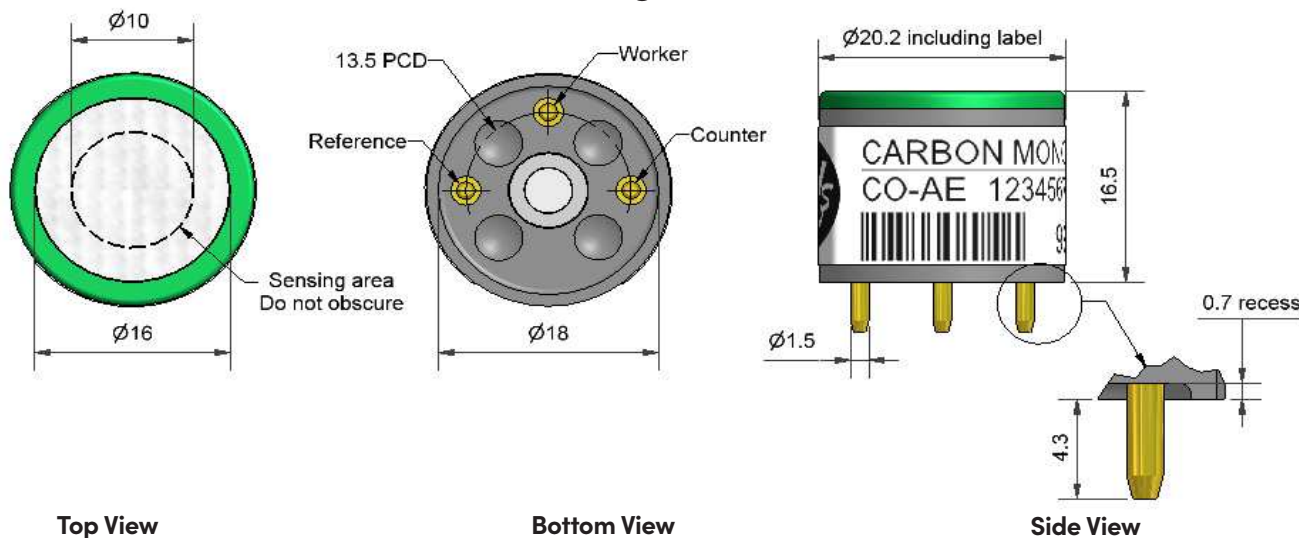




Technical specifications Version 1.0

CO-AE Carbon Monoxide Sensor – High Concentration


 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	$^{\circ}\text{C}$	-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



Figure 1 Sensitivity Temperature Dependence

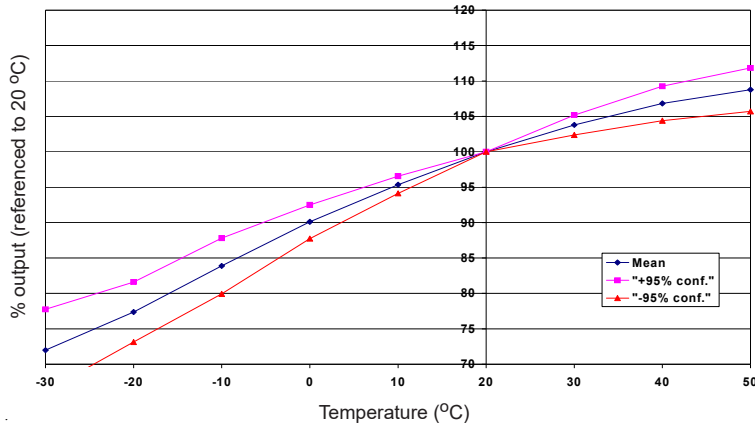


Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

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

Figure 2 Zero Temperature Dependence

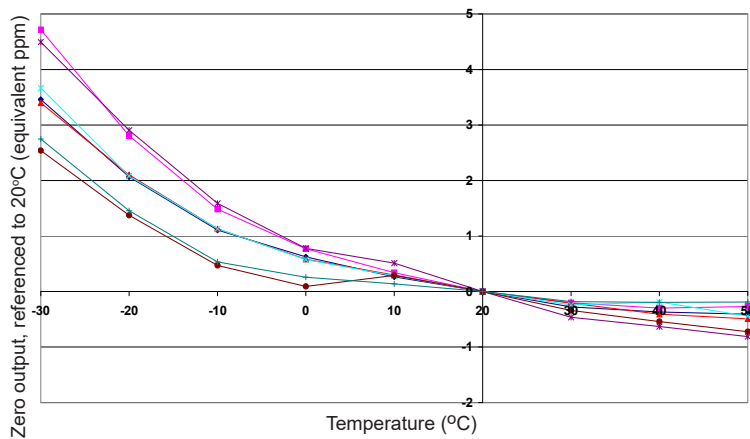
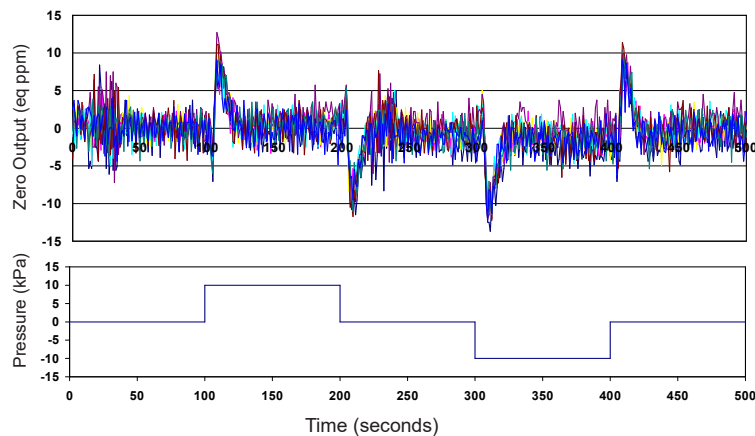


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 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.

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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