



# CO-CE Carbon Monoxide Sensor

## High Concentration



Figure 1 CO-CE Schematic Diagram



PATENTED

All dimensions in millimetres ( $\pm 0.1$ mm) unless otherwise stated

Top View

Bottom View

Side View

<b>PERFORMANCE</b>	Sensitivity	nA/ppm in 2,000ppm CO	10 to 25
	Response time	$t_{90}$ (s) from zero to 2,000ppm CO	< 75
	Zero current	ppm equivalent in zero air	< $\pm 20$
	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	< 500
	Overshoot limit	maximum ppm for stable response to gas pulse	100,000
<b>LIFETIME</b>	Zero drift	ppm equivalent change/year in lab air	< 1
	Sensitivity drift	% change/year in lab air, monthly test	< 4
	Operating life	months until 80% original signal (24 month warranted)	> 24
<b>ENVIRONMENTAL</b>	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 400ppm CO	70 to 90
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 400ppm CO	102 to 112
	Zero @ -20°C	ppm equivalent change from 20°C	< $\pm 3$
	Zero @ 50°C	ppm equivalent change from 20°C	< $\pm 5$
<b>CROSS SENSITIVITY</b>	Filter capacity	ppm-hours	H <sub>2</sub> S 4,000,000
	Filter capacity	ppm-hours	NO <sub>2</sub> 10,000,000
	Filter capacity	ppm-hours	NO 2,000,000
	Filter capacity	ppm-hours	SO <sub>2</sub> 5,000,000
	H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S < 0.1
	NO <sub>2</sub> sensitivity	% measured gas @ 10ppm	NO <sub>2</sub> < 0.1
	NO sensitivity	% measured gas @ 50ppm	NO < 0.1
	SO <sub>2</sub> sensitivity	% measured gas @ 20ppm	SO <sub>2</sub> < 0.1
	Cl <sub>2</sub> sensitivity	% measured gas @ 10ppm	Cl <sub>2</sub> < 0.1
	H <sub>2</sub> sensitivity	% measured gas @ 400ppm	H <sub>2</sub> at 20°C < 45
	C <sub>2</sub> H <sub>4</sub> sensitivity	% measured gas @ 400ppm	C <sub>2</sub> H <sub>4</sub> < 2
NH <sub>3</sub> sensitivity	% measured gas @ 20ppm	NH <sub>3</sub> < 0.1	
<b>KEY SPECIFICATIONS</b>	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	$\Omega$ (recommended)	10 to 47
	Weight	g	< 8



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, 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.



# CO-CE Performance Data

Technical Specification

**Figure 2 Sensitivity Temperature Dependence**

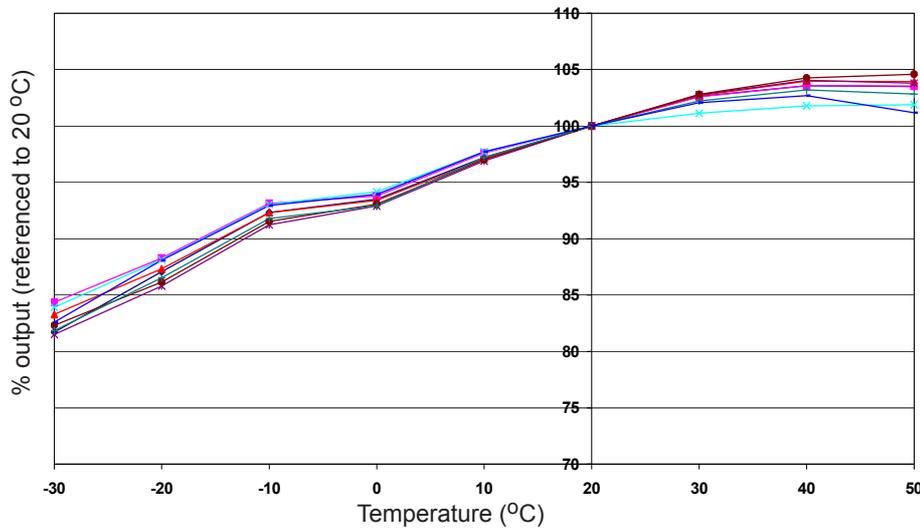


Figure 2 shows the variation in sensitivity caused by changes in temperature. This data is taken from a typical batch of sensors.

