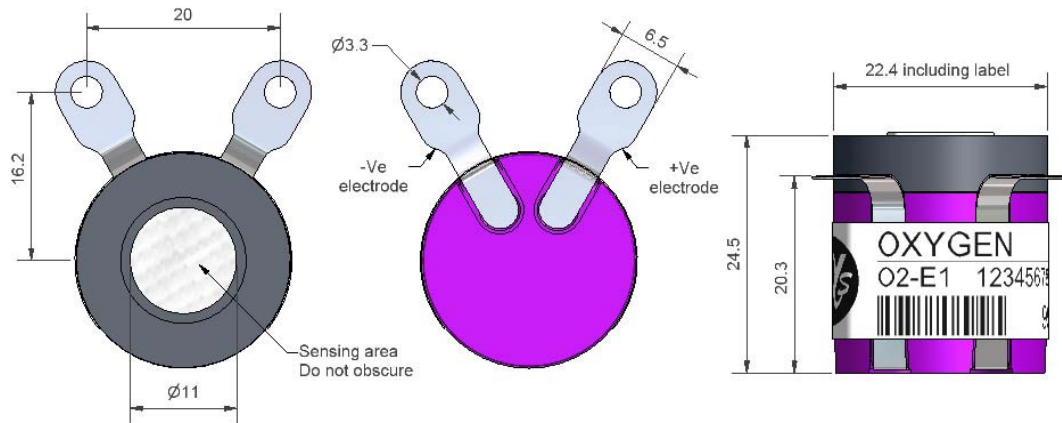




O2-E1 Oxygen Sensor



Figure 1 O2-E1 Schematic Diagram



All dimensions in millimetres (± 0.1 mm)

Top View

Bottom View

Side View

Technical Specification

PERFORMANCE	Output	μA @ 20.9% O_2	340 to 460
	Response time	t_{90} (s) from 20.9% to 0% O_2	< 15
	Zero current	μA in N_2	< 6
	Pressure sensitivity	(% change of output)/(% change of pressure) @ 20kPa	< 0.1
	Linearity	% O_2 deviation @ 10% O_2	< 0.6
	Hysteresis	% O_2 change after 16 cycles: 0 to 20.9% O_2	< 0.2
	Hand aspirator	% O_2 change during aspiration (typical) response	20 to 21.5
LIFETIME	Output drift	% change in output @ 3 months	< 1
	Operating life	months until 85% original output of 20.9% O_2	> 9
ENVIRONMENTAL	Humidity sensitivity	% O_2 change: 0% to 95% rh @ 40°C	< 0.7
	CO_2 sensitivity	% change in output / % CO_2 @ 5% CO_2	0.1
PHYSICAL DIMENSIONS	Diameter	mm (including label)	22.2
	Height	mm (excluding foam ring)	24.6
	Weight	g	< 33
KEY SPECIFICATIONS	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	Ω (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-E1 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

