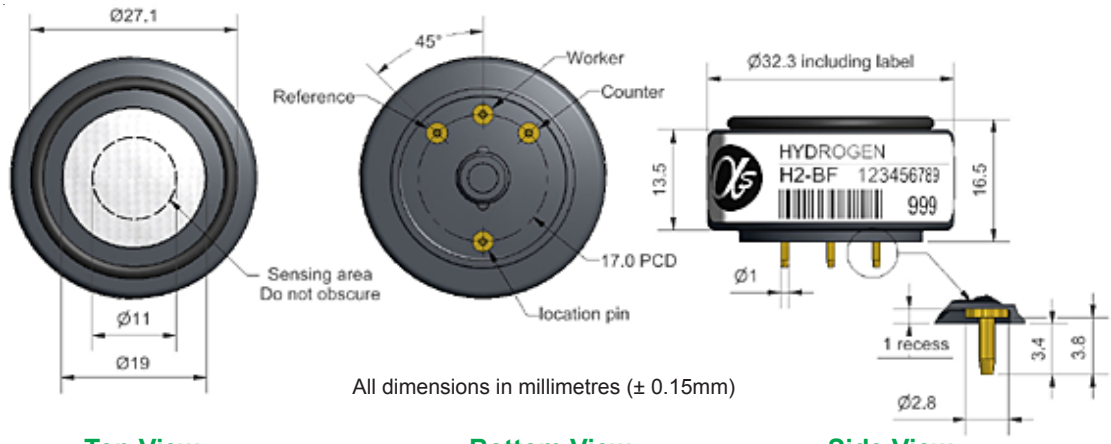
H2-BF Hydrogen Sensor

Technical Specification

Figure 1 H2-BF Schematic Diagram



All dimensions in millimetres (± 0.15mm)

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

PERFORMANCE	Sensitivity	nA/ppm in 400ppm H_2	10 to 25
	Response time	t_{90} (s) from zero to 400ppm H_2	< 80
	Zero current	ppm equivalent in zero air	< ±15
	Resolution	RMS noise (ppm equivalent)	< 0.8
	Range	ppm H_2 limit of performance warranty	5,000
	Linearity	ppm error at full scale, linear at zero and 4000ppm H_2	-200 to -500
	Overgas limit	maximum ppm for stable response to gas pulse	20,000
LIFETIME	Zero drift	ppm equivalent change/year in lab air	< 10
	Sensitivity drift	% change/year in lab air, monthly test	nd
	Operating life	months until 80% original signal (24 month warranted)	> 24
ENVIRONMENTAL	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 400 ppm H_2	10 to 40
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 400 ppm H_2	190 to 220
	Zero @ -20°C	ppm equivalent change from 20°C	30 to 40
	Zero @ 50°C	ppm equivalent change from 20°C	-5 to -20
CROSS SENSITIVITY	Filter capacity	ppm·hrs	H_2S 250,000
	NO_2 sensitivity	% measured gas @ 10ppm	NO_2 < 1
	Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2 < 1
	NO sensitivity	% measured gas @ 50ppm	NO < 1
	SO_2 sensitivity	% measured gas @ 20ppm	SO_2 < 1
	CO sensitivity	% measured gas @ 400ppm	CO < 2
	H_2S sensitivity	% measured gas @ 20ppm	H_2S < 1
	C_2H_4 sensitivity	% measured gas @ 400ppm	C_2H_4 < 60
	NH_3 sensitivity	% measured gas @ 400ppm	NH_3 < 1
	CO_2 sensitivity	% measured gas @ 5%	CO_2 < 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
	Load resistor	Ω (recommended)	10 to 47
	Weight	g	< 13

At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

NOTE: all sensors are tested at ambient environmental conditions, with 47 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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H2-BF Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

