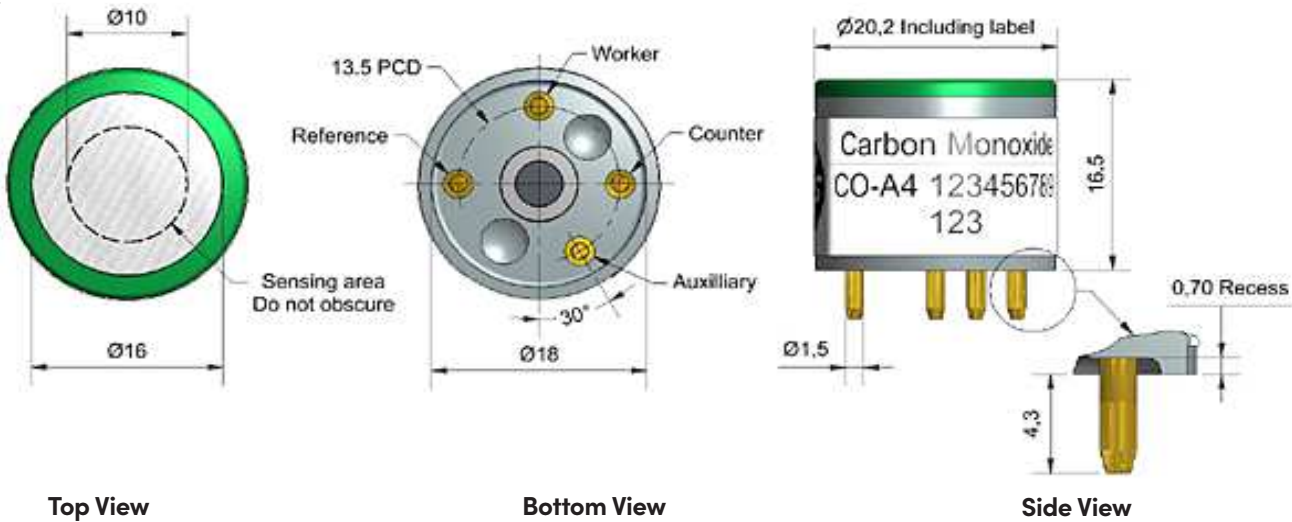


CO-A4 Carbon Monoxide Sensor – 4-Electrode



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

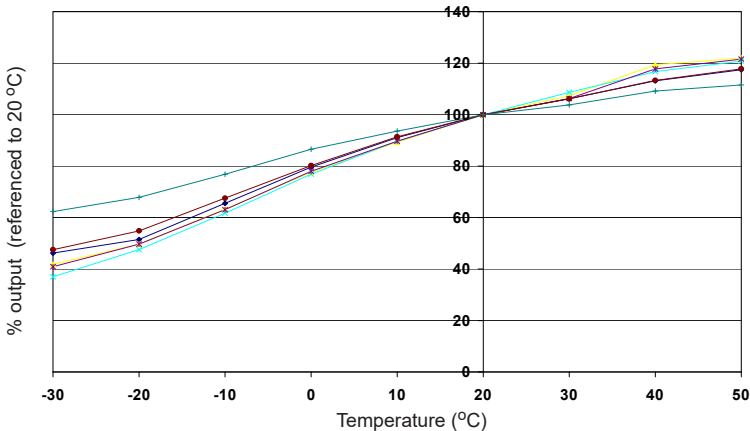


Figure 1 shows the temperature dependence of sensitivity at 2ppm CO.
This data is taken from a typical batch of sensors.

Figure 2 Zero Temperature Dependence

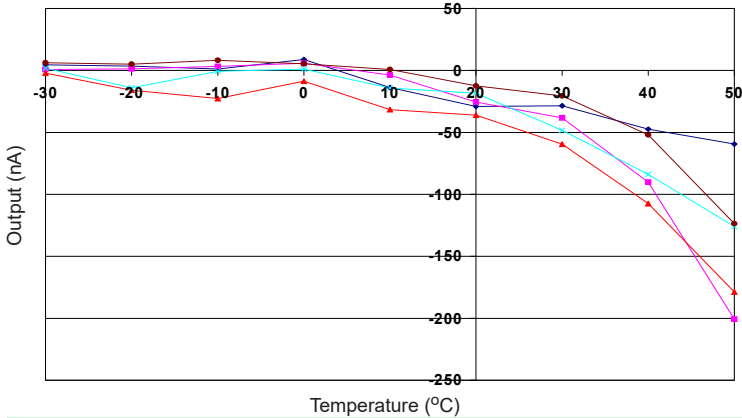


Figure 2 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.
This data is taken from a typical batch of sensors.
Contact Alphasense for further information on zero current correction.

Figure 3 Linearity from 0 to 1ppm

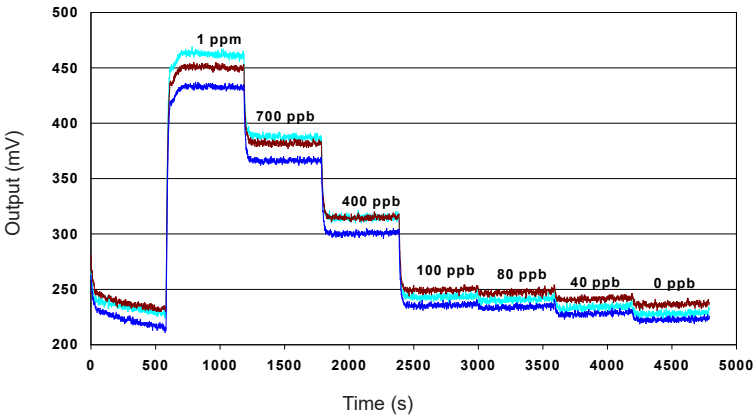


Figure 4 shows response from 0 to 1ppm CO.
Use of Alphasense AFE circuit reduces noise to 20ppb, with the opportunity of digital smoothing to reduce noise even further.