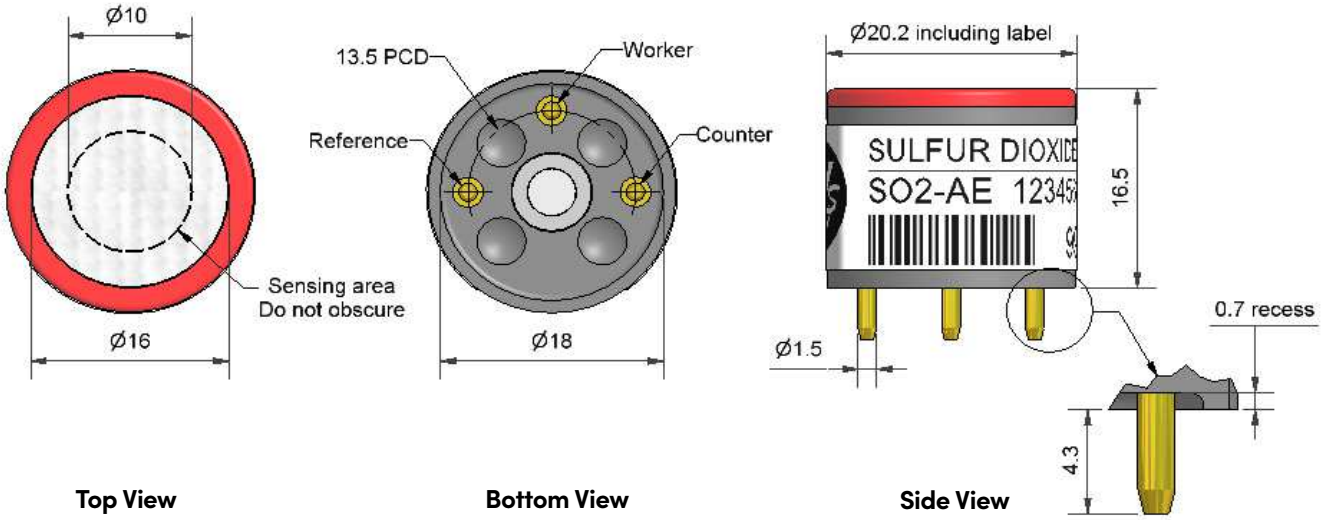
SO2-AE Sulfur Dioxide Sensor – High Concentration



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

Dimensions are in millimetres (± 0.1 mm).

Performance	Sensitivity	nA/ppm in 400ppm SO_2	50 to 80
	Response time	t90 (s) from zero to 400ppm SO_2	< 33
	Zero current	ppm equivalent in zero air	< ± 5
	Resolution	RMS noise (ppm equivalent)	< 1.5
	Range	ppm limit of performance warranty	2,000
	Linearity	ppm error at full scale, linear at zero and 400ppm	+20 to -20
	Overgas limit	maximum ppm for stable response to gas pulse	10,000
Lifetime	Zero drift	ppm equivalent change/year in lab air	< 0.2
	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) 400ppm	80 to 92
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) 400ppm	98 to 108
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 3
	Zero @ 50°C	ppm equivalent change from 20°C	< ± 4

Cross Sensitivity	Filter capacity	ppm·hrs	H_2S	< 5,000
	H_2S sensitivity	% measured gas @ 20ppm	H_2S	< 2
	NO_2 sensitivity	% measured gas @ 10ppm	NO_2	< -150
	Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2	< -60
	NO sensitivity	% measured gas @ 500ppm	NO	< 30
	CO sensitivity	% measured gas @ 400ppm	CO	< 10
	H_2 sensitivity	% measured gas @ 400ppm	H_2	< 1.5
	C_2H_4 sensitivity	% measured gas @ 1000ppm	C_2H_4	< 60
	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

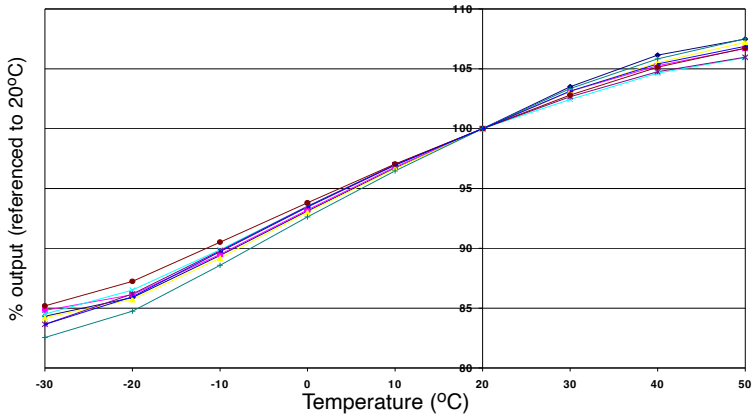


Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

Figure 2 Zero Temperature Dependence

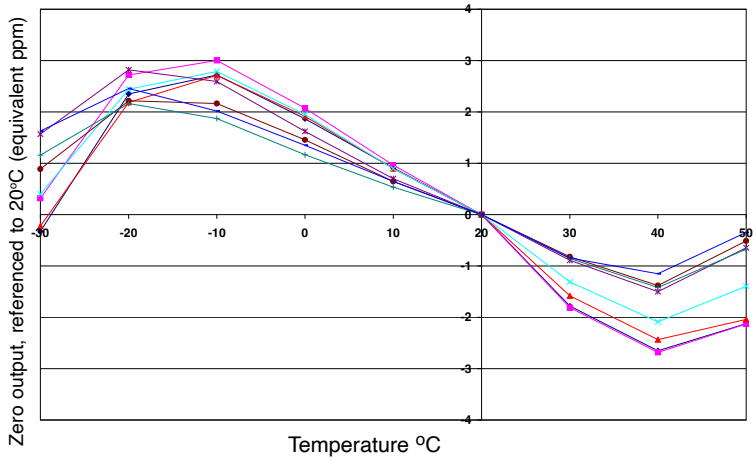


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 Response to Step Changes up to 10,000 ppm SO_2

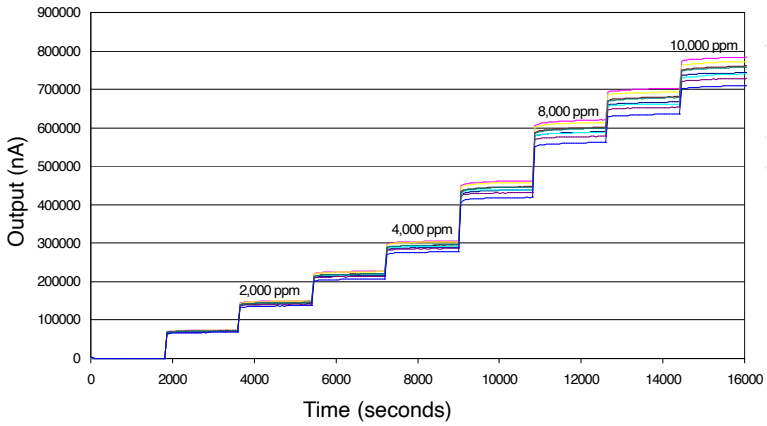


Figure 3 shows the response for a batch of sensors to high concentrations of SO_2 applied as sequential step increases.

The output remains linear over the range 0 to 10,000 ppm.