**Figure 3 Zero Temperature Dependence**

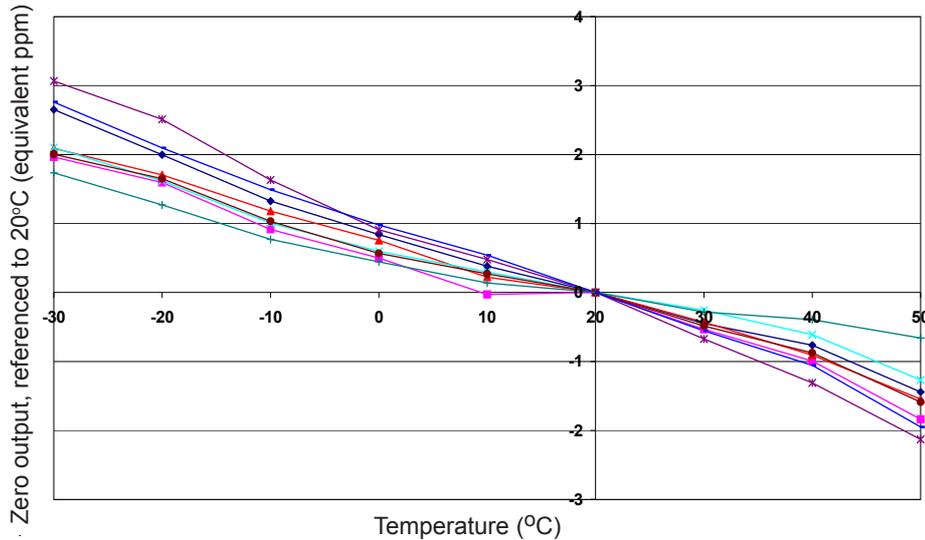


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C. This data is taken from a typical batch of sensors and shows repeatability.

**Figure 4 Response to 10% Volume CO**

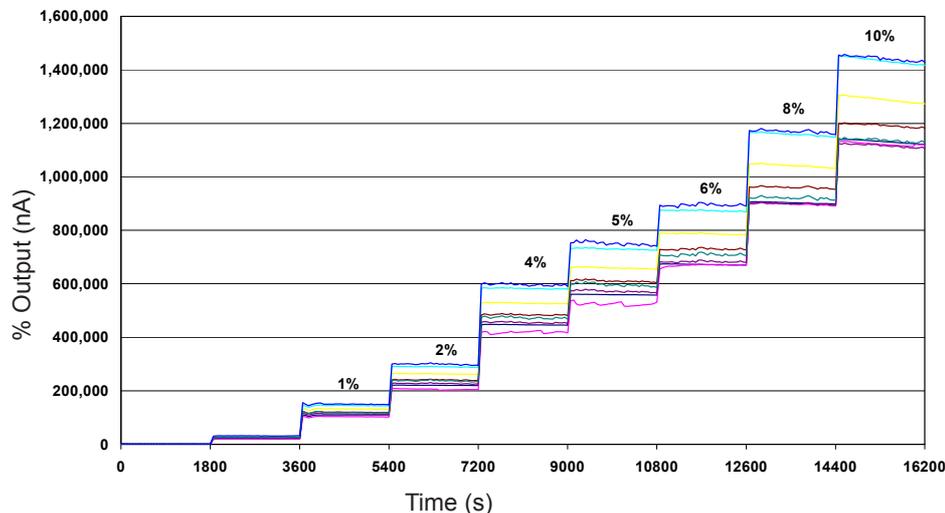


Figure 4 shows the non-linear response to step changes in CO concentrations from 10% CO to 0% CO. This data is taken from a typical batch of sensors and shows repeatability.

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](http://www.alphasense.com)".

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