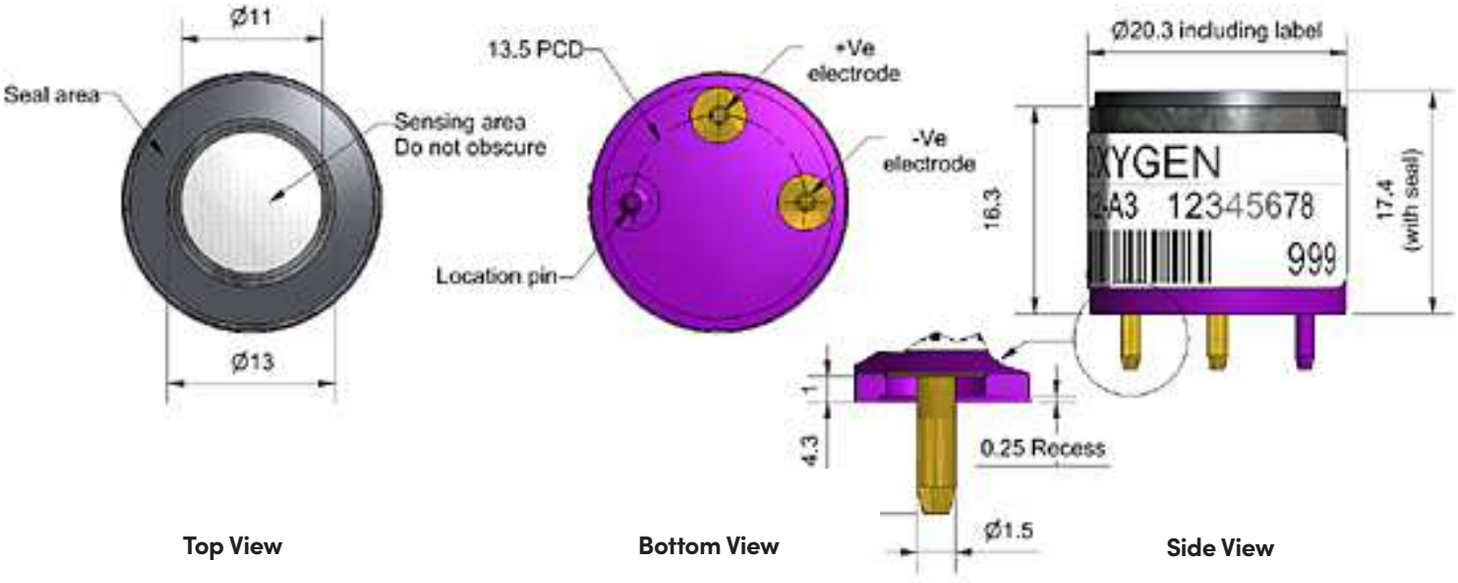
O2-A3 Oxygen sensor



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

Dimensions are in millimetres (± 0.15mm).

Performance	Output	µA @ 22°C, 20.9% O_2	55 to 85
	Response time	t90 (s) from 20.9% to 0% O_2 (47W load resistor)	< 15
	Zero current	µA @ 99.99% N_2, 22°C	< 2.5
Lifetime	Output drift	% change in output @ 3 months	< 2
	Operating life	Months until 85% original output in 20.9% O_2	> 36
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
	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	Ω (recommended)	47 to 100
	Height	mm (including foam ring)	17.4
	Weight	g	< 16

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 website at "www.alphasense.com".

Figure 1 Temperature Dependence in Air

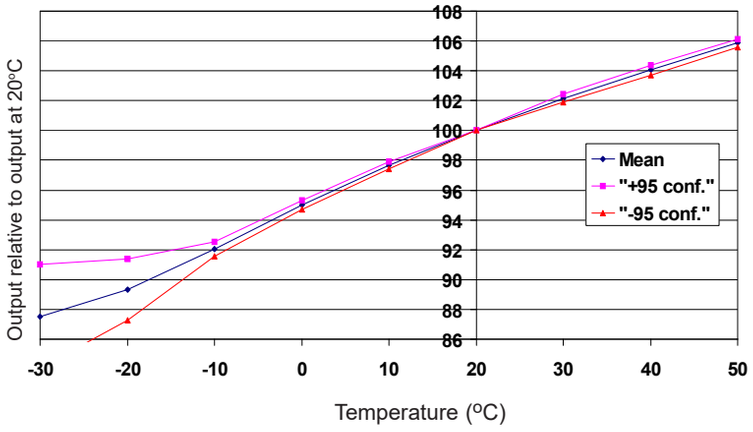


Figure 1 shows the variation of output caused by changes in temperature in 20.9% oxygen. The mean and ±95% confidence intervals are shown.

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

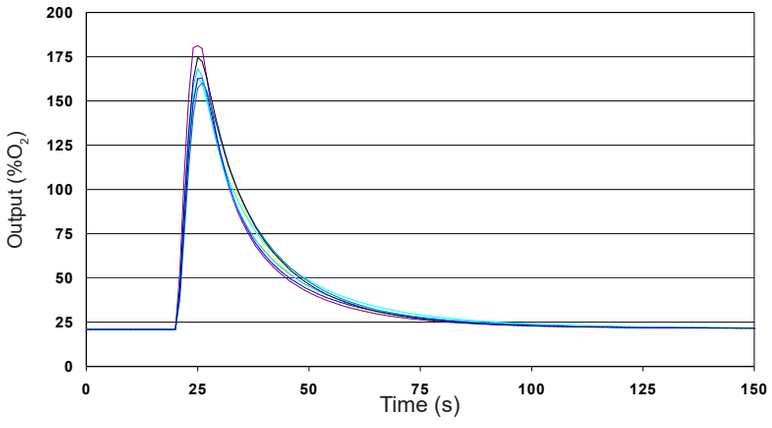
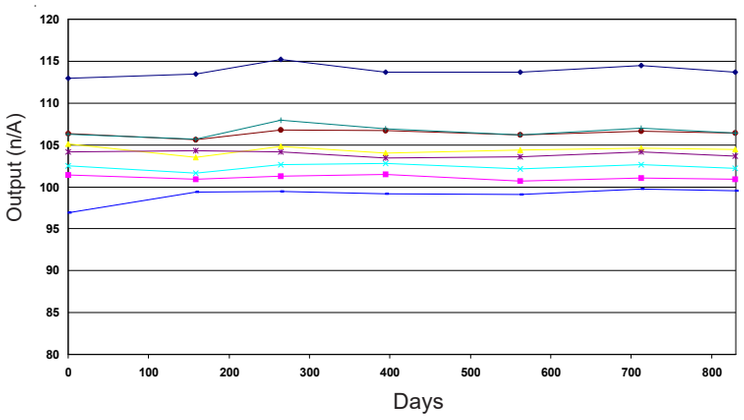


Figure 2 shows how a 25kPa pressure step change causes a signal transient that decays reproducibly. Negative pressure changes cause a negative transient.

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.