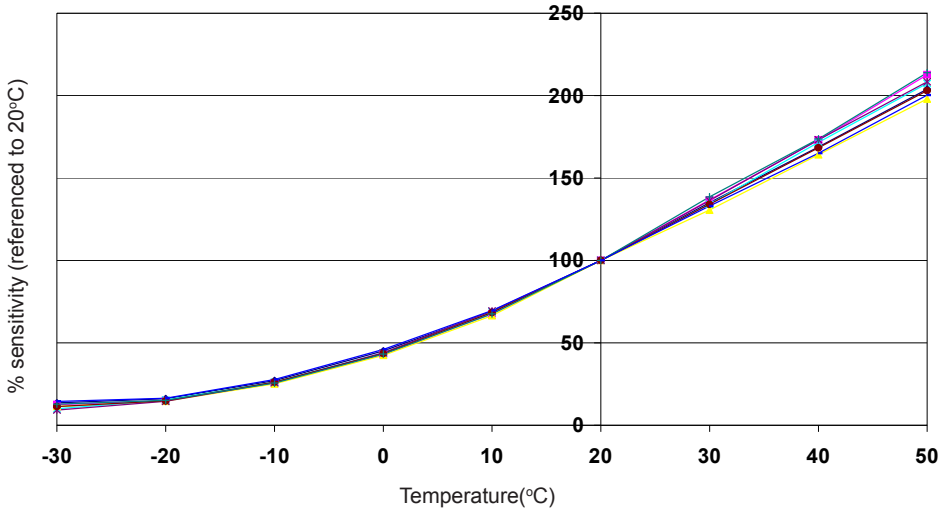


Figure 2 shows temperature dependence of sensitivity to 400ppm Hydrogen.

Temperaure correction of sensitivity using software is necessary for accurate measurements.

Figure 3 Zero Temperature Dependence

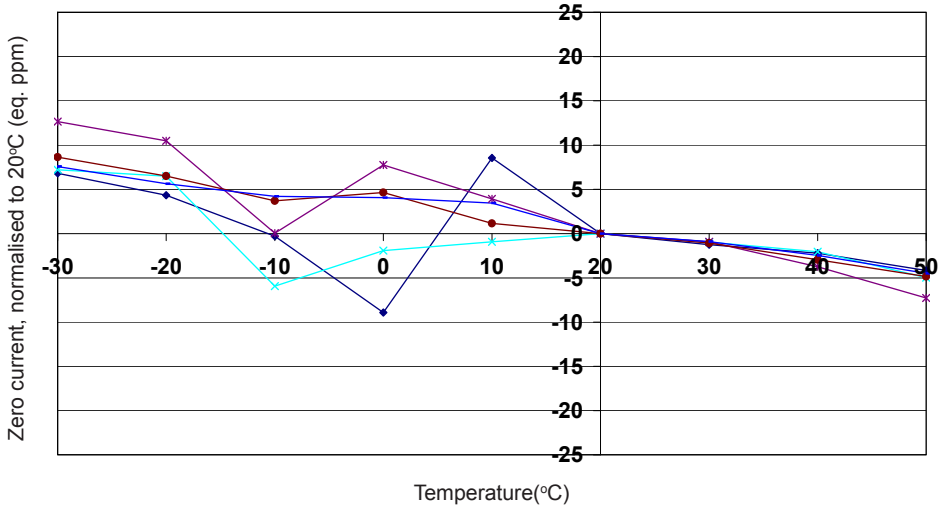
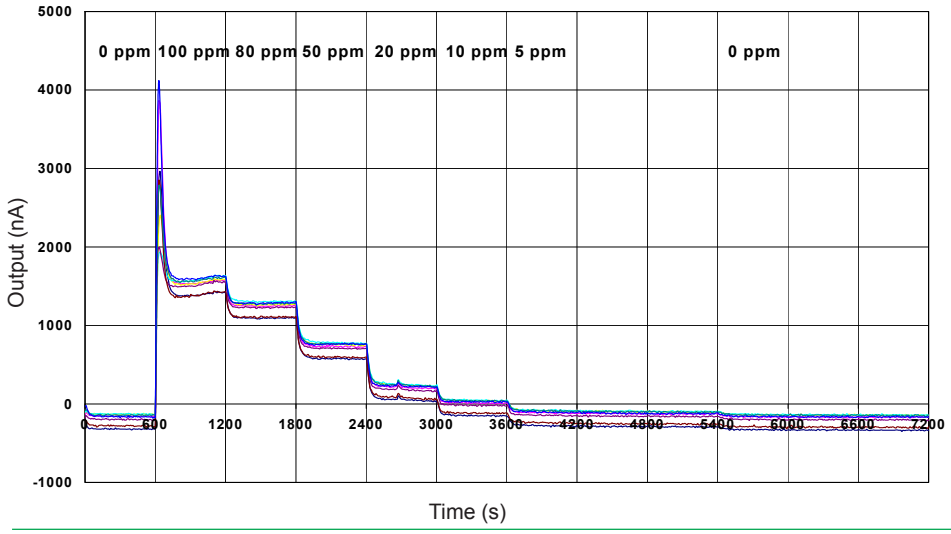


Figure 3 shows the variation of zero currrent with temperature, referenced to 20°C.

Figure 4 Linearity to 1000ppm



With good sensor response as low as 5 ppm Hydrogen, this sensor can be used for leak detection and process control.

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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