

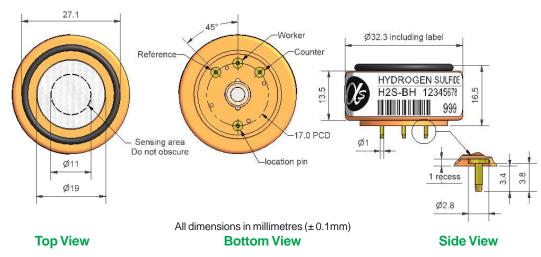
**Technical** 

## **H2S-BH Hydrogen Sulfide Sensor**



## Figure 1 H2S-BH Schematic Diagram

**PATENTED** 



PERFORMANCE	Sensitivity Response time Zero current Resolution Range Linearity Overgas range	nA/ppm in 20ppm H <sub>2</sub> S t <sub>90</sub> (s) from zero to 20ppm H <sub>2</sub> S ppm equivalent in zero air RMS noise (ppm equivalent) ppm H <sub>2</sub> S limit of performance warranty ppm error at full scale, linear at zero and 20ppm H <sub>2</sub> S maximum ppm for stable response to gas pulse	1,400 to 2,000 < 30 ± 0.1 < 0.02 50 < ± 0.3 200
LIFETIME	Zero drift Sensitivity drift Operating life	ppm equivalent change/year in lab air % change/year in lab air, monthly test months until 80% original signal (24 month warranted	< 0.02 < 2 d) > 24
ENVIRONMENTAL	Sensitivity @ -20°C Sensitivity @ 50°C Zero @ -20°C Zero @ 50°C	% (output @ -20°C/output @ 20°C) @ 20ppm % (output @ 50°C/output @ 20°C) @ 20ppm ppm equivalent change from 20°C ppm equivalent change from 20°C	81 to 96 102 to 110 ± 0.1 ± 0.15
CROSS SENSITIVITY	SO <sub>2</sub> sensitivity NO sensitivity NO <sub>2</sub> sensitivity Cl <sub>2</sub> sensitivity H <sub>2</sub> sensitivity C <sub>2</sub> H <sub>4</sub> sensitivity CO sensitivity NH <sub>3</sub> sensitivity	% measured gas @ 20ppm SO <sub>2</sub> % measured gas @ 50ppm NO % measured gas @ 10ppm NO <sub>2</sub> % measured gas @ 10ppm Cl <sub>2</sub> % measured gas @ 400ppm H <sub>2</sub> % measured gas @ 400ppm C <sub>2</sub> H <sub>4</sub> % measured gas @ 400ppm CO % measured gas @ 20ppm NH <sub>3</sub>	< 10 < 3 < -30 < -25 < 0.25 < 0.1 < 1 < 0.1
KEY SPECIFICATIONS	Temperature range Pressure range Humidity range Storage period Weight	°C kPa % rh continuous months @ 3 to 20°C (stored in sealed pot) g	-30 to 50 80 to 120 15 to 90 6 < 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-BH Performance Data**

## Figure 2 SensitivityTemperature Dependence

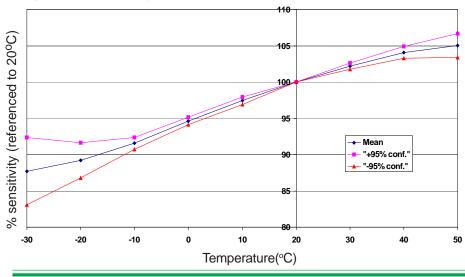


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Figure 3 Zero Temperature Dependence

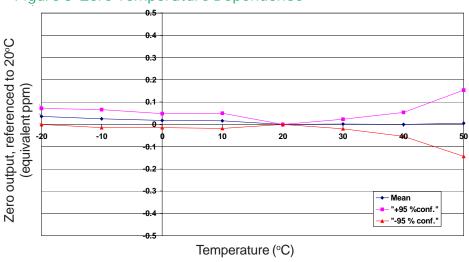


Figure 3 shows the variation in zero output caused by changes in temperature expressed as ppm gas equivalent.

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

Figure 4 Zero Long Term Stability

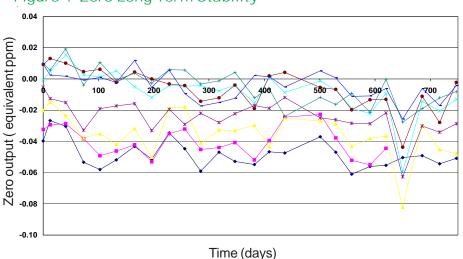


Figure 4 shows the excellent zero stability for the H2S-BH over 2 years, ensuring that low level alarms will remain stable.

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".

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