

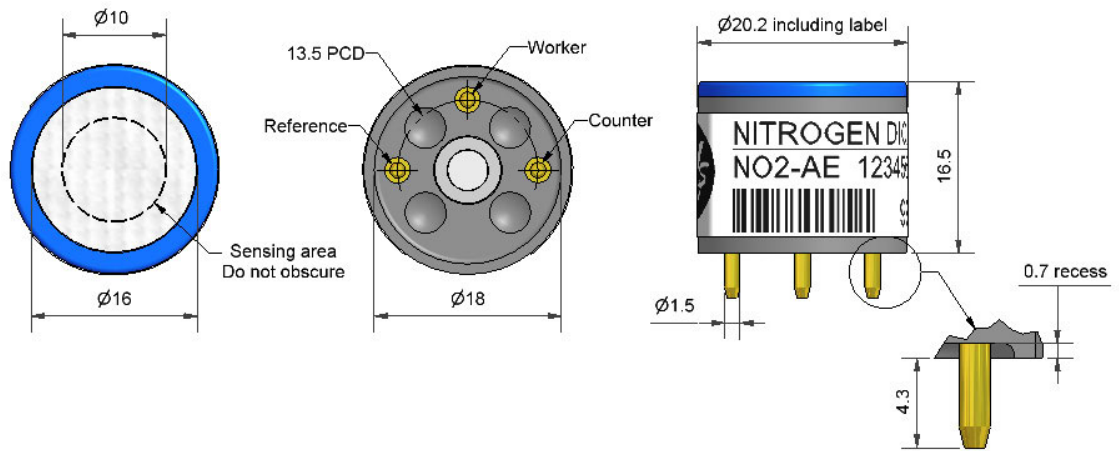


# NO2-AE Nitrogen Dioxide Sensor High Concentration



PATENT PENDING

Figure 1 NO2-AE Schematic Diagram



All dimensions in millimetres ( $\pm 0.1$ mm)

Top View

Bottom View

Side View

PERFORMANCE	Parameter	Specification	Range
	Sensitivity	nA/ppm @ 20°C in 10ppm NO <sub>2</sub> (33Ω Load Resistor)	-100 to -160
	Response time	t <sub>90</sub> (s) from zero to 10ppm NO <sub>2</sub> (33Ω Load Resistor)	< 25
	Zero current	ppm equivalent in zero air	< ± 1.5
	Resolution	RMS noise (ppm equivalent) (33Ω)	< 0.1
	Range	ppm limit of performance warranty	200
	Linearity	ppm error at 200ppm, linear at 30 and 100ppm NO <sub>2</sub>	< 2 to 11
	Overgas limit	maximum ppm for stable response to 10 minute gas pulse	> 1,000

LIFETIME	Parameter	Specification	Value
	Zero drift	ppm equivalent change/year in lab air	nd
	Sensitivity drift	% change/month in lab air, twice monthly gassing	< 2
	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 NO <sub>2</sub>	nd
	Sensitivity @ 40°C	% (output @ 40°C/output @ 20°C) @ 10ppm NO <sub>2</sub>	nd
	Zero @ -20°C	ppm equivalent	nd
	Zero @ 40°C	ppm equivalent	nd

CROSS SENSITIVITY	Gas	Sensitivity	Value
	CO	% measured gas @ 400ppm	< 0.1
	NO	% measured gas @ 50ppm	nd
	SO <sub>2</sub>	% measured gas @ 20ppm	nd
	Cl <sub>2</sub>	% measured gas @ 5ppm	nd
	H <sub>2</sub>	% measured gas @ 400ppm	< 0.1
	H <sub>2</sub> S	% measured gas @ 20ppm	nd

KEY SPECIFICATIONS	Parameter	Specification	Value
	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 (for optimum performance)	33
	Weight	g	< 6



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.

