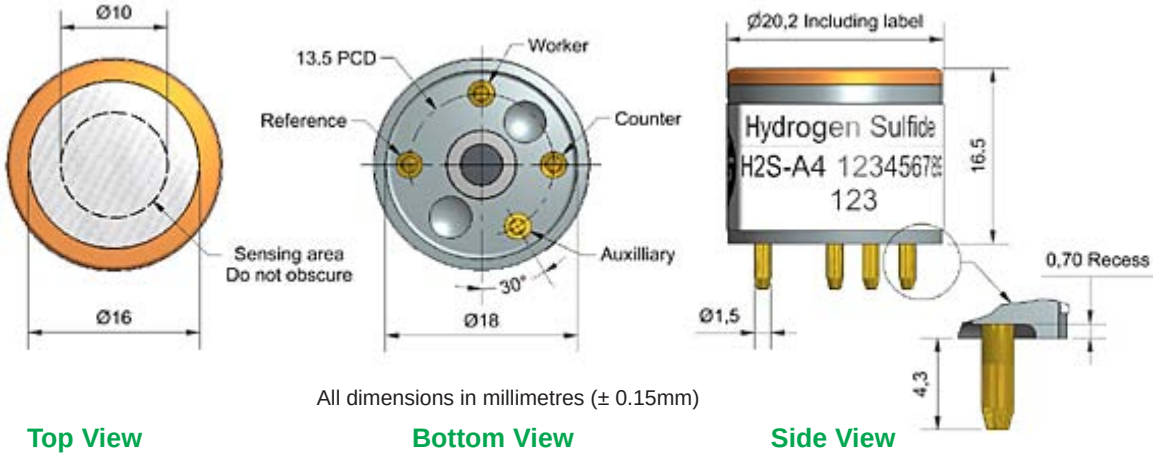
H2S-A4 Hydrogen Sulfide Sensor
4-Electrode

Technical Specification

Figure 1 H2S-A4 Schematic Diagram



All dimensions in millimetres (± 0.15mm)

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

PERFORMANCE	Sensitivity	nA/ppm at 2ppm H_2S	1300 to 1650
	Response time	t_{90} (s) from zero to 2ppm H_2S	< 35
	Zero current	nA in zero air at 20°C	-30 to 0
	Noise*	±2 standard deviations (ppb equivalent)	5
	Range	ppm H_2S limit of performance warranty	50
	Linearity	ppb error at full scale, linear at zero and 10ppm H_2S	< ± 0.5
	Overgas limit	maximum ppm for stable response to gas pulse	100

*** Tested with Alphasense AFE low noise circuit**

LIFETIME	Zero drift	ppb equivalent change/year in lab air	< ±100
	Sensitivity drift	% change/year in lab air, monthly test	< 20
	Operating life	months until 50% original signal (12 month warranted)	24

ENVIRONMENTAL	Sensitivity @ -20°C	(% output @ -20°C/output @ 20°C) @ 2ppm H_2S	80 to 92
	Sensitivity @ 50°C	(% output @ 50°C/output @ 20°C) @ 2ppm H_2S	100 to 110
	Zero @ -20°C	nA change from 20°C	30 to 50
	Zero @ 50°C	nA change from 20°C	90 to 110

CROSS SENSITIVITY	NO_2 sensitivity	% measured gas @	5ppm	NO_2	< -20
	Cl_2 sensitivity	% measured gas @	5ppm	Cl_2	< -8
	NO sensitivity	% measured gas @	5ppm	NO	< 3
	SO_2 sensitivity	% measured gas @	5ppm	SO_2	< 15
	CO sensitivity	% measured gas @	5ppm	CO	< 1
	H_2 sensitivity	% measured gas @	100ppm	H_2	< 0.5
	C_2H_4 sensitivity	% measured gas @	100ppm	C_2H_4	< 0.5
	NH_3 sensitivity	% measured gas @	5ppm	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	15 to 90
	Storage period	months @ 3 to 20°C (stored in sealed pot)	6
	Load resistor	Ω (AFE circuit is recommended)	33 to 100
	Weight	g	< 6

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 47 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.

Alphasense Ltd, Sensor Technology House, 300 Avenue West, Skyline 120, Great Notley. CM77 7AA. UK
Telephone: +44 (0) 1376 556 700 Fax: +44 (0) 1376 335 899 E-mail: sensors@alphasense.com Website: www.alphasense.com

