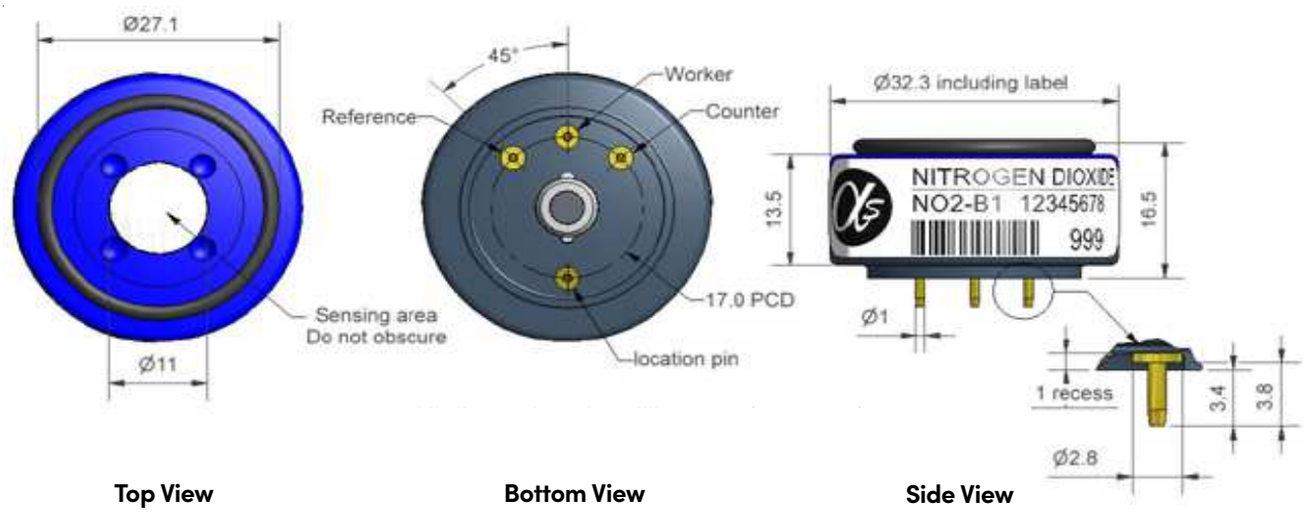
alphasense
AMETEK

Technical specifications Version 1.0

NO2-B1 Nitrogen Dioxide Sensor



Top View **Bottom View** **Side View**

Dimensions are in millimetres (± 0.1mm).

Performance	Sensitivity	nA/ppm in 10ppm NO_2	-450 to -1000
	Response time	t90 (s) from zero to 10ppm NO_2 (33Ω load resistor)	< 60
	Zero current	ppm equivalent in zero air	± 0.4
	Resolution	RMS noise (ppm equivalent) (33Ω Load Resistor)	< 0.02
	Range	ppm NO_2 limit of performance warranty	20
	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	100
Lifetime	Zero drift	ppm equivalent change/year in lab air	< 0.03
	Sensitivity drift	% change/year in lab air, monthly test	< -20 to -40
	Operating life	months until 80% original signal (24 month warranted)	> 24
Environmental	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 5ppm NO_2	75 to 95
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 5ppm NO_2	100 to 112
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 0.1
	Zero @ 50°C	ppm equivalent change from 20°C	< 0 to -0.5

Cross Sensitivity	H_2S sensitivity	% measured gas @ 20ppm	H_2S	< -100
	NO sensitivity	% measured gas @ 50ppm	NO	< 0.5
	Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2	< 100
	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_2H_4 sensitivity	% measured gas @ 400ppm	C_2H_4	< 0.1
	NH_3 sensitivity	% measured gas @ 20ppm	NH_3	< 0.1
	CO_2 sensitivity	% measured gas @ 5% volume	CO_2	0

