

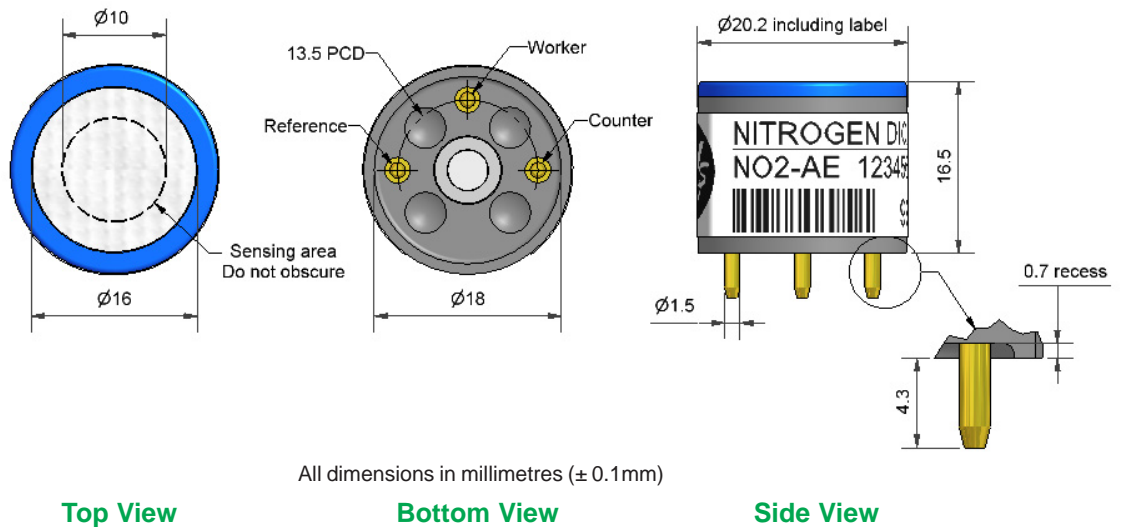


NO₂-AE Nitrogen Dioxide Sensor High Concentration



PATENT PENDING

Figure 1 NO₂-AE Schematic Diagram



Technical Specification

Table 1 NO₂-AE Specification

PERFORMANCE	Sensitivity	nA/ppm @ 22°C, 10ppm NO ₂ , (33Ω Load Resistor)	- 300 to - 400
	Response time	t ₉₀ (s) from zero to 10ppm NO ₂ (33Ω Load Resistor)	< 40
	Zero current	ppm equivalent in zero air, 22°C	< ± 0.3
	Resolution	RMS noise in zero air at 22°C (ppm equivalent) (33Ω)	< 0.1
	Range	ppm limit of performance warranty	200
	Linearity	ppm error at 200 ppm, linear at 30 and 100 ppm NO ₂	< + 2 to + 11
	Overgas range	maximum ppm for stable response to 10 minute gas pulse	> 1,000
LIFETIME	Zero drift	ppm equivalent change/month in lab air	nd
	Sensitivity drift	% change/month in lab air, twice monthly gassing	< 2
	Operating life	months until 80% original signal (12 month warranted)	< 24
ENVIRONMENTAL	Sensitivity @ -20°C % (output @ -20°C / output @ 20°C) @ 10ppm NO ₂		nd
	Sensitivity @ 40°C % (output @ 40°C / output @ 20°C) @ 10ppm NO ₂		nd
	Zero @ -20°C	ppm equivalent	nd
	Zero @ 40°C	ppm equivalent	nd
CROSS SENSITIVITY	CO sensitivity	% measured gas @ 400ppm CO	< - 0.1
	NO sensitivity	% measured gas @ 50ppm NO	nd
	SO ₂ sensitivity	% measured gas @ 20ppm SO ₂	nd
	Cl ₂ sensitivity	% measured gas @ 5ppm Cl ₂	nd
	H ₂ sensitivity	% measured gas @ 400ppm H ₂	< - 0.1
	H ₂ S sensitivity	% measured gas @ 20ppm H ₂ S	nd
PHYSICAL DIMENSIONS	Diameter	mm (including label) (± 0.1 mm)	20.2
	Height	mm (excluding O-ring) (± 0.1 mm)	16.5
	Weight	g	< 6
KEY SPECIFICATIONS	Temperature range	°C	-20 to 50
	Pressure range	kPa	80 to 120
	Humidity range	%rh continuous (5 to 95% rh short term)	15 to 90
	Storage period	months @ 3 to 20°C (store in sealed pot)	6
	Load resistor	ohm (for optimum performance)	33



