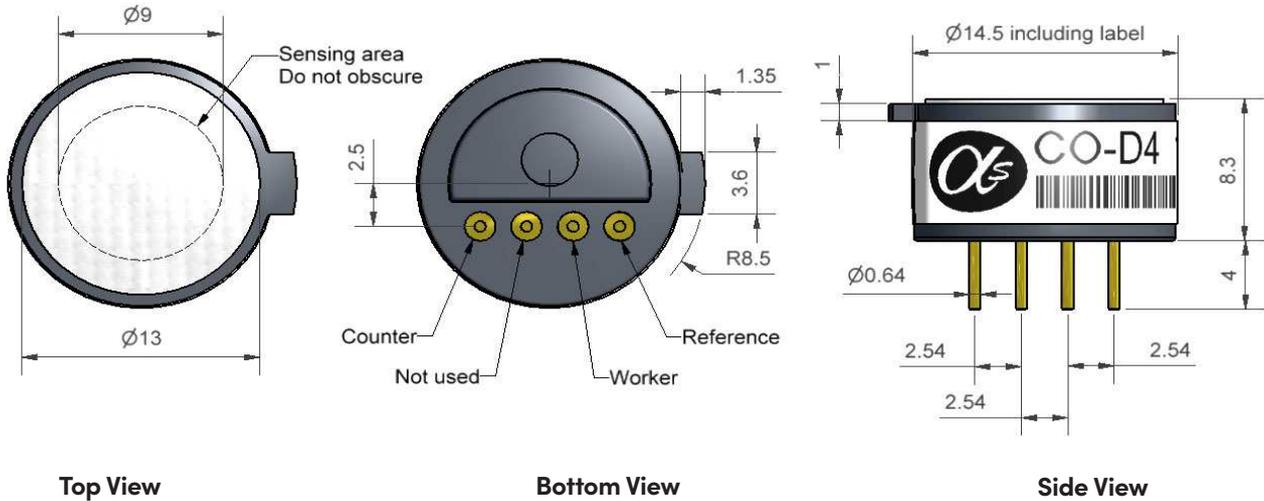




CO-D4 Carbon Monoxide Sensor – Miniature Size


Top View
Bottom View
Side View

 Dimensions are in millimetres (± 0.1 mm). A three-pin version is available on request, coded CO-DF.

Performance			
Sensitivity	nA/ppm in 400ppm CO		30 to 55
Response time	t90 (s) from zero to 400ppm CO % 22°C		< 25
Zero current	ppm equivalent in zero air		< ± 3
Resolution	RMS noise (ppm equivalent)		< 1.5
Range	ppm limit of performance warranty		1,000
Linearity	ppm CO error at full scale, linear at zero and 400ppm CO		± 40
Overgas limit	maximum ppm for stable response to gas pulse		2,000

Lifetime			
Zero drift	ppm equivalent change/year in lab air		< 0.5
Sensitivity drift	% change/year in lab air, monthly test		< 6
Operating life	months until 80% original signal (24-month warranted)		> 18

Environmental			
Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 400ppm CO		45 to 70
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 400ppm CO		105 to 125
Zero @ -20°C	ppm equivalent change from 20°C		< ± 2
Zero @ 50°C	ppm equivalent change from 20°C		< ± 4

Cross Sensitivity				
Filter capacity	ppm-hrs	H ₂ S		20,000
H ₂ S sensitivity	% measured gas @ 20ppm	H ₂ S		< 0.1
NO ₂ sensitivity	% measured gas @ 10ppm	NO ₂		< 6
Cl ₂ sensitivity	% measured gas @ 10ppm	Cl ₂		< 0.1
NO sensitivity	% measured gas @ 50ppm	NO		< 60
SO ₂ sensitivity	% measured gas @ 20ppm	SO ₂		< 0.1
H ₂ sensitivity	% measured gas @ 400ppm	H ₂		< 40
C ₂ H ₄ sensitivity	% measured gas @ 400ppm	C ₂ H ₄		< 110
NH ₃ sensitivity	% measured gas @ 20ppm	NH ₃		< 0.1

Key Specifications			
Temperature range	°C		-20 to 50
Pressure range	kPa		80 to 120
Humidity range	% rh (see note below)		15 to 90
Storage period	months @ 3 to 20°C (stored in sealed pot)		6
Load resistor	Ω (recommended)		10 to 47
Weight	g		< 2



