

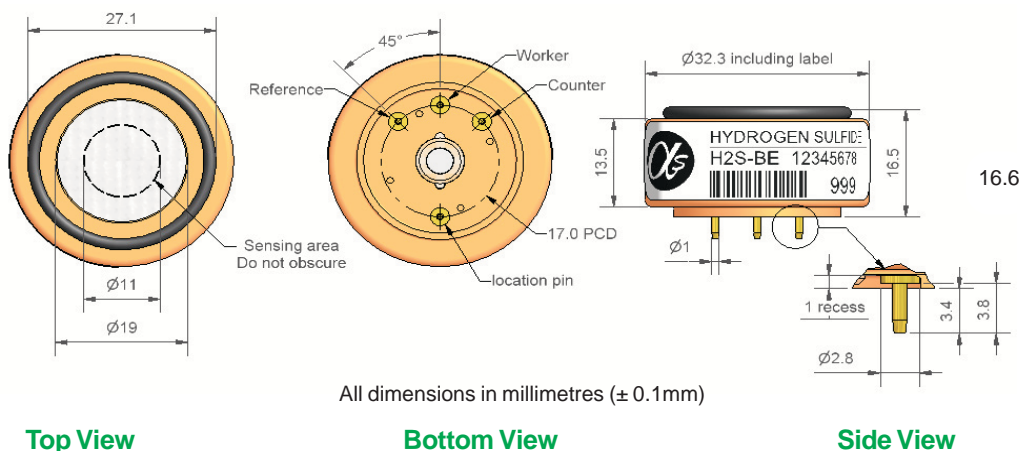


H2S-BE Hydrogen Sulfide Sensor



PATENTED

Figure 1 H2S-BE Schematic Diagram



Technical Specification

PERFORMANCE	Parameter	Specification	Value
	Sensitivity	nA/ppm in 200ppm H ₂ S	80 to 115
	Response time	t ₉₀ (s) from zero to 200ppm H ₂ S	< 35
	Zero current	ppm equivalent in zero air	< ± 0.7
	Resolution	RMS noise (ppm equivalent)	< 0.5
	Range	ppm H ₂ S limit of performance warranty	2,000
	Linearity	ppm error at 2000ppm, linear at zero and 400ppm H ₂ S	< 25
	Overgas range	maximum ppm for stable response to gas pulse	10,000

LIFETIME	Parameter	Specification	Value
	Zero drift	ppm equivalent change/year in lab air	< 0.25
	Sensitivity drift	% change/year in lab air, monthly test	< 2
	Operating life	months until 80% original signal (24 month warranted)	> 24

ENVIRONMENTAL	Parameter	Specification	Value
	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 200ppm	83 to 93
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 200ppm	102 to 110
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 4
	Zero @ 50°C	ppm equivalent change from 20°C	< ± 4

CROSS SENSITIVITY	Gas	Sensitivity	Specification	Value
	SO ₂	sensitivity	% measured gas @ 20ppm	< 20
	NO	sensitivity	% measured gas @ 50ppm	< 10
	NO ₂	sensitivity	% measured gas @ 10ppm	< -25
	Cl ₂	sensitivity	% measured gas @ 10ppm	< -12
	H ₂	sensitivity	% measured gas @ 400ppm	< 0.2
	C ₂ H ₄	sensitivity	% measured gas @ 400ppm	< 0.25
	CO	sensitivity	% measured gas @ 400ppm	< 4
NH ₃	sensitivity	% measured gas @ 20ppm	< 0.1	

KEY SPECIFICATIONS	Parameter	Specification	Value
	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
	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.



