



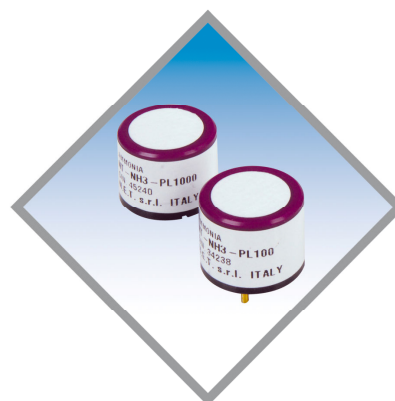
Premium Line

NT-NH3-PL100**Electrochemical Ammonia Sensor****Description**

The NT-NH3-PL100 is a new electrochemical gas sensor with 3 electrodes for the detection of Ammonia in a variety of gas detection applications. Exhibiting high performance with very stable base line and output signal and excellent selectivity, this compact sensor (20.4 mm diameter) is suitable both for portable and fixed gas detection instruments.

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.

This new Premium Line design offers several advantages with respect to the traditional industrial sensor. For example it gives the possibility to use a general OP amplifier instead of the high-cost OP97. Also, it shows much greater resistance and quicker recovery when exposed to ammonia, and almost no interference with H2S

**Technical Specifications**

| | |
|---|----------------------------|
| Detectable Gas: | Ammonia |
| Detection Range: | 0 - 100 ppm ⁽¹⁾ |
| Maximum Overload: | 200 ppm |
| Output Signal: | 100± 30 nA/ppm |
| Resolution: | 1 ppm |
| Repeatability: | ± 10 % |
| Typical Baseline Range: (pure air) | < 2 ppm |
| Typical Response Time (t ₉₀): | < 60 sec |
| Baseline Shift: (- 30 ~ 50 degree C) | < 3 ppm |
| Long Term Output Drift: | < 2%/month |
| Expected Life Time: | > 3 years |
| Weight: | Approximately 4.5 g |

Operating conditions

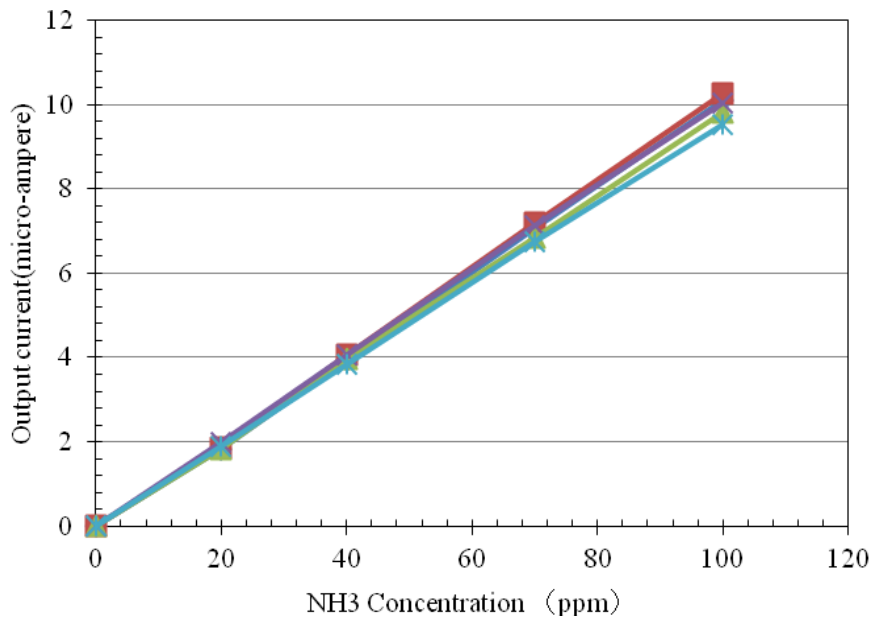
| | |
|-------------------------------|--|
| Operating Temperature: | -40°C to + 50°C (+ 55 °C only for intermittent operation) |
| Operating Humidity: | 15 to 90 % RH |
| Operating Pressure Range: | 1 atm± 10 % |
| Recommended Load Resistor: | 33 Ω |
| Bias Voltage: | Not required |
| Position Sensitivity: | None |
| Recommended Storage Temp.: | 0-20°C |
| Storage Life: | < 6 months |

