

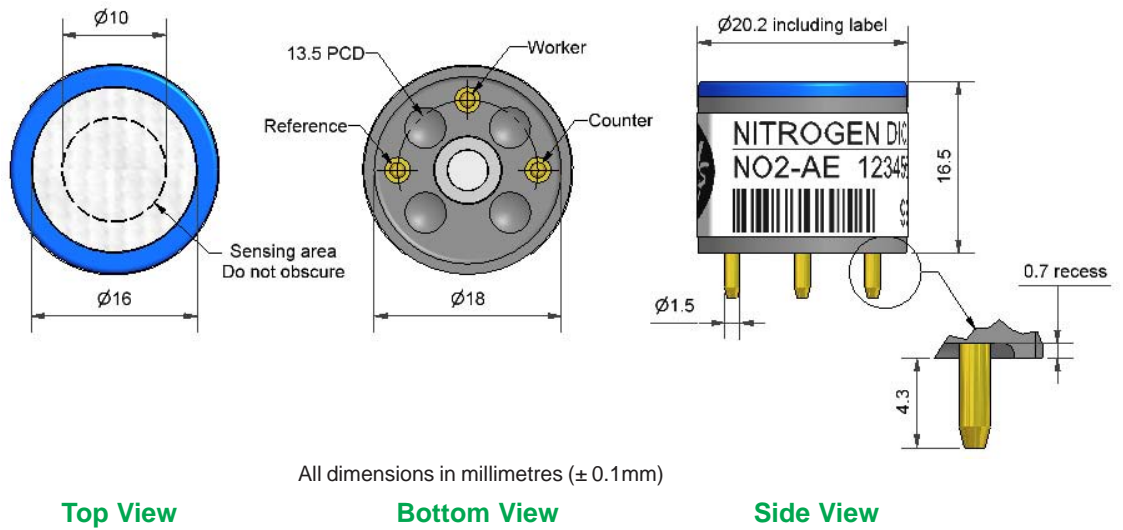


NO₂-AE Nitrogen Dioxide Sensor High Concentration



PATENT PENDING

Figure 1 NO₂-AE Schematic Diagram



Technical Specification

Table 1 NO₂-AE Specification

PERFORMANCE	Sensitivity	nA/ppm @ 22°C, 10ppm NO ₂ , (33 Ω Load Resistor)	- 300 to - 400
	Response time	t_{90} (s) from zero to 10ppm NO ₂ (33 Ω 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) (33 Ω)	< 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

