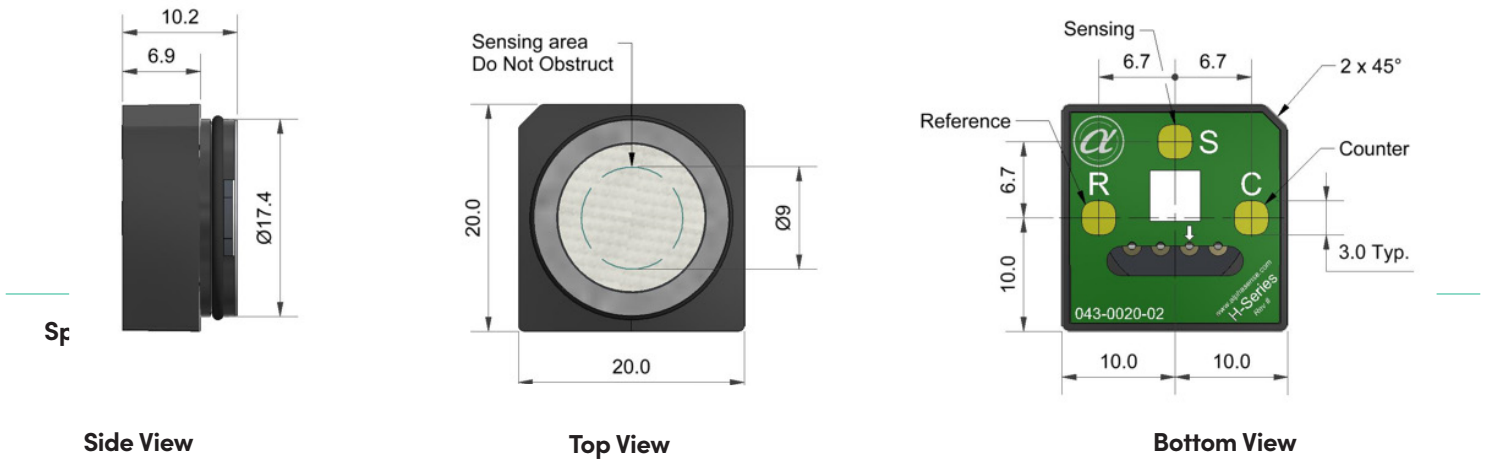


COH-H2 Carbon Monoxide and Hydrogen Sulfide



Performance			
Sensitivity	nA/ppm in 400ppm CO		50 to 100
Response time	t90 (s) from zero to 400ppm CO		< 35
Zero current	ppm equivalent in zero air		-3 to + 3.5
Resolution	rms noise (ppm equivalent)		< 0.5
Range	ppm CO limit of performance warranty		1,000
Linearity	ppm error at full scale, linear at zero and 400 ppm CO		10 to 40
Overgas limit	maximum CO for stable response to gas pulse		5,000

Lifetime			
Zero drift	ppm equivalent change/year in lab air		< 0.5
Sensitivity drift	% change/year in lab air, monthly test		< 4
Operating life	months until 80% original signal (24-month warranted)		24

Environmental			
Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 100ppm CO		30 to 50
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 100ppm CO		120 to 145
Zero @ -20°C	ppm equivalent change from 20°C		0 to 5
Zero @ 50°C	ppm equivalent change from 20°C		0 to -5

Cross Sensitivity			
Filter capacity	ppm hours of Hydrogen Sulfide		1200
H ₂ S sensitivity	% measured gas @ 20ppm	H ₂ S	< 12
H ₂ sensitivity	% measured gas @ 400ppm	H ₂ @ 20°C	< 8
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	< 100
SO ₂ sensitivity	% measured gas @ 20ppm	SO ₂	< 2
C ₂ H ₄ sensitivity	% measured gas @ 400ppm	C ₂ H ₄	< 60
NH ₃ sensitivity	% measured gas @ 20ppm	NH ₃	± 0.5

Key Specifications			
Temperature range	°C		-30 to 50
Pressure range	kPa		80 to 120
Humidity range	% h continuous (see note below)		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 CO Channel Sensitivity Temperature Dependence

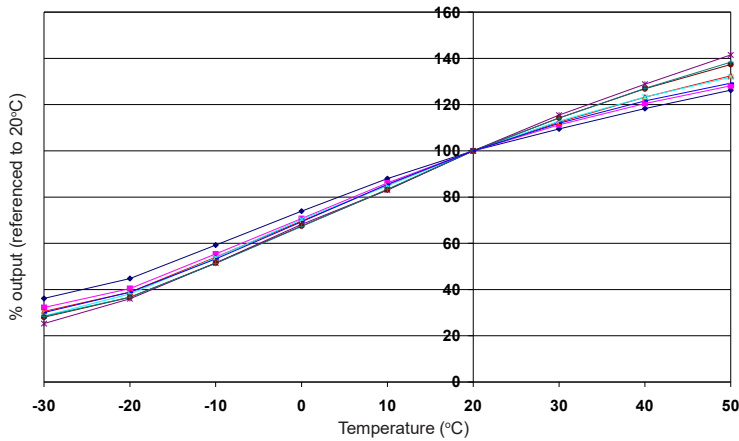


Figure 1 shows the % variation in sensitivity caused by changes in temperature.

