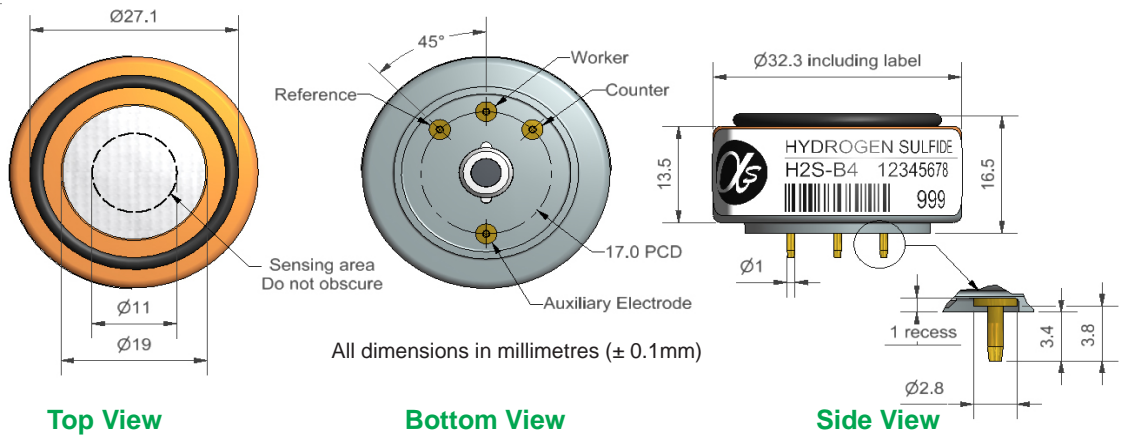


# H2S-B4 Hydrogen Sulfide Sensor 4-Electrode



PATENTED

Figure 1 H2S-B4 Schematic Diagram



Technical Specification

PERFORMANCE	Parameter	Value	Unit
	Sensitivity	nA/ppm in 2ppm H <sub>2</sub> S	1400 to 2500
	Response time	t <sub>90</sub> (s) from zero to 1ppm H <sub>2</sub> S	< 50
	Zero current	nA in zero air at 20°C	-70 to -200
	Noise*	RMS noise (ppb equivalent)	< 4
	Limit of detection*	ppb equivalent	< 10
	Range	ppm H <sub>2</sub> S limit of performance warranty	25
	Linearity	ppm error at full scale, linear at zero and 2ppm H <sub>2</sub> S	-1 to +5
	Overgas limit	maximum ppm for stable response to gas pulse	100

\* Requires a low noise potentiostat circuit for lowest noise and best resolution

LIFETIME	Parameter	Value	Unit
	Zero drift	ppb equivalent change/year in lab air	nd
	Sensitivity drift	% change/year in lab air, monthly test	nd
	Operating life	months until 80% original signal (24 month warranted)	> 24

ENVIRONMENTAL	Parameter	Value	Unit
	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 2ppm H <sub>2</sub> S	77 to 85
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 2ppm H <sub>2</sub> S	108 to 115
	Zero @ -20°C	ppm equivalent change from 20°C	< 0 to 0.05
	Zero @ 50°C	ppm equivalent change from 20°C	< 0 to -0.1

CROSS SENSITIVITY	Gas	Sensitivity	Unit
	NO <sub>2</sub>	% measured gas @ 10ppm	< -10
	Cl <sub>2</sub>	% measured gas @ 10ppm	< -25
	NO	% measured gas @ 10ppm	< 35
	SO <sub>2</sub>	% measured gas @ 20ppm	< 18
	CO	% measured gas @ 10ppm	< 3
	H <sub>2</sub>	% measured gas @ 400ppm	< 0.5
	C <sub>2</sub> H <sub>4</sub>	% measured gas @ 400ppm	< 0.5
	NH <sub>3</sub>	% measured gas @ 20ppm	< 0.1
CO <sub>2</sub>	% measured gas @ 5%	< 0.1	

KEY SPECIFICATIONS	Parameter	Value	Unit
	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 (recommended)	33 to 100
	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-B4 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

