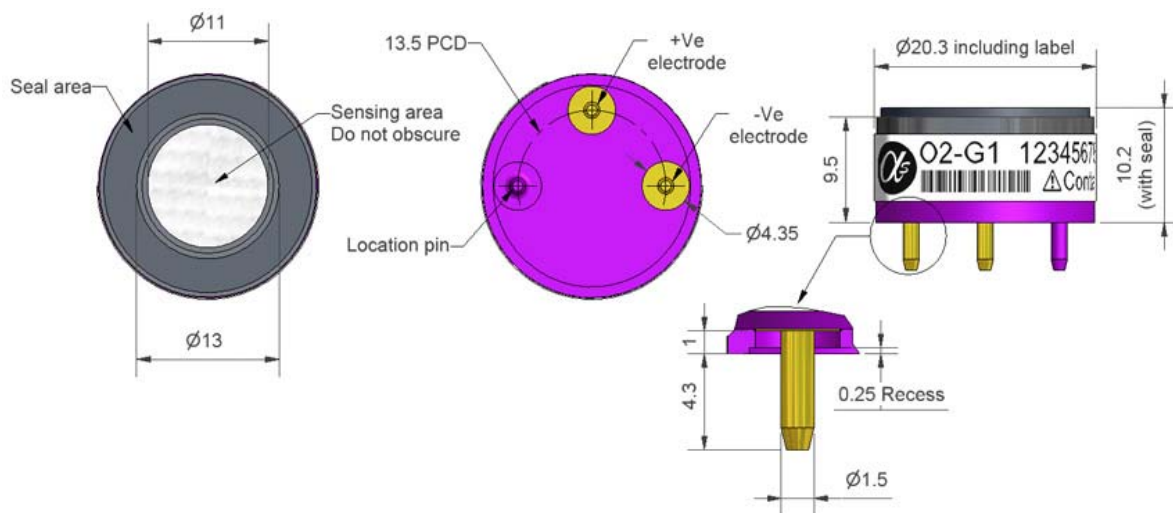


# O2-G1 Oxygen Sensor

## Miniature Size



Figure 1 O2-G1 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>	65 to 85
	Response time	t <sub>90</sub> (s) from 20.9% to 0% O <sub>2</sub> (47W load resistor)	< 18
	Zero current	$\mu\text{A}$ @ 99.999% 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>	> 12
<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
	Output at -20°C	% output/output at 20°C in 20.9% O <sub>2</sub>	87 to 93
	Output at +50°C	% output/output at 20°C in 20.9% O <sub>2</sub>	103 to 107
<b>KEY SPECIFICATIONS</b>	Temperature range	°C	-30 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 container)	6
	Load resistor	$\Omega$ (recommended)	47 to 100
	Weight	g	<7



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-G1 Performance Data

Figure 2 Temperature Dependence in Air

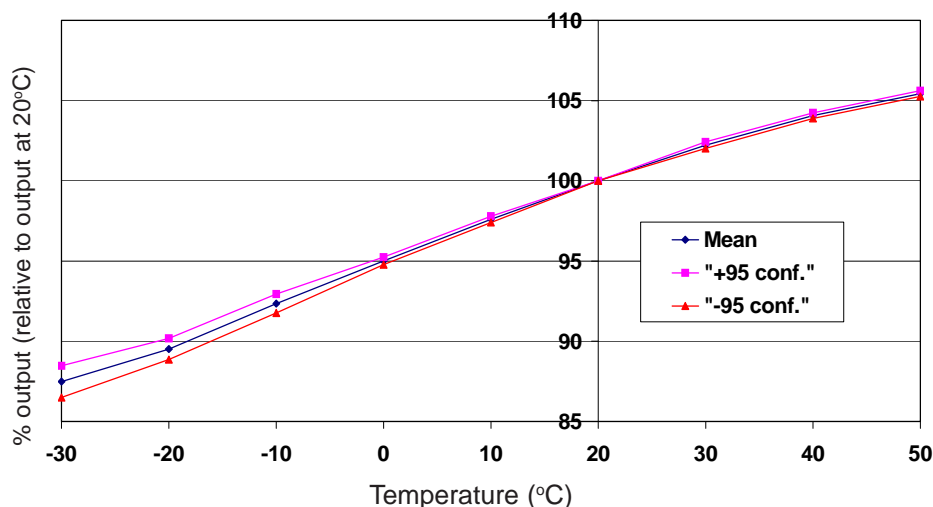


Figure 2 shows the variation of output caused by changes in temperature in 20.9% oxygen.

