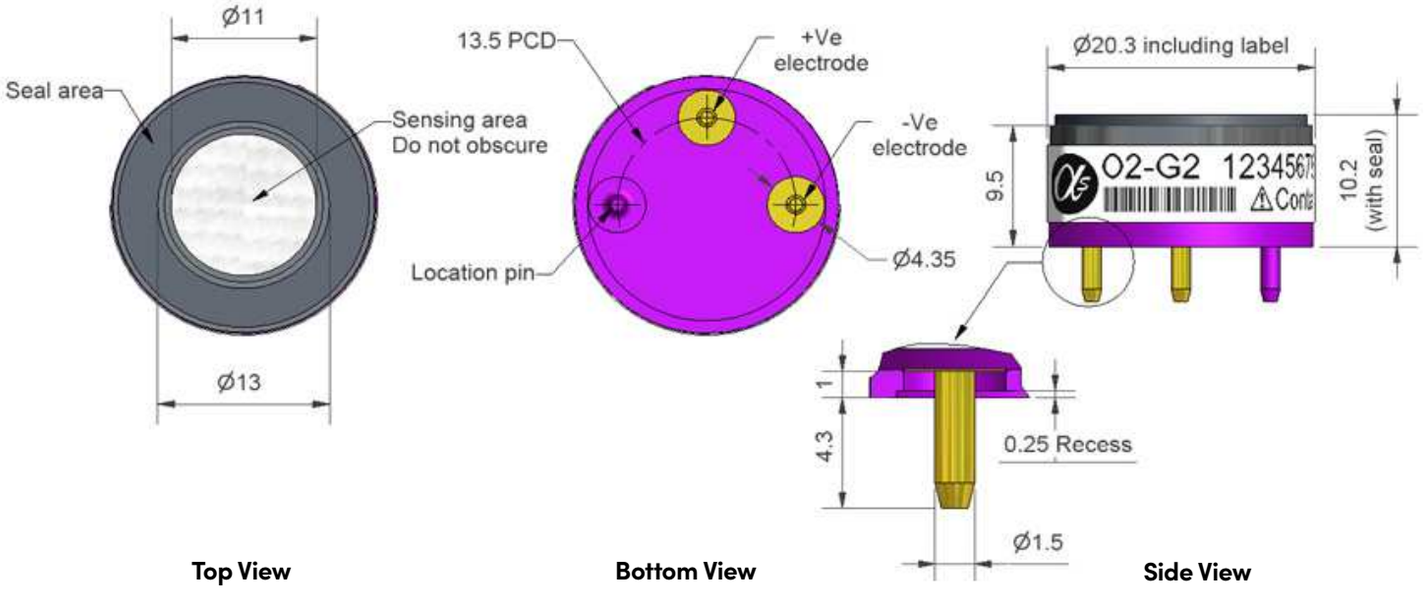
# O2-G2 Oxygen Sensor – Miniature size




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

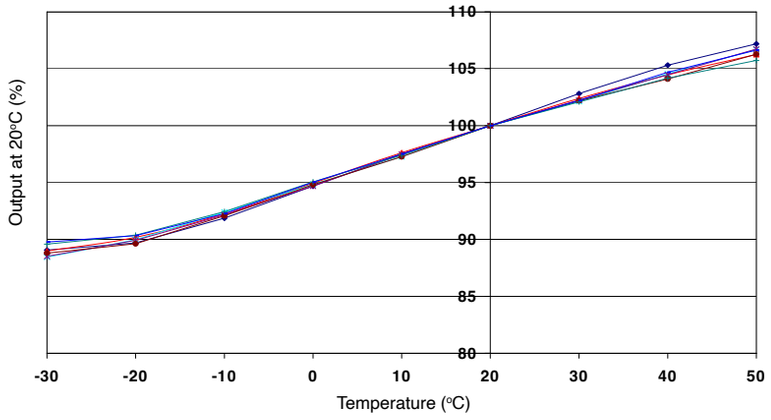
Dimensions are in millimetres (± 0.15 mm).

| | | | |
|---|---|---|---|
| **Performance** | Output | µA @ 22°C, 20.9% $O_2$ | 30 to 42 |
| | Response time | t90 (s) from 20.9% to 0% $O_2$ (47Ω) | < 20 |
| | 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% $O_2$ | > 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 non-condensing (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 |



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".

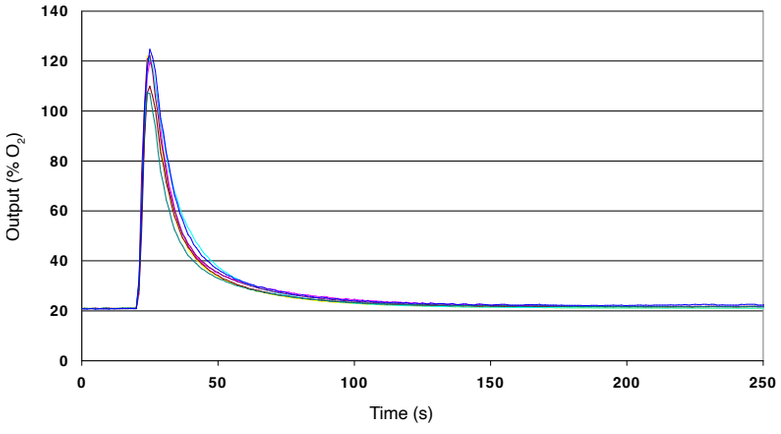
### Figure 1 Temperature Dependence in Air




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.

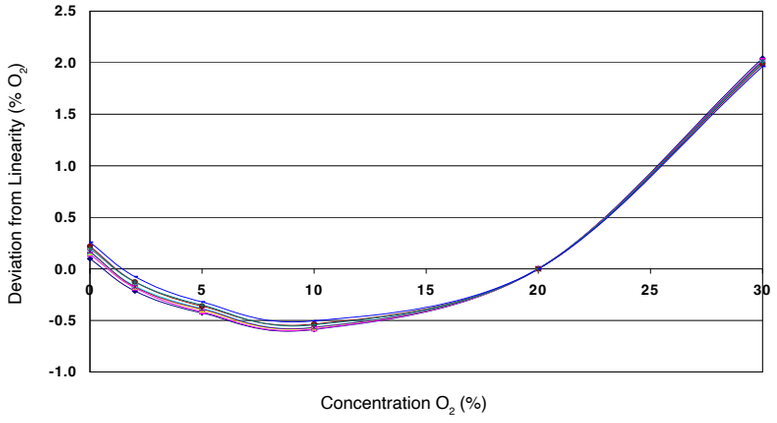
### Figure 2 Pressure Step Performance




Step changes in pressure can cause a temporary signal transient. Positive pressure gives an output signal increase whilst negative pressure causes the output signal to decrease.

Typical transient response for an O2-G2 sensor exposed to a 10 kPa pressure pulse is shown.

### Figure 3 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 3 shows that the non-linearity is very repeatable and can be corrected in software to the required accuracy.