



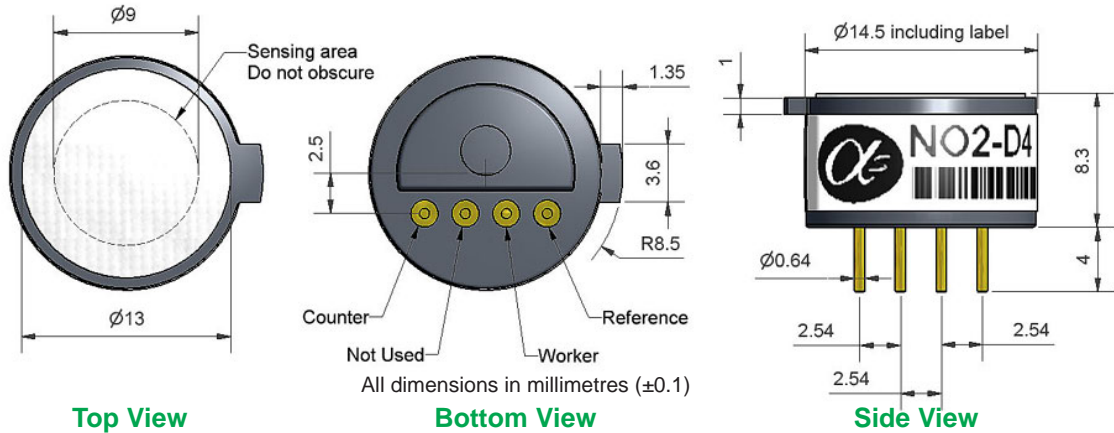
# NO2-D4 Nitrogen Dioxide Sensor

## Miniature Size



PATENTED

Figure 1 NO2-D4 Schematic Diagram



Technical Specification

<b>PERFORMANCE</b>	Sensitivity	nA/ppm in 10ppm NO <sub>2</sub>	-250 to -450
	Response time	t <sub>90</sub> (s) from zero to 10ppm NO <sub>2</sub>	< 25
	Zero current	ppm equivalent in zero air	$\pm 0.35$
	Resolution	RMS noise (ppm equivalent)	0.1
	Range	ppm NO <sub>2</sub> limit of performance warranty	20
	Linearity	ppm error at full scale, linear at zero and 10ppm NO <sub>2</sub>	0 to -0.6
	Overgas limit	maximum ppm for stable response to gas pulse	60
<b>LIFETIME</b>	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
<b>ENVIRONMENTAL</b>	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 10ppm	80 to 95
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 10ppm	95 to 105
	Zero @ -20°C	ppm equivalent change from 20°C	< $\pm 0.6$
	Zero @ 50°C	ppm equivalent change from 20°C	< $\pm 0.5$
<b>CROSS SENSITIVITY</b>	H <sub>2</sub> S	sensitivity % measured gas @ 20ppm H <sub>2</sub> S	< -20
	CL <sub>2</sub>	sensitivity % measured gas @ 10ppm CL <sub>2</sub>	< 80
	NO	sensitivity % measured gas @ 50ppm NO	< 0.5
	SO <sub>2</sub>	sensitivity % measured gas @ 20ppm SO <sub>2</sub>	< 1
	CO	sensitivity % measured gas @ 400ppm CO	< 0.1
	H <sub>2</sub>	sensitivity % measured gas @ 400ppm H <sub>2</sub>	< 0.1
	C <sub>2</sub> H <sub>4</sub>	sensitivity % measured gas @ 400ppm C <sub>2</sub> H <sub>4</sub>	< 0.1
	NH <sub>3</sub>	sensitivity % measured gas @ 20ppm NH <sub>3</sub>	< 0.1
	CO <sub>2</sub>	sensitivity % measured gas @ 10% CO <sub>2</sub>	< 0.1
<b>KEY SPECIFICATIONS</b>	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	$\Omega$ (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

