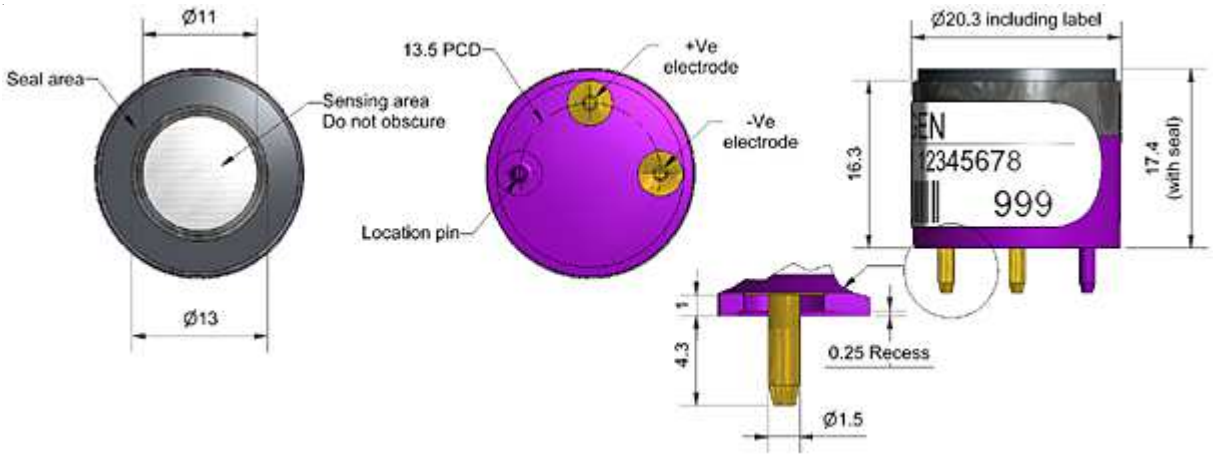
# O2-A1 Oxygen Sensor


Technical Specification

## Figure 1 O2-A1 Schematic Diagram




All dimensions in millimetres (± 0.15mm)

Top View Bottom View Side View

## PERFORMANCE

| | | |
|---|---|---|
| Output | µA @ 20.9%$O_2$ | 190 to 240 |
| Response time | t90 (s) from 20.9% to 0% $O_2$ | < 15 |
| Zero current | µA in $N_2$ | < 2.5 |
| Linearity | % $O_2$ deviation @ 10% $O_2$ | < 0.6 |

## LIFETIME

| | | |
|---|---|---|
| Output drift | % change in output @ 3 months | < 1 |
| Operating life | months until 85% original output of 20.9% $O_2$ | > 12 |

## ENVIRONMENTAL

| | | |
|---|---|---|
| Humidity sensitivity | % $O_2$ change: 0% to 95% rh @ 40°C | < 0.7 |
| $CO_2$ sensitivity | % (change $O_2$ reading)/% $CO_2$ @ 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 pot,open circuit) | 6 |
| Load resistor | Ω (recommended) | 47 to 100 |
| Diameter | mm (including label) | 20.0 |
| Height | mm (including foam ring) | 17.4 |
| Weight | g | < 16 |

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.

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# O2-A1 Performance Data

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## Figure 2 Temperature Dependence in Air

