LFO2-A4 Oxygen Sensor
Lead-free 3-Electrode

Figure 1 LFO2-A4 Schematic Diagram

All dimensions in millimetres (± 0.15mm)

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

PERFORMANCE

Output	µA @ 20.9% O_2	90 to 120
Response time	t90 (s) from 20.9% to 0 % O_2	< 15
Linearity	% O_2 deviation @ 10% O_2	< 0.10

LIFETIME

Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C)	80 to 90
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C)	105 to 115
Output drift	% change in output @ 3 months	< 1
Operating life	months until 85% original output of 20.9% O_2	> 48

KEY SPECIFICATIONS

Temperature range	°C	-30 to 50
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, open circuit)	6
Bias voltage	mV	-600
Diameter	mm (including label)	20.0
Height	mm (including foam ring)	17.4
Weight	g	< 6

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.
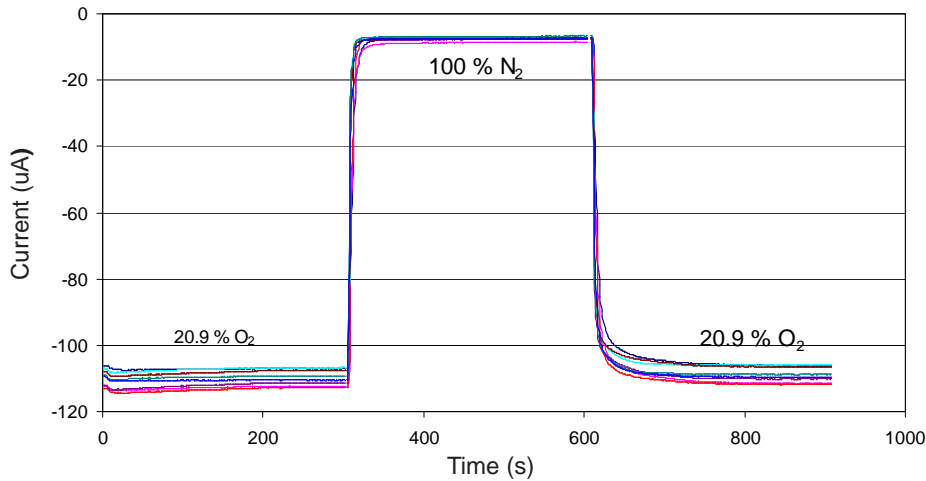
At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

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".

Technical Specification

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LFO2-A4 Oxygen Sensor
Performance Data

Figure 2 Response to 20.9% Oxygen

100 % N$_2$

20.9 % O$_2$
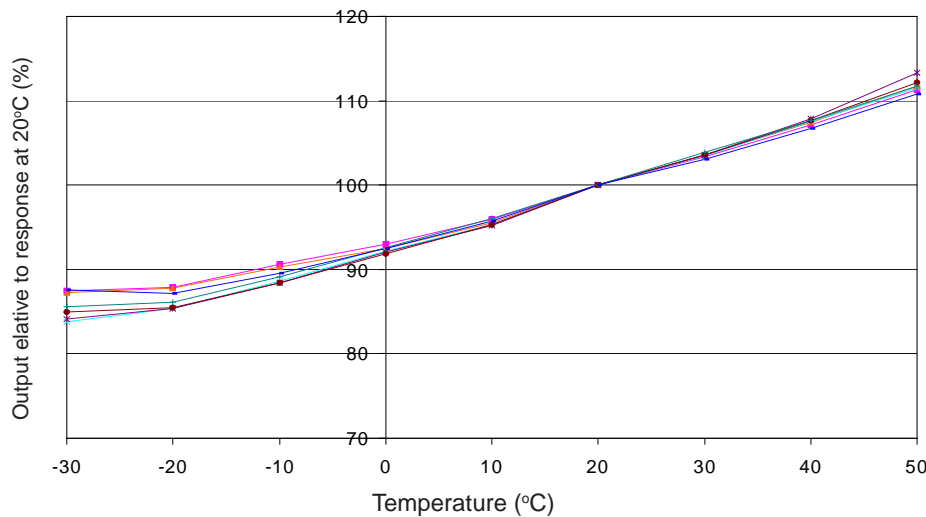
20.9 % O$_2$

Sensor response is fast and repeatable, returning rapidly to the baseline.

The sensor must be biased at -600mV continuously if instant response is required when swiching on the gas detector.

Figure 3 Sensitivity Temperature Dependence

The very repeatable and nearly linear sensitivity temperature dependence allows for simple correction in software.

Figure 4 Linearity to 20.9% Oxygen

$y = -430.93x - 6.86$
$R^2 = 0.9999$

Ln(1/(1-C)) with C the concentration (%O$_2$)
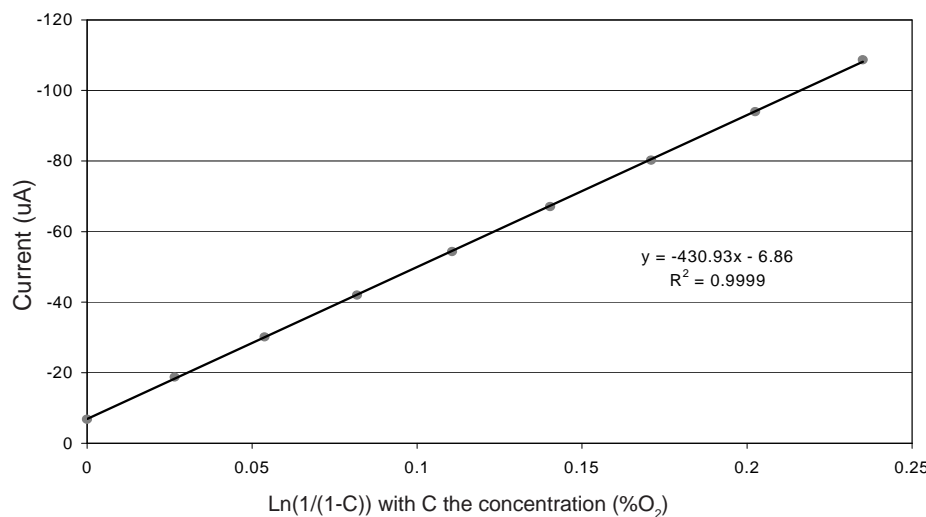
Although the signal is nearly linear up to 30% O$_2$, theory is proven to be accurate by fitting the output with the function K*Ln(1/(1-C))