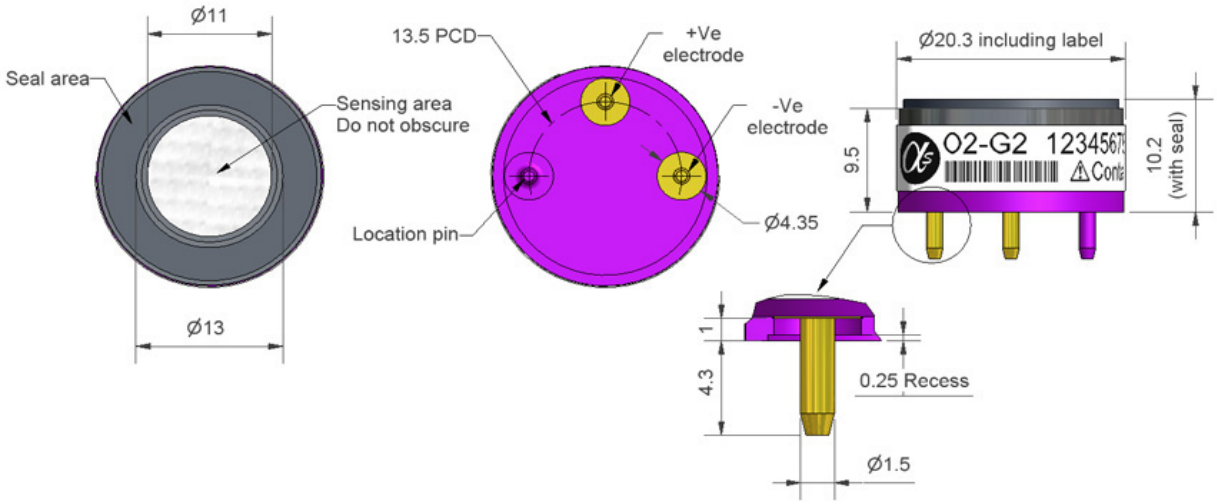
O2-G2 Oxygen Sensor

Miniature Size

Technical Specification

Figure 1 O2-G2 Schematic Diagram



All dimensions in millimetres (± 0.1mm)

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

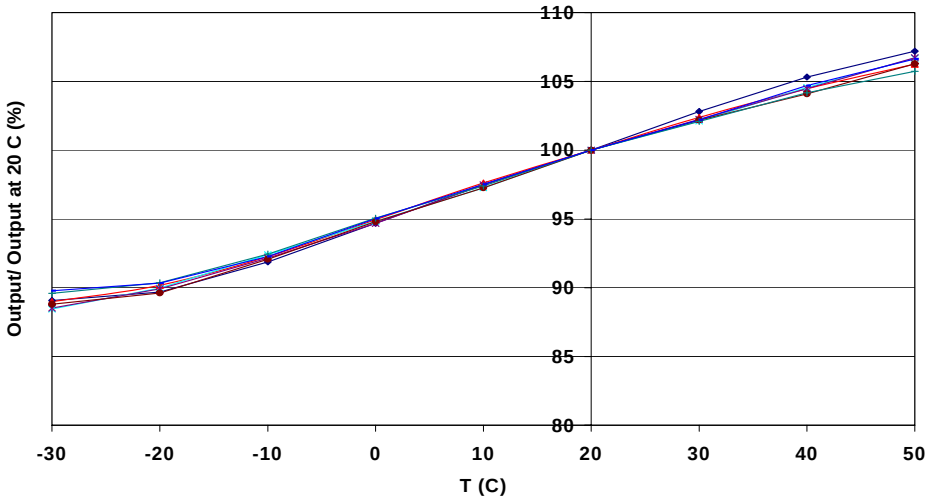
PERFORMANCE	Output	µA @ 22°C, 20.9% O_2	30 to 42
	Response time	t90 (s) from 20.9% to 0% O_2 (47Ω)	< 18
	Zero current	µA @ 99.99% N_2, 22°C	< 2
LIFETIME	Output drift	% change in output @ 3 months	< 2
	Operating life	months until 85% original output in 20.9% O_2	> 24
ENVIRONMENTAL			
	Humidity Sensitivity	% O_2 change: 0% to 95% rh @ 40°C	< 0.7
	Pressure sensitivity	(% change of output)/(% change of pressure) @ 20kPa	< 0.1
	CO_2 sensitivity	% change in output / % CO_2 @ 5% CO_2	< 0.1
	Output at -20°C	%output/output at 20°C in 20.9% O_2	87 to 93
	Output at +50°C	%output/output at 20°C in 20.9% O_2	103 to 107
KEY SPECIFICATIONS			
	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 pot)	6
	Load resistor	Ω (recommended)	47 to 100
	Weight	g	< 7