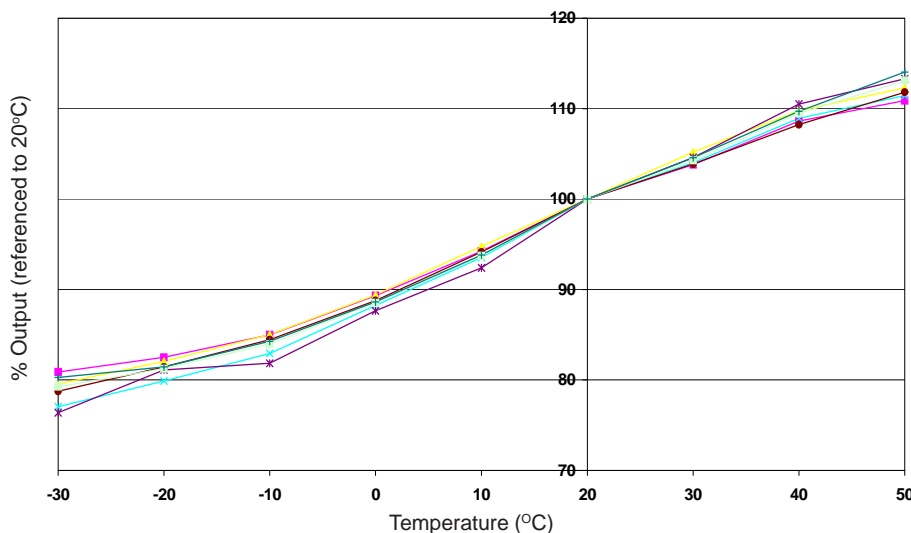


Figure 2 shows the variation in sensitivity caused by changes in temperature. This data is taken from a typical batch of sensors.

Figure 3 Zero Temperature Dependence (corrected)

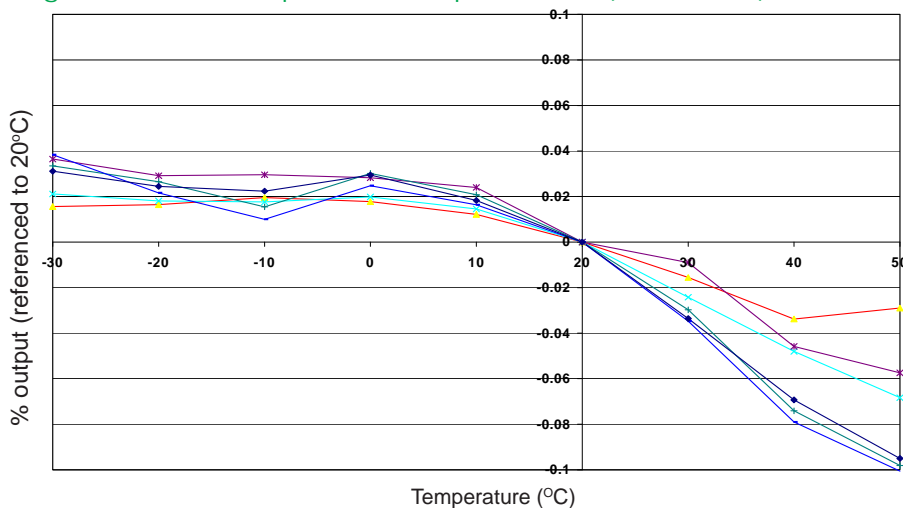
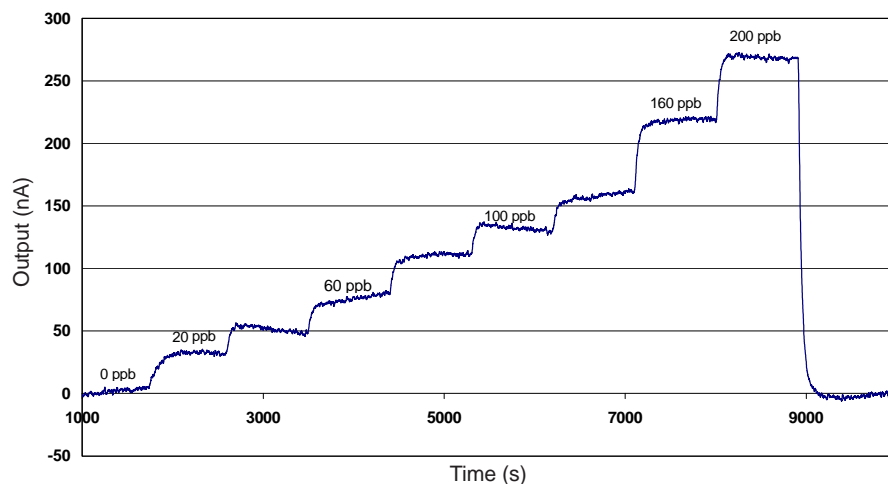


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C. This excellent zero performance requires a low noise circuit and zero correction using the auxiliary electrode. This data is taken from a typical batch of sensors.

Figure 4 Linearity to 200ppb H<sub>2</sub>S



The H2S-B4 responds linearly at low concentrations, showing repeatable performance at concentrations below 200ppb.