# H2S-BH Hydrogen Sulfide Sensor

45° ----

-Worker



Figure 1 H2S-BH Schematic Diagram

PATENTED



(	Reference Sensing area Do not obscure	Morker Counter My Counter My Counter My Counter My DROGEN SULFIRE H2S-BH 12345678 999 999 999 17.0 PCD 17.0 PCD 00 1 recess 02.8 Side View	3.8
ORMANCE	Sensitivity	nA/ppm in 20ppm $H_2S$	1,400 to 2,000
	Response time	$t_{90}$ (s) from zero to 20ppm $H_2S$	< 30
	Zero current	ppm equivalent in zero air	± 0.1
	Resolution	RMS noise (ppm equivalent)	< 0.02
	Range	ppm $H_2S$ limit of performance warranty	50
	Linearity	ppm error at full scale, linear at zero and 20ppm $H_2S$	< ± 0.3
	Overgas range	maximum ppm for stable response to gas pulse	200
IME	Zero drift	ppm equivalent change/year in lab air	< 0.02
	Sensitivity drift	% change/year in lab air, monthly test	< 2
	Operating life	months until 80% original signal (24 month warranted)	) > 24
ONMENTAL	. Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 20ppm	81 to 96
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 20ppm	102 to 110
	Zero @ -20°C	ppm equivalent change from20°C	± 0.1
	Zero @ 50°C	ppm equivalent change from 20°C	± 0.15
S ITIVITY	$\begin{array}{llllllllllllllllllllllllllllllllllll$	$      \% \ measured gas @ 20ppm \qquad SO_2 \\      \% \ measured gas @ 50ppm \qquad NO \\      \% \ measured gas @ 10ppm \qquad NO_2 \\      \% \ measured gas @ 10ppm \qquad Cl_2 \\      \% \ measured gas @ 400ppm \qquad H_2 \\      \% \ measured gas @ 400ppm \qquad C_2H_4 \\      \% \ measured gas @ 400ppm \qquad CO \\      \% \ measured gas @ 20ppm \qquad NH_3 \\      $	< 10 < 3 < -30 < -25 < 0.25 < 0.1 < 1 < 0.1
IFICATIONS	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-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 0.04 equivalent ppm) 0.02 0.00 500 100 200 300 600 700 -0.02 Zero output ( -0.04 -0.06 -0.08 -0.10 Time (days)

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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