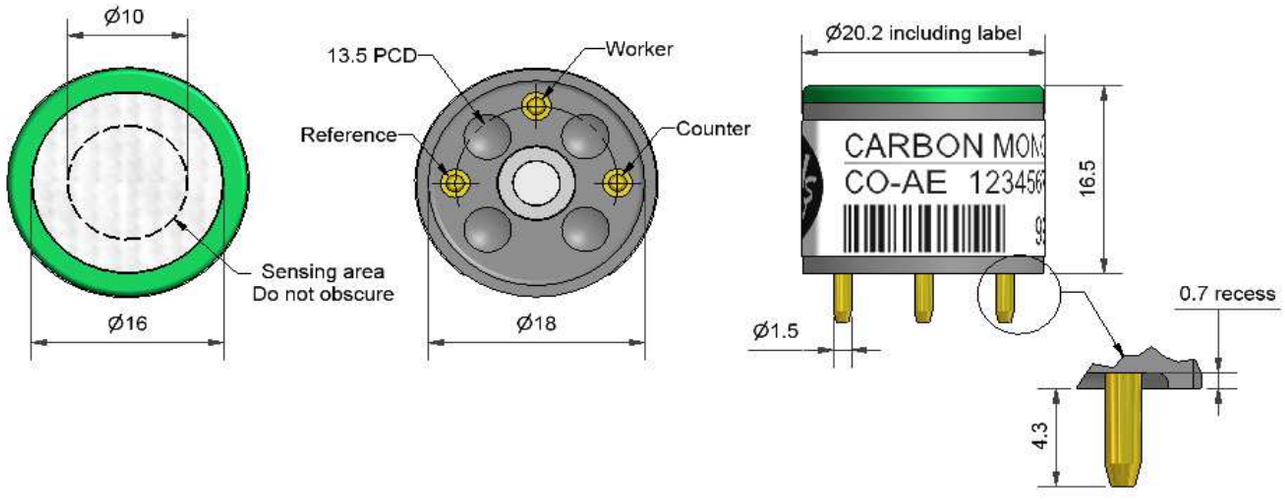
alphasense
AMETEK

Technical specifications Version 1.0

CO-AE Carbon Monoxide Sensor – High Concentration



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

Dimensions are in millimetres (± 0.1 mm).

Performance	Sensitivity	nA/ppm in 2,000ppm CO		10 to 25
	Response time	t90 (s) from zero to 2,000ppm CO		< 50
	Zero current	ppm equivalent in zero air		< ± 20
	Resolution	RMS noise (ppm equivalent)		< 5
	Range	ppm CO limit of performance warranty		10,000
	Linearity	ppm error at full scale, linear at zero and 2,000ppm CO		< 0 to 500
	Overgas limit	maximum ppm for stable response to gas pulse		100,000
Lifetime	Zero drift	ppm equivalent change/year in lab air		< 2
	Sensitivity drift	% change/year in lab air, monthly test		< 1
	Operating life	months until 80% original signal (24-month warranted)		> 24
Environmental	Sensitivity @ -20°C	(% output @ -20°C/output @ 20°C) @ 400ppm CO		65 to 93
	Sensitivity @ 50°C	(% output @ 50°C/output @ 20°C) @ 400ppm CO		98 to 115
	Zero @ -20°C	ppm equivalent change from 20°C		< ± 2
	Zero @ 50°C	ppm equivalent change from 20°C		< ± 5
Cross Sensitivity	Filter capacity	ppm·hrs	H_2S	3,000,000
	Filter capacity	ppm·hrs	NO_2	8,000,000
	Filter capacity	ppm·hrs	NO	200,000
	Filter capacity	ppm·hrs	SO_2	4,000,000
	H_2S sensitivity	% measured gas @ 20ppm	H_2S	< 0.1
	NO_2 sensitivity	% measured gas @ 10ppm	NO_2	< 0.1
	Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2	< 0.2
	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	< 75
	C_2H_4 sensitivity	% measured gas @ 400ppm	C_2H_4	< 20
	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		< 6

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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

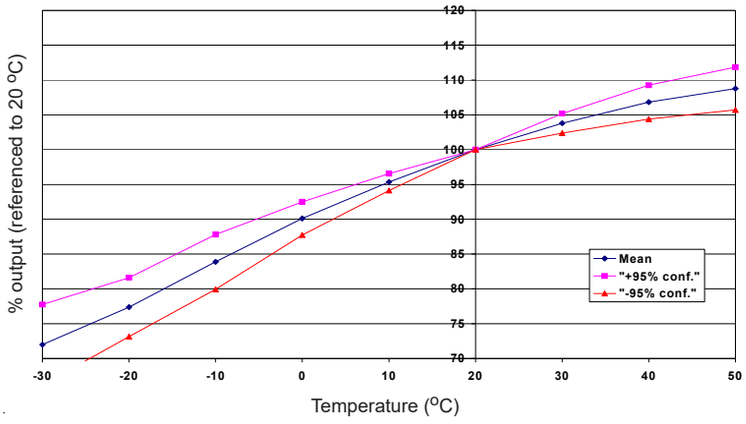


Figure 1 shows the variation in sensitivity caused by changes in temperature.

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

Figure 2 Zero Temperature Dependence

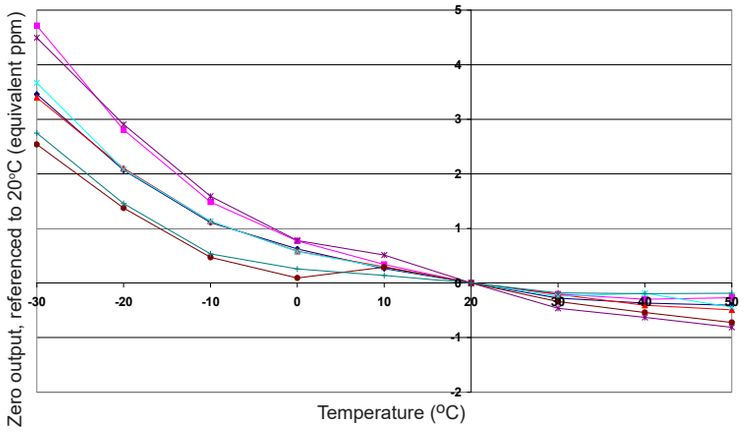
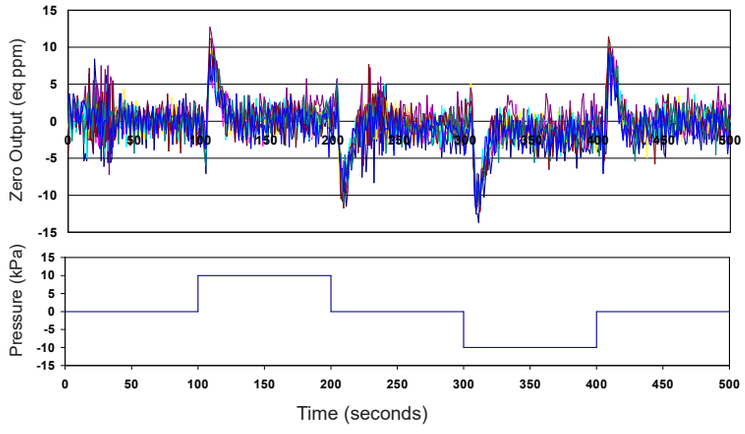


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 Zero Response to Pressure Steps



From ambient pressure, sensors were subjected to both positive and negative 10kPa pressure steps. The small transient rapidly decays as the sensor returns to its zero baseline.