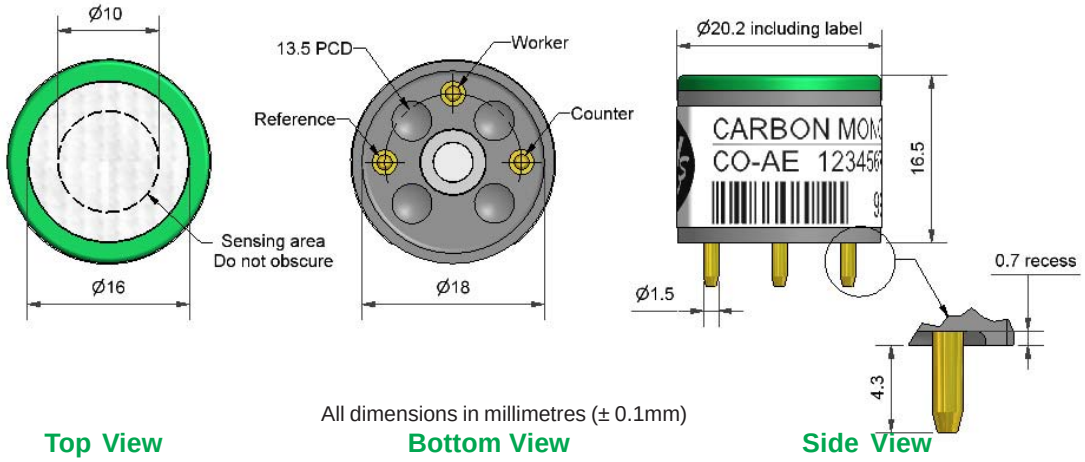
CO-AE Carbon Monoxide Sensor
High Concentration

PATENTED

Technical Specification

Figure 1 CO-AE Schematic Diagram



All dimensions in millimetres (± 0.1mm)

Top View | Bottom View | Side View

PERFORMANCE	Sensitivity	nA/ppm in 2,000ppm CO		12 to 20
	Response time	t_{90} (s) from zero to 2,000ppm CO		< 75
	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 2000ppm CO		<0 to 500
	Overgas range	maximum ppm for stable response to gas pulse		100,000
LIFETIME	Zero drift	ppm equivalent change/year in lab air		nd
	Sensitivity drift	% change/month in lab air, monthly test		nd
	Operating life	months until 80% original signal (24 month warranted)		> 24
ENVIRONMENTAL	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 400ppm CO		77 to 93
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 400ppm CO		97 to 110
	Zero @ -20°C	ppm equivalent change from 20°C		±2
	Zero @ 50°C	ppm equivalent change from 20°C		-2 to +5
CROSS SENSITIVITY	Filter capacity	ppm-hours	H_2S	3,000,000
	Filter capacity	ppm-hours	NO_2	8,000,000
	Filter capacity	ppm-hours	NO	2,000,000
	Filter capacity	ppm-hours	SO_2	4,000,000
	SO_2 sensitivity	% measured gas @ 20ppm	SO_2	< 0.1
	NO sensitivity	% measured gas @ 50ppm	NO	nd
	NO_2 sensitivity	% measured gas @ 10ppm	NO_2	< 1
	Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2	nd
	H_2 sensitivity	% measured gas @ 400ppm	H_2 at 20°C	< 75
	C_2H_4 sensitivity	% measured gas @ 400ppm	C_2H_4	< 60
	H_2S sensitivity	% measured gas @ 20ppm	H_2S	< 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	W (recommended)		10 to 47
	Weight	g		< 6

NOTE: all sensors are tested at ambient environmental conditions, with 10 ohm load resistor, 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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CO-AE Performance Data

