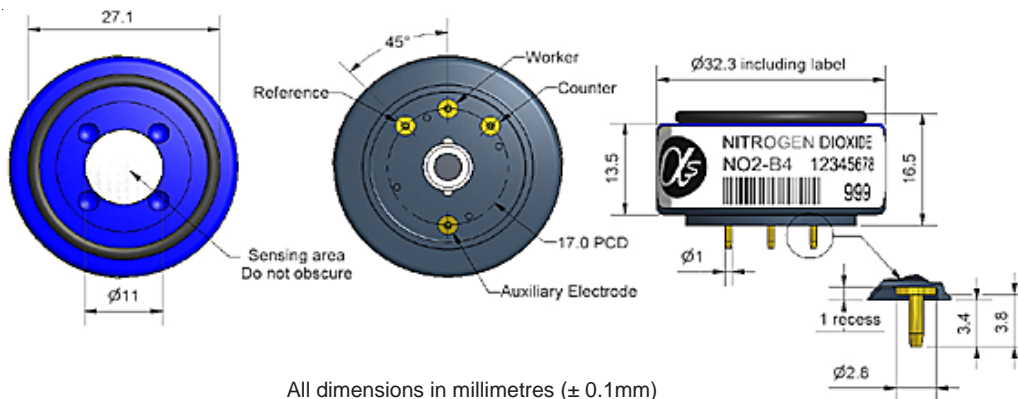


NO2-B4 Nitrogen Dioxide Sensor



PATENTED

Figure 1 NO2-B4 Schematic Diagram



Top View

Bottom View

Side View

PERFORMANCE

Sensitivity	nA/ppm in 10ppm NO ₂	-350 to -550
Response time	t ₉₀ (s) from zero to 10ppm NO ₂ (33Ω load resistor)	< 40
Zero current	ppm equivalent in zero air	±0.2
Resolution	RMS noise (ppm equivalent) 33Ω load resistor	< 0.02
Range	ppm NO ₂ limit of performance warranty	50
Linearity	ppm error at full scale, linear at zero and 10ppm NO ₂	< ±0.2
Overgas limit	maximum ppm for stable response to gas pulse	200

LIFETIME

Zero drift	ppm equivalent change/year in lab air	<0.03
Sensitivity drift	% change/year in lab air, monthly test	<6
Operating life	months until 80% original signal (24 month warranted)	> 24

ENVIRONMENTAL

Sensitivity @ -20°C	(output @ -20°C/output @ 20°C) @ 5ppm NO ₂	78 to 93
Sensitivity @ 50°C	(output @ 50°C/output @ 20°C) @ 5ppm NO ₂	101 to 109
Zero @ -20°C	ppm equivalent change from 20°C	0 to 0.15
Zero @ 50°C	ppm equivalent change from 20°C	< ±0.2
Sensitivity in 100% O ₂		none

CROSS SENSITIVITY

H ₂ S sensitivity	% measured gas @ 20ppm H ₂ S	< 100
NO sensitivity	% measured gas @ 50ppm NO	<0.5
Cl ₂ sensitivity	% measured gas @ 10ppm Cl ₂	75
SO ₂ sensitivity	% measured gas @ 20ppm SO ₂	< -2
CO sensitivity	% measured gas @ 400ppm CO	< 0.1
H ₂ sensitivity	% measured gas @ 400ppm H ₂	< 0.1
C ₂ H ₄ sensitivity	% measured gas @ 400ppm C ₂ H ₄	< 0.1
CO ₂ sensitivity	% measured gas @ 5% Vol CO ₂	<0.1
Halothane sensitivity	@ 100ppm Halothane	< 0.1

KEY SPECIFICATIONS

Temperature range	°C	-20 to 50
Pressure range	kPa	80 to 120
Humidity range	% rh continuous	15 to 90
Storage period	months @ 3 to 20°C (stored in sealed pot)	6
Load resistor	Ω (recommended)	33 to 47
Weight	g	< 13



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.

