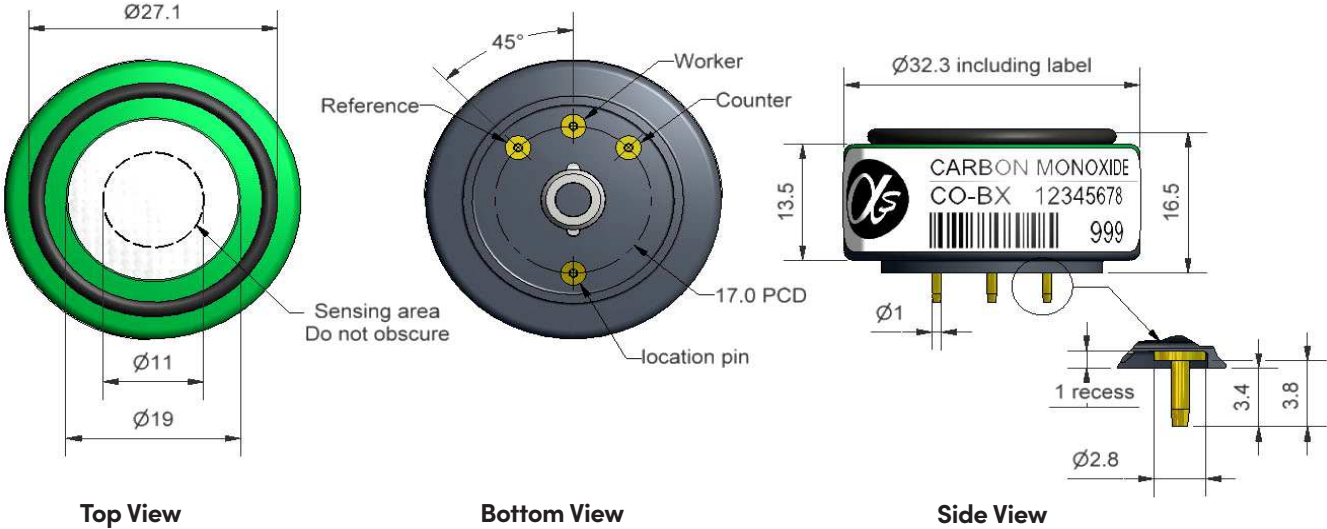


CO-BX Carbon Monoxide Sensor – Low Hydrogen Cross Sensitivity



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 ₂ S	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 ₂ S sensitivity	% measured gas @ 20ppm	H ₂ S	< 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 ₂ H ₄ sensitivity	% measured gas @ 400ppm	C ₂ H 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	

Figure 1 Sensitivity Temperature Dependence

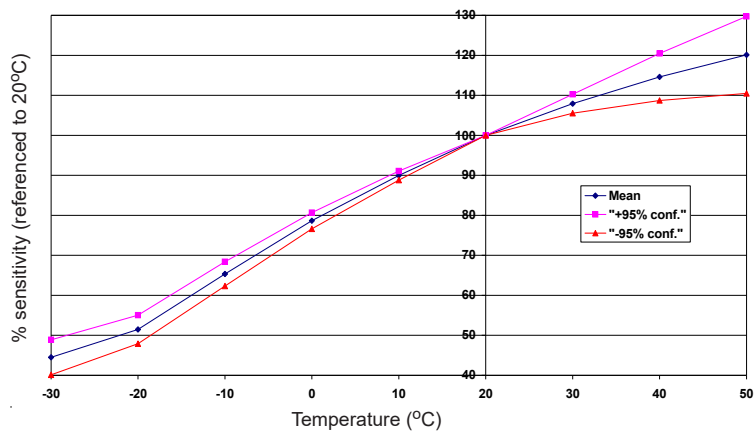


Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

The mean and $\pm 95\%$ confidence intervals are shown.

Figure 2 Zero Temperature Dependence

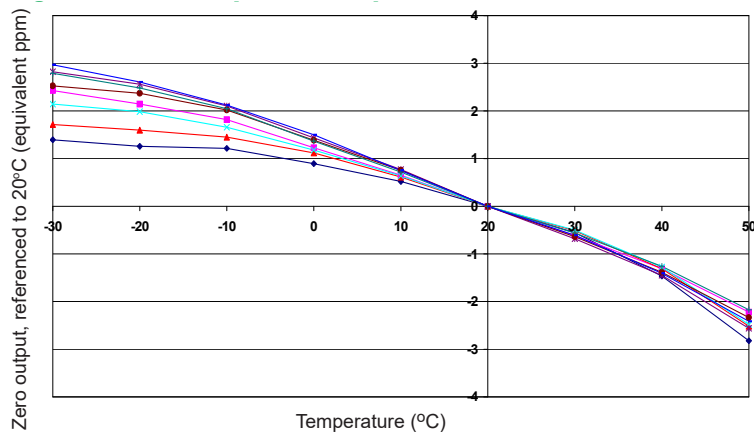
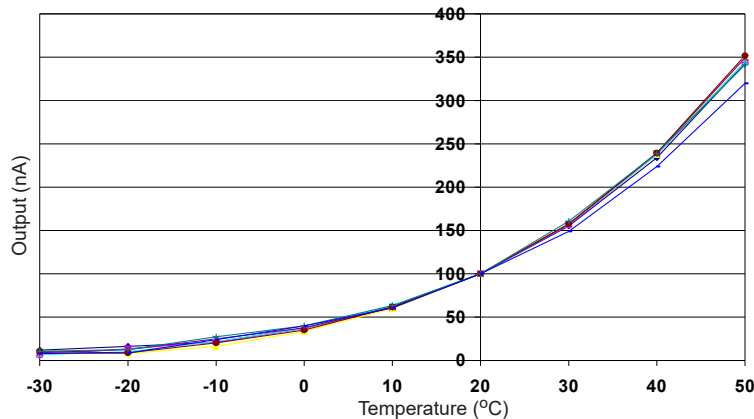


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 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.