



# H2-BF Hydrogen Sensor

Figure 1 H2-BF Schematic Diagram



Technical Specification

PERFORMANCE	Parameter	Specification	Range
	Sensitivity	nA/ppm in 400ppm H <sub>2</sub>	10 to 25
	Response time	t <sub>90</sub> (s) from zero to 400ppm H <sub>2</sub>	< 55
	Zero current	ppm equivalent in zero air	< $\pm 15$
	Resolution	RMS noise (ppm equivalent)	< 0.8
	Range	ppm H <sub>2</sub> limit of performance warranty	5,000
	Linearity	ppm error at full scale, linear at zero and 4000ppm H <sub>2</sub>	-200 to -500
	Overgas limit	maximum ppm for stable response to gas pulse	20,000

LIFETIME	Parameter	Specification	Range
	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	Parameter	Specification	Range
	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 400 ppm H <sub>2</sub>	10 to 40
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 400 ppm H <sub>2</sub>	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 <sub>2</sub> S	250,000
	NO <sub>2</sub> sensitivity	% measured gas @ 10ppm	NO <sub>2</sub>	< 1
	Cl <sub>2</sub> sensitivity	% measured gas @ 10ppm	Cl <sub>2</sub>	< 1
	NO sensitivity	% measured gas @ 50ppm	NO	< 1
	SO <sub>2</sub> sensitivity	% measured gas @ 20ppm	SO <sub>2</sub>	< 1
	CO sensitivity	% measured gas @ 400ppm	CO	< 2
	H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S	< 1
	C <sub>2</sub> H <sub>4</sub> sensitivity	% measured gas @ 400ppm	C <sub>2</sub> H <sub>4</sub>	< 60
	NH <sub>3</sub> sensitivity	% measured gas @ 400ppm	NH <sub>3</sub>	< 1
CO <sub>2</sub> sensitivity	% measured gas @ 5%	CO <sub>2</sub>	< 1	

KEY SPECIFICATIONS	Parameter	Specification	Range
	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	$\Omega$ (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.

# H2-BF Performance Data

Technical Specification

**Figure 2 Sensitivity Temperature Dependence**

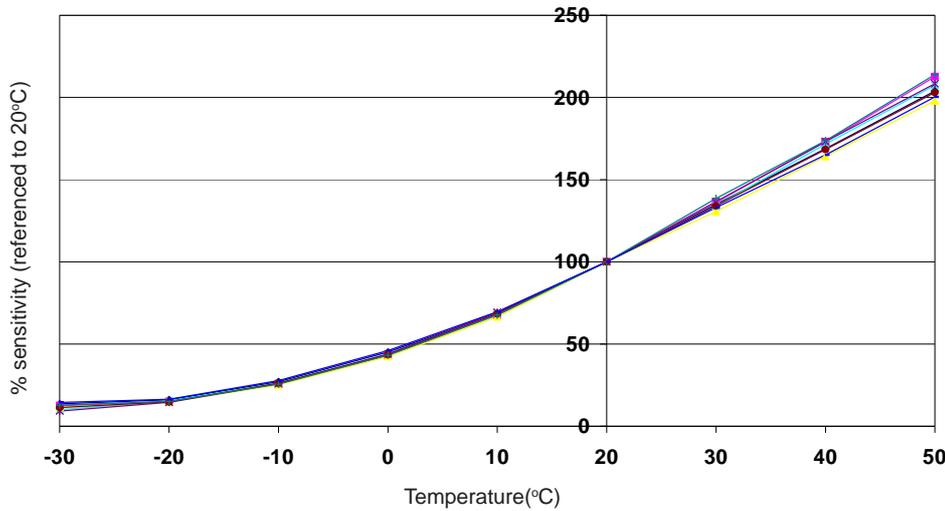


Figure 2 shows temperature dependence of sensitivity to 400ppm Hydrogen.

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

**Figure 3 Zero Temperature Dependence**

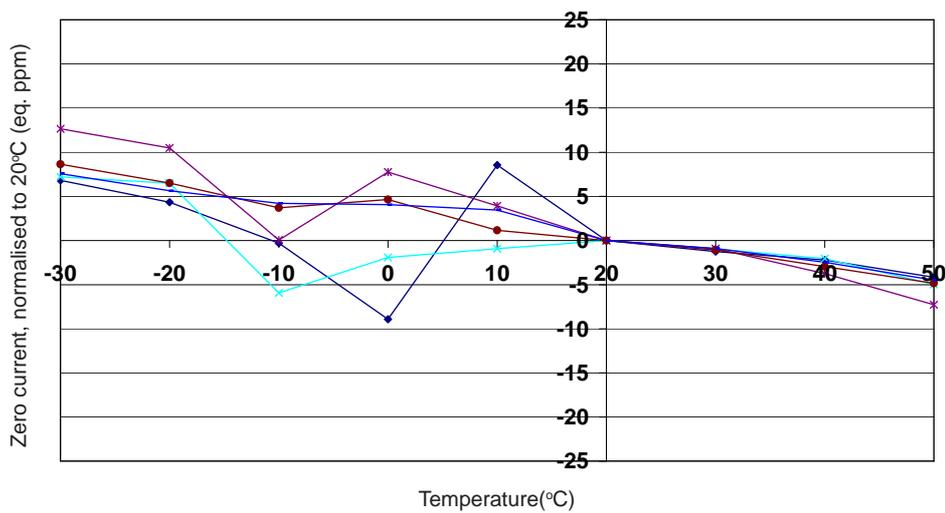
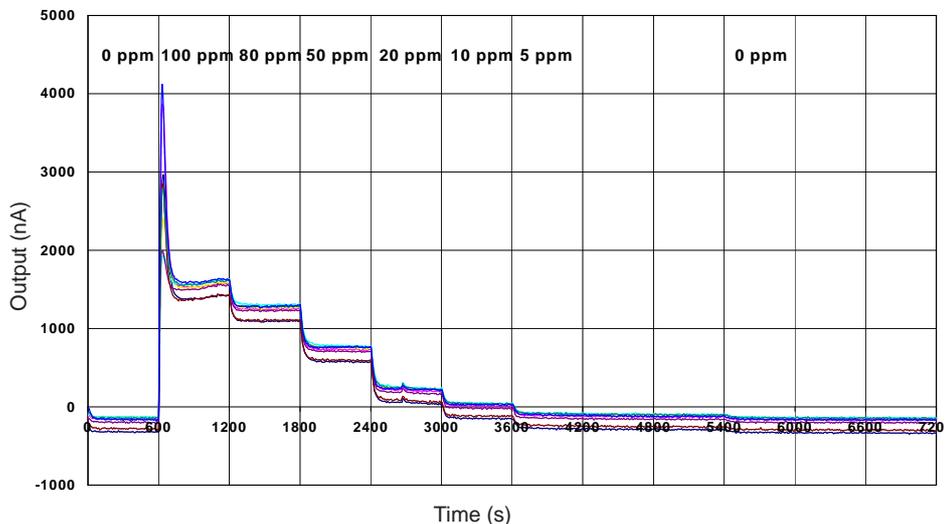


Figure 3 shows the variation of zero current with temperature, referenced to 20°C.

**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.