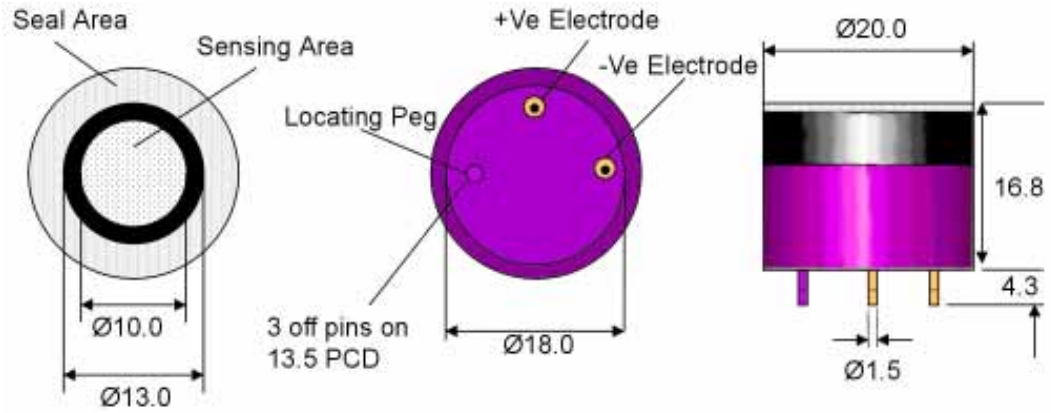
O2-A1 Oxygen Sensor

Technical Specification

Figure 1 O2-A1 Schematic Diagram



All dimensions in millimetres (± 0.15mm)

Top View **Bottom View** **Side View**

Table 1 O2-A1 Specification

PERFORMANCE	Output	µA @ 22°C, 20.9% O_2	205 to 255
	Response time	t90 (s) from 20.9% to 0% O_2 (47Ω)	< 10
	Zero current	µA @ 99.999% N_2, 22°C	< 2
	Pressure sensitivity	(% change of output)/(% change of pressure) @ 20kPa	< 0.1
	Linearity	% O_2 deviation @ 10% O_2	< 0.6
	Hysteresis	% O_2 change after 16 cycles: 0 to 20.9% O_2 @ 22°C	< 0.15
	Hand aspirator response	% O_2 change during aspiration (typical)	19.8 to 22
LIFETIME	Output drift	% change in output @ 3 months	< 2
	Operating life	months until 85% original output in 20.9% O_2	> 12
ENVIRONMENTAL	Humidity Sensitivity	% O_2 change: 0% to 95% rh @ 40°C	< 0.7
	CO_2 sensitivity	% change in output / % CO_2 @ 5% CO_2	< 0.1
PHYSICAL DIMENSIONS	Diameter	mm (including label) (± 0.1mm)	20
	Height	mm (including foam ring) (± 0.1mm)	16.8
	Weight	g	16
KEY SPECIFICATIONS	Temperature range	°C	-20 to 55
	Pressure range	kPa	80 to 120
	Humidity range	% rh continuous (0 to 99% rh short term)	5 to 95
	Storage period	months @ 3 to 20°C (store in sealed pot)	6
	Load resistor	Ω (recommended)	47 to 100

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.