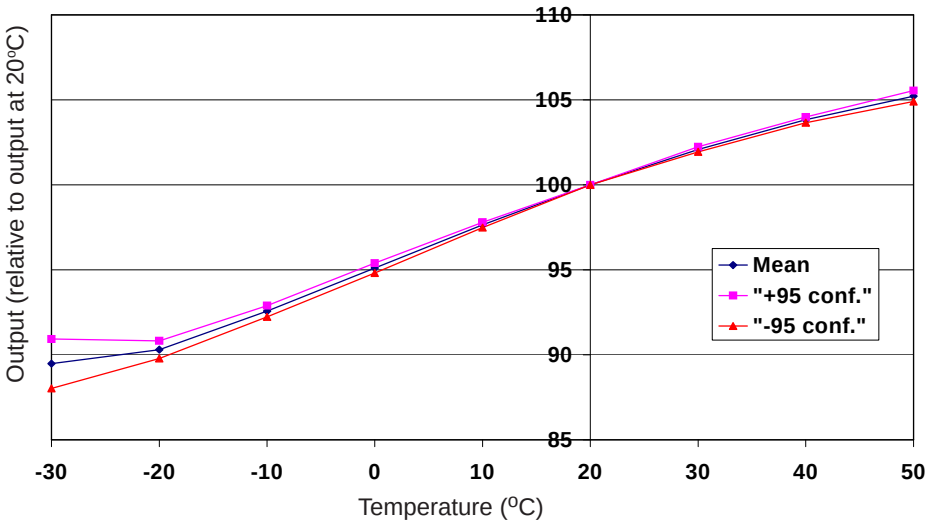
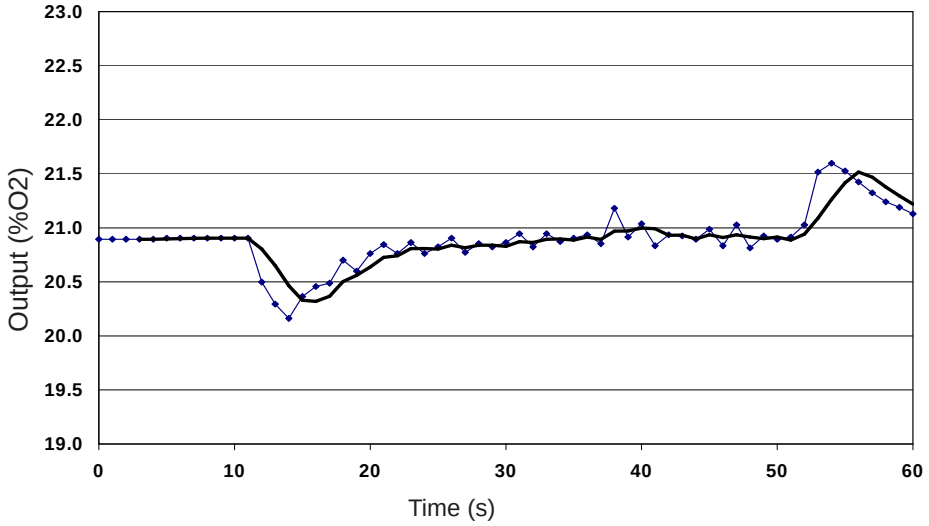



Figure 2 shows the variation of sensor output in clean air due to temperature changes .
This data is taken from a typical batch of sensors.

The mean and ± 95% confidence intervals are shown.

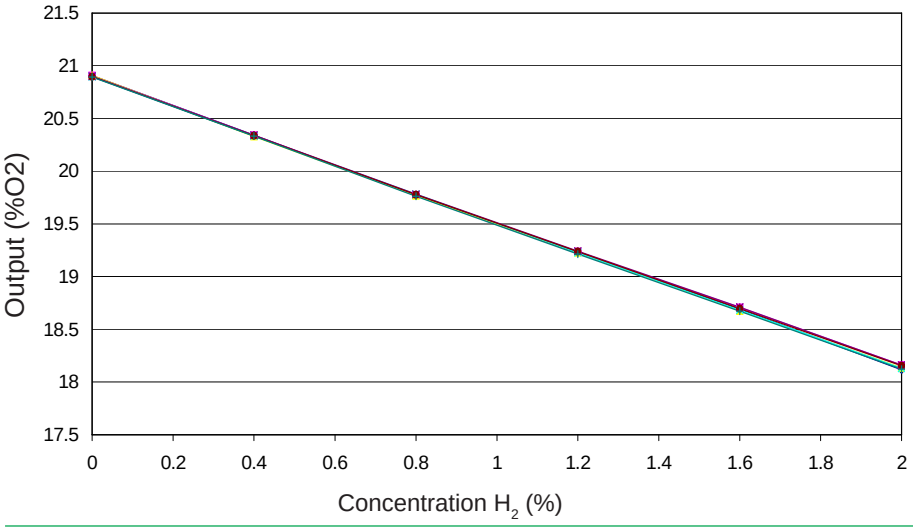
## Figure 3 Aspirated Gas Transients




Many gas detectors use either pumps or hand aspirators to sample gases remotely. Pressure transients, caused by pumping, can set gas detectors into alarm.

Alphasense oxygen sensors are 100% tested for pressure transients.

## Figure 4 Response to Hydrogen




Hydrogen reduces the oxygen sensor output by 6.5%.

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".