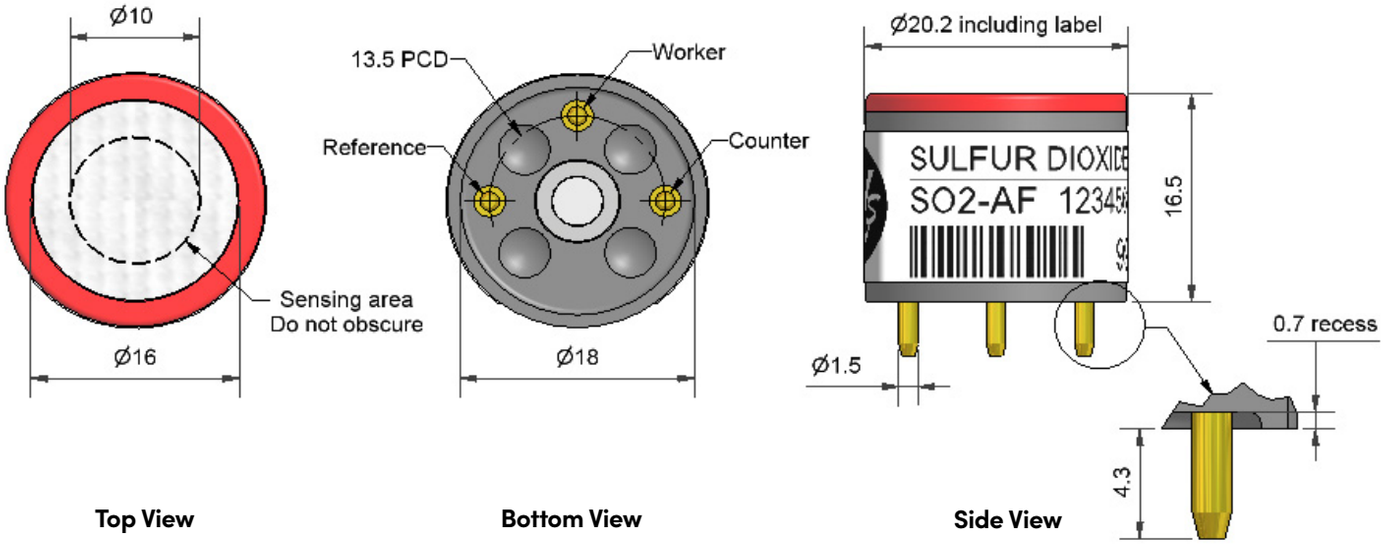
alphasense
AMETEK

Technical specifications Version 1.0

SO2-AF Sulfur Dioxide Sensor



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

Dimensions are in millimetres (± 0.1 mm).

Performance	Sensitivity	nA/ppm in 10ppm SO_2	300 to 550
	Response time	t_{90} (s) from zero to 10ppm SO_2	< 35
	Zero current	ppm equivalent in zero air	< ± 0.6
	Resolution	RMS noise (ppm equivalent)	< 0.1
	Range	ppm limit of performance warranty	50
	Linearity	ppm error at full scale, linear at zero and 10ppm	< ± 0.3
	Overgas limit	maximum ppm for stable response to gas pulse	75
Lifetime	Zero drift	ppm equivalent change/year in lab air	<0.1
	Sensitivity drift	% change/year in lab air, monthly test	< 4
	Operating life	months until 80% original signal (24 month warranted)	> 24
Environmental	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 10ppm	70 to 90
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 10ppm	90 to 102
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 0.8
	Zero @ 50°C	ppm equivalent change from 20°C	< ± 3
Cross sensitivity	Filter capacity	ppm·hrs H_2S	1000
	H_2S sensitivity	% measured gas @ 20ppm H_2S	< 3
	NO_2 sensitivity	% measured gas @ 10ppm NO_2	< -130
	Cl_2 sensitivity	% measured gas @ 10ppm Cl_2	< -60
	NO sensitivity	% measured gas @ 50ppm NO	< ± 2
	CO sensitivity	% measured gas @ 400ppm CO	< 1.6
	H_2 sensitivity	% measured gas @ 400ppm H_2	< 0.3
	C_2H_4 sensitivity	% measured gas @ 400ppm C_2H_4	< 40
	NH_3 sensitivity	% measured gas @ 20ppm NH_3	< 0.1
Key specifications	Temperature range	°C	-30 to 50
	Pressure range	kPa	80 to 120
	Humidity range	% rh continuous	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

T: +44 (0)1376 556700 **E:** sensors@alphasense.com **W:** www.alphasense.com

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. or visit our website at "www.alphasense.com".