(1) Available also in the detection ranges 0-300 ppm, 0-1000 ppm and 0-5000 ppm (see NET website for further information)

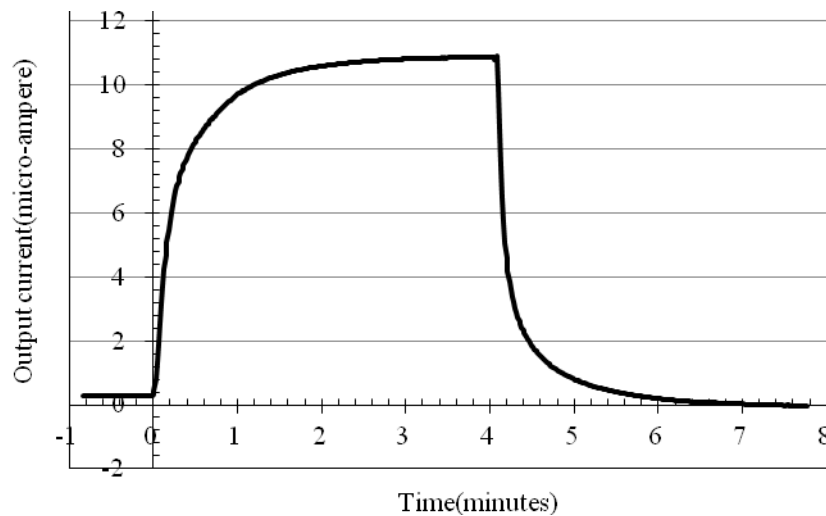
Typical cross sensitivities

| Gas | Test Gas Concentration (ppm) | Typical NH3 Concentration Equivalent (ppm) |
|------------------|------------------------------|--|
| Ammonia | 100 | 100 |
| Hydrogen Sulfide | 10 | -1.5 to 0 |
| Sulphur Dioxide | 10 | -3 |
| Carbon Dioxide | 5000 | 0 |
| Carbon Monoxide | 300 | 0 |
| Hydrogen | 1000 | 0 |
| Nitrogen Dioxide | 20 | -1.5 to 0 |
| Nitric Oxide | 30 | 0 |
| Ethanol | 100 | 0 |

