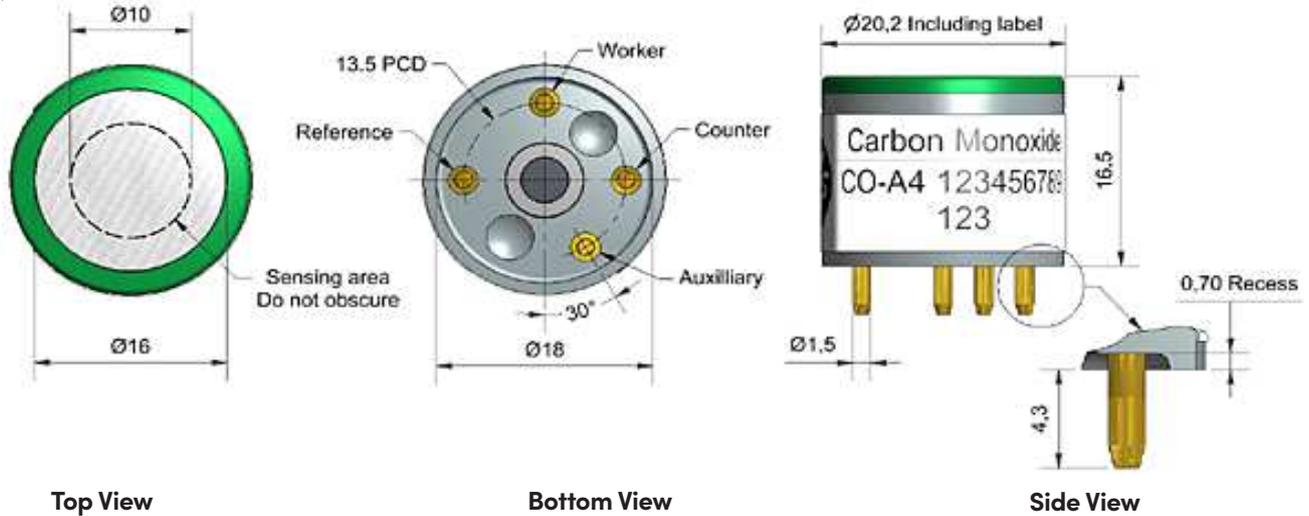




CO-A4 Carbon Monoxide Sensor – 4-Electrode


 Dimensions are in millimetres (± 0.1 mm).

Performance

Sensitivity	nA/ppm in 2ppm CO	220 to 410
Response time	t90 (s) from zero to 10ppm CO	< 30
Zero current	nA in zero air at 20°C	-100 to +10
Noise*	± 2 standard deviations (ppb equivalent)	20
Range ppm limit of performance warranty		500
Linearity	ppm CO error at full scale, linear at zero, 15ppm CO	< ± 1
Overgas limit	maximum ppm for stable response to gas pulse	2000

*Tested with Alphasense AFE low noise circuit

Lifetime

Zero drift	ppb equivalent change/year in lab air	< ± 100
Sensitivity drift	% change/year in lab air, monthly test	< 10
Operating life	months until 50% original signal (24-month warranted)	> 36

Environmental

Sensitivity @ -20°C	(% output @ -20°C/output @ 20°C) @ 5ppm CO	50 to 85
Sensitivity @ 50°C	(% output @ 50°C/output @ 20°C) @ 5ppm CO	110 to 125
Zero @ -20°C	nA change from 20°C	10 to 40
Zero @ 50°	nA change from 20°C	-120 to -200

Cross Sensitivity

Filter capacity	ppm·hrs	H ₂ S	250,000
H ₂ S sensitivity	% measured gas @ 5ppm	H ₂ S	< 0.1
NO ₂ sensitivity	% measured gas @ 5ppm	NO ₂	< -2
CL ₂ sensitivity	% measured gas @ 5ppm	CL ₂	< 0.1
NO sensitivity	% measured gas @ 5ppm	NO	< -2
SO ₂ sensitivity	% measured gas @ 5ppm	SO ₂	< 0.1
H ₂ sensitivity	% measured gas @ 100ppm	H ₂ at 20°C	< 50
C ₂ H ₄ sensitivity	% measured gas @ 100ppm	C ₂ H ₄	< 0.5
NH ₃ sensitivity	% measured gas @ 20ppm	NH ₃	< 0.1

