

Premium Line

NT-NO2-PL10

Electrochemical Nitrogen Dioxide Sensor

Description

The NT-NO2-PL10 is a new electrochemical gas sensor with 3 electrodes for detection of Nitrogen Dioxide (NO₂) in a variety of gas detection applications. Exhibiting high performance with long-term stability, this compact sensor (20.4 mm diameter) is suitable for both portable and fixed gas detection instruments. The NT-NO2-PL10 is particularly suitable for use in fixed monitoring systems measuring NO₂ in low levels in underground car parks, where long term reliability and low cost are essential requirements.

The porous electrode technology enables accurate gas detection with high sensitivity. The mechanical design of the sensor gives optimum gas diffusion characteristics, and the hermetically sealed enclosure prevents costly electrolyte leakage.



Technical Specifications

Detectable Gas:	Nitrogen Dioxide
Detection Range:	0 – 10 ppm ⁽¹⁾
Maximum Overload:	100 ppm
Output Signal:	1000± 250 nA/ppm ⁽²⁾
Resolution:	0.05 ppm
Repeatability:	± 2 %
Typical Baseline Range: (pure air)	< ± 0.1 ppm
Typical Response Time (t ₉₀):	< 25 sec
Baseline Shift: (- 20 ~ 40 degree C)	< 0.1 ppm
Long Term Output Drift:	< 2%/month
Expected Life Time:	> 2 years
Weight:	Approximately 4.5 g

Operating conditions

Operating Temperature:	-20°C to + 50°C
Operating Humidity:	15 to 90 % RH
Operating Pressure Range:	1atm± 10 %
Recommended Load Resistor:	33 Ohm
Bias Voltage:	Not required
Position Sensitivity:	None
Recommended Storage Temp.:	0-20°C
Storage Life:	Less than 6 months

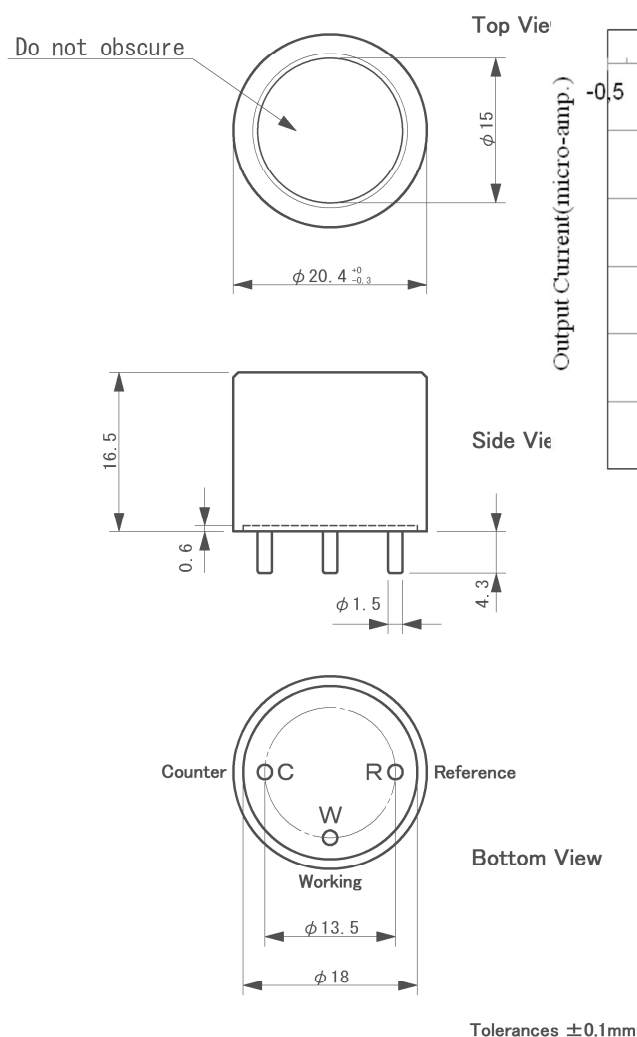
⁽¹⁾ Available also in the special detection range 0-30 ppm, see NT-NO2-PL30

⁽²⁾ The output signal of the NT-NO2 sensor is of opposite polarity to similar sensors such as for CO or H₂S.

