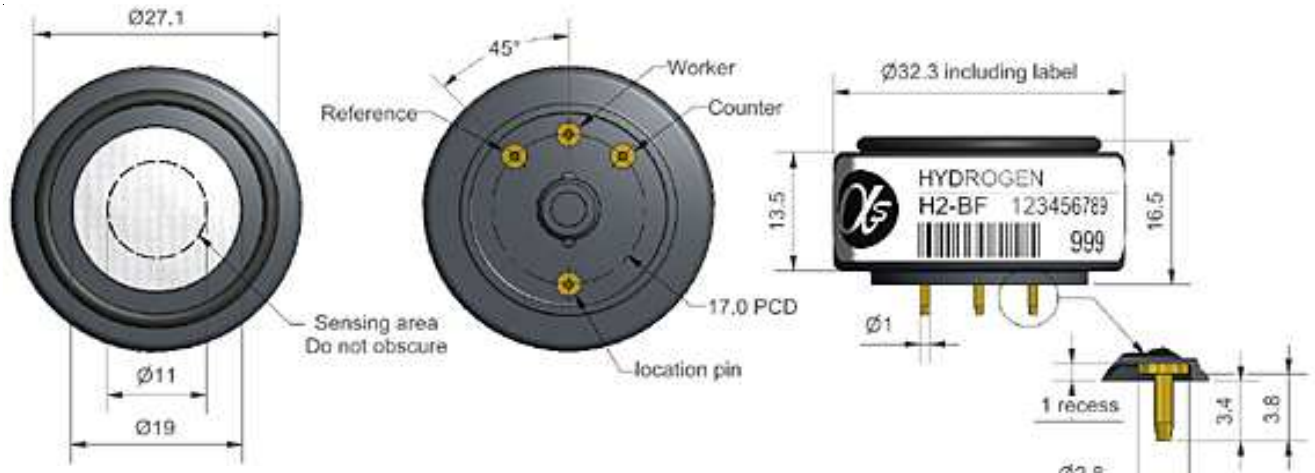
H2-BF Hydrogen Sensor



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

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

Performance	Sensitivity	nA/ppm in 400ppm H_2		10 to 25
	Response time	t90 (s) from zero to 400ppm H_2		< 55
	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) @ 400ppm H_2		10 to 40
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 400ppm 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

Figure 1 Sensitivity Temperature Dependence

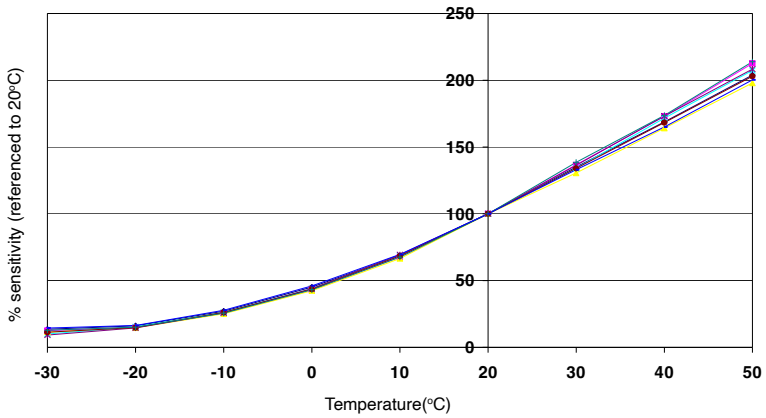


Figure 1 shows temperature dependence of sensitivity to 400ppm hydrogen.

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

Figure 2 Zero Temperature Dependence

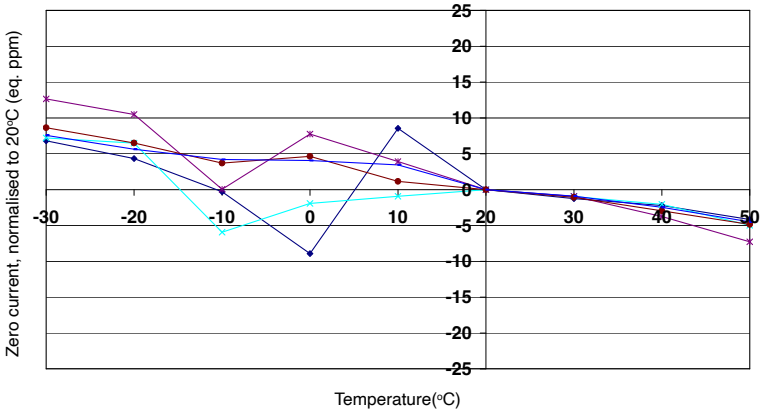
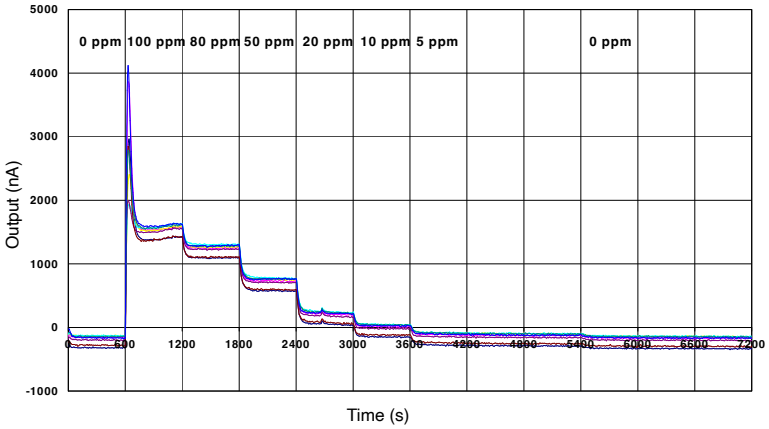


Figure 2 shows the variation of zero currrent with temperature, referenced to 20°C.

Figure 3 Linearity to 1000ppm



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