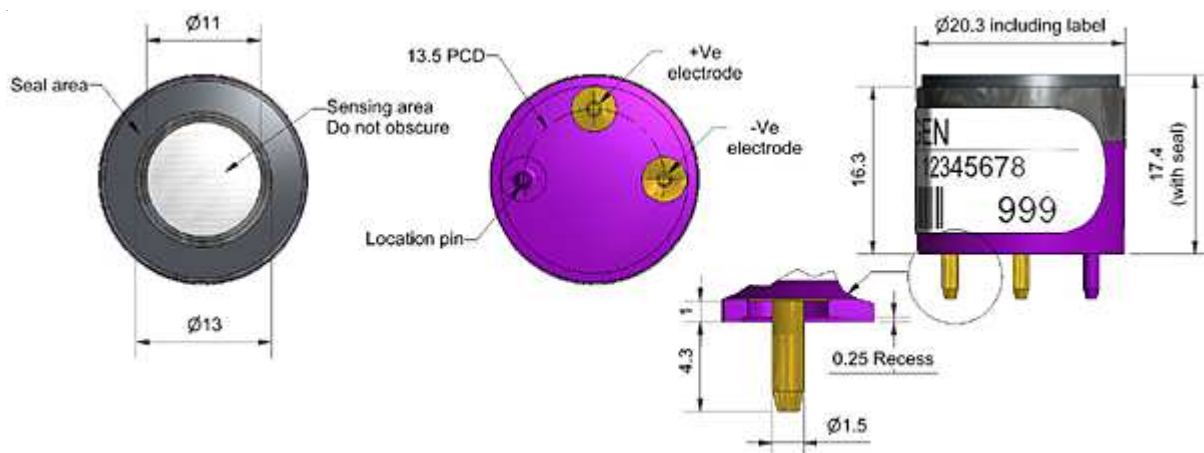


# O2-A1 Oxygen Sensor



Figure 1 O2-A1 Schematic Diagram



All dimensions in millimetres ( $\pm 0.15\text{mm}$ )

Top View

Bottom View

Side View

## PERFORMANCE

Output	$\mu\text{A}$ @ 20.9% $\text{O}_2$	190 to 240
Response time	$t_{90}$ (s) from 20.9% to 0% $\text{O}_2$	< 15
Zero current	$\mu\text{A}$ in $\text{N}_2$	< 2.5
Linearity	% $\text{O}_2$ deviation @ 10% $\text{O}_2$	< 0.6

## LIFETIME

Output drift	% change in output @ 3 months	< 1
Operating life	months until 85% original output of 20.9% $\text{O}_2$	> 12

## ENVIRONMENTAL

Humidity sensitivity	% $\text{O}_2$ change: 0% to 95% rh @ 40°C	< 0.7
$\text{CO}_2$ sensitivity	% (change $\text{O}_2$ reading)/% $\text{CO}_2$ @ 5% $\text{CO}_2$	0.1
Pressure sensitivity	(% change of output)/(% change of pressure) @ 20kPa	< 0.1

## KEY SPECIFICATIONS

Temperature range	$^{\circ}\text{C}$	-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	$\Omega$ (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.