NO2-AE Performance Data

Technical Specification

Figure 2 Linearity

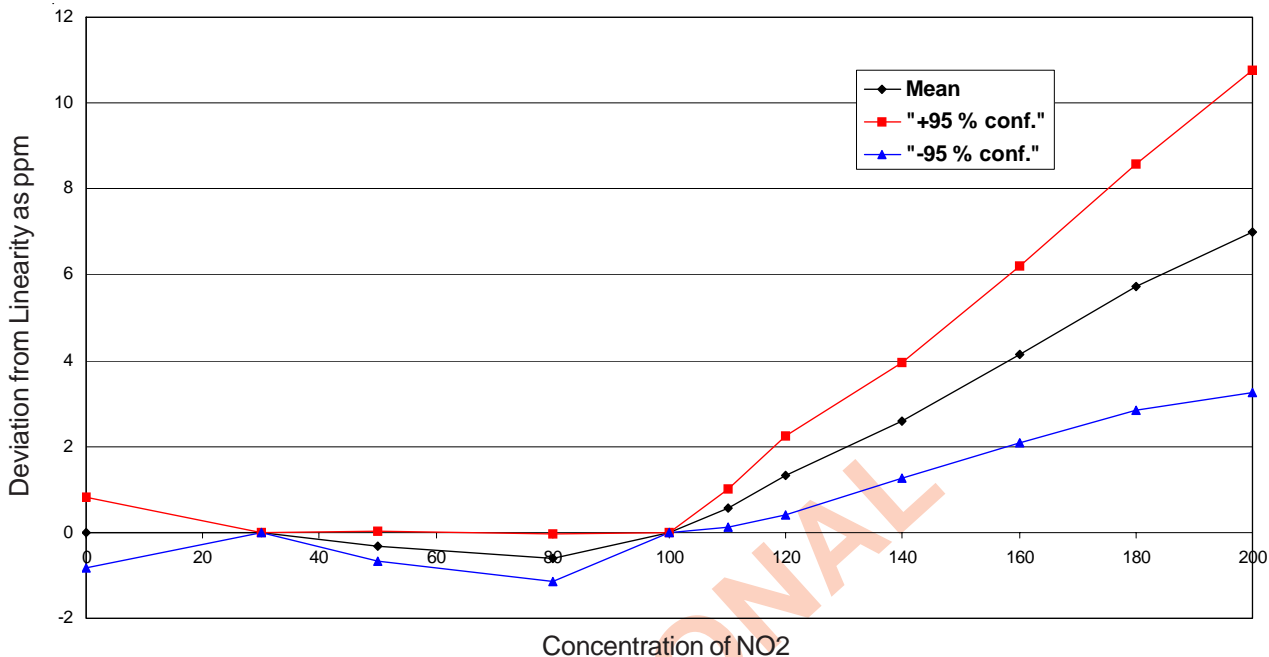


Figure 2 shows the variation in sensitivity at increasing concentrations of NO2. The data is taken from a typical batch of sensors and the mean and $\pm 95\%$ confidence intervals are shown.

Figure 3 Response Profile (t_{90})

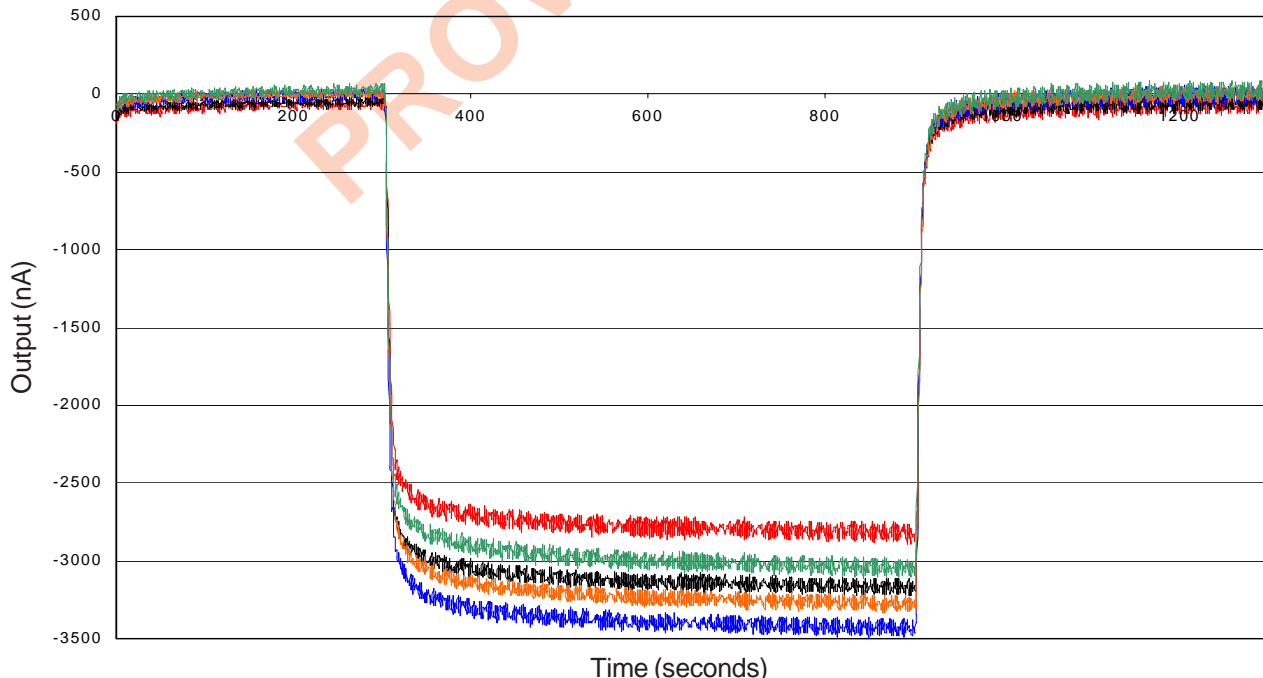


Figure 3 shows the response to 10 ppm NO2 for typical NO2-A1 sensors. t_{90} response time for these sensors is < 40 s. Load resistor is 33Ω for best noise (< 50 ppb).

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"

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 it. (©ALPHASENSE LTD) Doc. Ref. TDS/NO2AE/Issue 12