

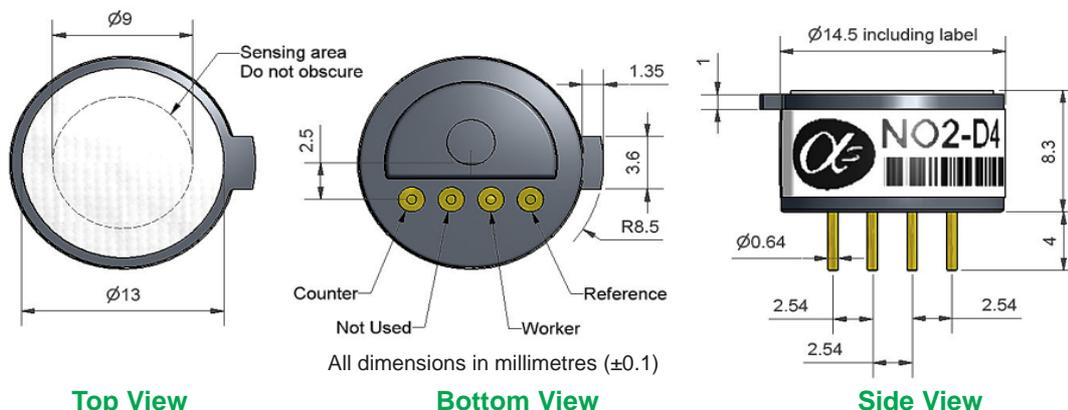
NO2-D4 Nitrogen Dioxide Sensor

Miniature Size



Figure 1 NO2-D4 Schematic Diagram

PATENTED



Technical Specification

PERFORMANCE	Parameter	Specification	Range
	Sensitivity	nA/ppm in 10ppm NO ₂	-200 to -450
	Response time	t ₉₀ (s) from zero to 10ppm NO ₂	< 35
	Zero current	ppm equivalent in zero air	± 0.8
	Resolution	RMS noise (ppm equivalent)	0.1
	Range	ppm NO ₂ limit of performance warranty	20
	Linearity	ppm error at full scale, linear at zero and 10ppm NO ₂	0 to -0.6
	Overgas limit	maximum ppm for stable response to gas pulse	60

LIFETIME	Parameter	Specification	Value
	Zero drift	ppm equivalent change/year in lab air	nd
	Sensitivity drift	% change/month in lab air, twice monthly test	nd
	Operating life	months until 80% original signal (24 month warranted)	> 24

ENVIRONMENTAL	Parameter	Specification	Value
	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 10ppm	75 to 95
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 10ppm	90 to 105
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 0.6
	Zero @ 50°C	ppm equivalent change from 20°C	< ± 1.5

CROSS SENSITIVITY

Gas	Parameter	Specification	Value
H ₂ S, CL ₂ , NO, SO ₂ , CO, H ₂ , C ₂ H ₄ , NH ₃ , CO ₂ , O ₃	sensitivity	% measured gas @ 20ppm	< -200
	sensitivity	% measured gas @ 10ppm	< 120
	sensitivity	% measured gas @ 50ppm	< 0.5
	sensitivity	% measured gas @ 20ppm	< -3
	sensitivity	% measured gas @ 400ppm	< 0.1
	sensitivity	% measured gas @ 400ppm	< 0.1
	sensitivity	% measured gas @ 400ppm	< 0.1
	sensitivity	% measured gas @ 20ppm	< 0.1
	sensitivity	% measured gas @ 10%	< 0.1
	sensitivity	% measured gas @ 200ppb	< 70

KEY SPECIFICATIONS	Parameter	Specification	Value
	Temperature range	°C	-20 to 50
	Pressure range	kPa	80 to 120
	Humidity range	%rh (see note below)	15 to 90
	Storage period	months @ 3 to 20°C (stored in sealed pot)	6
	Load resistor	Ω (for optimum performance)	33
	Weight	g	< 2

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 tested and stored at ambient environments 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.