Linearity

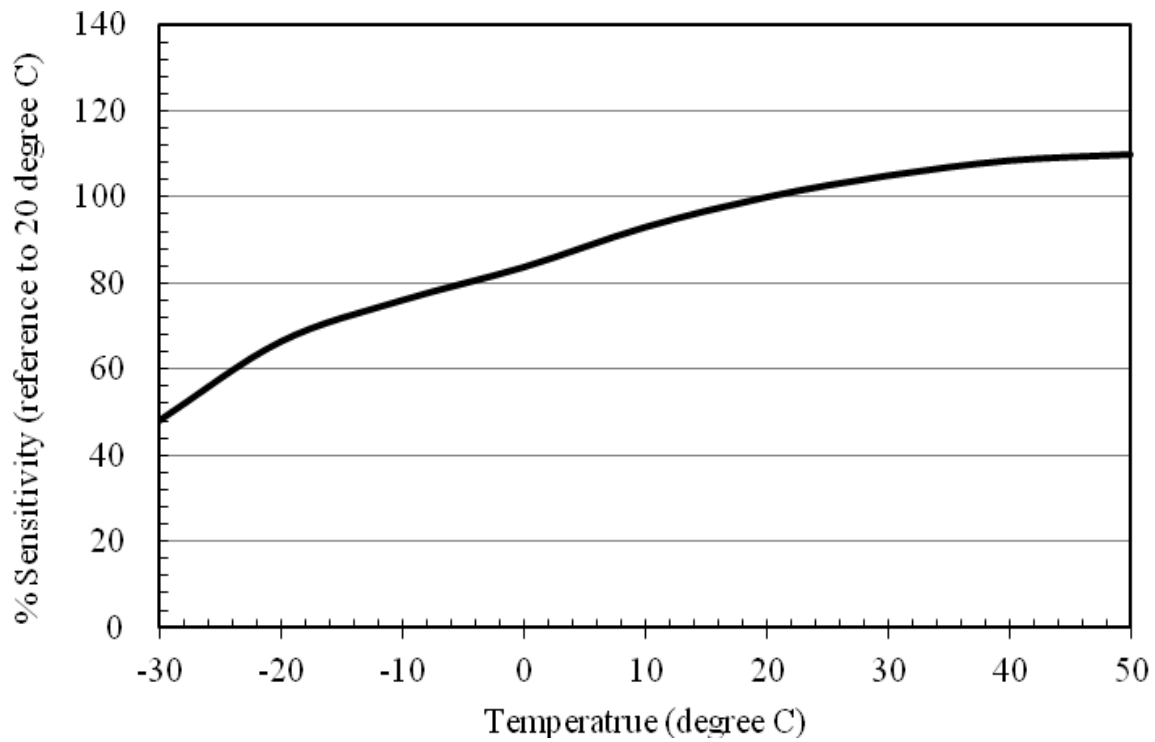


Response and Recovery time

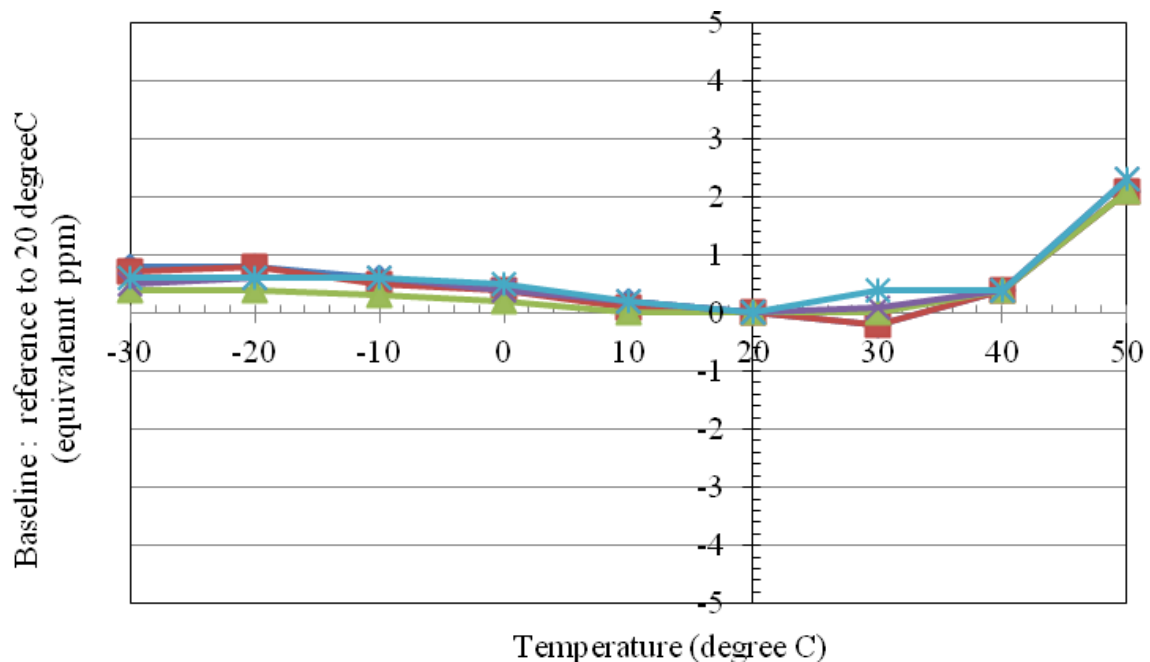


N.E.T. has a policy of continuous development and improvement of its products. As such the specification for the device outlined in the data sheet may be changed without notice.