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-G2 Performance Data

Technical Specification

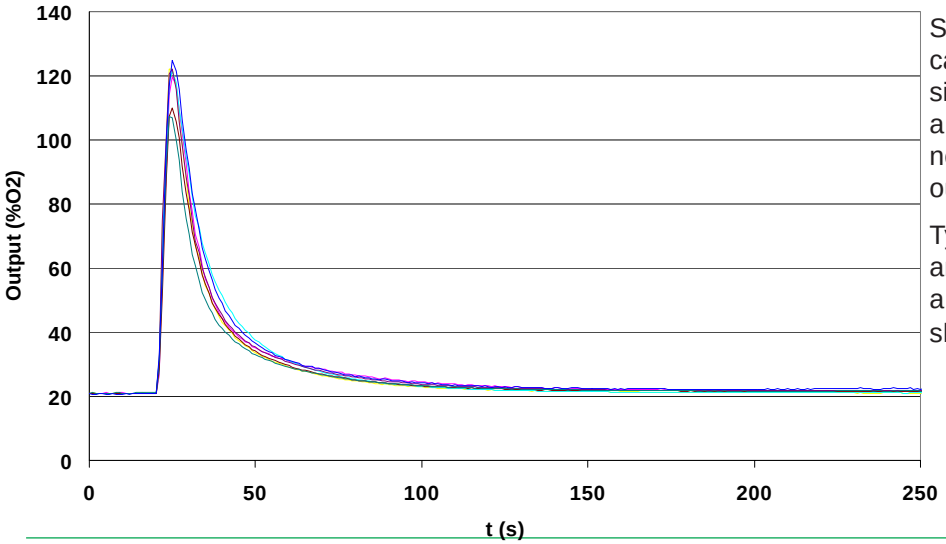
Figure 2 Temperature Dependence in Air



This graph 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-G2 is shown.

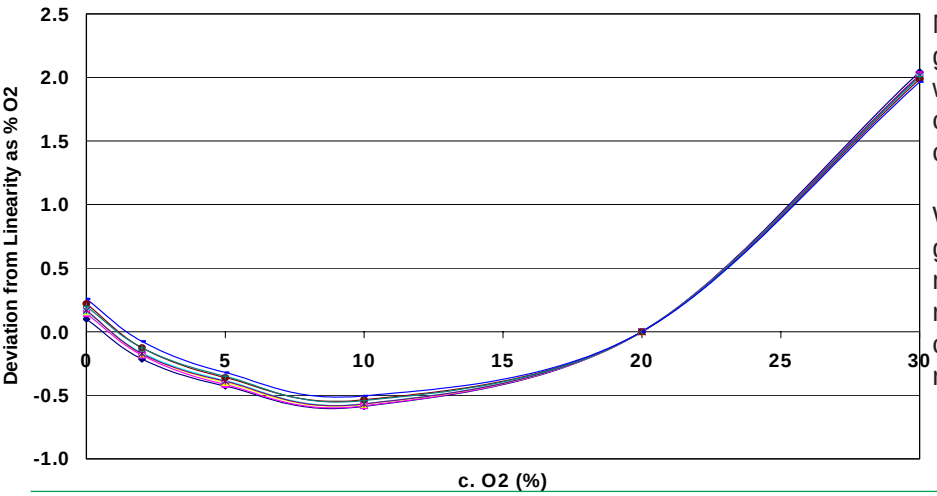
Figure 3 Pressure Step Performance



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-G2 sensor exposed to a 10kPa pressure pulse is shown.

Figure 4 Linearity



Mass flow oxygen sensors generate a non-linear current with increasing oxygen concentration:
current = k * log (1/(1-C)).

When plotted on a linear graph, figure 4 shows that the non-linearity is very repeatable and can be corrected in software to the required accuracy.