NO2-D4 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

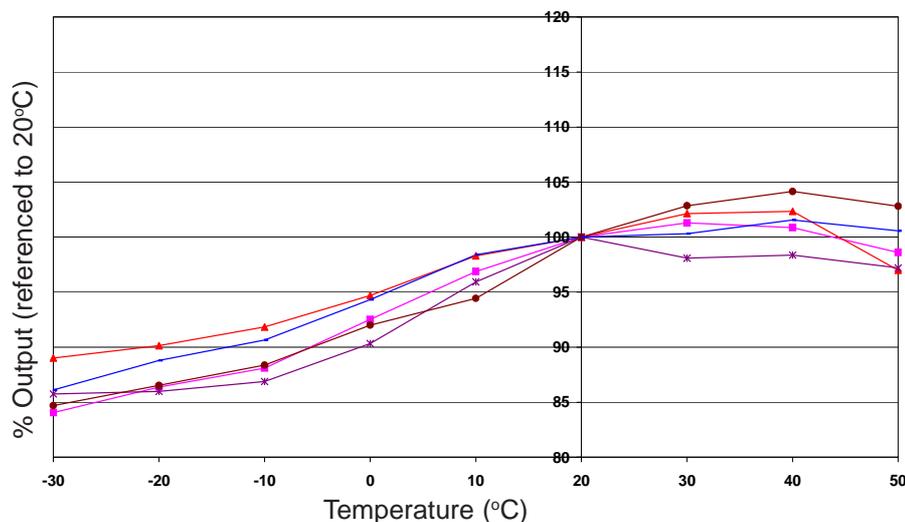


Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of NO₂-D4 sensors. Good repeatability means accurate temperature compensation.

Figure 3 Zero Temperature Dependence

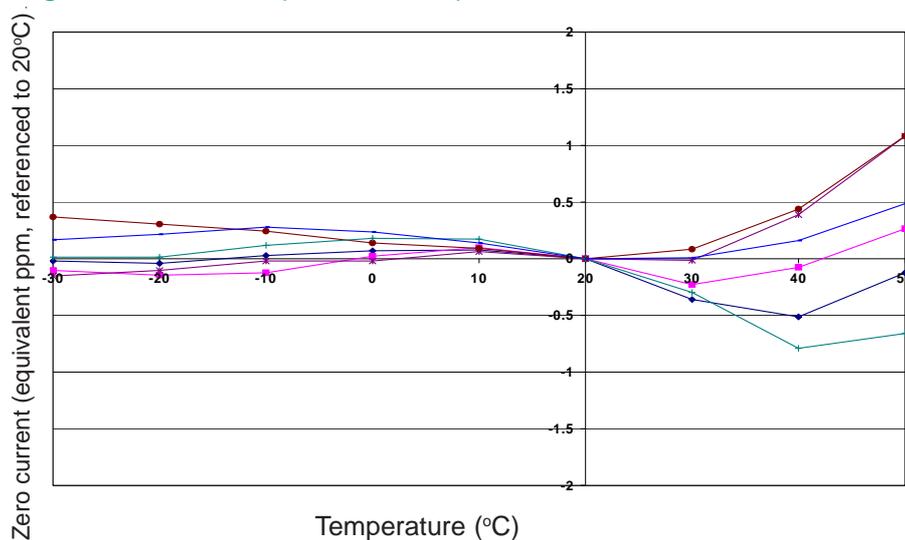
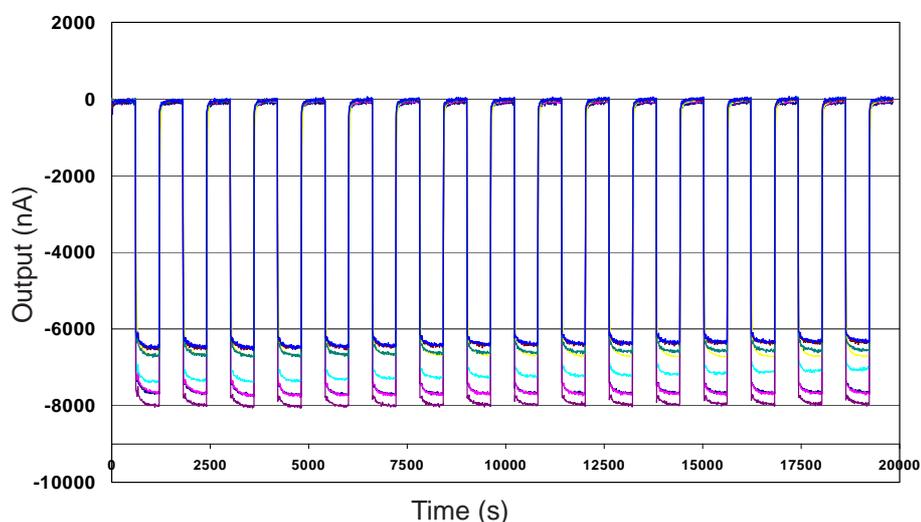


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 4 Repeated gassing with 20ppm NO₂



This hysteresis graph shows stable response when gassed repeatedly with 20ppm NO₂.