alphasense
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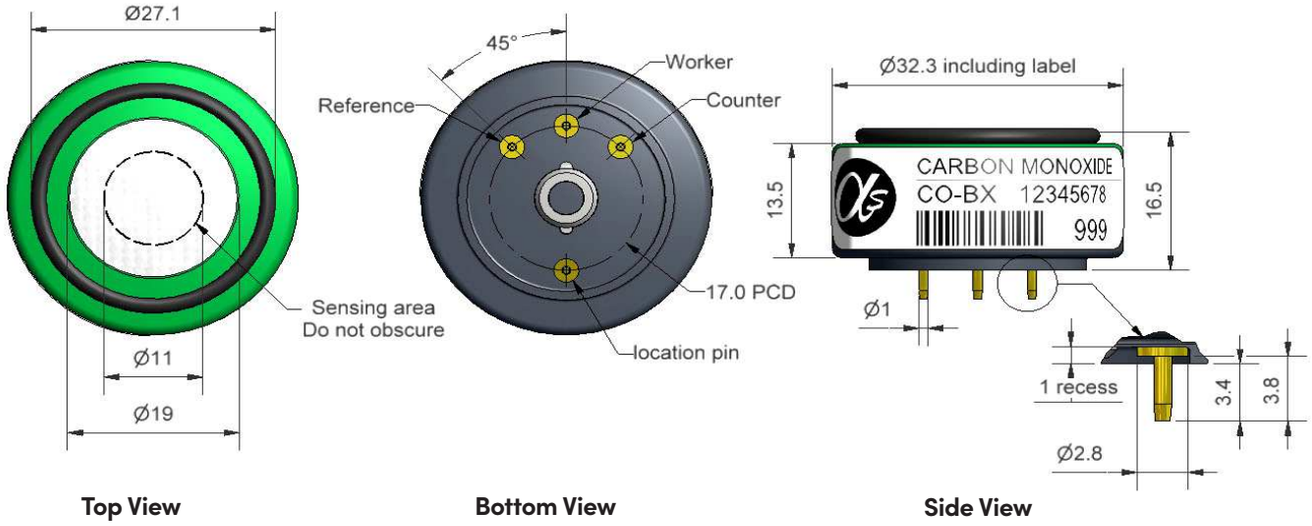
Technical specifications Version 1.0

CO-BX Carbon Monoxide Sensor – Low Hydrogen Cross Sensitivity



Top View **Bottom View** **Side View**

Dimensions are in millimetres (± 0.1 mm).

Performance	Sensitivity	nA/ppm in 400ppm CO		70 to 130
	Response time	t90 (s) from zero to 400ppm CO		< 25
	Zero current	ppm equivalent in zero air		< ± 3
	Resolution	RMS noise (ppm equivalent)		< 0.5
	Range	ppm limit of performance warranty		2,000
	Linearity	ppm CO error at full scale, linear at zero, 1000ppm CO		< ± 20
	Overgas limit	maximum ppm for stable response to gas pulse		5,000
Lifetime	Zero drift	ppm equivalent change/year in lab air		< 0.2
	Sensitivity drift	% change/year in lab air, monthly test		< 3
	Operating life	months until 80% original signal (24-month warranted)		> 24
Environmental	Sensitivity @ -20°C	(% output @ -20°C/output @ 20°C) @ 400ppm CO		40 to 60
	Sensitivity @ 0°C	(% output @ 0°C/output @ 20°C) @ 400ppm CO		65 to 85
	Sensitivity @ 50°C	(% output @ 50°C/output @ 20°C) @ 400ppm CO		110 to 130
	Zero @ -20°C	ppm equivalent change from 20°C		< 0 to 4
	Zero @ 0°C	ppm equivalent change from 20°C		< 0 to 3
	Zero @ 50°C	ppm equivalent change from 20°C		< 0 to -6
Cross Sensitivity	Filter capacity	ppm·hrs	H_2S	160,000
	Filter capacity	ppm·hrs	NO_2	120,000
	Filter capacity	ppm·hrs	NO	120,000
	Filter capacity	ppm·hrs	SO_2	160,000
	H_2S sensitivity	% measured gas @ 20ppm	H_2S	< 0.1
	NO_2 sensitivity	% measured gas @ 10ppm	NO_2	< -3
	Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2	< -0.1
	NO sensitivity	% measured gas @ 50ppm	NO	< -5
	SO_2 sensitivity	% measured gas @ 20ppm	SO_2	< 0.1
	H_2 sensitivity	% measured gas @ 400ppm	H_2 at 20°C	< 5
	C_2H_4 sensitivity	% measured gas @ 400ppm	C_2H_4	< 10
	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 (recommended)		10 to 47
	Weight	g		< 13

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For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. or visit our website at "www.alphasense.com".