All capillary oxygen sensors show a change in signal with temperature, and the very repeatable 95% confidence intervals for the O2-G1 are shown.

Figure 3 Pressure Step Performance

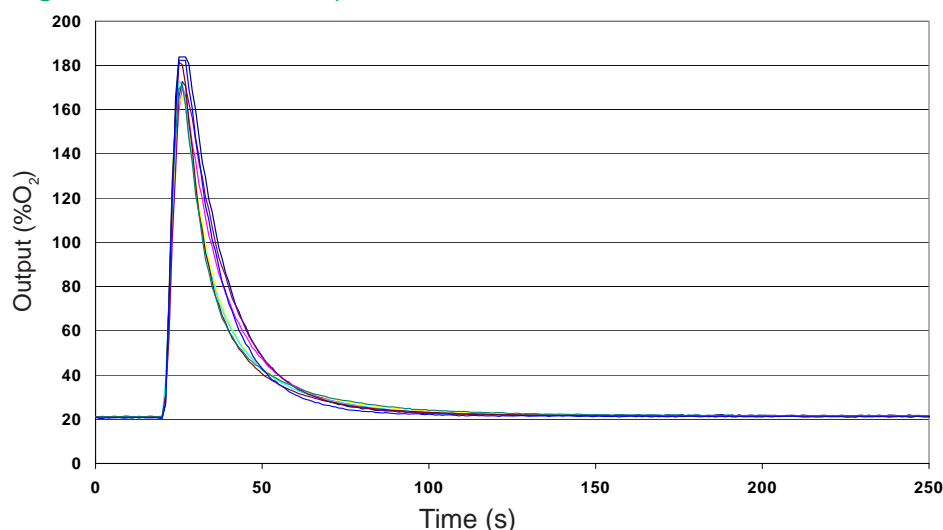


Figure 3 shows how a 25 kPa pressure step change causes a signal transient that decays reproducibly. Negative pressure changes cause a negative transient.

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

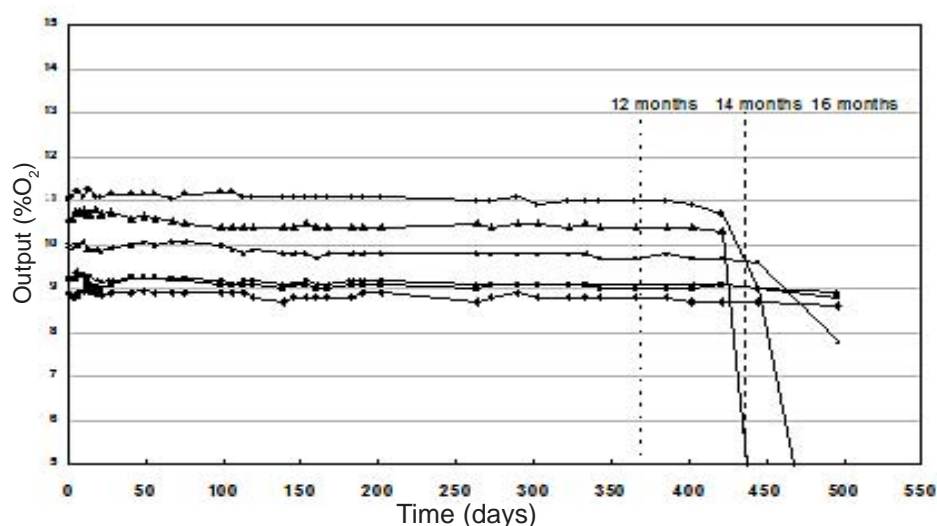


Figure 4 shows long term stability data for the O2-G1 sensors.

All sensors show stable outputs beyond the 12 month period.