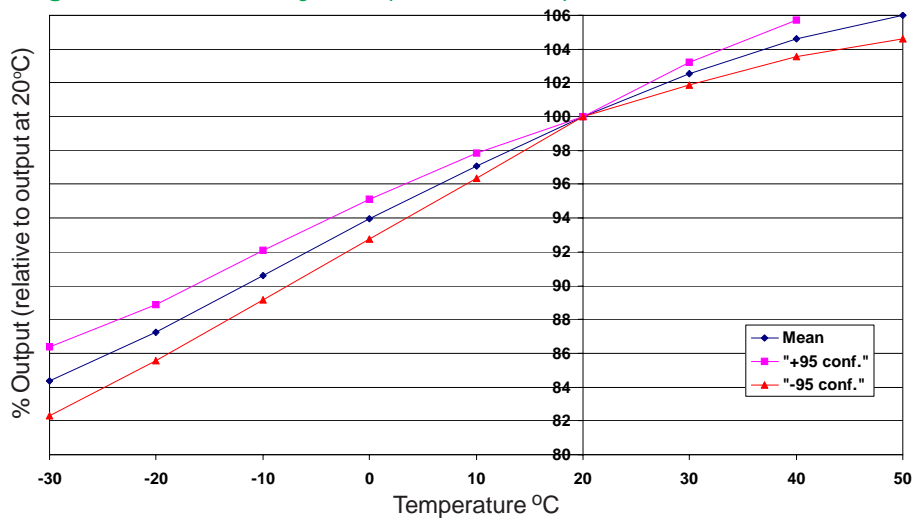
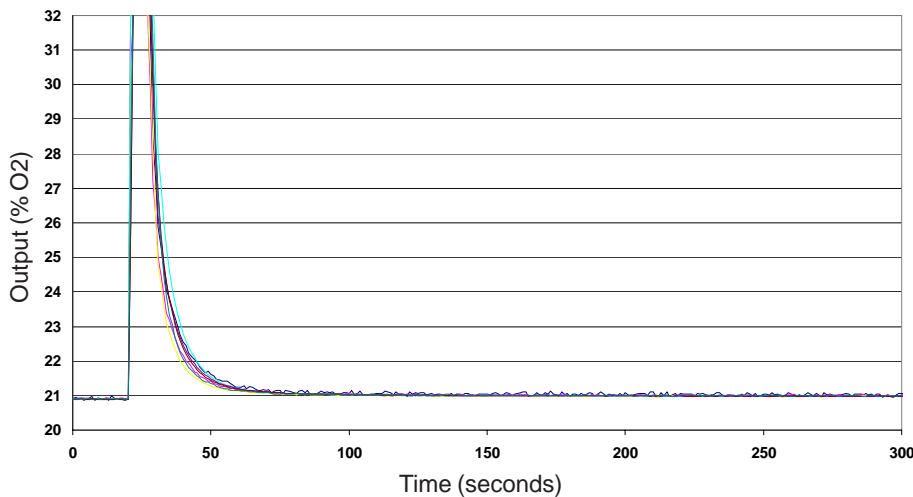


Figure 2 shows the variation in sensitivity caused by changes in temperature.

See Application Note: AAN 110 on our website

Figure 3 Pressure Step 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-E1 sensor exposed to a 10kPa pressure pulse shows very repeatable recovery time from sensor to sensor.

Figure 4 Response Profile

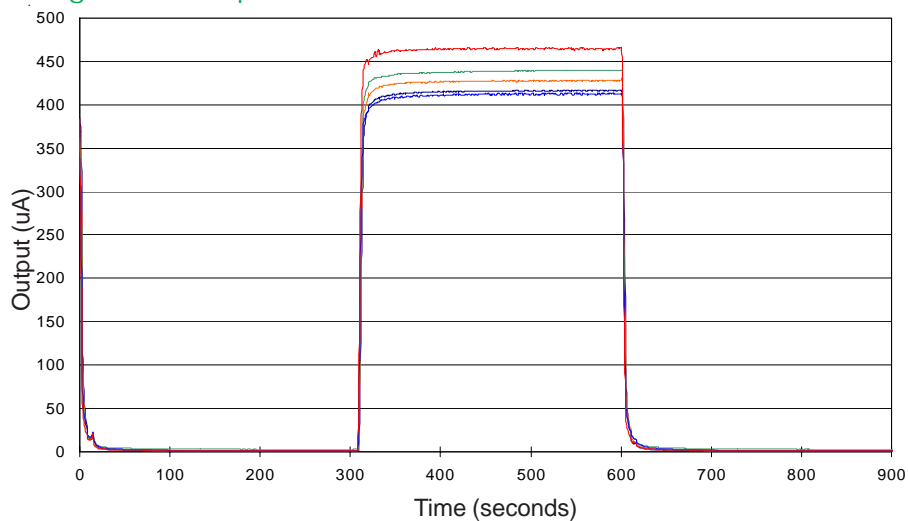


Figure 4 shows the time taken for a typical batch of O2-E1 sensors to reach 90% of its maximum output. This is termed the t_{90} response time and for these sensors is less than 10 seconds.

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".

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 it. ©ALPHASENSE LTD) Doc. Ref. TDS/O2E1/ Issue 13