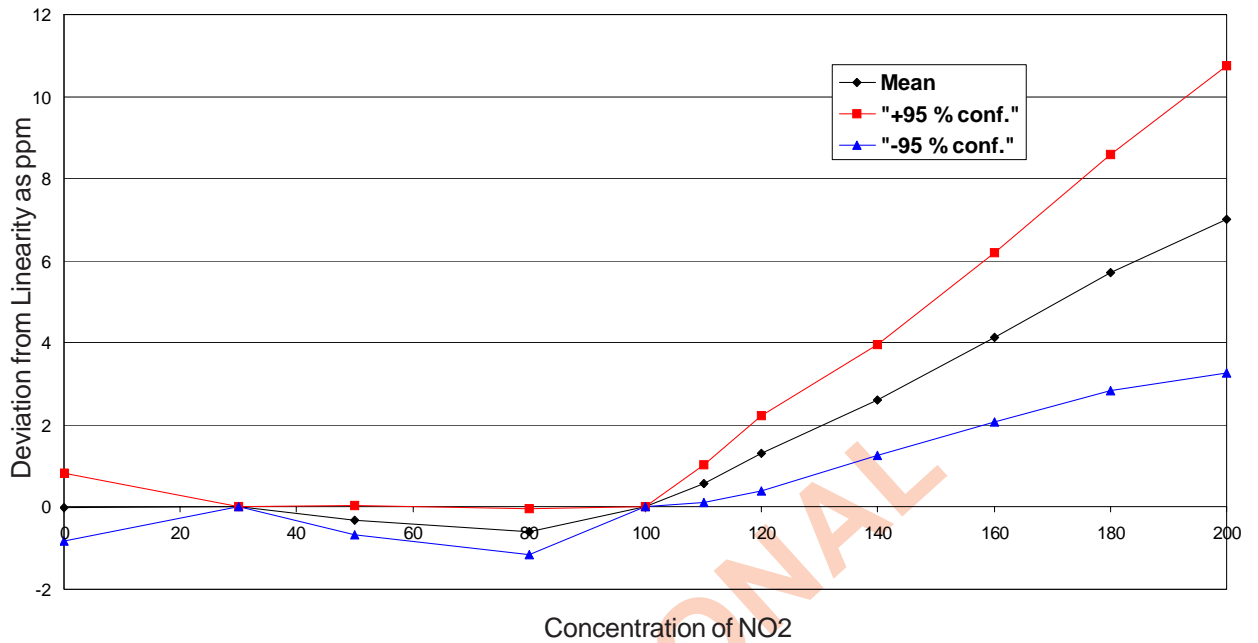


Figure 2 shows the variation in sensitivity at increasing concentrations of NO2. The data is taken from a typical batch of sensors and the mean and $\pm 95\%$ confidence intervals are shown.

Figure 3 Response Profile (t_{90})

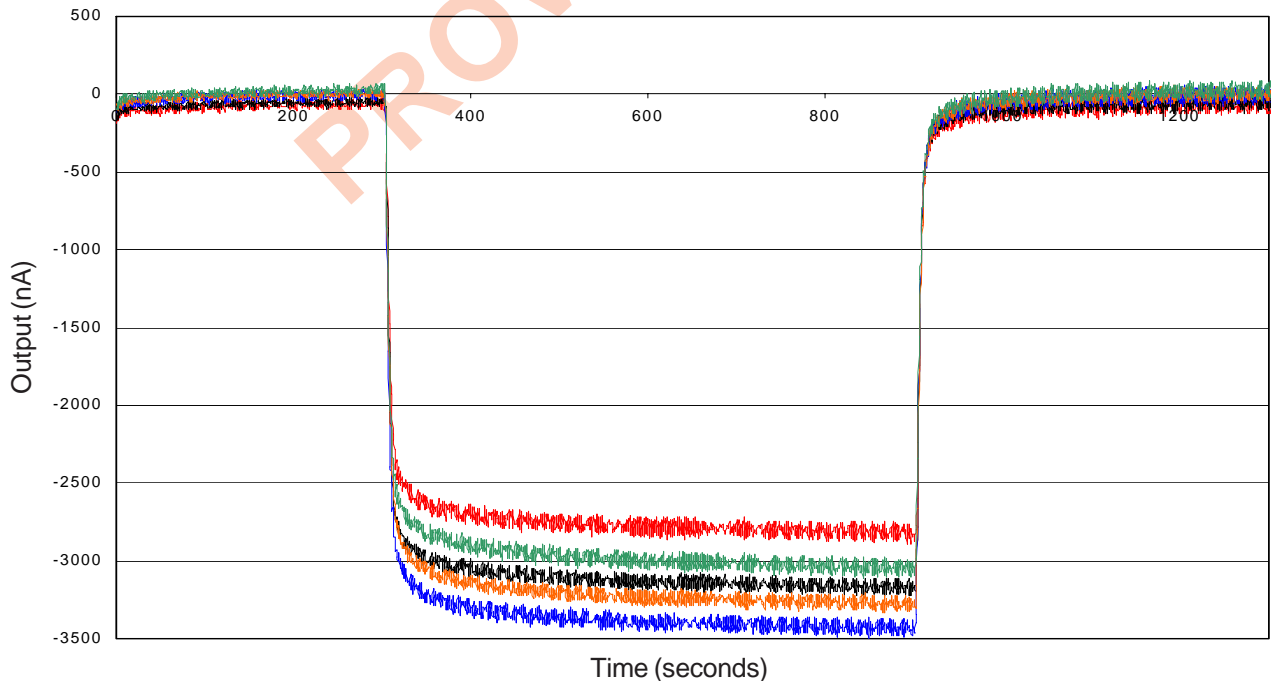


Figure 3 shows the response to 10 ppm NO2 for typical NO2-A1 sensors. t_{90} response time for these sensors is < 40 s. Load resistor is 33Ω for best noise (< 50 ppb).

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"

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