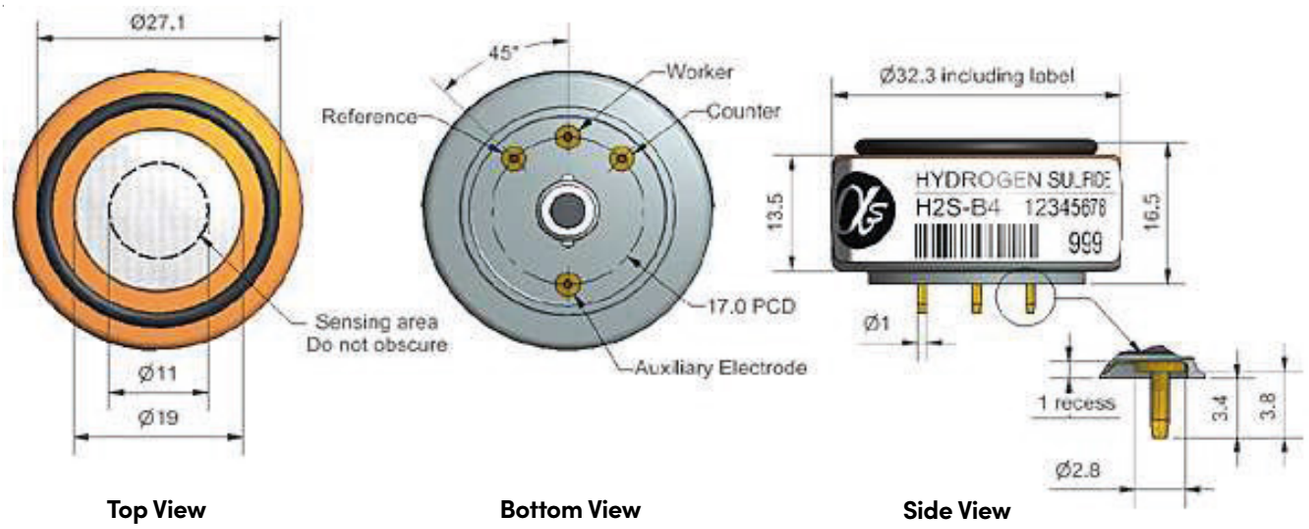
alphasense
AMETEK

Technical specifications Version 1.0

H2S-B4 Hydrogen Sulfide Sensor – 4-Electrode



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

Dimensions are in millimetres (± 0.15 mm).

Performance	Sensitivity	nA/ppm at 2ppm H_2S		1450 to 2600
	Response time	t90 (s) from zero to 2ppm H_2S		< 60
	Zero current	nA in zero air at 20°C		-250 to 200
	Noise*	±2 standard deviations (ppb equivalent)		1
	Range	ppm H_2S limit of performance warranty		100
	Linearity	ppb error at full scale, linear at zero and 40ppm H_2S		< ± 4
	Overgas limit	maximum ppm for stable response to gas pulse		200
	***Tested with Alphasense ISB low noise circuit**			
Lifetime	Zero drift	ppm equivalent change/year in lab air		< ± 100
	Sensitivity drift	% change/year in lab air, monthly test		< 20
	Operating life	months until 50% original signal (24-month warranted)		> 24
Environmental	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 2ppm H_2S		77 to 90
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 2ppm H_2S		100 to 110
	Zero @ -20°C	nA change from 20°C		50 to 60
	Zero @ 50°C	nA change from 20°C		-120 to -160
Cross Sensitivity	NO_2 sensitivity	% measured gas @ 5ppm	NO_2	< -10
	Cl_2 sensitivity	% measured gas @ 5ppm	Cl_2	< -12
	NO sensitivity	% measured gas @ 5ppm	NO	< 12
	SO_2 sensitivity	% measured gas @ 5ppm	SO_2	< 20
	CO sensitivity	% measured gas @ 5ppm	CO	< 3
	H_2 sensitivity	% measured gas @ 100ppm	H_2	< 0.5
	C_2H_4 sensitivity	% measured gas @ 100ppm	C_2H_4	< 0.1
	NH_3 sensitivity	% measured gas @ 20ppm	NH_3	< 0.1
	CO_2 sensitivity	% measured gas @ 5%	CO_2	< 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 (ISB circuit is recommended)		33 to 100
	Weight	g		< 13