Key Specifications	Temperature range	°C	-20 to 50
	Pressure range	kPa	80 to 120
	Humidity range	% rh continuous (see note below) months @	15 to 90
	Storage period	3 to 20°C (stored in sealed pot)	6
	Load resistor	Ω (for optimum performance)	33
	Weight	g	< 13

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

Figure 1 Sensitivity Temperature Dependence

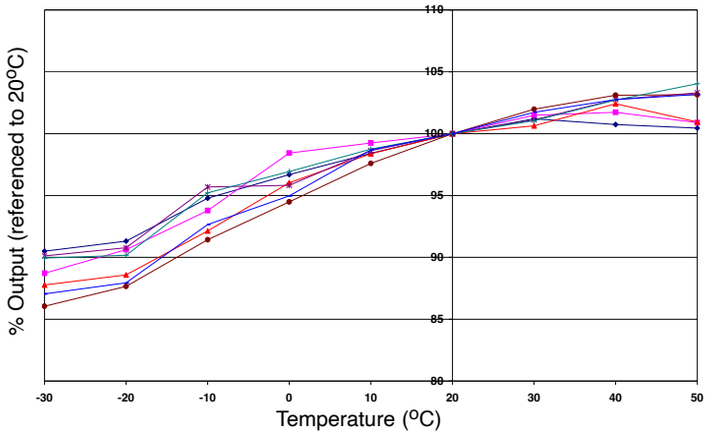

Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

Figure 2 Zero Temperature Dependence

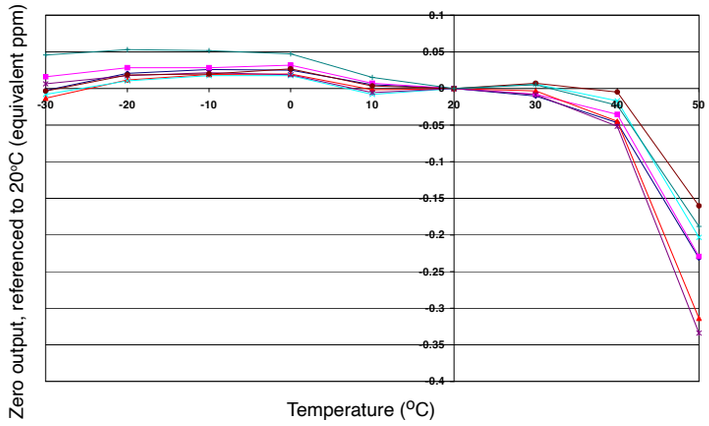

Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 Effect of Load Resistor Value on Noise

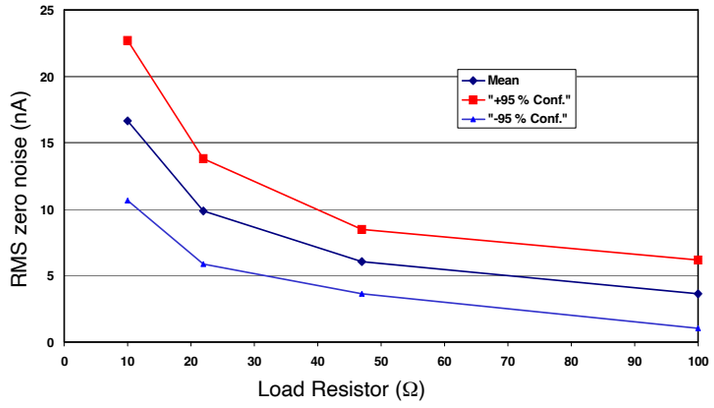

Figure 3 shows the effect of the load resistor on the RMS zero noise for the NO2-B1 sensor. The mean and ±95% confidence intervals are shown.

The t90 response time increases linearly with increasing load resistor value. If a fast response is required then a 10 Ω load resistor should be employed; this will give a fast response.

Note: Above 85% rh and 40°C a maximum continuous exposure period of 10 days is warranted. Where such exposure occurs the sensor will recover normal electrolyte volumes when allowed to rest at lower % rh and temperature levels for several days.

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 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.