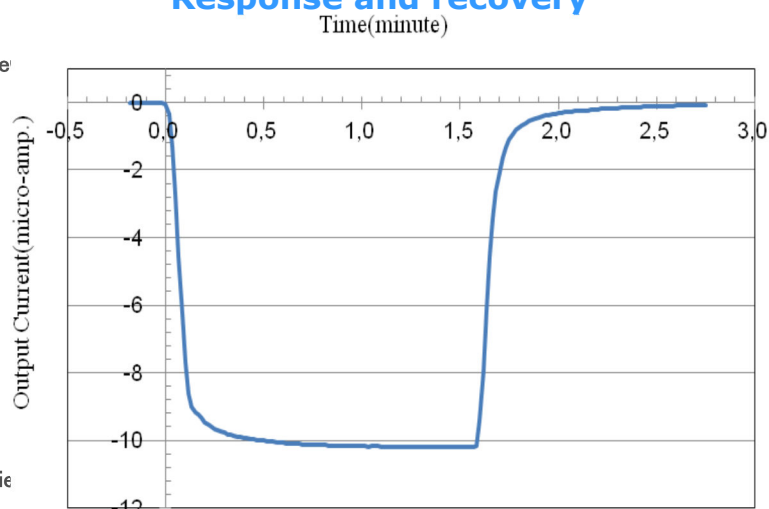
Typical cross sensitivities

Gas	Test Gas Concentration (ppm)	Typical NO ₂ Concentration Equivalent (ppm)
Nitrogen Dioxide	10	10
Hydrogen	1000	0
Carbon Monoxide	300	0
Carbon Dioxide	5000	0
Sulphur Dioxide	20	0
Hydrogen Sulfide	10	-0.7 to 0
Nitric Oxide	30	0
Ammonia	100	0
Ethanol	100	0
Chlorine	1	1

