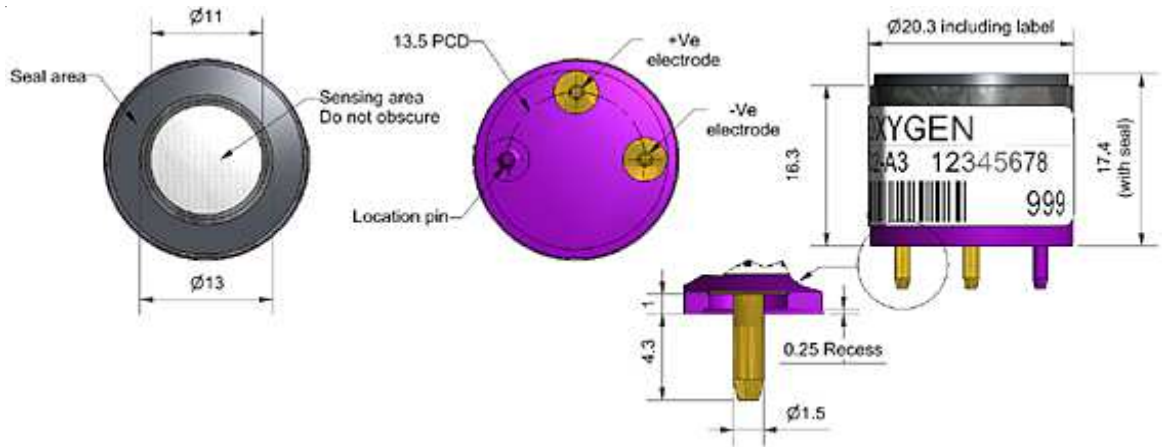




# O2-A3 Oxygen Sensor



Figure 1 O2-A3 Schematic Diagram



All dimensions in millimetres ( $\pm 0.15\text{mm}$ )

Top View

Bottom View

Side View

<b>PERFORMANCE</b>	Output	$\mu\text{A}$ @ 22°C, 20.9% O <sub>2</sub>	60 to 85
	Response time	t <sub>90</sub> (s) from 20.9% to 0% O <sub>2</sub> (47Ω load resistor)	< 15
	Zero current	$\mu\text{A}$ @ 99.99% N <sub>2</sub> , 22°C	< 2.5
<b>LIFETIME</b>	Output drift	% change in output @ 3 months	< 2
	Operating life	months until 85% original output in 20.9% O <sub>2</sub>	> 36
<b>ENVIRONMENTAL</b>	Humidity sensitivity	% O <sub>2</sub> change: 0% to 95% rh @ 40°C	< 0.7
	CO <sub>2</sub> sensitivity	% change in output / % CO <sub>2</sub> @ 5% CO <sub>2</sub>	+ 0.1
	Pressure sensitivity	(% change of output)/(% change of pressure) @ 20kPa	< 0.1
<b>KEY SPECIFICATIONS</b>	Temperature range	°C	-30 to 55
	Pressure range	kPa	80 to 120
	Humidity range	% rh non-condensing (0 to 99% rh short term)	5 to 95
	Storage period	months @ 3 to 20°C (store in sealed container)	6
	Load resistor	Ω (recommended)	47 to 100
	Height	mm (including foam ring)	17.4
	Weight	g	< 16



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 47 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.