H2S-A4 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

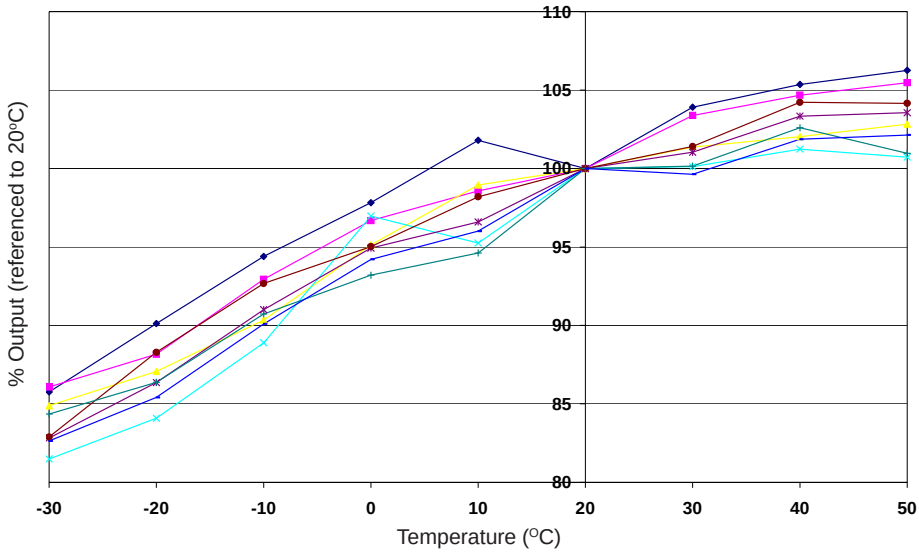


Figure 2 shows the temperature dependence of sensitivity at 2ppm H_2S.

This data is taken from a typical batch of sensors.

Figure 3 Zero Temperature Dependence (uncorrected)

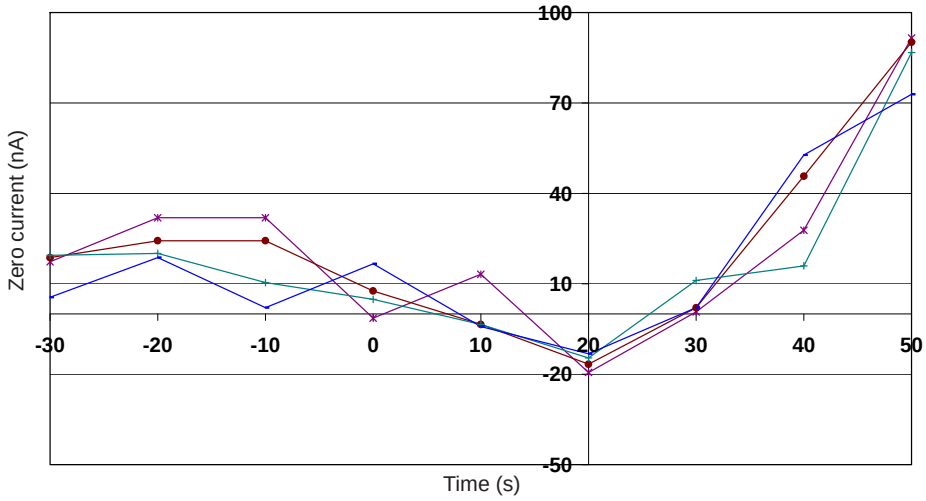


Figure 3 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.

This data is taken from a typical batch of sensors.

Contact Alphasense for futher information on zero current correction.

Figure 4 0 to 200ppb Linearity

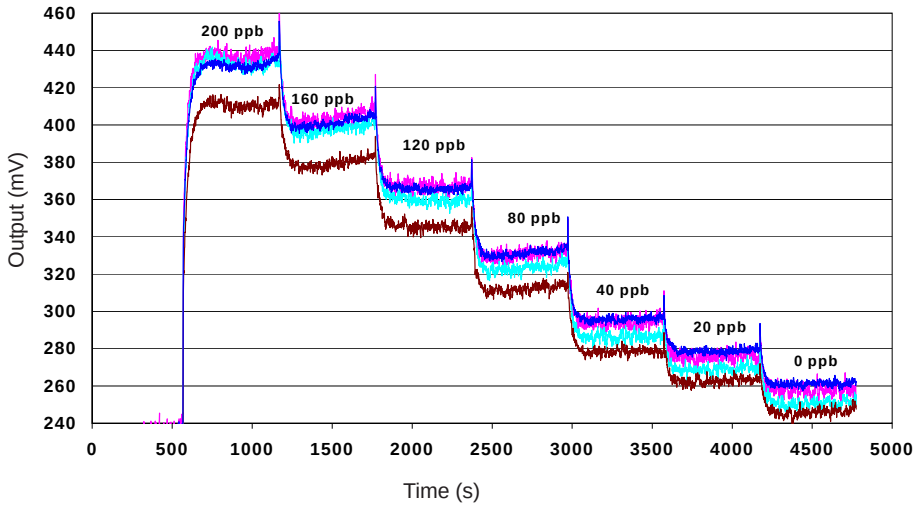


Figure 4 shows response to 200ppb H_2S.

Use of Alphasense AFE circuit reduces noise to 5ppb, with the opportunity of digital smooting to reduce noise even further

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".