQS for Vehicle, Air Purifier, Damper

summary