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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

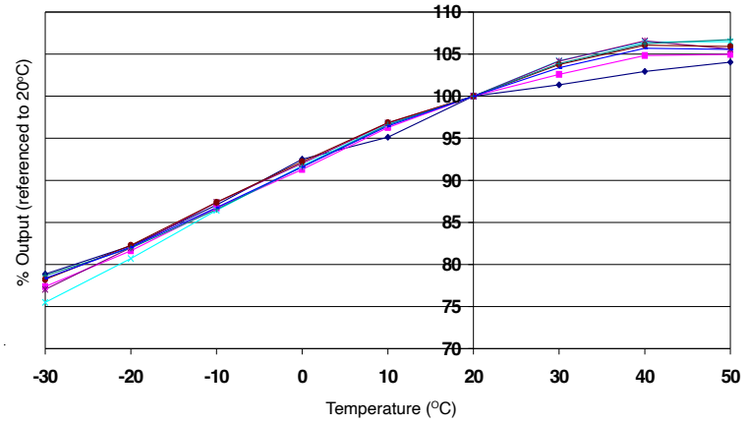

Figure 1 shows the temperature dependence of sensitivity at 2ppm H_2S.

This data is taken from a typical batch of sensors.

Figure 2 Zero Temperature Dependence

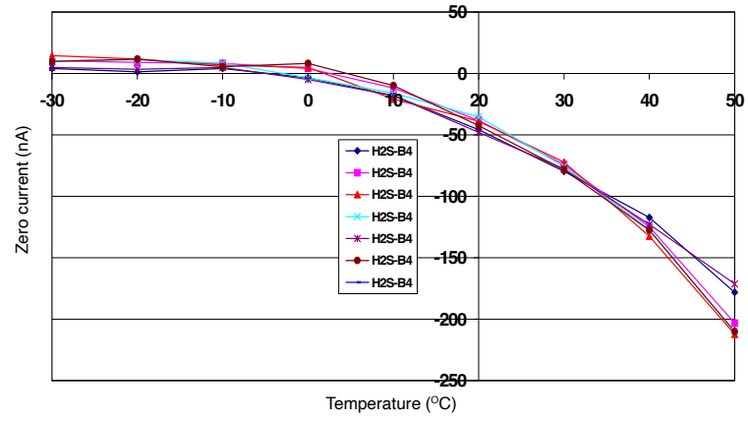

Figure 2 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.

This data is taken from a typical batch of sensors.

Contact Alphasense for futher information on zero current correction.

Figure 3 Linearity to 200 ppb H_2S

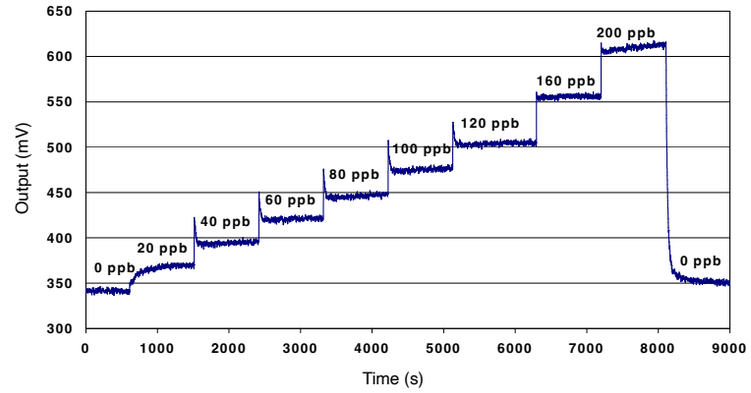

Figure 3 shows response to 200ppb H_2S.

Use of Alphasense ISB circuit reduces noise to 1ppb, with the opportunity of digital smoothing to reduce noise even further.