Figure 1 Sensitivity Temperature Dependence

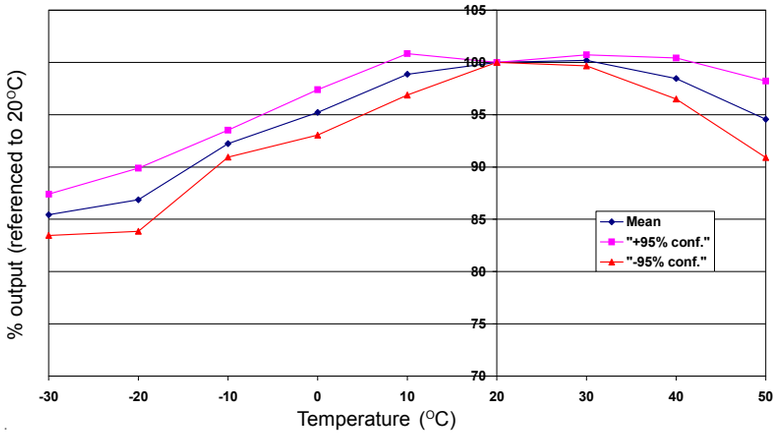


Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors. The mean and 95% confidence intervals are shown.

Figure 2 Zero Temperature Dependence

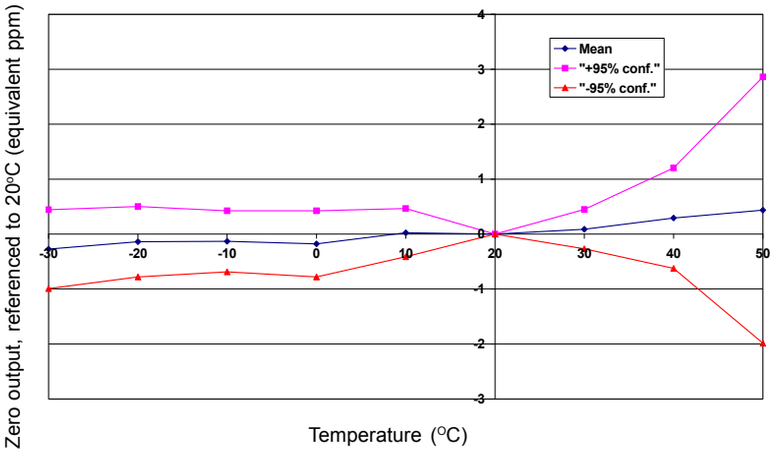
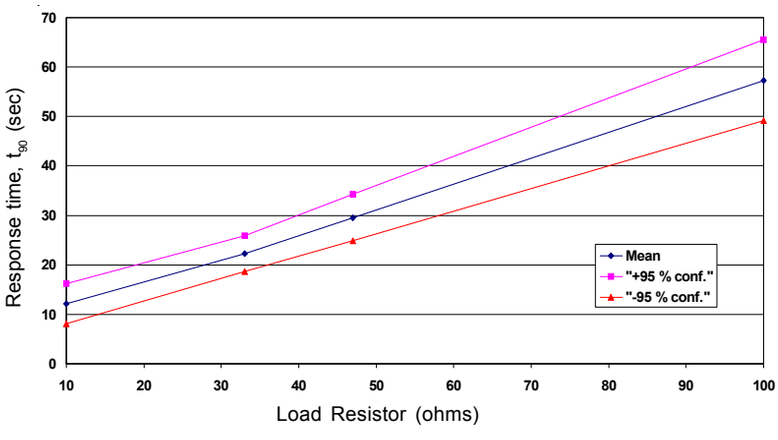


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 Response Time vs. Load Resistor



As with all Alphasense toxic gas sensors, increasing the load resistor slows the response time, but also reduces noise for better resolution.