Technical Specification

Figure 2 SensitivityTemperature Dependence

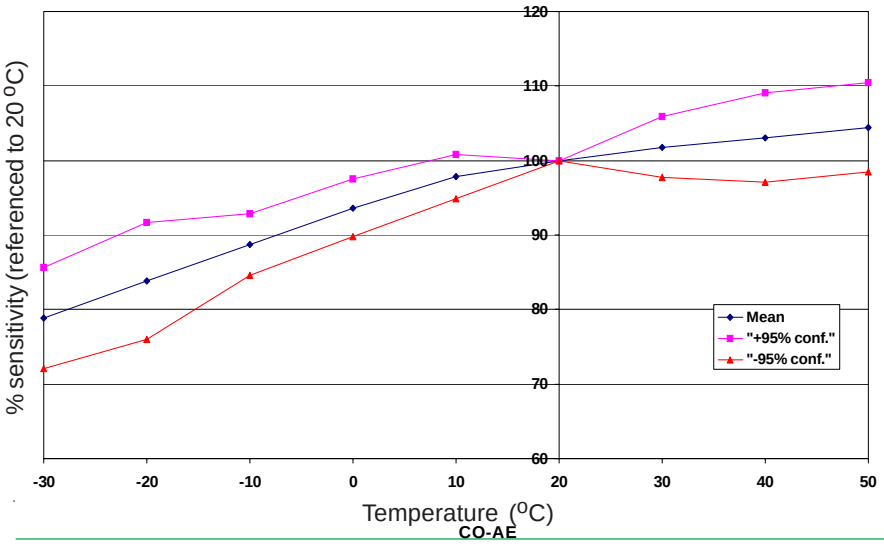
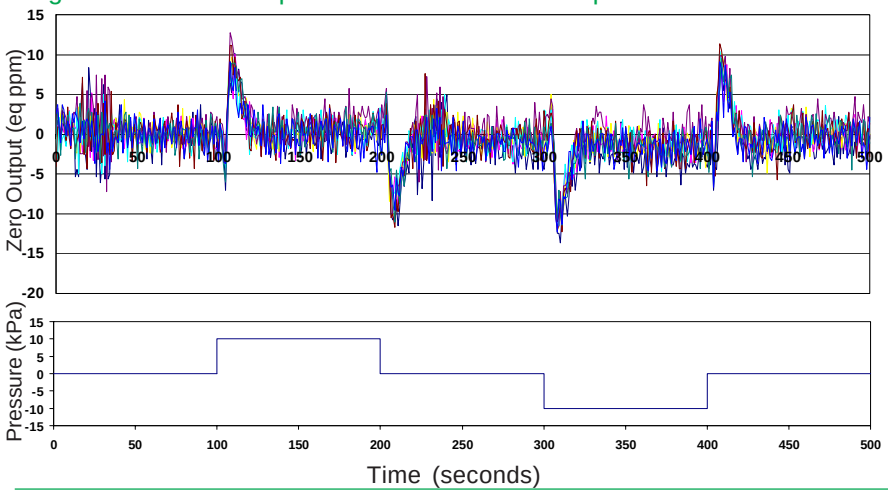


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Figure 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.

Figure 4 Linear Response to Exposure to 1% Volume

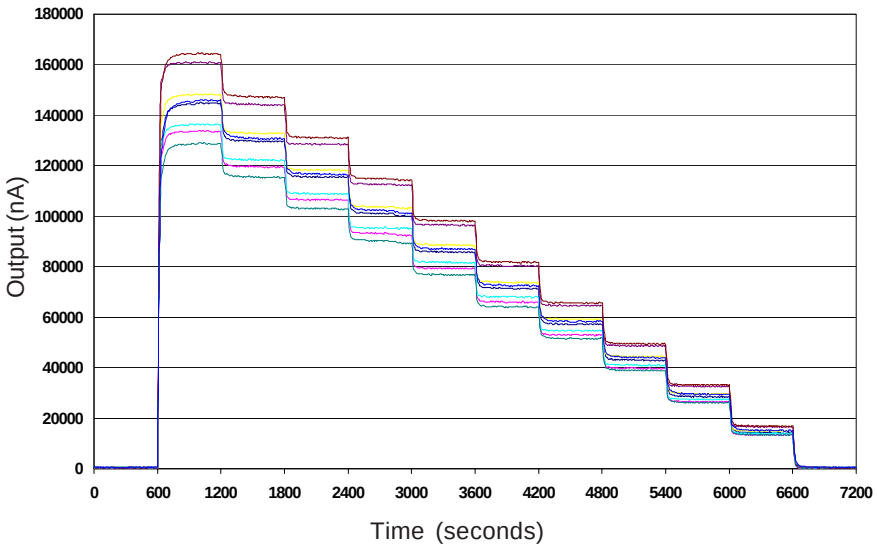


Figure 4 shows the response to step changes in CO concentrations from zero to 1% by volume.

This data is taken from a typical batch of sensors.

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