

## Technical Information

### Electrochemical Formaldehyde Sensor *NE-HCHO-S*

~ Industrial Use ~

#### (1) Design Features

**High Sensitivity**

**Stability**

**High Reliability**

**Linearity**

**Low Power Consumption for Battery Operation**

#### (2) Specifications

[Sensitivity Characteristics]

Detection Gas	Formaldehyde
Detection Range	0 ~ 10 ppm
Maximum Overload	50 ppm
Output Signal	600 ± 150 nA/ppm
Repeatability	± 5 %
Typical Baseline Range (pure air)	< ± 0.05 ppm
Typical Response Time (t <sub>90</sub> )	< 120 sec. (HCHO : 1 ppm)
Baseline Shift (0 ~ 40°C)	< 0.2 ppm
Expected Life Time	Over 2 years

[Operating Conditions]

Operating Temperature	-20 ~ 50°C
Operating Humidity	15 ~90 % RH
Operating Pressure Range	1atm± 10 %
Recommended Load Resistor	10 Ω
Bias Voltage	Not required
Position Sensitivity	None
Recommended Storage Temp.	0 ~ 20°C
Storage Life	Less than 6 months

[Physical Characteristics]

Case Material	PPO
Cap Color	Black
Weight	5 g (approx.)

[Appearance and Dimensions]

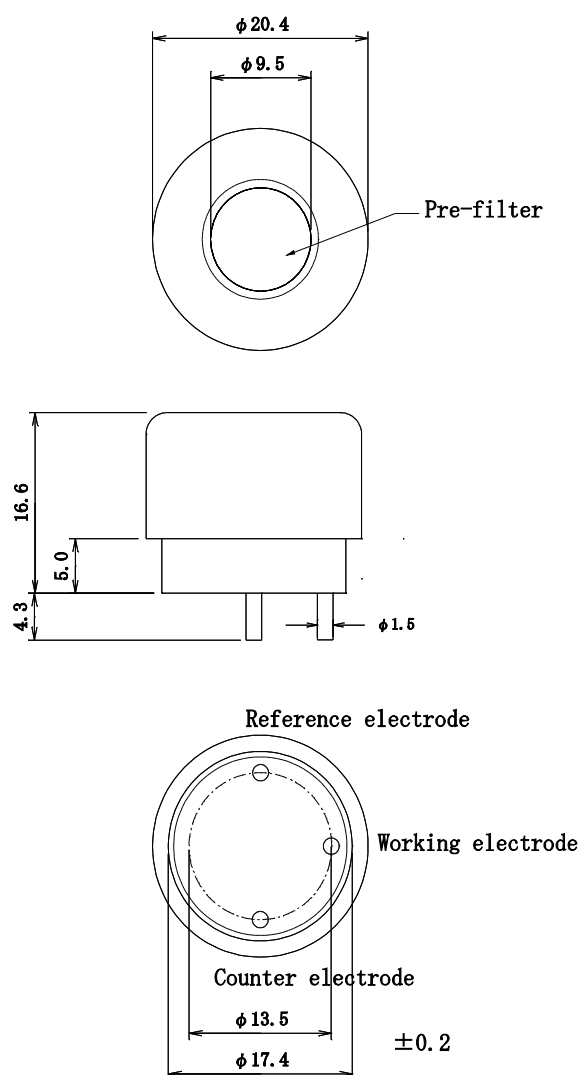


Fig.1 : Appearance and Dimensions of NE-HCHO-S

### (3) Characteristics

#### (3-1) Cross Sensitivity

Table 1 : Cross Sensitivity of NE-HCHO-S

Gas	Concentration (ppm)	Typical Formaldehyde Concentration (ppm) Equivalent
Formaldehyde	10	10
Hydrogen Sulfide	1	4
Carbon-monoxide	100	<6
Carbon-dioxide	5,000	0
Hydrogen	1000	<10
Sulfur-dioxide	10	<8
Chlorine	10	<-8
Methane	5,000	0
Nitric Oxide	10	<0.5
Nitrogen Dioxide	10	-7
Ammonia	100	0
Acetaldehyde	100	<2
Toluene	100	0
Xylene	100	0
Methanol	100	2
Ethanol	100	15