# O2-A3 Performance Data

# Technical Specification

**Figure 2 Temperature Dependence in Air**

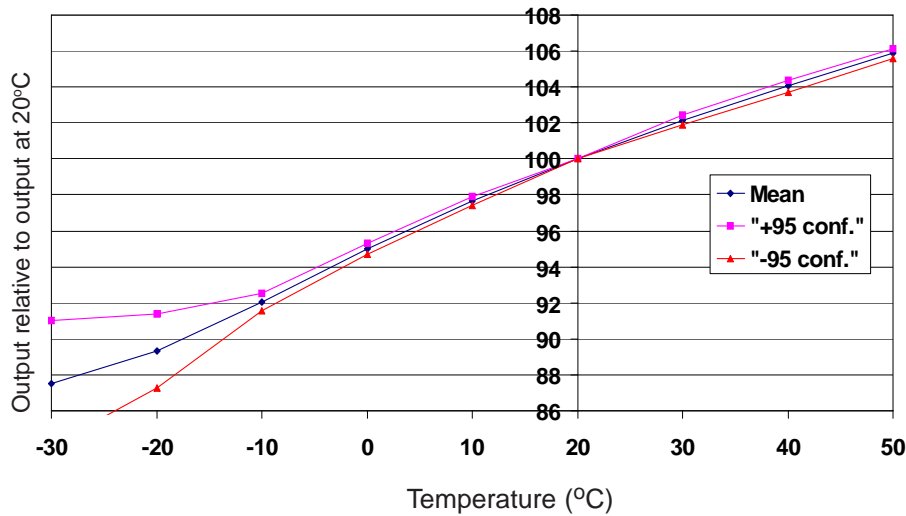


Figure 2 shows the variation of output caused by changes in temperature in 20.9% oxygen. The mean and  $\pm 95\%$  confidence intervals are shown.

All capillary oxygen sensors show a change in signal with temperature. The repeatable 95% confidence intervals for the O2-A3 are shown.

**Figure 3 Pressure Step Performance**

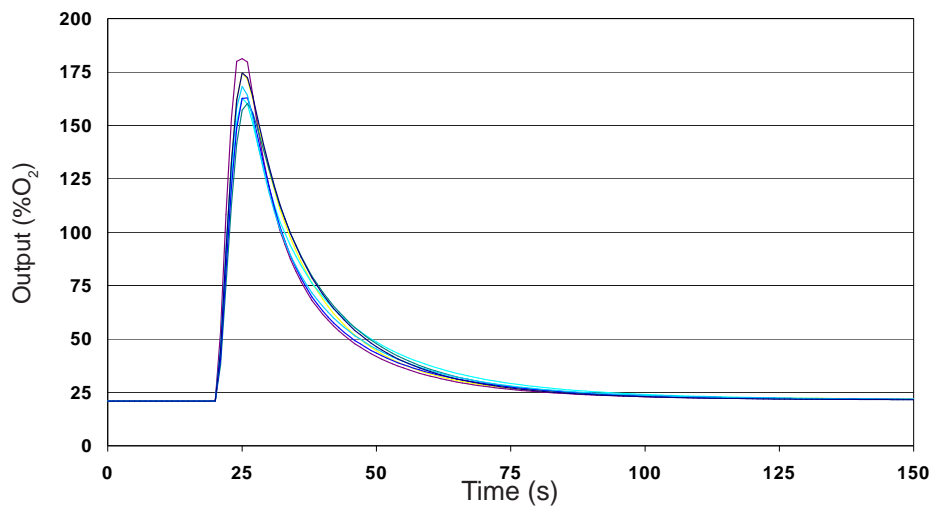
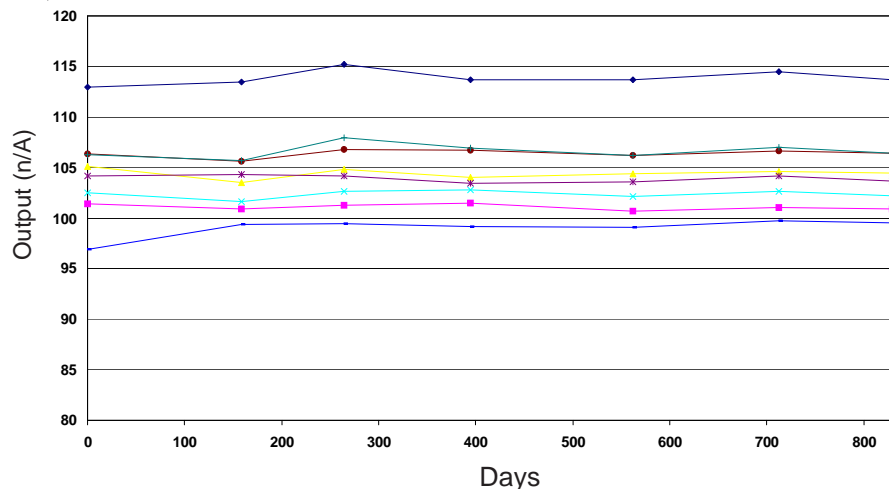


Figure 3 shows how a 25kPa pressure step change causes a signal transient that decays reproducibly. Negative pressure changes cause a negative transient.

The small shift in final output is less than 10% of the pressure change, so 10kPa pressure step shifts output by less than 1% (<0.2% oxygen).

**Figure 4 Long Term Stability**



Mass flow Oxygen sensors show excellent long term stability. Regular calibration is not necessary so long as temperature compensation is correct.

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](http://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. (©ALPHASENSE LTD) Doc. Ref. O2-A3/SEPT15*