The data is taken from a typical batch of sensors.

Figure 2 CO Channel Zero Temperature Dependence

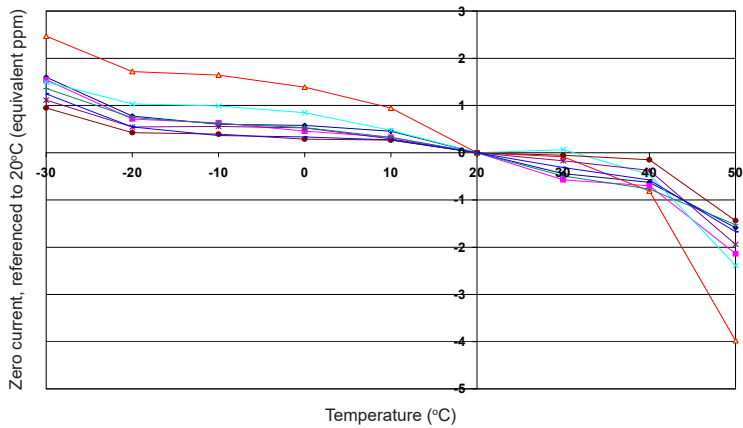


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to the zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 CO Channel Response to 800ppm CO

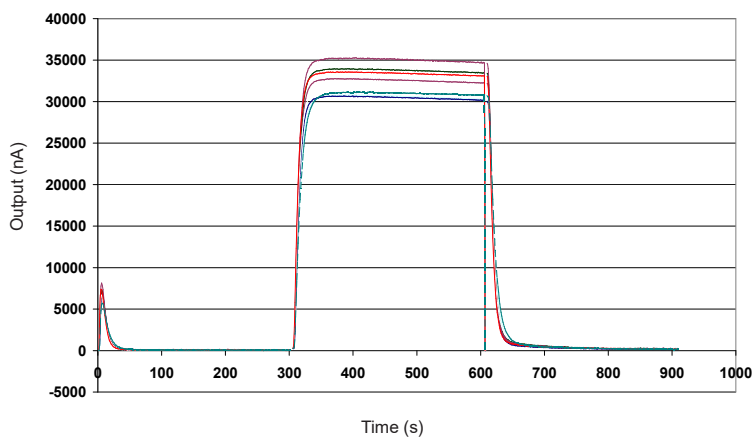
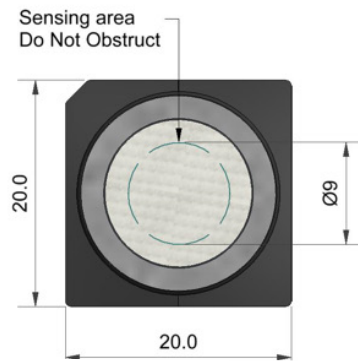


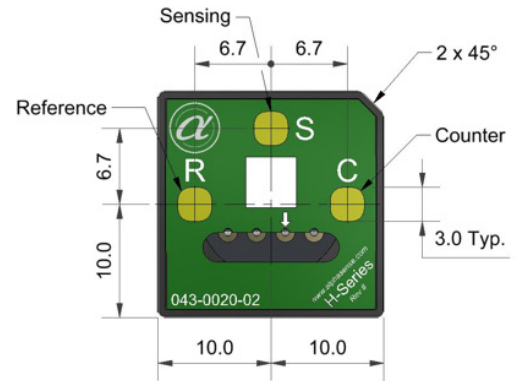
Figure 3 shows the response for a batch of sensors tested with 400ppm CO. The fast, stable response shows a robust sensor that operates well above its specification.