Technical Specification

# O2-A1 Performance Data

# Technical Specification

**Figure 2 Temperature Dependence in Air**

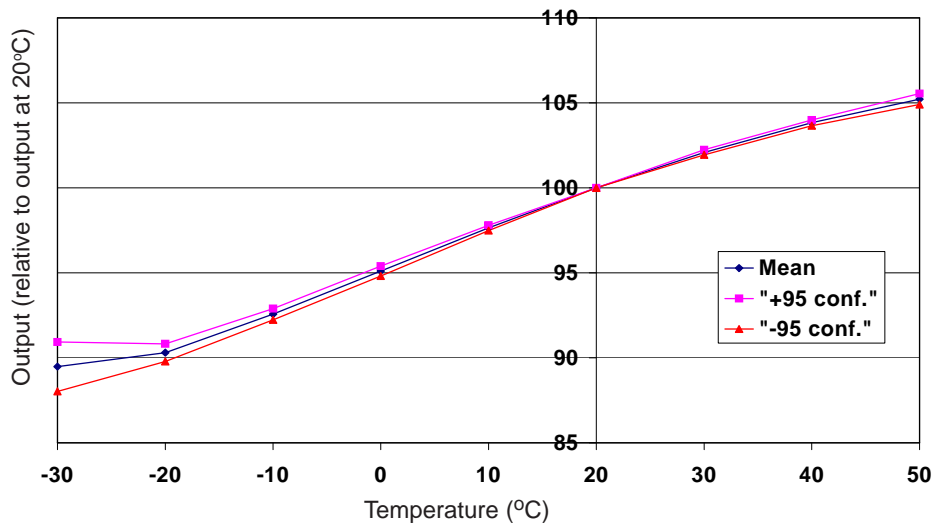
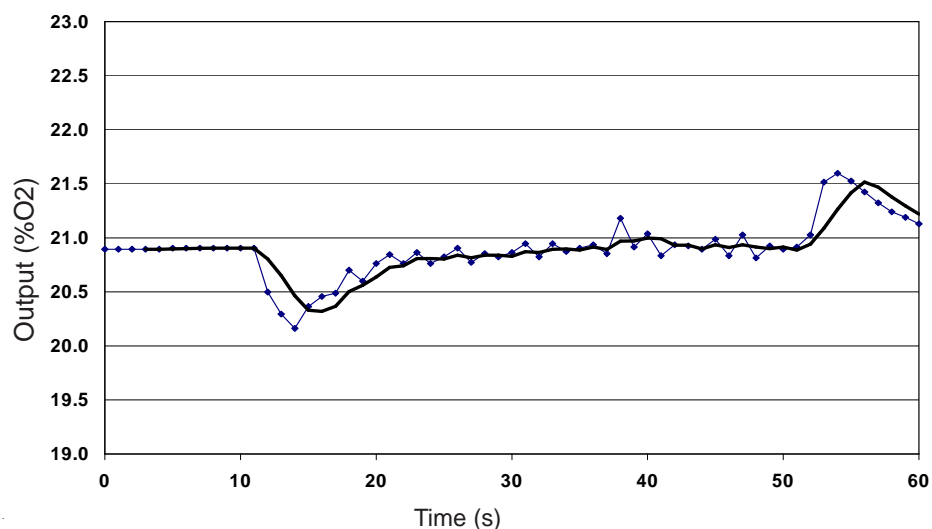


Figure 2 shows the variation of sensor output in clean air due to temperature changes.

This data is taken from a typical batch of sensors.

The mean and  $\pm$  95% confidence intervals are shown.

**Figure 3 Aspirated Gas Transients**

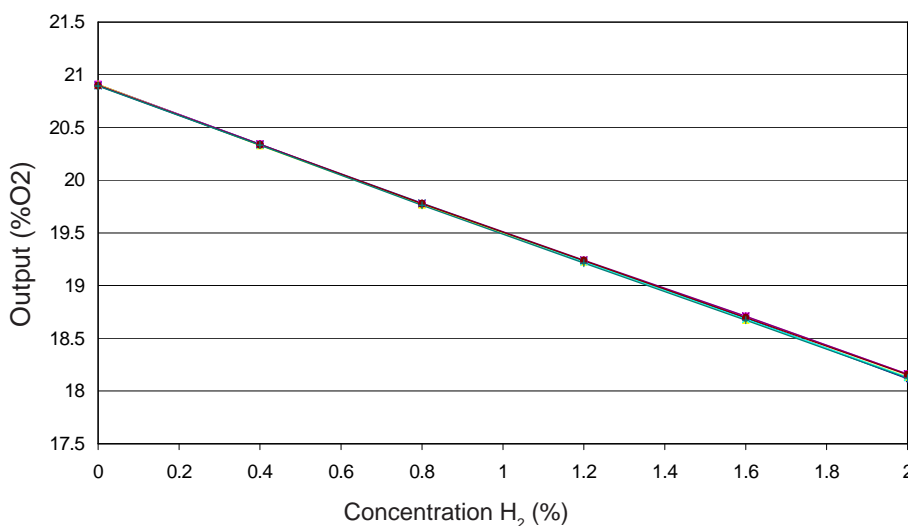


Many gas detectors use either pumps or hand aspirators to sample gases remotely.

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%.