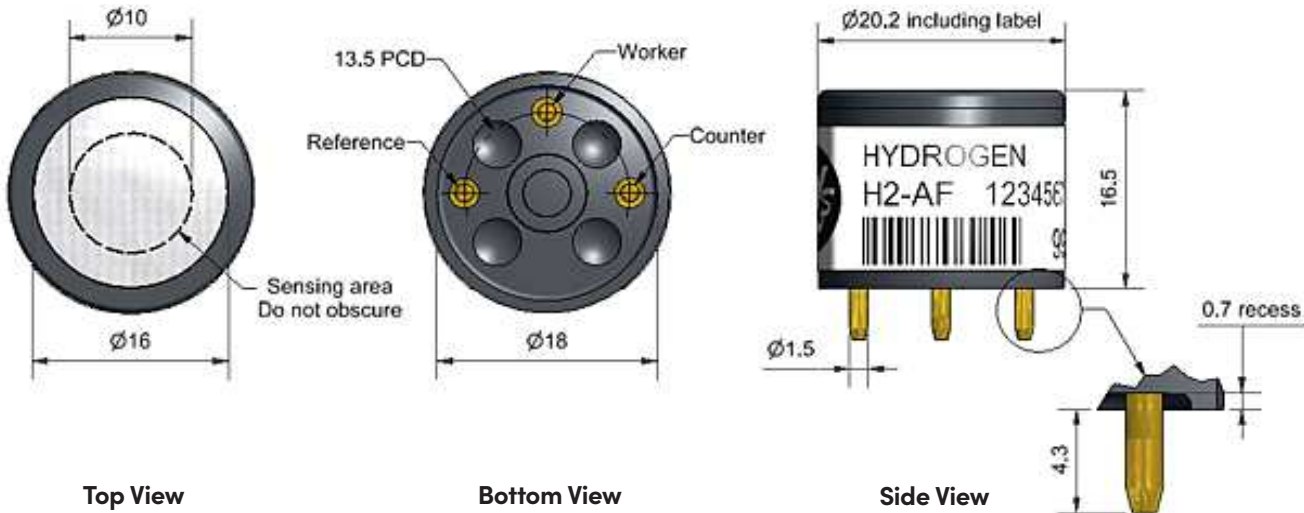


H2-AF Hydrogen Sensor

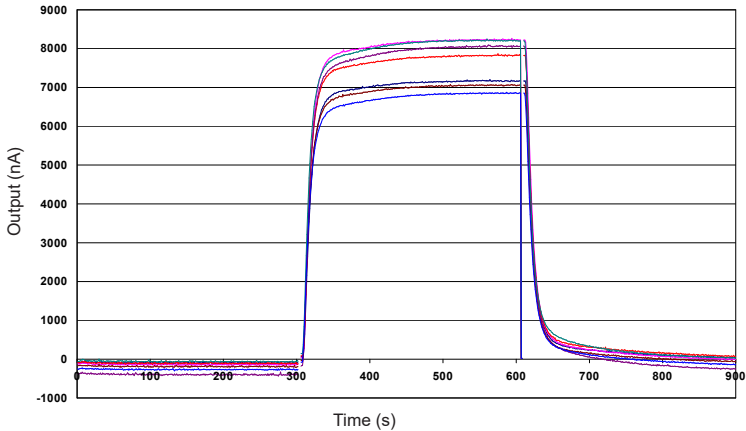


Dimensions are in millimetres (± 0.1 mm) unless otherwise stated.

Performance	Sensitivity	nA/ppm in 400ppm H <sub>2</sub> at 23°C	10 to 40	
	Response time	t90 (s) from zero to 400ppm H <sub>2</sub>	< 35	
	Zero current	ppm equivalent in zero air	-25 to 15	
	Resolution	RMS noise (ppm equivalent)	< 0.7	
	Range	ppm H <sub>2</sub> limit of performance warranty	2,000	
	Linearity	ppm error at full scale, linear at zero and 400ppm H <sub>2</sub>	-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) @ 500ppm H2	10 to 25	
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 500ppm H2	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 <sub>2</sub> S	nd
	CO sensitivity	% measured gas @ 400ppm	CO	< 2
	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	< 40
	SO <sub>2</sub> sensitivity	% measured gas @ 20ppm	SO <sub>2</sub>	< 4
	H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S	< 2
	C <sub>2</sub> H <sub>4</sub> sensitivity	% measured gas @ 400ppm	C <sub>2</sub> H <sub>4</sub>	< 25
	NH <sub>3</sub> sensitivity	% measured gas @ 20ppm	NH <sub>3</sub>	< 1
CO <sub>2</sub> sensitivity	% measured gas @ 5%	CO <sub>2</sub>	< 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	



Figure 1 Response to 400ppm H<sub>2</sub>



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

Figure 2 Sensitivity Temperature Dependence

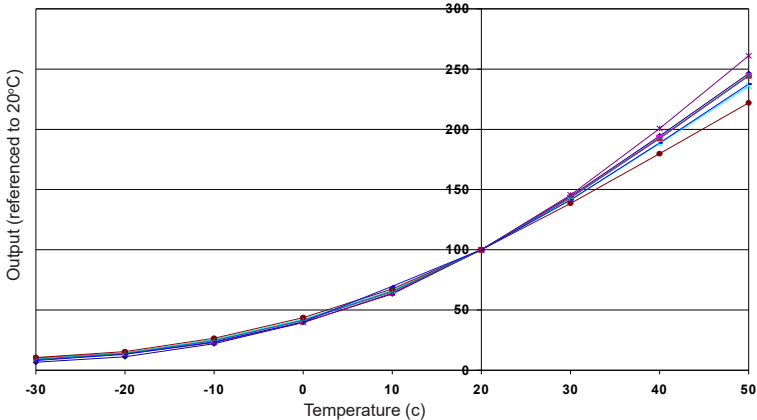


Figure 2 shows typical temperature dependence, measured at 1,000ppm H<sub>2</sub>.  
This strong temperature dependence is very repeatable, so accurate temperature measurement ( $\pm 0.5^{\circ}\text{C}$ ) is needed.

Figure 3 Zero Current Temperature Dependence

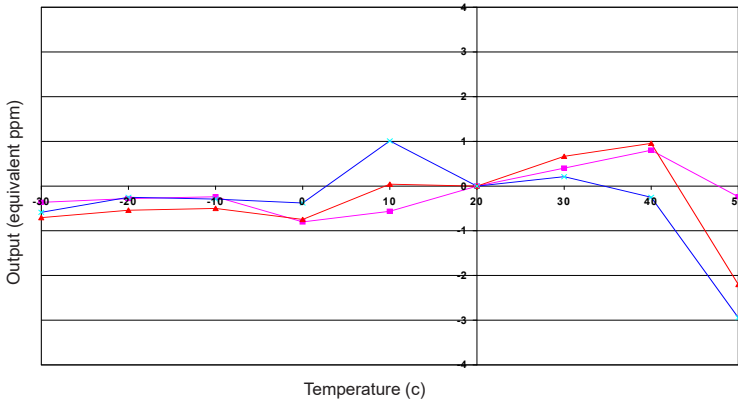


Figure 3 shows typical zero current from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ , expressed as equivalent ppm deviation from the zero current at  $20^{\circ}\text{C}$ .