#### (3-2) Temperature Dependency

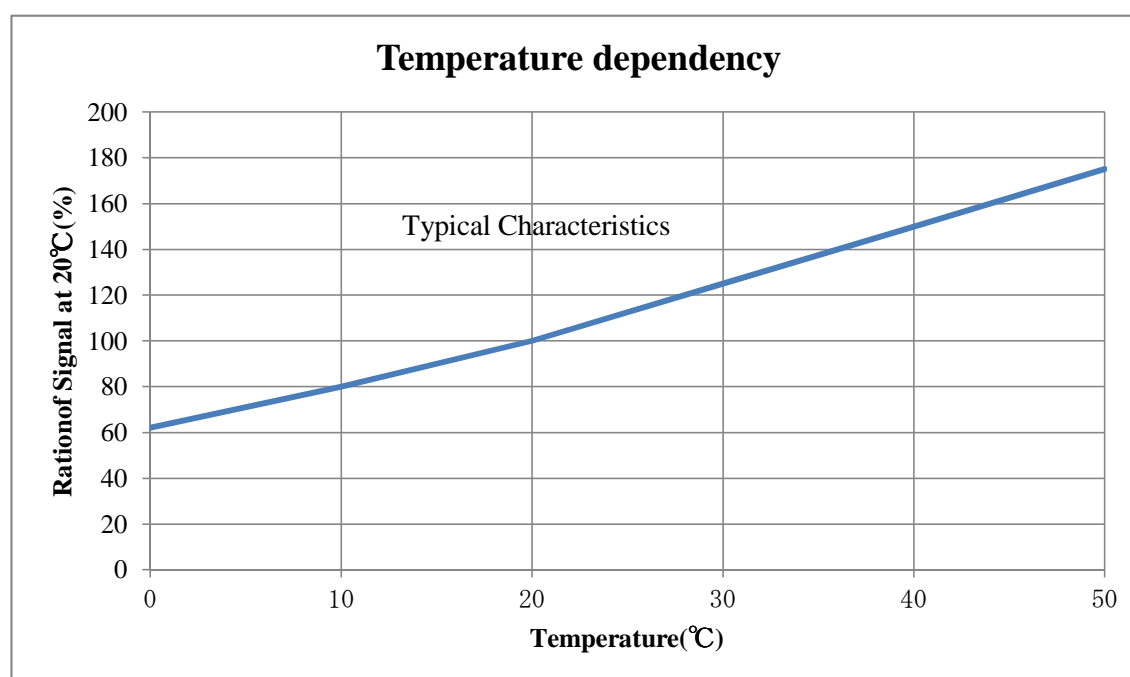


Fig. 2 : Typical Temperature Coefficient of NE-HCHO-S

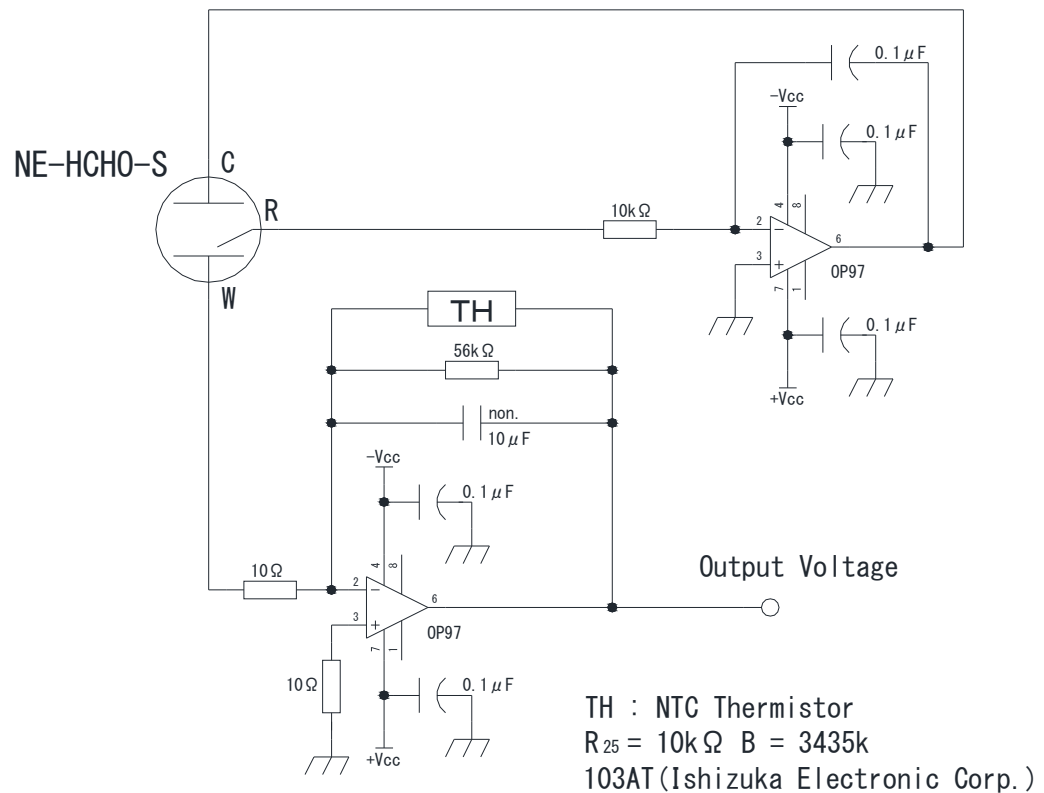
**(4) Basic Test Circuit**

Fig. 3 : Basic Test Circuit for NE-HCHO-S

- Circuit is test use only.
- Remove the short-pin before sensor is connected to the circuit.
- Apply the voltage to +Vcc and -Vcc at the same time.

## [Notes]

- Use only within specified conditions.
- Sensor characteristics must be measured in clean air.
- Electrode pins must be correctly connected.  
Wrong connection does not allow correct functions.
- Do not apply voltage directly to electrode pins.
- Do not bend pins.
- Do not put excess vibration or shocks.
- If sensor housing is damaged or scratched, do not use.
- Do not blow organic solvents, paints, chemical agents, oils, or high concentration gases directly onto sensors.
- Do not solder to pins of sensor directly.  
Use exclusive sockets.
- Do not use contact grease when sensor is connected to the sockets.
- Do not disassemble or change any parts.
- If sensor is used under irregular atmosphere, contact us.

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