



H2-AF Hydrogen Sensor



Figure 1 H2-AF Schematic Diagram



All dimensions in millimetres (± 0.15 mm)

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	
	% 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	
	% (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 ₂ S		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 ₂ S sensitivity	% measured gas	@ 20ppm	H ₂ S	< 2				
C ₂ H ₄ sensitivity	% measured gas	@ 400ppm	C ₂ H 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.

Technical Specification

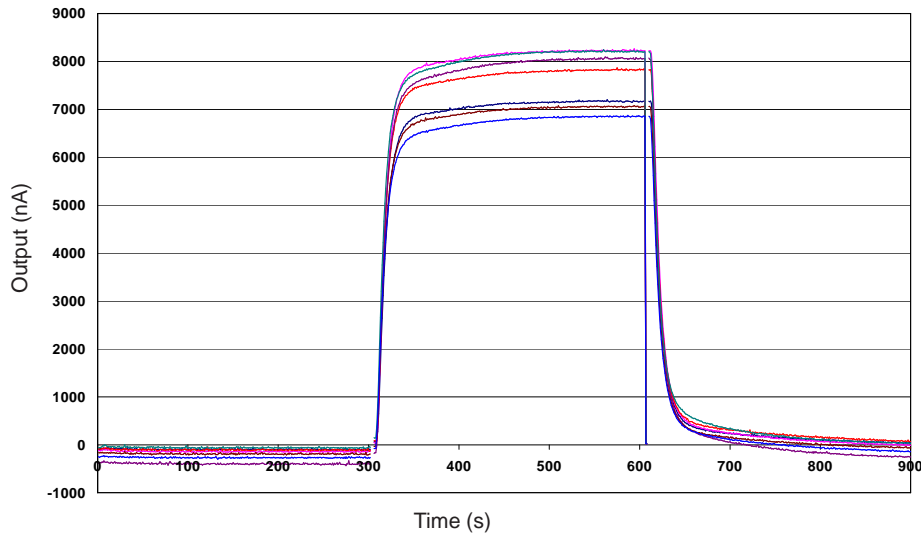
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H2-AF Performance Data

Technical Specification

Figure 2 Response to 400ppm H₂



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

Figure 3 Sensitivity Temperature Dependence

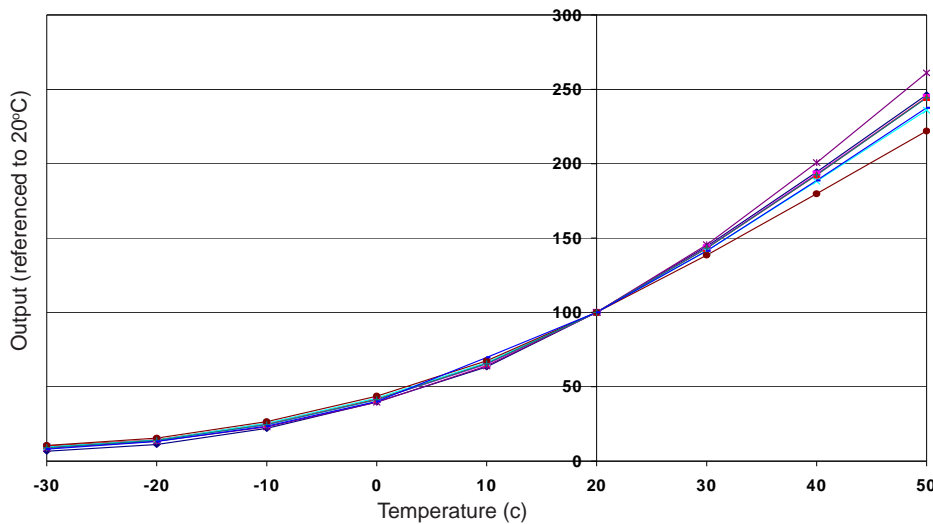


Figure 3 shows typical temperature dependence, measured at 1,000ppm H₂.

This strong temperature dependence is very repeatable, so accurate temperature measurement ($\pm 0.5^\circ\text{C}$) is needed.

Figure 4 Zero Current Temperature Dependence

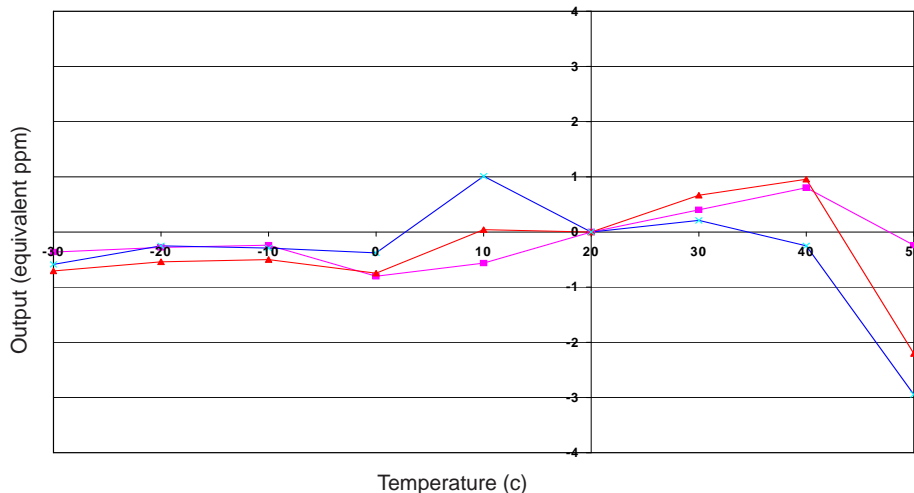


Figure 4 shows typical zero current from -30°C to $+50^\circ\text{C}$, expressed as equivalent ppm deviation from the zero current at 20°C .

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