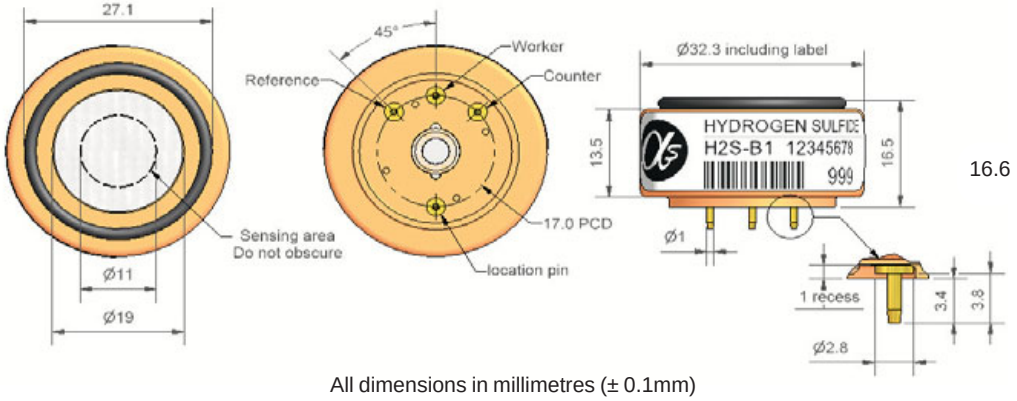
H2S-B1 Hydrogen Sulfide Sensor

PATENTED

Technical Specification

Figure 1 H2S-B1 Schematic Diagram



All dimensions in millimetres (± 0.1mm)

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

PERFORMANCE	Sensitivity	nA/ppm in 20ppm H_2S	300 to 440
	Response time	t_{90} (s) from zero to 20ppm H_2S	< 35
	Zero current	ppm equivalent in zero air	< ± 0.2
	Resolution	RMS noise (ppm equivalent)	< 0.1
	Range	ppm H_2S limit of performance warranty	200
	Linearity	ppm error at full scale, linear at zero and 20ppm H_2S	1 to -8
	Overgas range	maximum ppm for stable response to gas pulse	500
LIFETIME	Zero drift	ppm equivalent change/year in lab air	< 0.05
	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	83 to 93
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 20ppm	102 to 110
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 1
	Zero @ 50°C	ppm equivalent change from 20°C	< ± 1

CROSS SENSITIVITY	SO_2	sensitivity % measured gas @ 20ppm	SO_2	< 18
	NO	sensitivity % measured gas @ 50ppm	NO	< 6
	NO_2	sensitivity % measured gas @ 10ppm	NO_2	< -30
	Cl_2	sensitivity % measured gas @ 10ppm	Cl_2	< -25
	H_2	sensitivity % measured gas @ 400ppm	H_2	< 1
	C_2H_4	sensitivity % measured gas @ 400ppm	C_2H_4	< 0.8
	CO	sensitivity % measured gas @ 400ppm	CO	< 4
	NH_3	sensitivity % measured gas @ 400ppm	NH_3	< 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
	Weight	g	< 13

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.

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H2S-B1 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