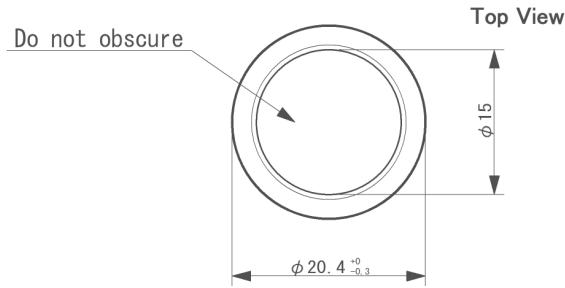
Temperature Dependency



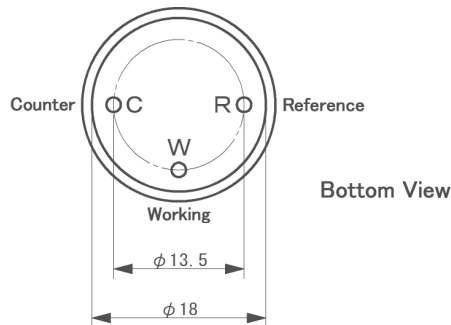
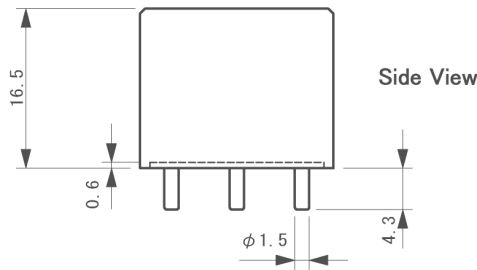
Baseline Shift



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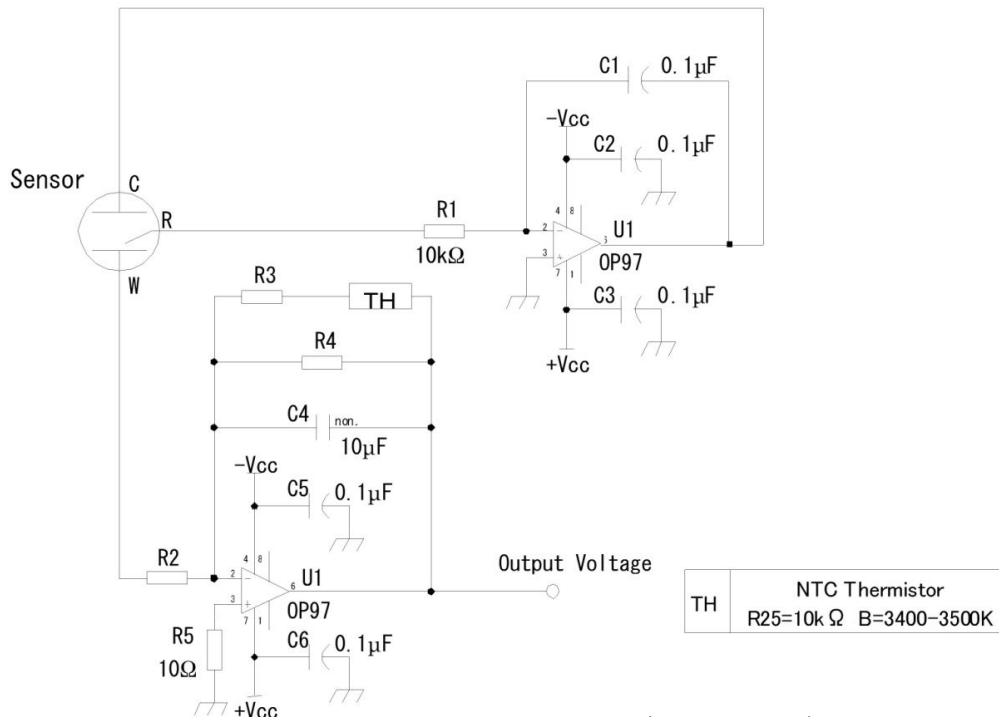
Dimensions



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 NET for assistance.

Sample Circuit



R2=33 Ω , R3=16.2 k Ω , R4=15.4 k Ω

NTC thermistor: B constant 3500K, R₂₅=10 k Ω