Dimensions



Response and recovery

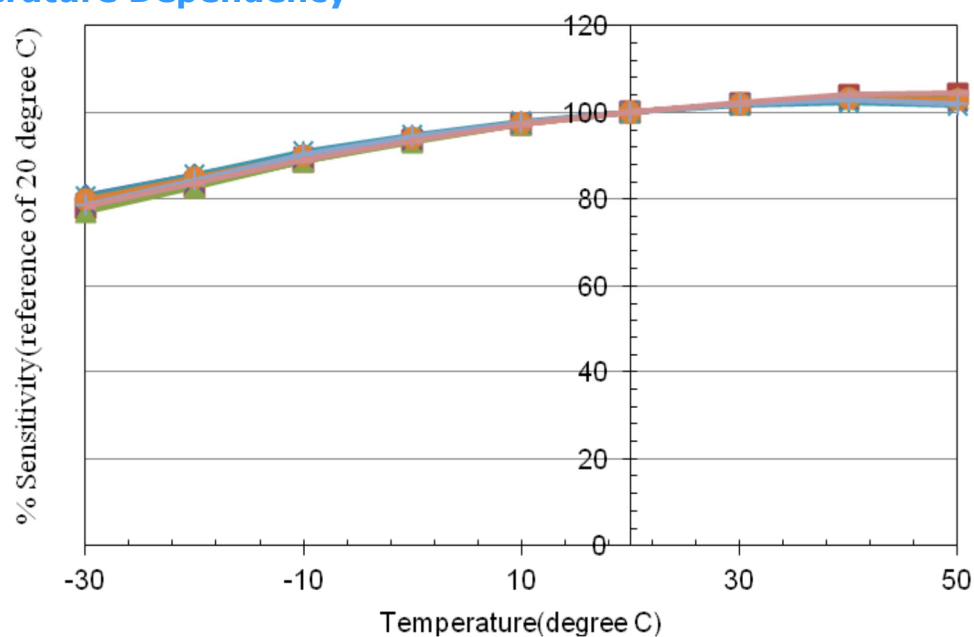


NO₂ sensor Premium Line Benefits

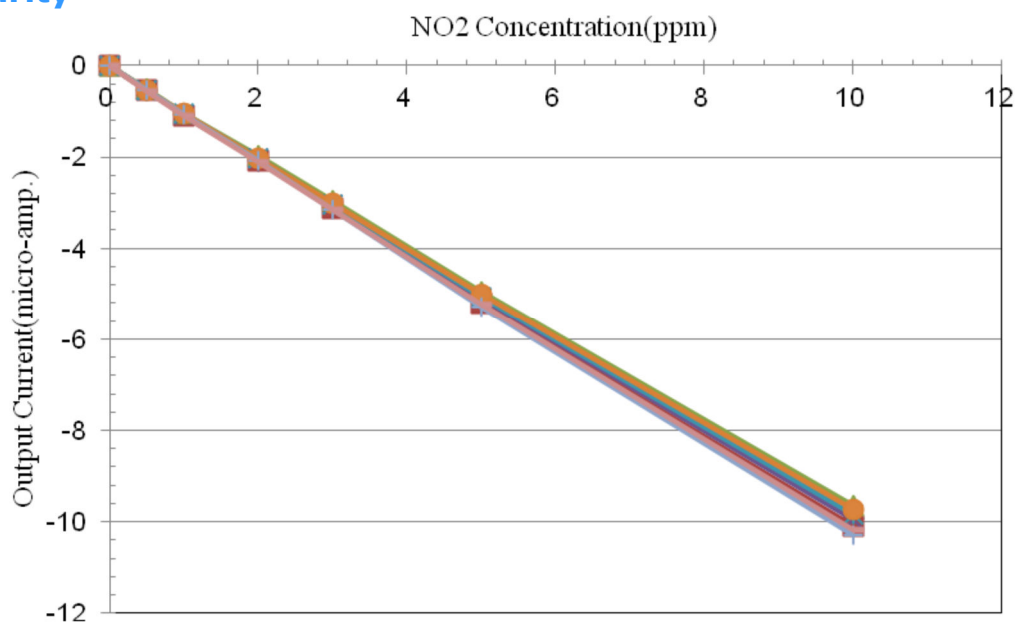
- The sensor has an excellent selectivity compared to other industrial sensors on the market. Especially the sensitivity to H₂S is very low.
- The sensor shows a very small temperature dependency.
- The sensor has an excellent mechanical durability. As a result, the sensors can maintain a long stability without the breaking down of wires or the leakage of the electrolyte.

N.E.T. has a policy of continuous development and improvement of its products. As such the specification for the device outlined in the data sheet may be changed without notice.

