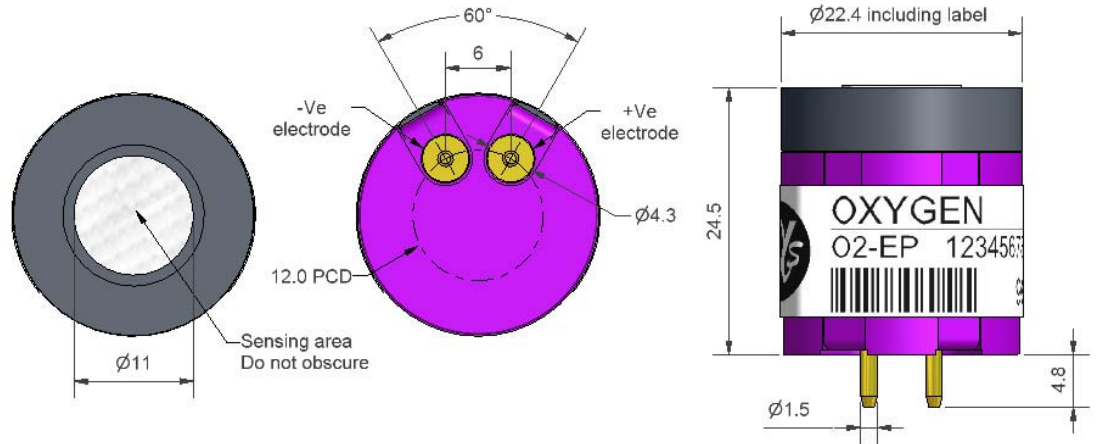




# O2-EP Oxygen Sensor



Figure 1 O2-EP Schematic Diagram



All dimensions in millimetres ( $\pm 0.1$ mm)

Top View

Bottom View

Side View

<b>PERFORMANCE</b>	Output	$\mu\text{A}$ @ 20.9% $\text{O}_2$	340 to 460
	Response time	$t_{90}$ (s) from 20.9% to 0% $\text{O}_2$	< 15
	Zero current	$\mu\text{A}$ in $\text{N}_2$	< 6
	Pressure sensitivity	(% change of output)/(% change of pressure) @ 20kPa	< 0.1
	Linearity	% $\text{O}_2$ deviation @ 10% $\text{O}_2$	< 0.6
	Hysteresis	% $\text{O}_2$ change after 16 cycles: 0 to 20.9% $\text{O}_2$	< 0.2
	Hand aspirator	% $\text{O}_2$ change during aspiration (typical) response	20 to 21.5
<b>LIFETIME</b>	Output drift	% change in output @ 3 months	< 1
	Operating life	months until 85% original output of 20.9% $\text{O}_2$	> 9
<b>ENVIRONMENTAL</b>	Humidity sensitivity	% $\text{O}_2$ change: 0% to 95% rh @ 40°C	< 0.7
	$\text{CO}_2$ sensitivity	% change in output / % $\text{CO}_2$ @ 5% $\text{CO}_2$	0.1
<b>PHYSICAL DIMENSIONS</b>	Diameter	mm (including label)	22.2
	Height	mm (excluding foam ring)	24.6
	Weight	g	< 33
<b>KEY SPECIFICATIONS</b>	Temperature range	°C	-30 to 55
	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, unshorted)	6
	Load resistor	$\Omega$ (recommended)	47 to 100

