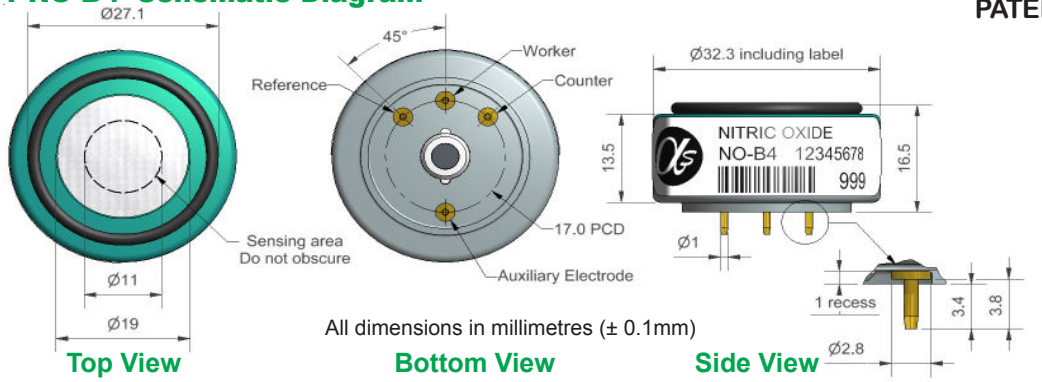
NO-B4 Nitric Oxide Sensor
4-Electrode



Technical Specification

PATENTED

Figure 1 NO-B4 Schematic Diagram



All dimensions in millimetres (± 0.1mm)

PERFORMANCE

Sensitivity	nA/ppm at 2ppm NO	500 to 850
Response time	t_{90} (s) from zero to 2ppm NO	< 45
Zero current	nA in zero air at 20°C	30 to 140
Noise*	±2 standard deviations (ppb equivalent)	15
Range	ppm NO limit of performance warranty	20
Linearity	ppb error at full scale, linear at zero and 5ppm NO	< ±1
Overgas limit	maximum ppm for stable response to gas pulse	50

*** Tested with Alphasense ISB low noise circuit**

LIFETIME

Zero drift	ppb equivalent change/year in lab air	0 to 50
Sensitivity drift	% change/year in lab air, monthly test	0 to -20
Operating life	months until 50% original signal (24 month warranted)	> 24

ENVIRONMENTAL

Sensitivity @ -20°C	(% output @ -20°C/output @ 20°C) @ 2ppm NO	60 to 90
Sensitivity @ 40°C	(% output @ 50°C/output @ 20°C) @ 2ppm NO	97 to 110
Zero @ -20°C	nA	0 to 30
Zero @ 40°C	nA	100 to 200

CROSS SENSITIVITY

H_2S sensitivity	% measured gas @ 5ppm	H_2S (after 3 minutes)		< 10
NO_2 sensitivity	% measured gas @ 5ppm	NO_2 (after 3 minutes)		< 4
Cl_2 sensitivity	% measured gas @ 5ppm	Cl_2		< 3
SO_2 sensitivity	% measured gas @ 5ppm	SO_2		< 5
H_2 sensitivity	% measured gas @ 100ppm	H_2		< 0.1
CO sensitivity	% measured gas @ 5ppm	CO		< 0.3
NH_3 sensitivity	% measured gas @ 5ppm	NH_3		< 0.1
CO_2 sensitivity	% measured gas @ 5% Vol	CO_2		< 0.1
O_3 sensitivity	% measured gas @ 100ppb	O_3		< 4
Halothane sensitivity	@ 100ppm	Halothane		< 0.1

KEY SPECIFICATIONS

Bias voltage	mV (working electrode potential is above reference electrode)	+200
Temperature range	°C	-30 to 40
Pressure range	kPa	80 to 120
Humidity range	% rh continuous	15 to 85
Storage period	months @ 3 to 20°C (stored in sealed pot)	6
Load resistor	Ω (ISB circuit is recommended)	33 to 100
Weight	g	< 13



At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

NOTE: all sensors are tested at ambient environmental conditions, with 10 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.