H2S-BE Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

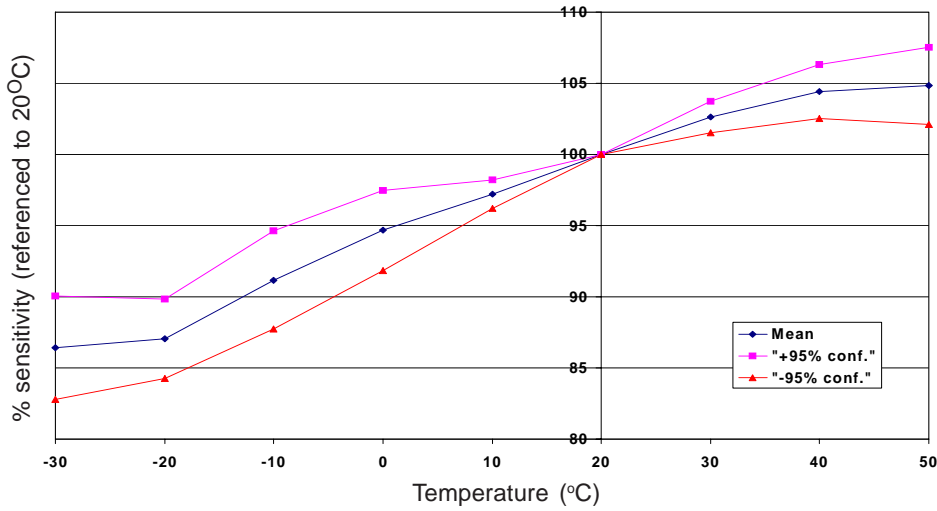


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Figure 3 Zero Temperature Dependence

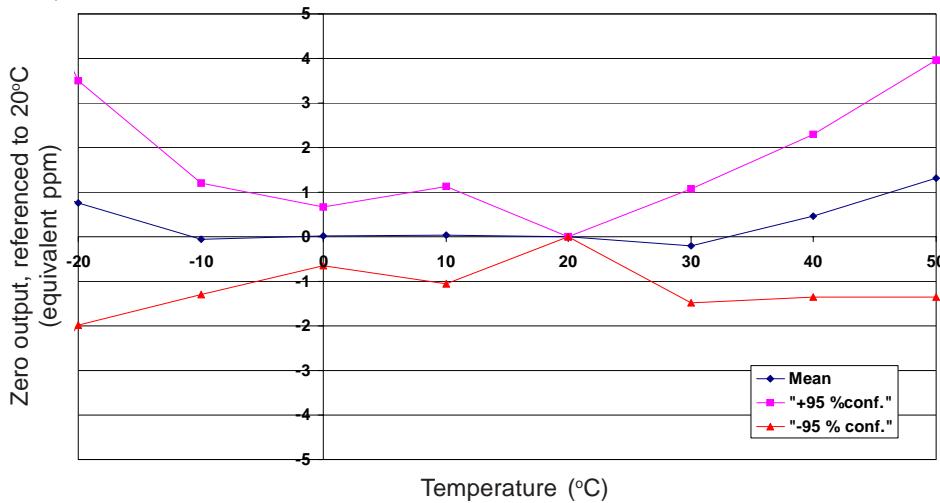
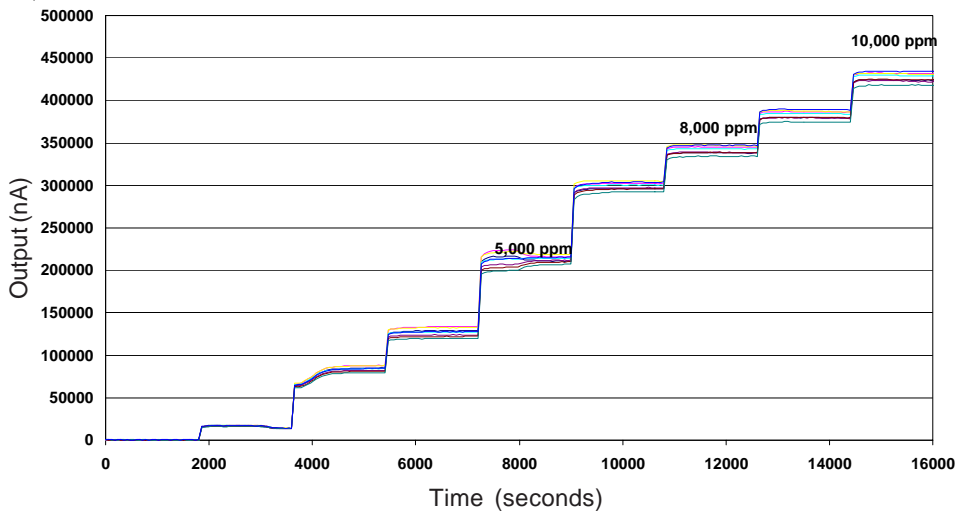


Figure 3 shows the variation in zero output caused by changes in temperature expressed as ppm gas equivalent.

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

Figure 4 Response to H₂S Concentrations up to 1%



Sensors respond rapidly, remaining stable, even at concentrations of 1% H₂S.

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".