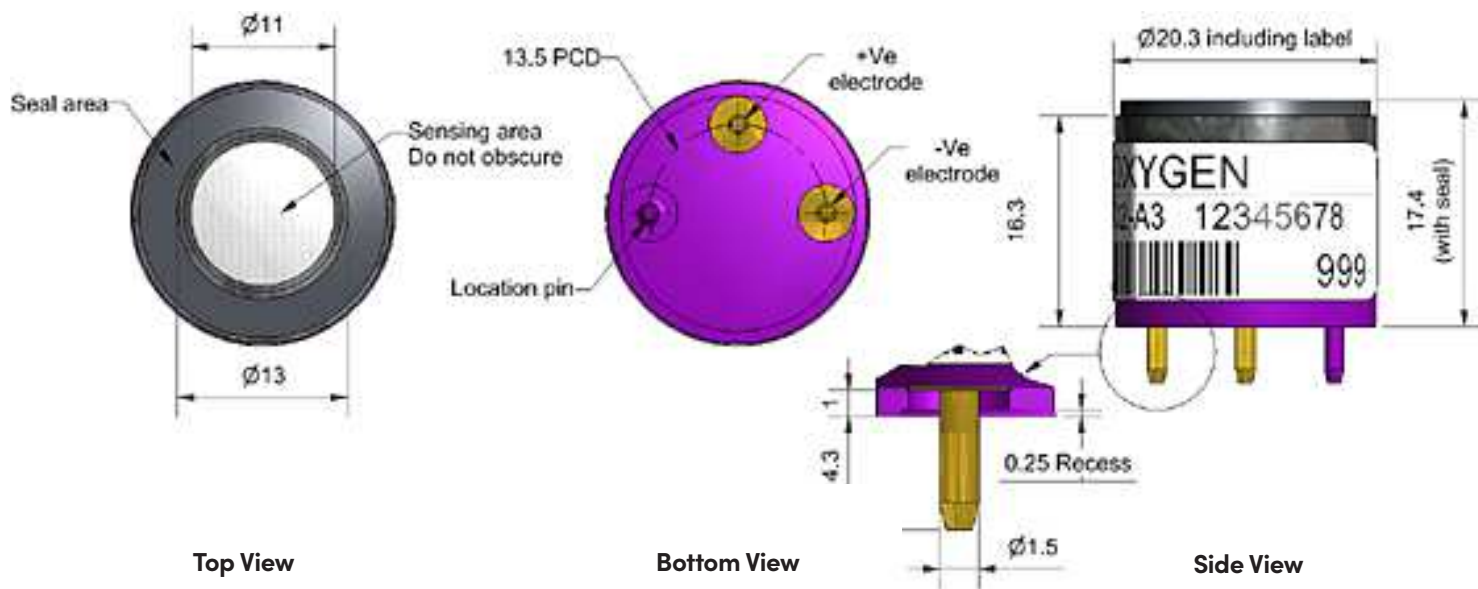




## O2-A3 Oxygen sensor


 Dimensions are in millimetres ( $\pm 0.15$ mm).

Performance	Output	$\mu\text{A}$ @ 22°C, 20.9% O <sub>2</sub>	55 to 85
	Response time	t <sub>90</sub> (s) from 20.9% to 0% O <sub>2</sub> (47W load resistor)	< 15
	Zero current	$\mu\text{A}$ @ 99.99% N <sub>2</sub> , 22°C	< 2.5

Lifetime	Output drift	% change in output @ 3 months	< 2
	Operating life	Months until 85% original output in 20.9% O <sub>2</sub>	> 36

Environmental	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

Key Specifications	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	$\Omega$ (recommended)	47 to 100
	Height	mm (including foam ring)	17.4
	Weight	g	< 16



**Figure 1 Temperature Dependence in Air**

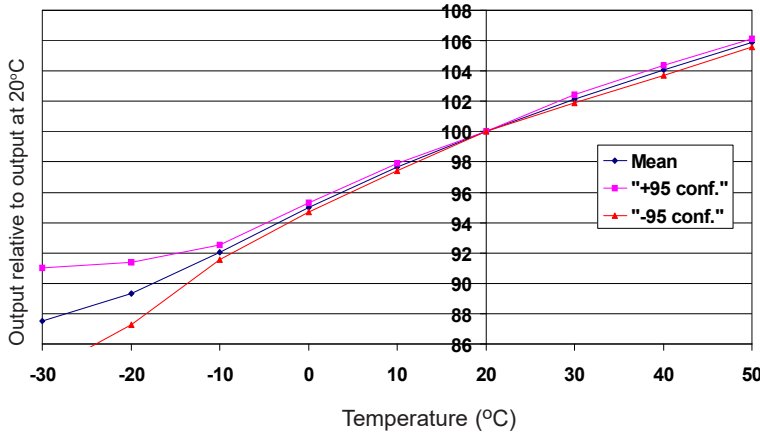


Figure 1 shows the variation of output caused by changes in temperature in 20.9% oxygen. The mean and  $\pm 95\%$  confidence intervals are shown.

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

**Figure 2 Pressure Step Performance**

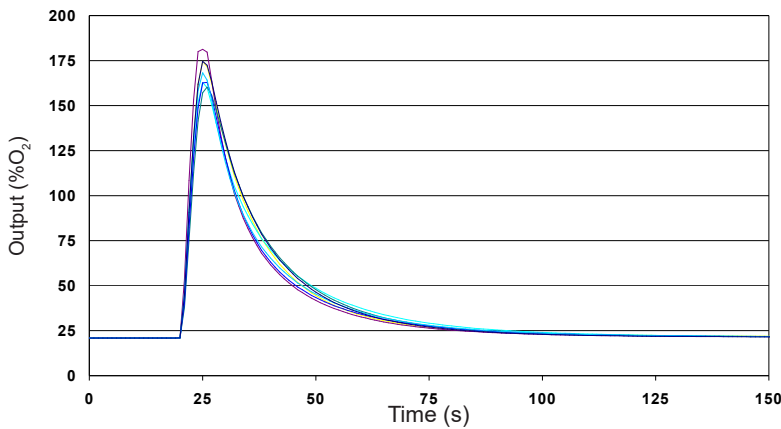
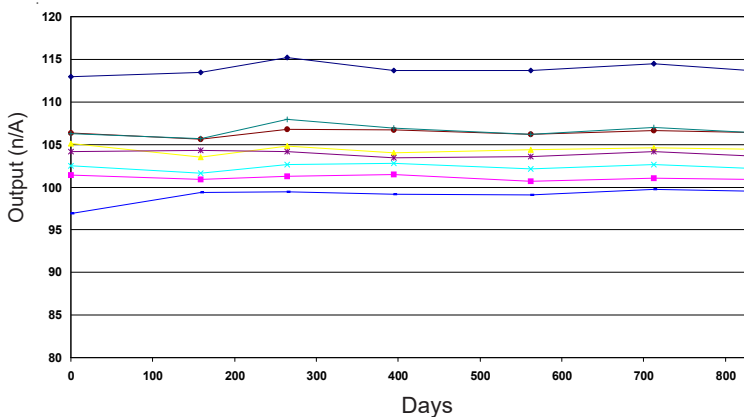


Figure 2 shows how a 25kPa pressure step change causes a signal transient that decays reproducibly. Negative pressure changes cause a negative transient.

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 3 Long Term Stability**



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

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 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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