



NO-A1 Nitric Oxide Sensor



PATENT PENDING

Figure 1 NO-A1 Schematic Diagram

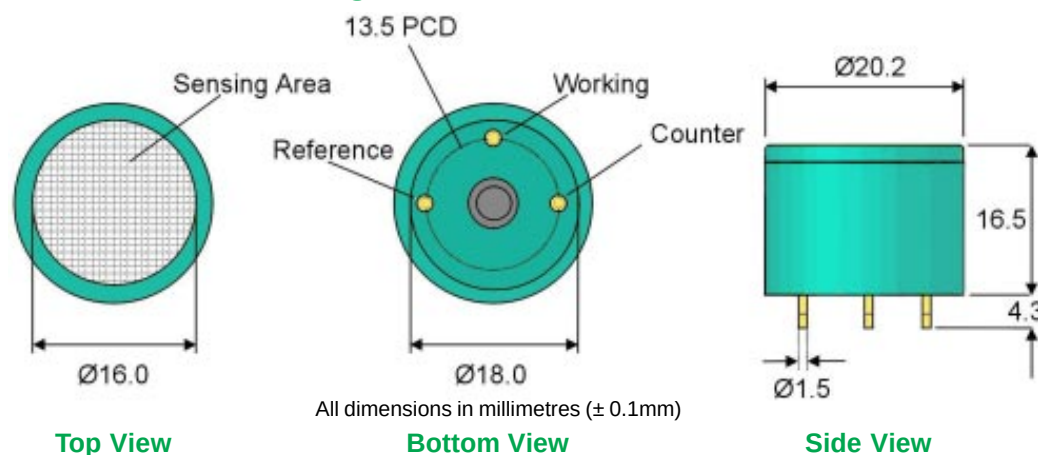


Table 1 NO-A1 Specification

PERFORMANCE	Sensitivity	nA/ppm in 50ppm NO	300 to 400
	Response time	t ₉₀ (s) from zero to 50ppm NO (10Ω Load Resistor)	< 20
	Zero current	ppm equivalent in zero air	3
	Resolution	RMS noise (ppm equivalent) (10Ω Load Resistor)	< 0.2
	Range	ppm limit of performance warranty	100
	Linearity	ppm error at full scale, linear at 0 and 50ppm	± 4
	Overshoot range	maximum ppm for stable response to gas pulse	250
LIFETIME	Zero drift	ppm equivalent change/month in lab air	nd
	Sensitivity drift	% change/month in lab air, twice monthly gassing	nd
	Operating life	months until 80% original signal (24 month warranted)	> 24
ENVIRONMENTAL	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 50ppm	75 to 96
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 50ppm	90 to 102
	Zero @ -20°C	ppm equivalent	-2 to 0
	Zero @ 50°C	ppm equivalent	1 to 3
CROSS SENSITIVITY	NO ₂ sensitivity	% measured gas @ 50ppm	NO ₂ < 5
	SO ₂ sensitivity	% measured gas @ 20ppm	SO ₂ < 2
	Cl ₂ sensitivity	% measured gas @ 10ppm	Cl ₂ < 15
	H ₂ sensitivity	% measured gas @ 400ppm	H ₂ < 0.1
	H ₂ S sensitivity	% measured gas @ 20ppm	H ₂ S < 15
	CO sensitivity	% measured gas @ 400ppm	CO < 0.1
	C ₂ H ₄ sensitivity	% measured gas @ 400ppm	C ₂ H ₄ nd
	NH ₃ sensitivity	% measured gas @ 20ppm	NH ₃ < 0.1
KEY SPECIFICATIONS	CO ₂ sensitivity	% measured gas @ 5% Vol	CO ₂ 0
	Bias voltage	mV	+ 300
	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)	10 to 100
	Weight	g	<6

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.