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O2-A1 Performance Data

Technical Specification

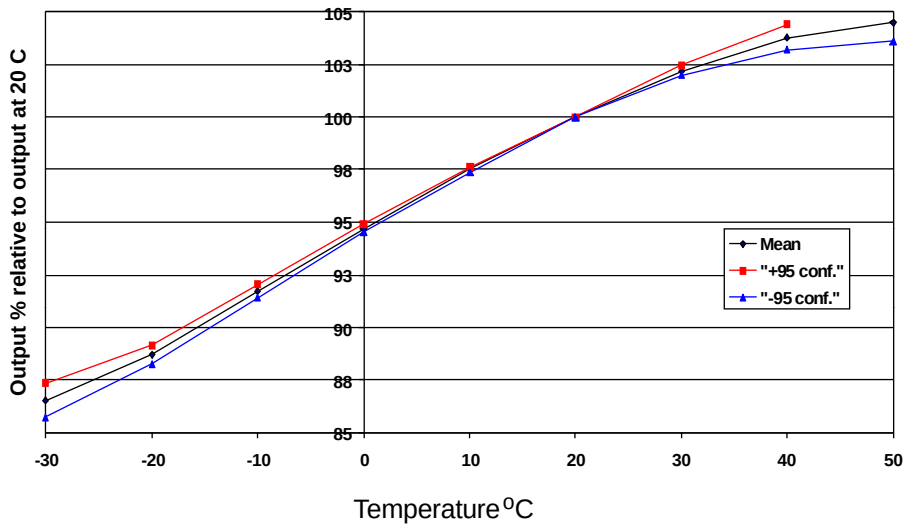

Figure 2 Temperature Performance

Figure 2 shows the variation in sensitivity caused by changes in temperature. All capillary oxygen sensors will show some variation in signal output with temperature and the typical response of an O2-A1 is shown.

(See Application Note AAN 110-1)

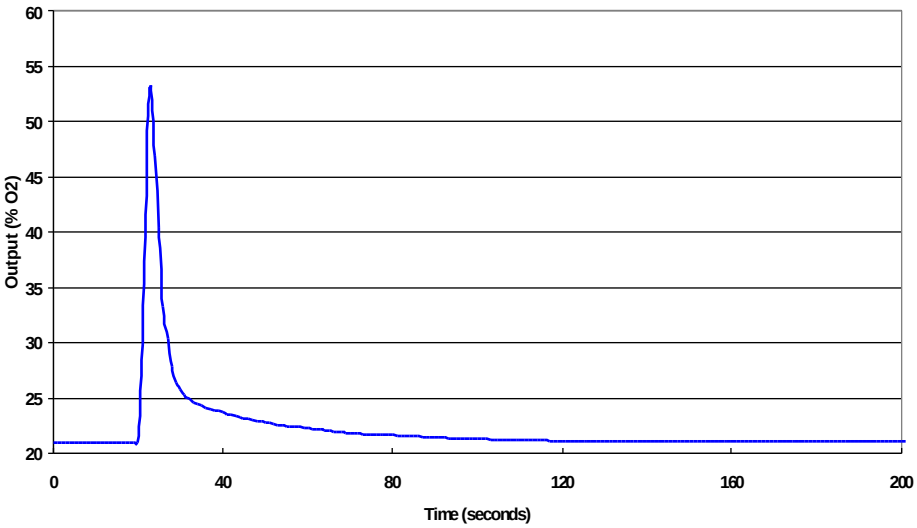

Figure 3 Pressure Pulse Performance

Step changes in pressure can cause a temporary signal transient. Positive pressure gives a output signal increase whilst negative pressure causes the output signal to decrease. Typical transient response for an O2-A1 sensor exposed to a 10kPa pressure pulse is shown. **(See Application Note AAN 110-1)**

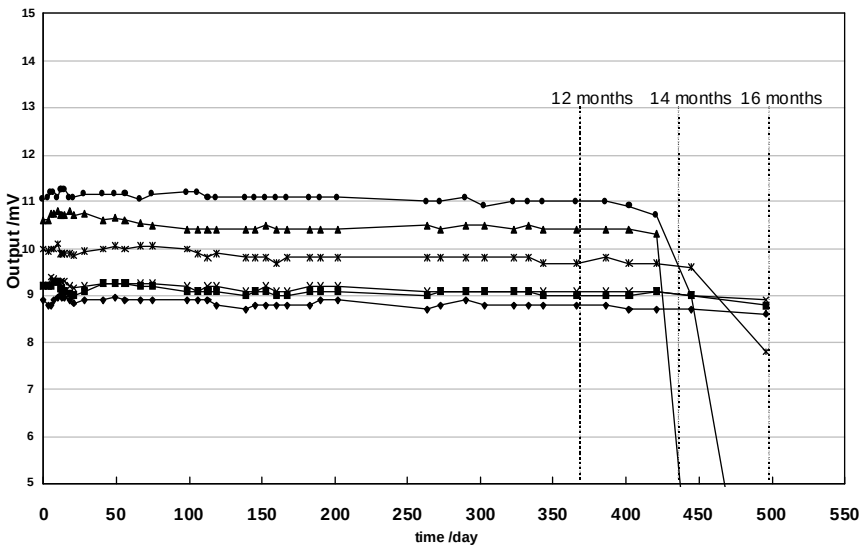

Figure 4 Long Term Stability

Figure 4 shows long term stability data for 6 O2-A1 sensors. All sensors show stable outputs well beyond the 12 month period, with 3 sensors remaining very stable up to 16 months.

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".