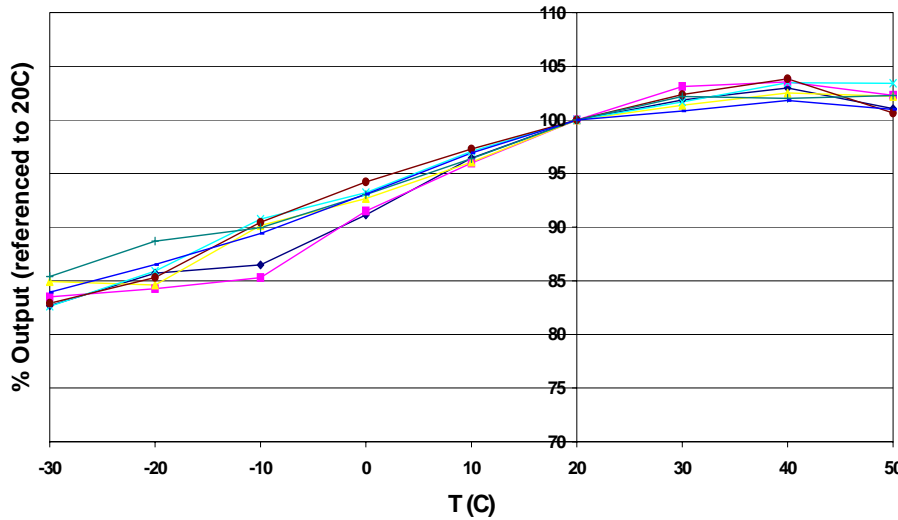


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Zero temperature dependence is the same as CL2-D4

Figure 3 Response to 20ppm NO<sub>2</sub>

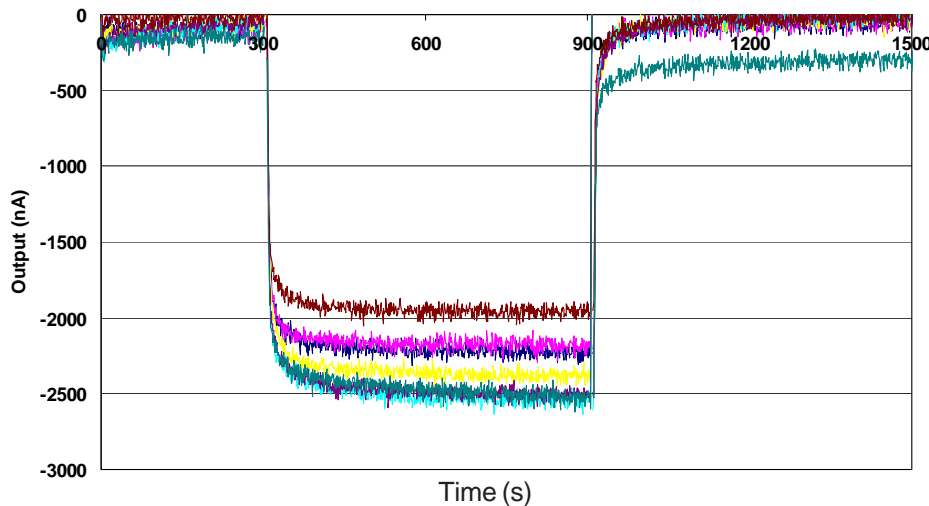
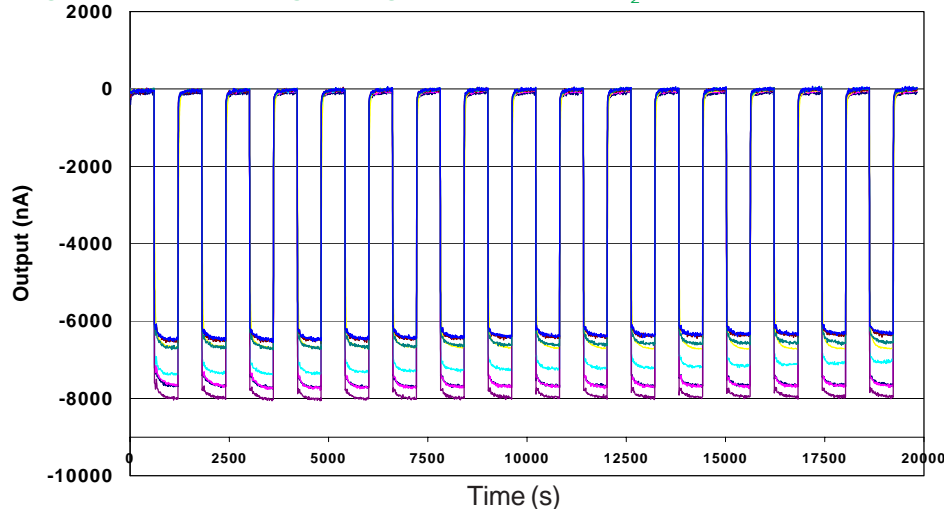


Figure 3 shows response to first zero air, then 20 ppm NO<sub>2</sub> and then zero air.

Fast response time and good zero stability give confidence that the sensor will respond rapidly and reliably to a gas emergency.

Figure 4 Repeated gassing with 20ppm NO<sub>2</sub>



This hysteresis graphs shows stable response with repeated gassing of 20ppm NO<sub>2</sub>

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd or access our web site at "[www.alphasense.com](http://www.alphasense.com)".

*In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Alphasense Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within. (©ALPHASENSE LTD) Doc. Ref. NO2D4/JUL09*