



 α lphasense **VMELEK**®

Technical specifications Version 1.0

CO-B4 Carbon Monoxide Sensor – 4-Electrode



Top View

Dimensions are in millimetres (± 0.1 mm).

Performance	Sensitivity Response time Zero current Noise [*] Range Linearity Overgas limit *Tested with Alphasense	nA/ppm in 2ppm CO t90 (s) from zero to 10ppm CO nA in zero air at 20°C ±2 standard deviations (ppb equivalent) ppm limit of performance warranty ppm CO error at full scale, linear at zero, 500ppm CO maximum ppm for stable response to gas pulse ISB low noise circuit		420 to 650 < 30 +30 to -250 4 1000 20 to 35 2000
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		40 to 70
	Sensitivity @ 50°C	(% output @ 50°C/output @ 20°C) @ 5ppm CO		110 to 125
	Zero @ -20°C	nA		-30 to +30
	Zero @ 50°C	nA		-50 to -200
Cross Sensitivity	Filter capacity H ₂ S sensitivity NO ₂ sensitivity Cl ₂ sensitivity NO sensitivity SO ₂ sensitivity H ₂ sensitivity C ₂ H ₄ sensitivity NH ₃ sensitivity	ppm·hrs % measured gas @ 5ppm % measured gas @ 5ppm % measured gas @ 5ppm % measured gas @ 5ppm % measured gas @ 100ppm % measured gas @ 100ppm % measured gas @ 20ppm	H_2S H_2S NO_2 CI_2 NO SO_2 H_2 at 20°C C_2H_4 NH_3	250,000 < 1 < 1 < 1 < -3 < 0.1 < 50 < 1 < 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 (ISB circuit is recommended)		33 to 100
	Weight	g		< 13







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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 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 futher information on zero current correction.





Figure 3 shows response from 0 to 1ppm CO. Use of Alphasense ISB circuit reduces noise to 4ppb, 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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