Figure 1 Sensitivity Temperature Dependence

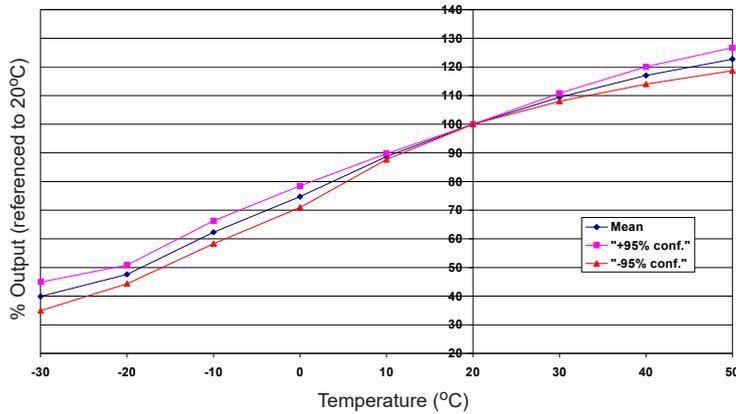


Figure 1 shows the variation in sensitivity caused by changes in temperature. Repeatable temperature dependence at elevated temperatures allows more accurate temperature compensation.

This data is taken from a typical batch of sensors. The mean and $\pm 95\%$ confidence intervals are shown.

Figure 2 Zero Temperature Dependence

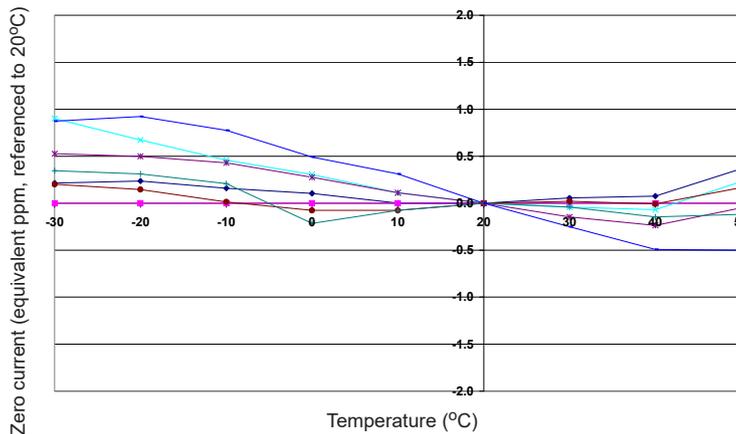


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 Response to 4,000ppm CO

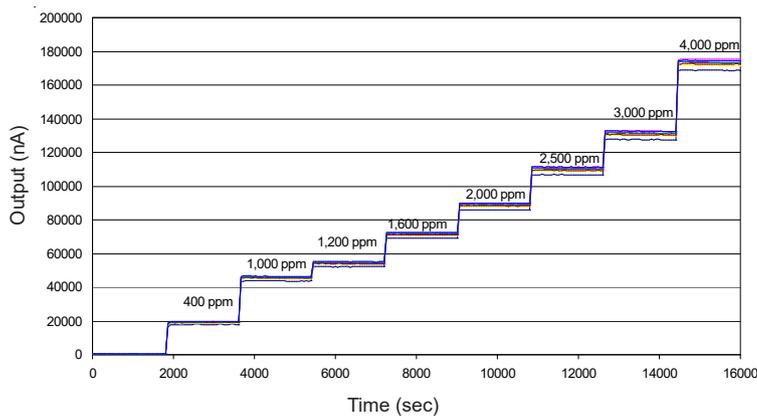


Figure 3 shows sensor output for increasing concentrations of CO, up to twice the specified overgas concentration. Data shown is eight sensors taken from a typical production batch.

This stepped overgas test shows the robustness of the sensor with fast response and straight plateaus at each step.

Note: Above 85% rh and 40°C a maximum continuous exposure period of 10 days is warranted. Where such exposure occurs the sensor will recover normal electrolyte volumes when allowed to rest at lower %rh and temperature levels for several days.

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 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.

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. (©ALPHASENSE LTD) Doc. Ref. CO-D4/SEP22