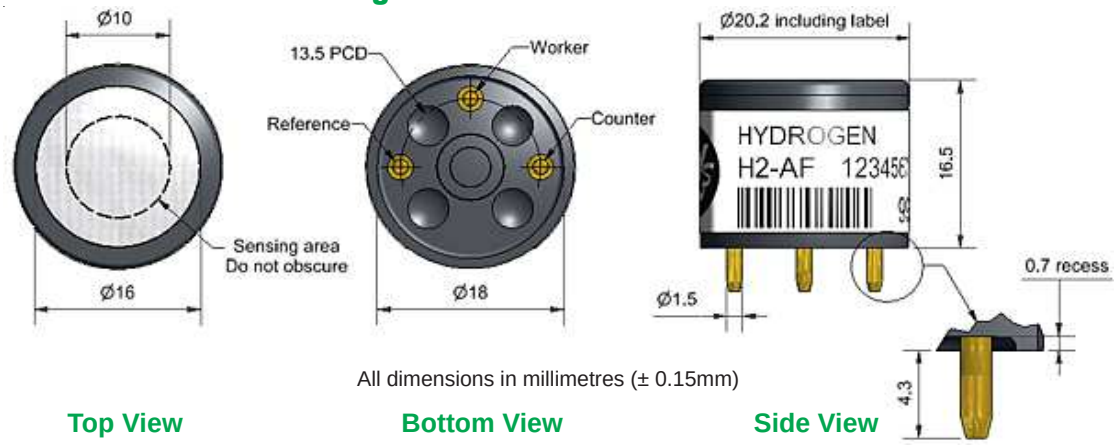
H2-AF Hydrogen Sensor

Technical Specification

Figure 1 H2-AF Schematic Diagram



All dimensions in millimetres (± 0.15mm)

Top View | Bottom View | Side View

PERFORMANCE	Sensitivity	nA/ppm in 400ppm H_2 at 23°C	10 to 25
	Response time	t_{90} (s) from zero to 400ppm H_2	< 45
	Zero current	ppm equivalent in zero air	± 15
	Resolution	RMS noise (ppm equivalent)	< 0.7
	Range	ppm H_2 limit of performance warranty	2,000
	Linearity	ppm error at full scale, linear at zero and 400ppm H_2	-200 to -500
	Overgas limit	maximum ppm for stable response to gas pulse	5,000
LIFETIME	Zero drift	ppm equivalent change/year in lab air	< 20
	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) @ 500 ppm H_2	10 to 25
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 500 ppm H_2	220 to 275
	Zero @ -20°C	ppm equivalent change from 20°C	± 2
	Zero @ 50°C	ppm equivalent change from 20°C	0 to -4
CROSS SENSITIVITY	Filter capacity	ppm·hrs H_2S	nd
	CO sensitivity	% measured gas @ 400ppm CO	< 2
	NO_2 sensitivity	% measured gas @ 10ppm NO_2	< 1
	Cl_2 sensitivity	% measured gas @ 10ppm Cl_2	< 1
	NO sensitivity	% measured gas @ 50ppm NO	< 40
	SO_2 sensitivity	% measured gas @ 20ppm SO_2	< 4
	H_2S sensitivity	% measured gas @ 20ppm H_2S	< 2
	C_2H_4 sensitivity	% measured gas @ 400ppm C_2H_4	< 25
	NH_3 sensitivity	% measured gas @ 20ppm 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	< 6

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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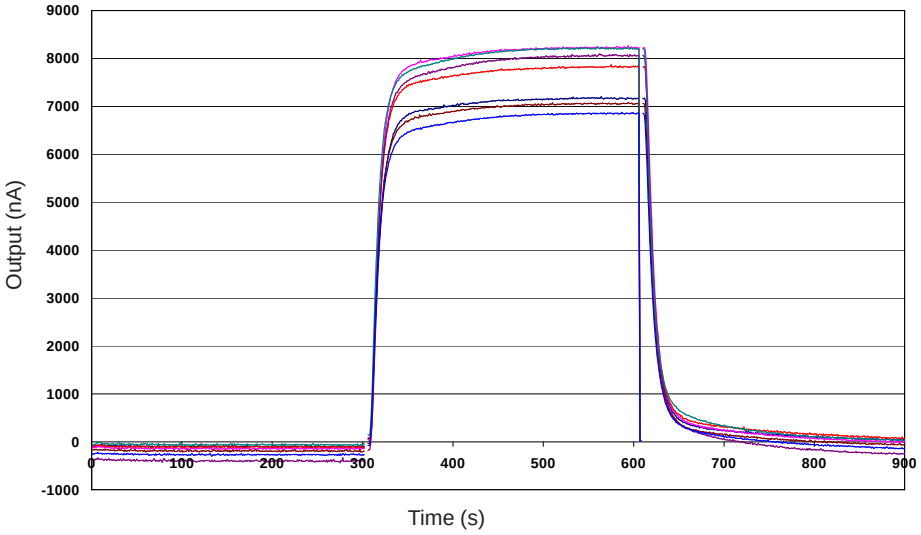
H2-AF Performance Data