Technical Specification

NO2-B4 Performance Data

Technical Specification

Figure 2 Response to 10ppm NO₂

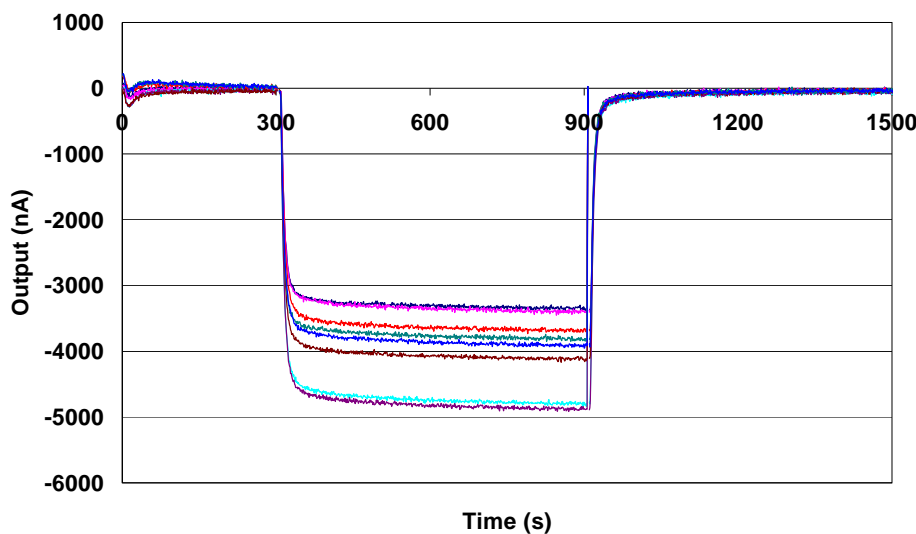


Figure 2 shows the response to 10ppm NO₂.

Baseline response was not corrected using the auxiliary electrode.

Careful selection of load resistor will improve noise.

Figure 3 Zero temperature dependence

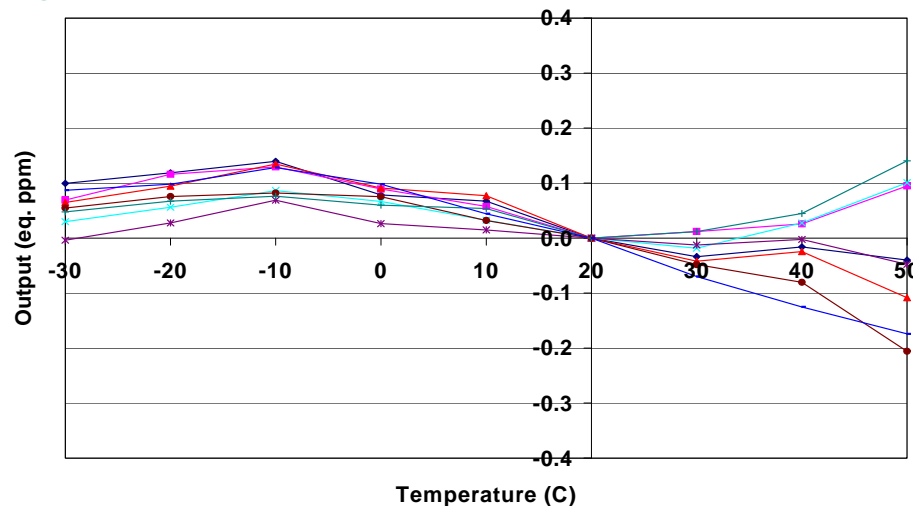
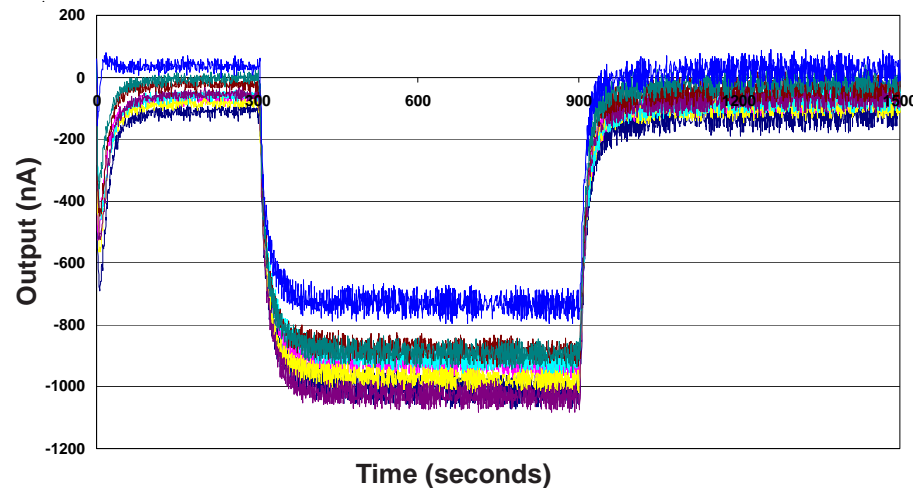


Figure 3 shows the change in baseline with temperature.

The small shift in zero current is repeatable.

These results are taken from a typical batch of sensors.

Figure 4 NO2-B4 Response to 1ppm NO₂



With a 33 Ω load resistor, the NO2-B4 shows excellent resolution, even at the ppb level: ideal for outdoor air environmental testing.