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NO-B4 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

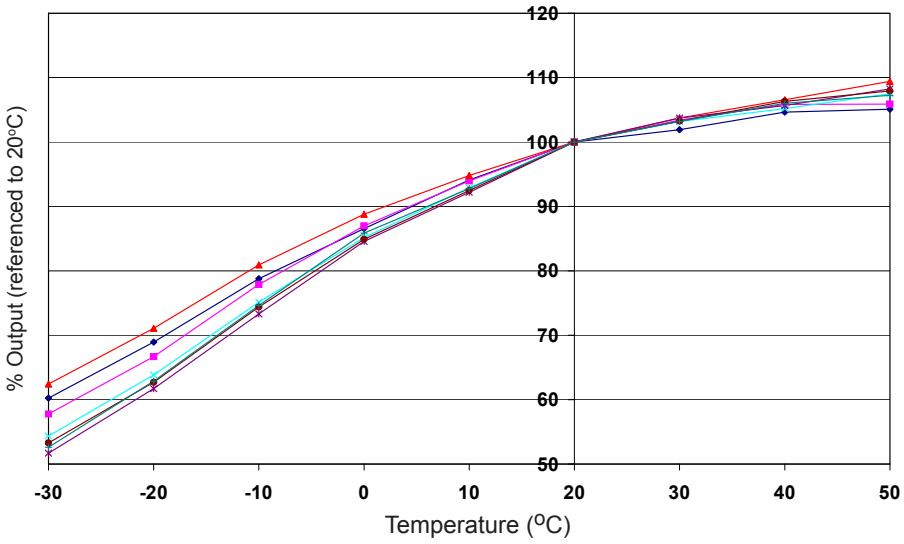


Figure 2 shows the temperature dependence of sensitivity at 2ppm NO.

This data is taken from a typical batch of sensors.

Figure 3 Zero Temperature Dependence

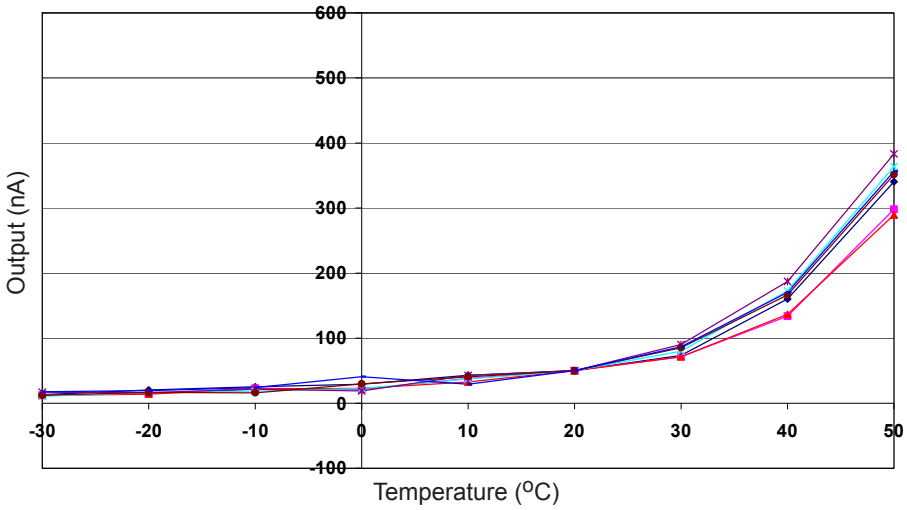


Figure 3 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.

This data is taken from a typical batch of sensors.

Contact Alphasense for futher information on zero current correction.

Figure 4 Response to 200ppb NO

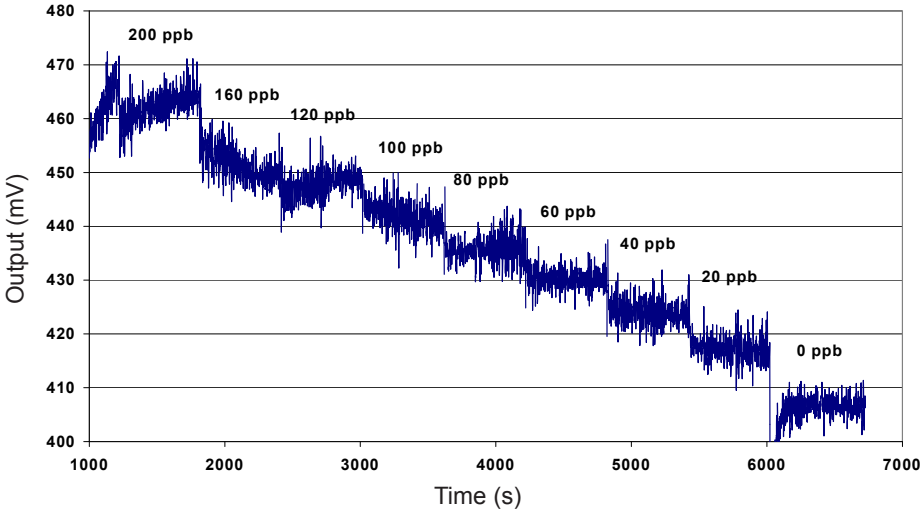


Figure 4 shows response to 200ppb NO.

Use of Alphasense ISB circuit reduces noise to 15ppb with the opportunity of digital smooting to reduce noise even further

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. For Application Notes visit "www.alphasense.com".

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