Technical Specification



# NO<sub>2</sub>-AE Performance Data

Technical Specification

Figure 2 Linearity

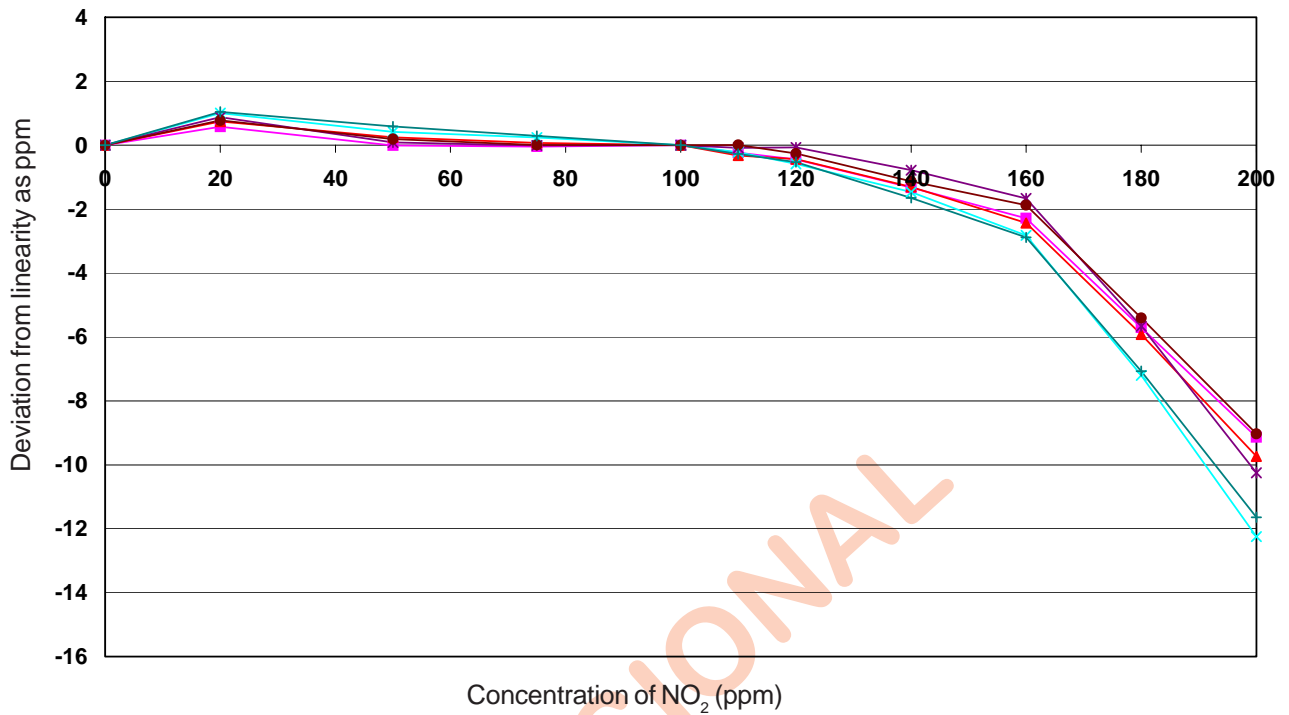


Figure 2 shows the variation in sensitivity at increasing concentrations of NO<sub>2</sub>. The data is taken from a typical batch of sensors and the mean and  $\pm 95\%$  confidence intervals are shown.

Figure 3 Response Profile ( $t_{90}$ )

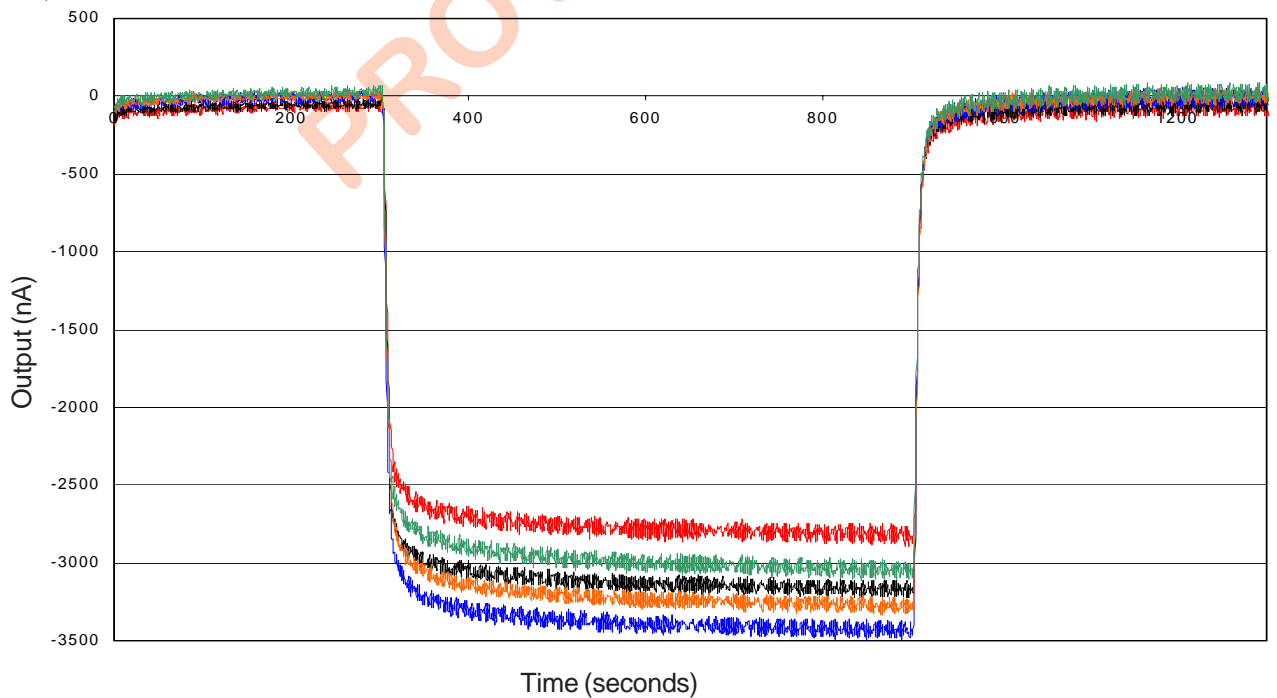


Figure 3 shows the response to 10 ppm NO<sub>2</sub> for typical NO<sub>2</sub>-A1 sensors.  $t_{90}$  response time for these sensors is < 40 s. Load resistor is 33  $\Omega$  for best noise (< 50ppb).

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 web site at "[www.alphasense.com](http://www.alphasense.com)"

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