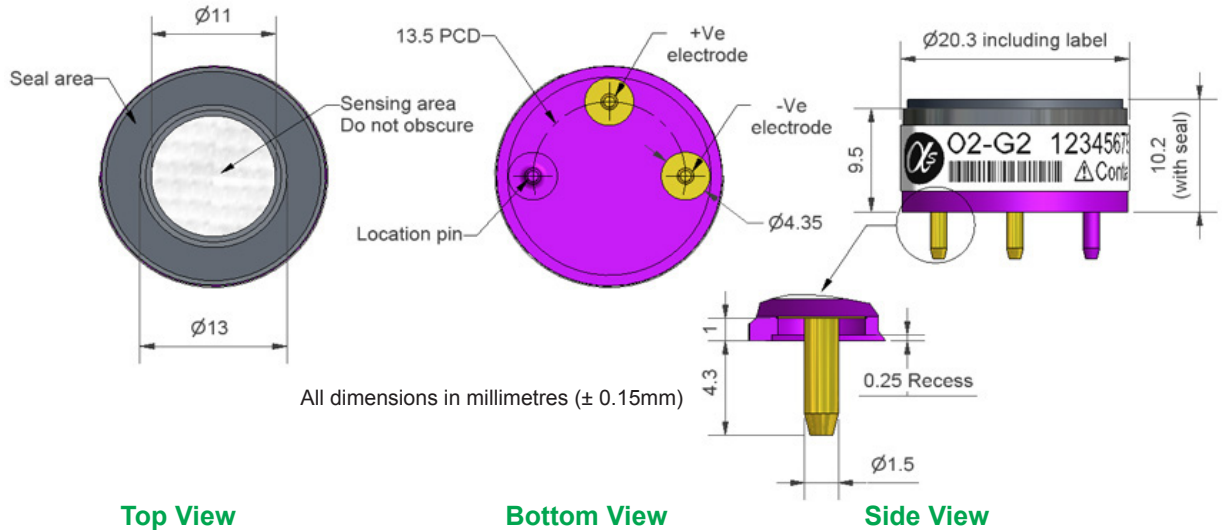




O2-G2 Oxygen Sensor Miniature Size



Figure 1 O2-G2 Schematic Diagram



Technical Specification

| 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 |



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.

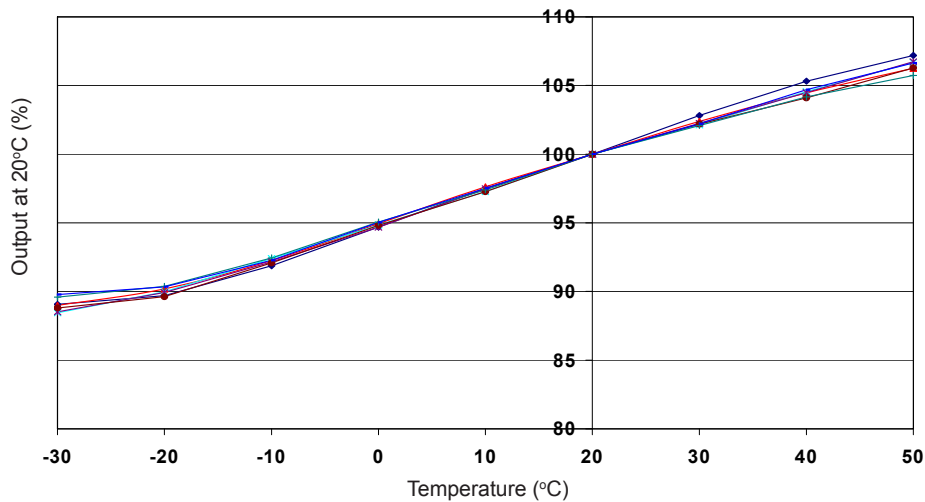
NOTE: all sensors are tested at ambient environmental conditions, with 47 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.



O2-G2 Performance Data

Technical Specification

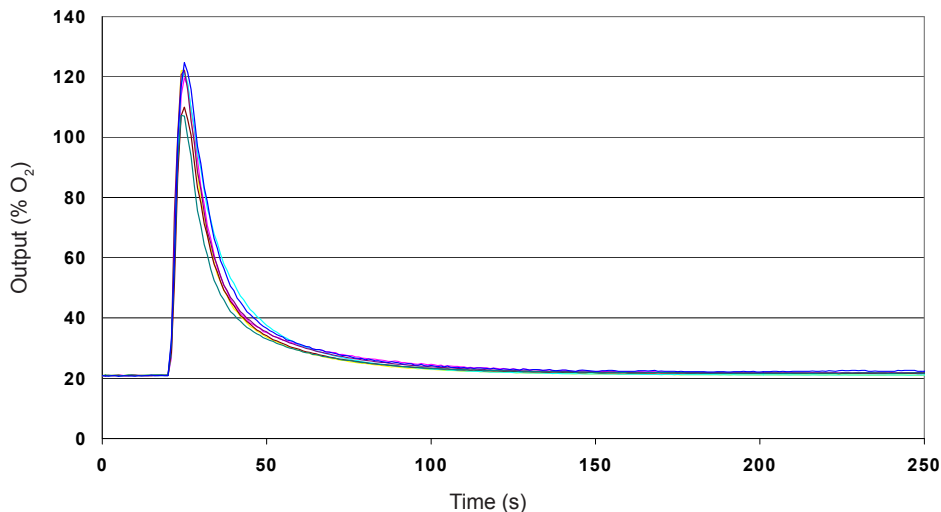
Figure 2 Temperature Dependence in Air



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.

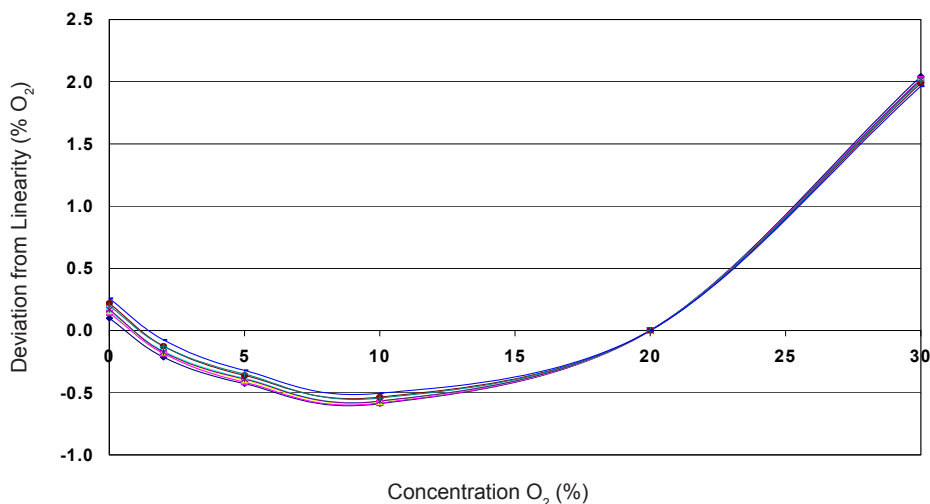
Figure 3 Pressure Step Performance



Step changes in pressure can cause a temporary signal transient. Positive pressure gives an 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:
$$\text{current} = k \cdot \log(1/(1-C))$$

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.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. For Application Notes visit "www.alphasense.com".

In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Alphasense Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within. (©ALPHASENSE LTD) Doc. Ref. O2-G2/SEPT15