Technical Specification

Figure 2 Response to 400ppm H_2



This Hydrogen sensor shows a strong, repeatable repsonse to Hydrogen, combined with low sensitivity to CO.

Figure 3 Sensitivity Temperature Dependence

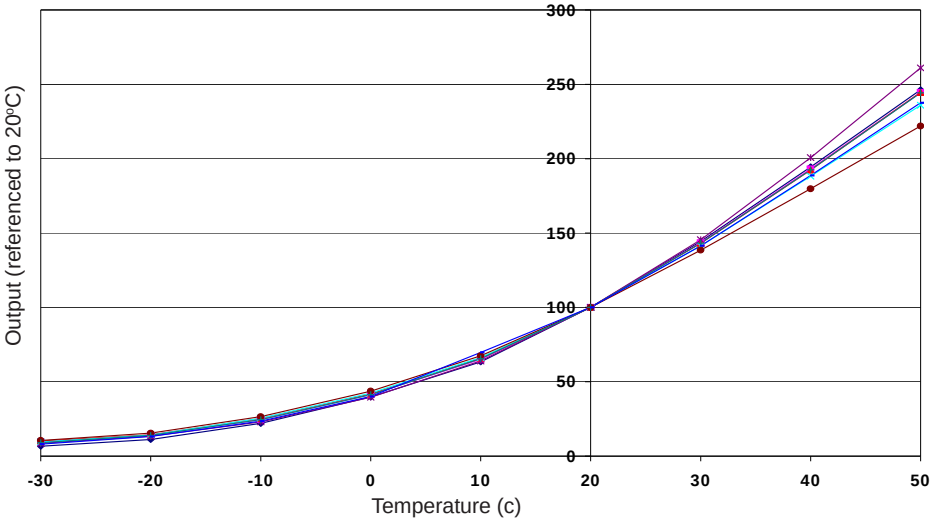


Figure 3 shows typical temperature dependence, measured at 1,000ppm H_2.

This strong temperature dependence is very repeatable, so accurate temperature measurement (±0.5°C) is needed.

Figure 4 Zero Current Temperature Dependence

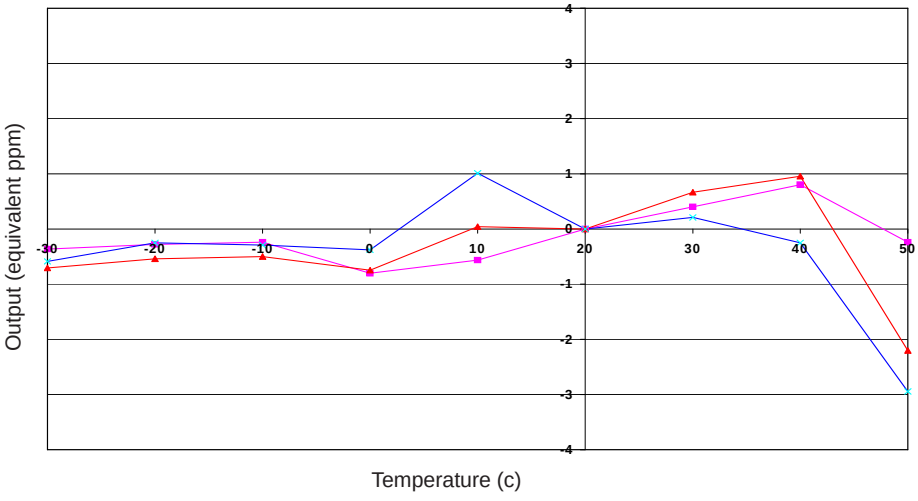


Figure 4 shows typical zero current from -30°C to +50°C, expressed as equivalent ppm deviation from the zero current at 20°C.

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