Key Specifications

Temperature range	°C	-30 to 50
Pressure range	kPa	80 to 120
Humidity range	% rh continuous	15 to 90
Storage period	months @ 3 to 20°C (stored in sealed pot)	6
Load resistor	Ω (AFE circuit is recommended)	33 to 100
Weight	g	< 6



Figure 1 Sensitivity Temperature Dependence

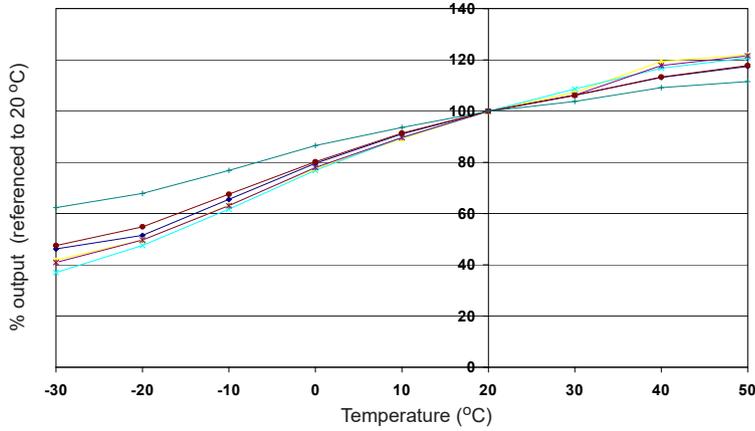


Figure 1 shows the temperature dependence of sensitivity at 2ppm CO.

This data is taken from a typical batch of sensors.

Figure 2 Zero Temperature Dependence

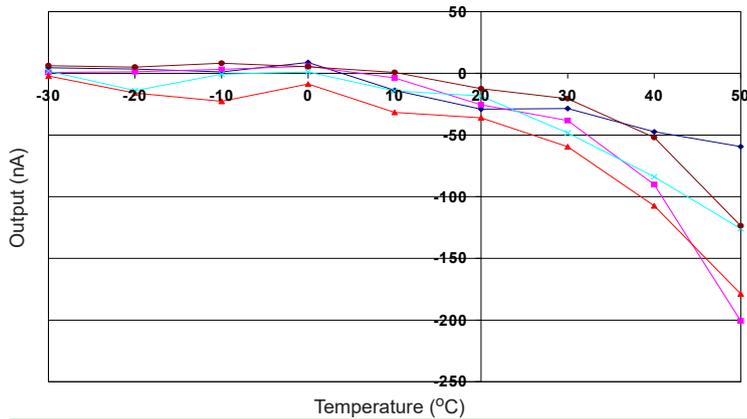


Figure 2 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.

This data is taken from a typical batch of sensors.

Contact Alphasense for further information on zero current correction.

Figure 3 Linearity from 0 to 1ppm

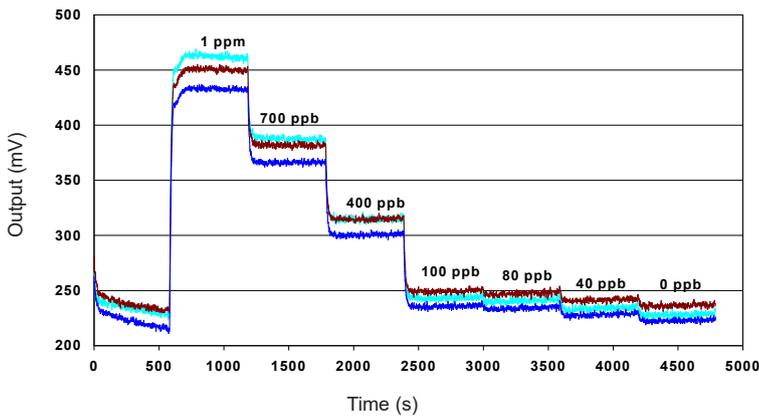


Figure 4 shows response from 0 to 1ppm CO.

Use of Alphasense AFE circuit reduces noise to 20ppb, with the opportunity of digital smoothing to reduce noise even further.

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.

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