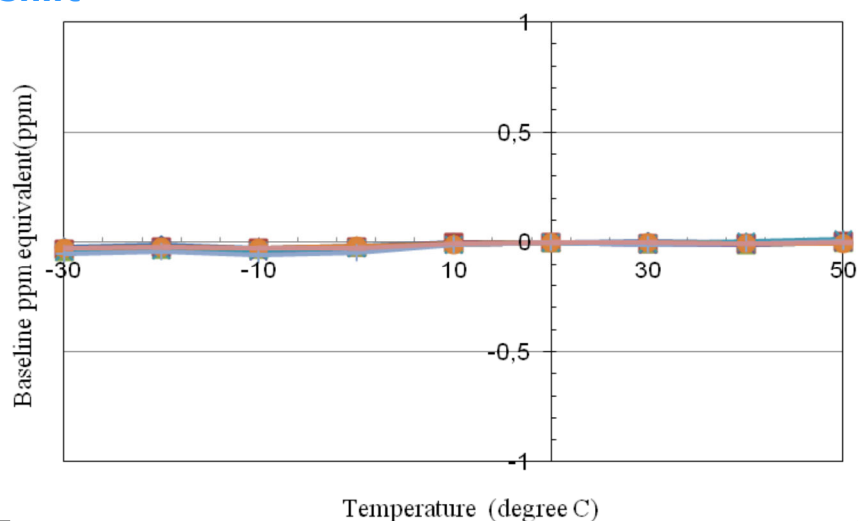
Temperature Dependency



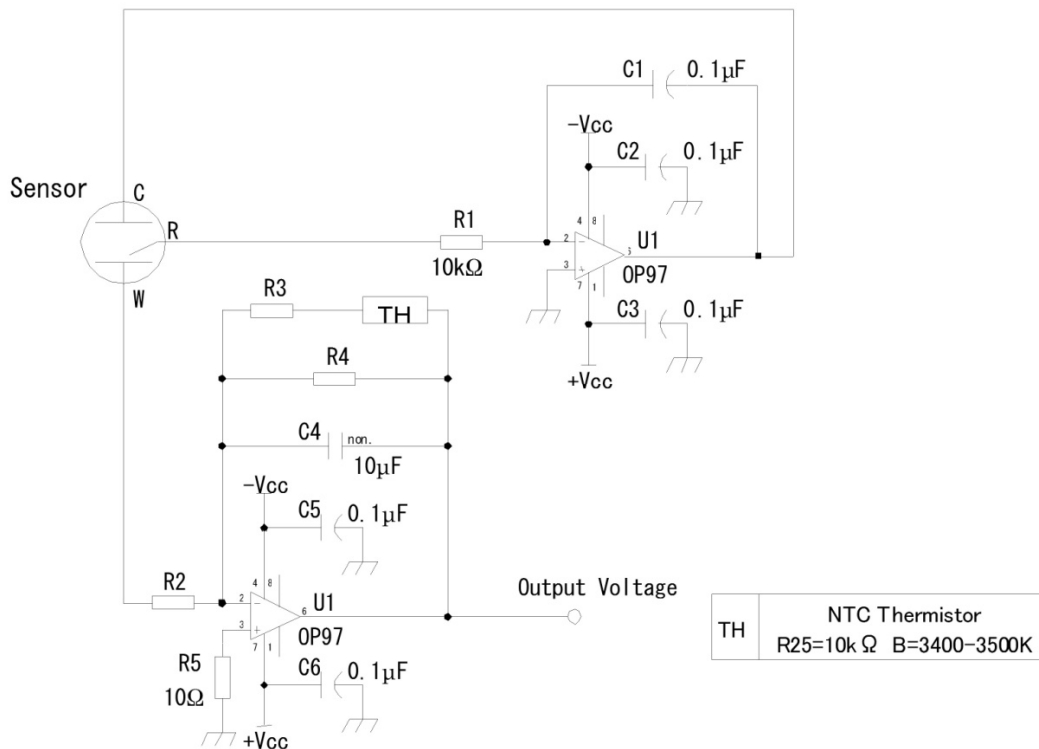
Linearity



Baseline shift



Basic Circuit



In the circuit, $R2=33\ \Omega$, $R3=26.1\ \text{k}\Omega$ and $R4=14\ \text{k}\Omega$.

The temperature dependence of the sensor is compensated by NTC thermistor that has 3435K of B constant which is made by Ishizuka Denshi. Other thermistor can be used, if the B constant is around 3500K and the resistant value (R_{25}) is 10 k Ω .

Notes

Use within specified conditions.

Sensor characteristics must be measured in clean air without noise gases.

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 solder to electrode pins directly. Use exclusive sockets.

Do not use contact grease on electrode pins.

Do not put excess strength on electrode pins.

If sensor housing is damaged or scratched, do not use sensor.

Do not blow organic solvents, paints, chemical agents, oils, or high concentration gases onto sensor.

Do not disassemble or change any parts.

If sensor is used under irregular atmosphere, contact us for assistance.