Side View



Top View



Bottom View

Specification Hydrogen Sulfide Channel

Performance	Sensitivity	nA/ppm in 20ppm H ₂ S	650 to 1100
	Response time	t90 (s) from zero to 20ppm H ₂ S @ 20°C	< 30
	Zero current	ppm equivalent in zero air	± 0.25
	Resolution	rms noise (ppm equivalent)	< 0.1
	Range	ppm H ₂ S limit of performance warranty	100
	Linearity	ppm error at full scale, linear at zero and 20ppm H ₂ S	< ± 5
	Overgas limit	maximum ppm H ₂ S for stable response to gas pulse	200
Lifetime	Zero drift	ppm equivalent change/year in lab air	< 0.1
	Sensitivity drift	% change/year in lab air, monthly test	< 2
	Operating life	months until 80% original signal (24-month warranted)	24
Environmental	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 20ppm H ₂ S	75 to 90
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 20ppm H ₂ S	100 to 112
	Zero @ -20°C	ppm equivalent change from 20°C	± 0.05
	Zero @ 50°	ppm equivalent change from 20°C	< 0 to 0.2
Cross Sensitivity	NO ₂ sensitivity	% measured gas @ 10ppm	NO ₂ < -30
	Cl ₂ sensitivity	% measured gas @ 10ppm	Cl ₂ < -25
	NO sensitivity	% measured gas @ 50ppm	NO < 30
	SO ₂ sensitivity	% measured gas @ 20ppm	SO ₂ < 30
	CO sensitivity	% measured gas @ 400ppm	CO < 1.5
	H ₂ sensitivity	% measured gas @ 400ppm	H ₂ < 0.3
	C ₂ H ₄ sensitivity	% measured gas @ 400ppm	C ₂ H ₄ < 0.2
NH ₃ sensitivity	% measured gas @ 20ppm	NH ₃ < 2	

Figure 4 H₂S Channel Response to 25ppm H₂S

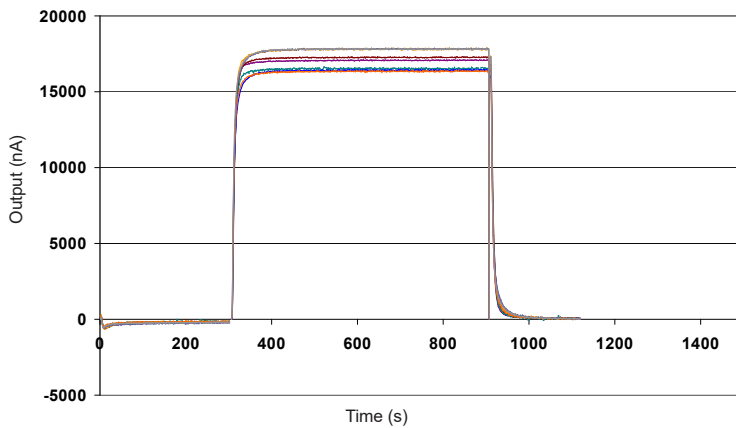


Figure 4 shows response to 25ppm H₂S. Sensor shows a fast and stable response and recovery and repeatable sensitivity.

Figure 5 H₂S Channel Sensitivity Temperature Dependence

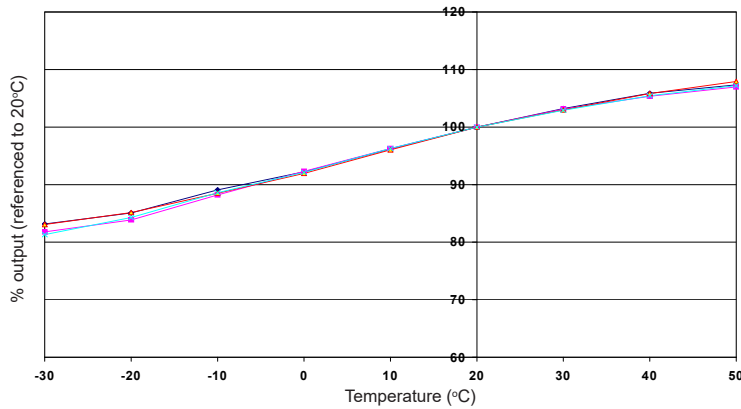


Figure 5 shows the % variation in sensitivity caused by changes in temperature. The data is taken from a typical batch of sensors.

Figure 6 H₂S Channel Zero Temperature Dependence

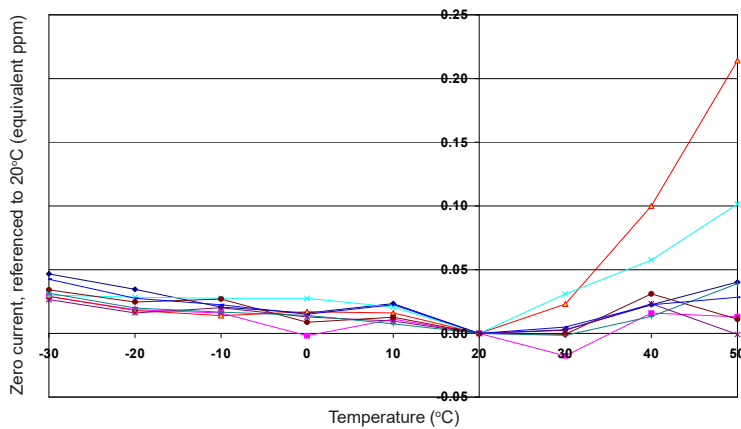


Figure 6 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to the zero at 20°C. This data is taken from a typical batch of sensors.

Note: Above 85% rh and 40°C a maximum continuous exposure period of 10 days is warranted. Where such exposure occurs the sensor will recover normal electrolyte volumes, when allowed to rest at lower %rh and temperature levels for several days.

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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