NO-A1 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

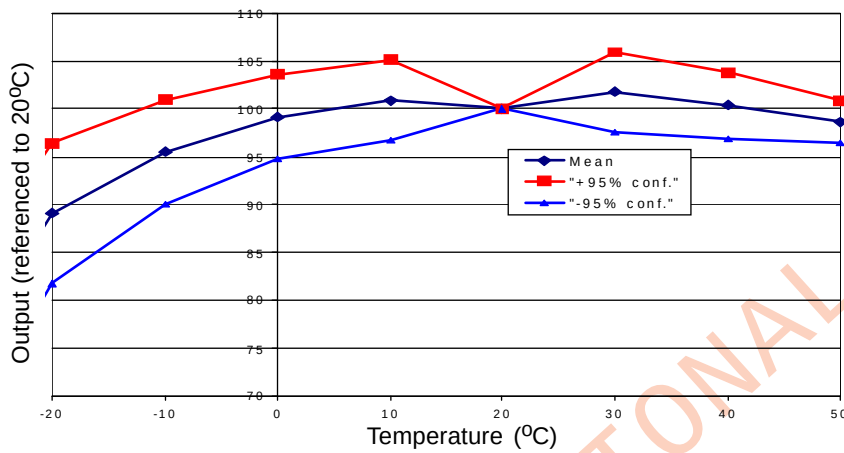


Figure 2 shows the variation in sensitivity caused by changes in temperature. The data is taken from a typical batch of sensors and the mean and $\pm 95\%$ confidence intervals are shown.

Figure 3 Zero Temperature Dependence

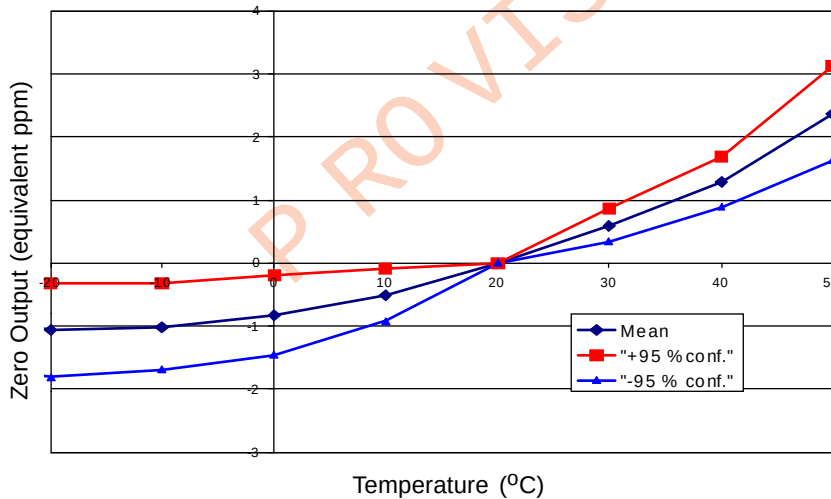


Figure 3 shows the variation in zero output caused by changes in temperature expressed at ppm gas equivalent. The data is taken from a typical batch of sensors and the mean and $\pm 95\%$ confidence intervals are shown.

Figure 4 Response Profile (t_{90})

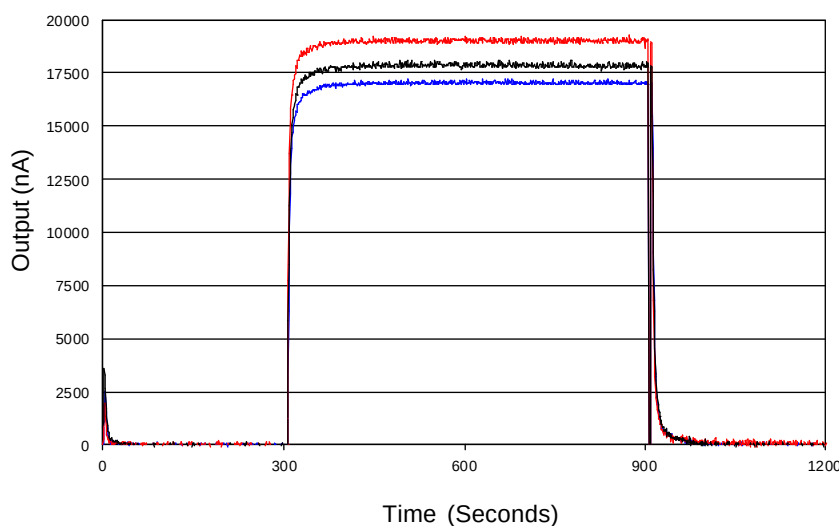


Figure 3 shows the time for typical NO-A1 sensors to reach 90% of their maximum output on exposure to 50ppm NO.

t_{90} response time for these sensors is < 20 seconds.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. For Application Notes visit "www.alphasense.com".

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