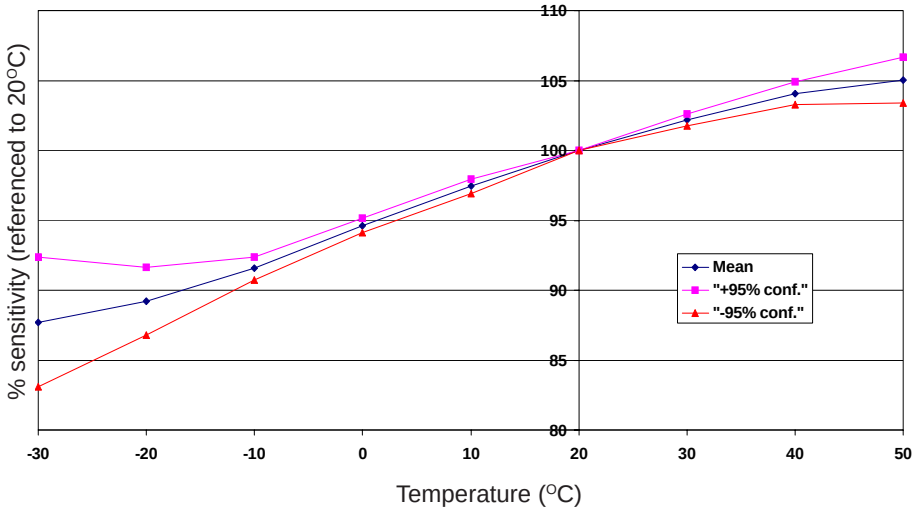

Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors. The mean and ± 95% confidence intervals are shown.

Figure 3 Zero Temperature Dependence

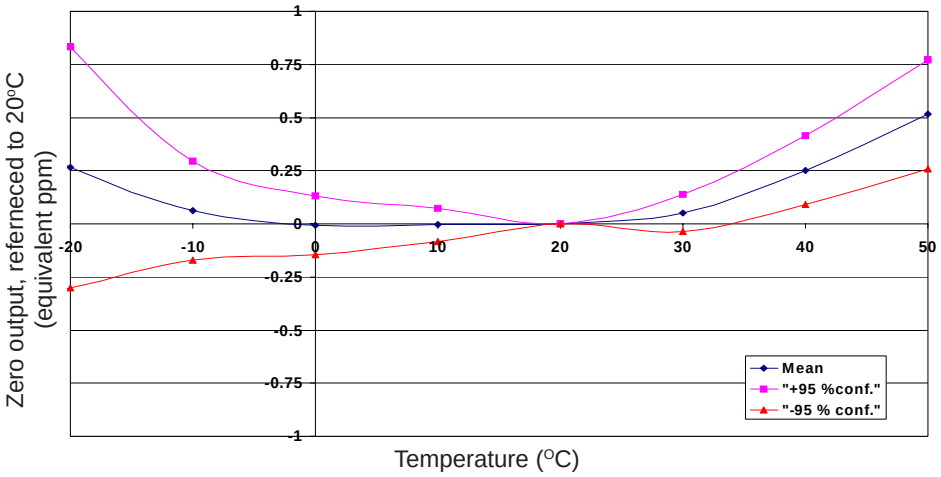

Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent.

This data is taken from a typical batch of sensors. The mean and ± 95% confidence intervals are shown.

Figure 4 Sensitivity Long Term Stability

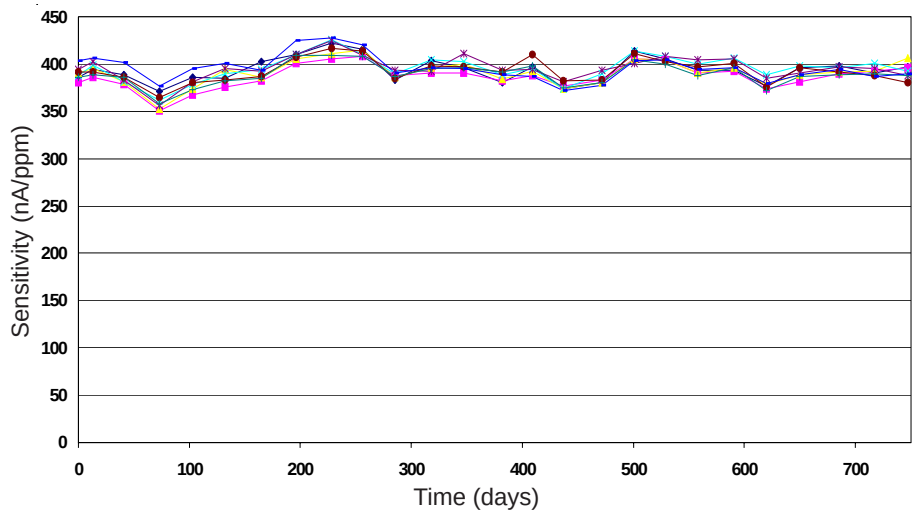

Figure 4 shows the long term stability over 2 years for the H2S-B1. With no effective change in response to the H2S, the sensor is ideal for low maintenance, fixed sites.

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".