**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-EP Performance Data

# Technical Specification

Figure 2 Sensitivity Temperature Dependence

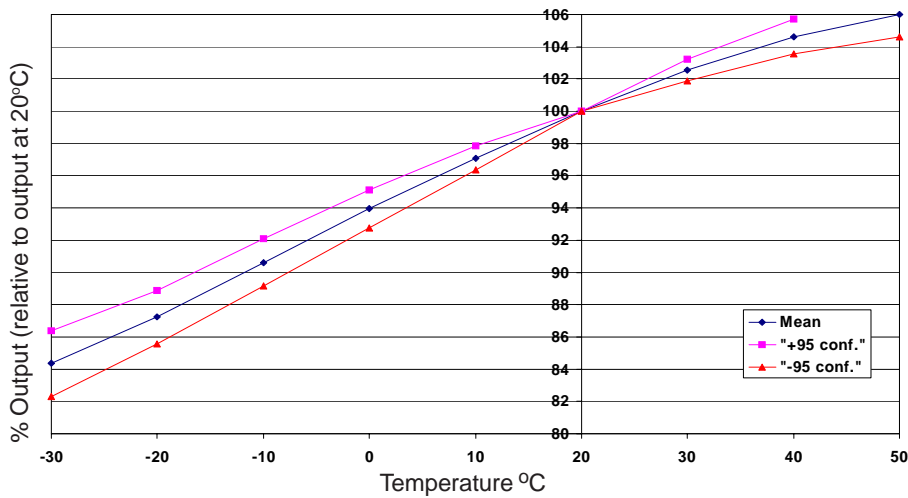
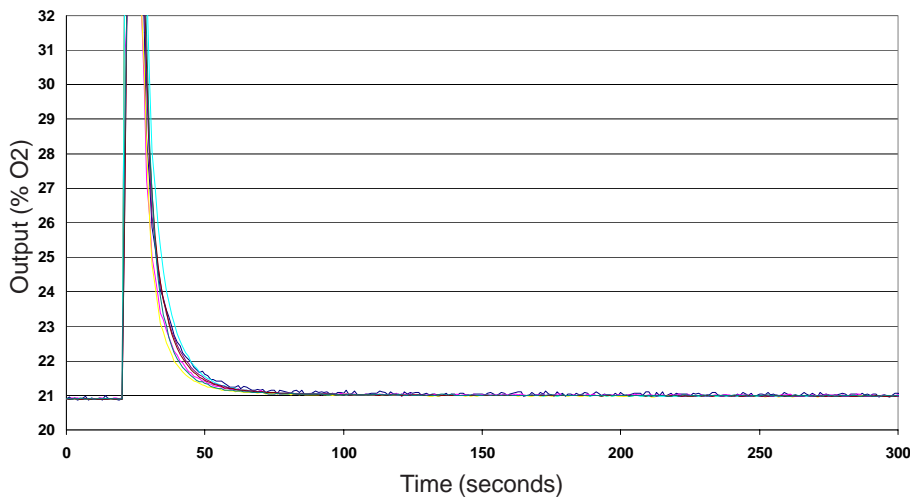


Figure 2 shows the variation in sensitivity caused by changes in temperature.

See Application Note: AAN 110 on our website.

Figure 3 Pressure Pulse Performance



Step changes in pressure can cause a temporary signal transient. Positive pressure gives a output signal increase whilst negative pressure causes the output signal to decrease. Typical transient response for an O2-EP sensor exposed to a 10kPa pressure pulse step shows very repeatable recovery from sensor to sensor.

Figure 4 Response Profile

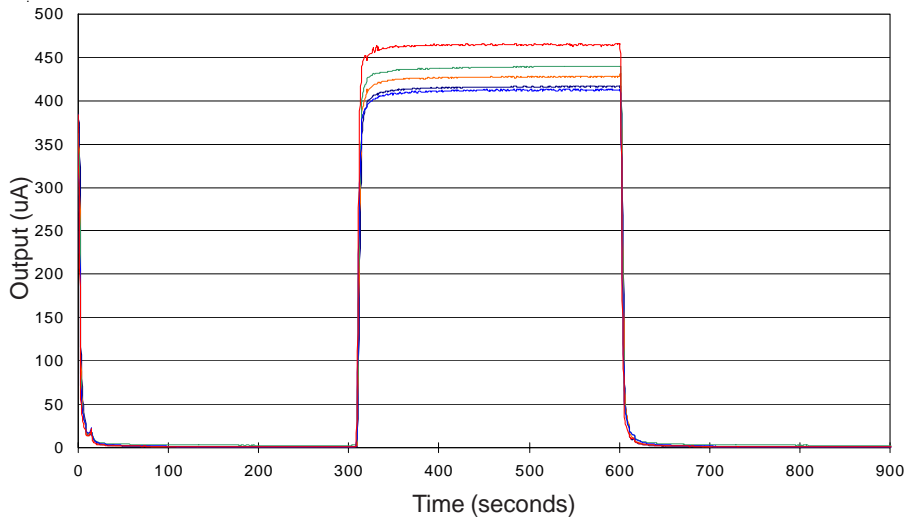


Figure 4 shows the time taken for a typical batch of O2-EP sensors to reach 90% of its maximum output. This is termed the  $t_{90}$  response time and for these sensors the  $t_{90}$  is less than 10 seconds.

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](http://www.alphasense.com)".