Figure 1 Sensitivity Temperature Dependence

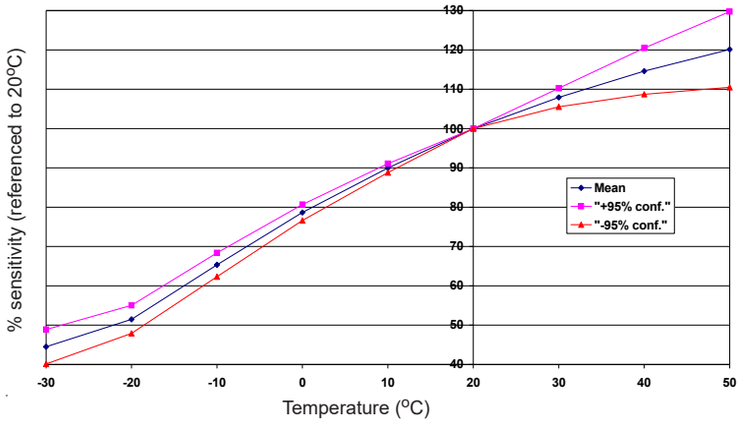


Figure 1 shows the variation in sensitivity caused by changes in temperature.

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

Figure 2 Zero Temperature Dependence

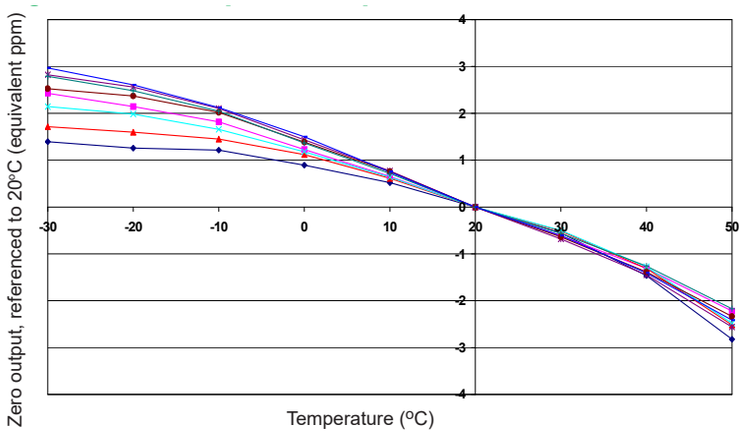
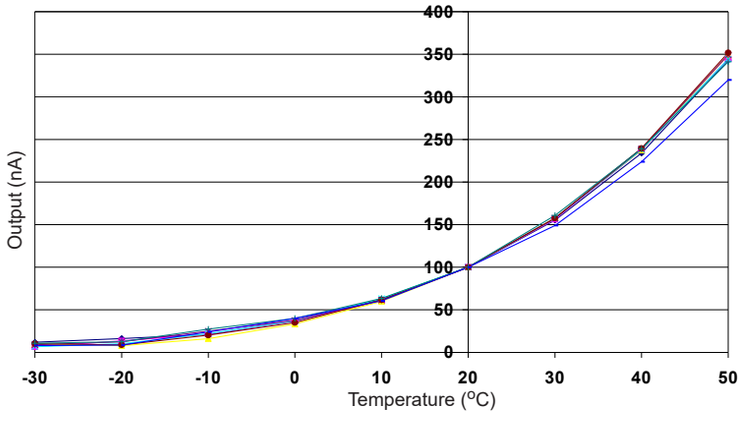


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 Hydrogen Temperature Dependence



Hydrogen sensitivity is very dependent on temperature.

At low temperatures hydrogen sensitivity can be ignored, but above 30°C it is important.

Important. The CO-BX must be operated with a 0 Volt bias between Reference & Working electrodes. Failure to comply with this requirement will result in a loss of its low Hydrogen cross sensitivity performance.

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. Doc. Ref. CO-BX/SEP22