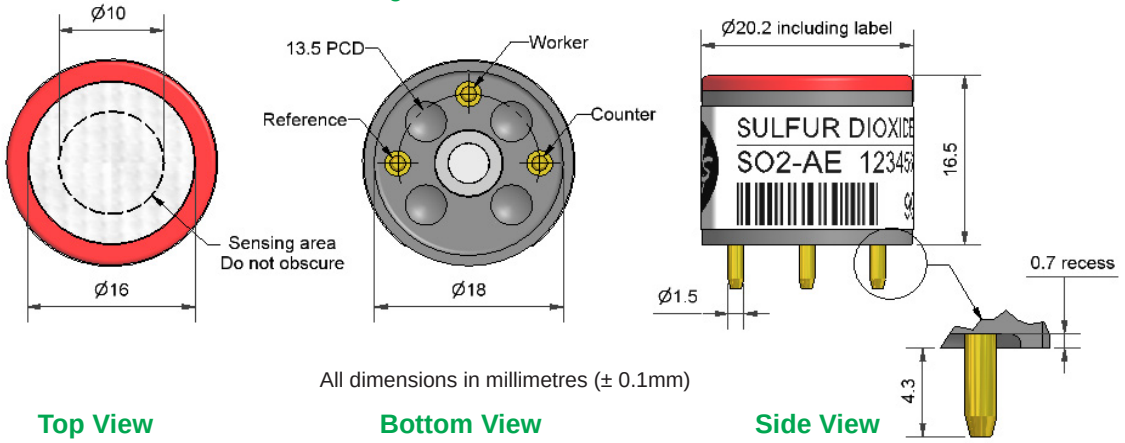
SO2-AE Sulfur Dioxide Sensor

High Concentration

PATENTED

Technical Specification

Figure 1 SO2-AE Schematic Diagram



All dimensions in millimetres (± 0.1mm)

Top View Bottom View Side View

PERFORMANCE	Sensitivity	nA/ppm in 400ppm SO_2		55 to 80
	Response time	t_{90} (s) from zero to 400ppm SO_2		< 30
	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		0 to -80
	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	< -200
	Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2	< -60
	NO sensitivity	% measured gas @ 500ppm	NO	< 25
	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	< 40
	NH_3 sensitivity	% measured gas @ 20ppm	NH_3	< 0.1
KEY SPECIFICATIONS	Temperature range	℃		-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

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.

NOTE: all sensors are tested at ambient environmental conditions, with 10 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.

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SO2-AE Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

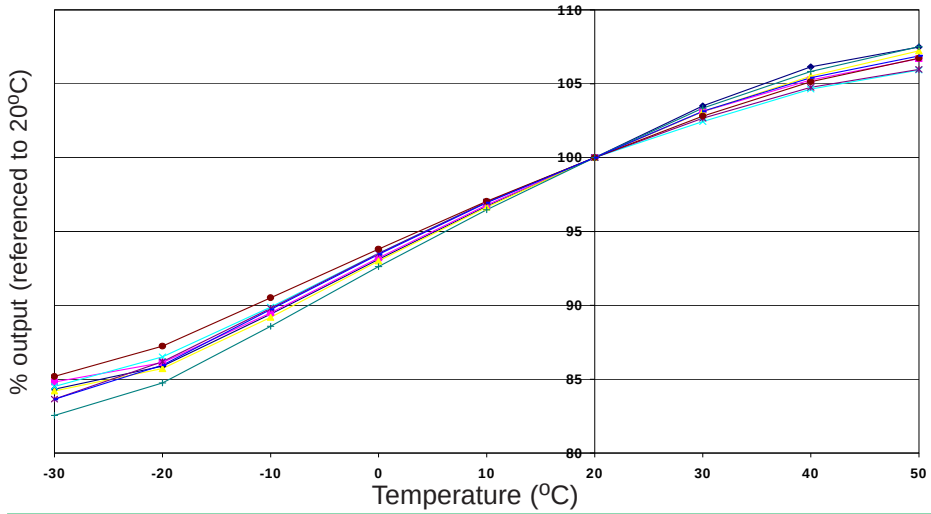

Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

Figure 3 Zero Temperature Dependence

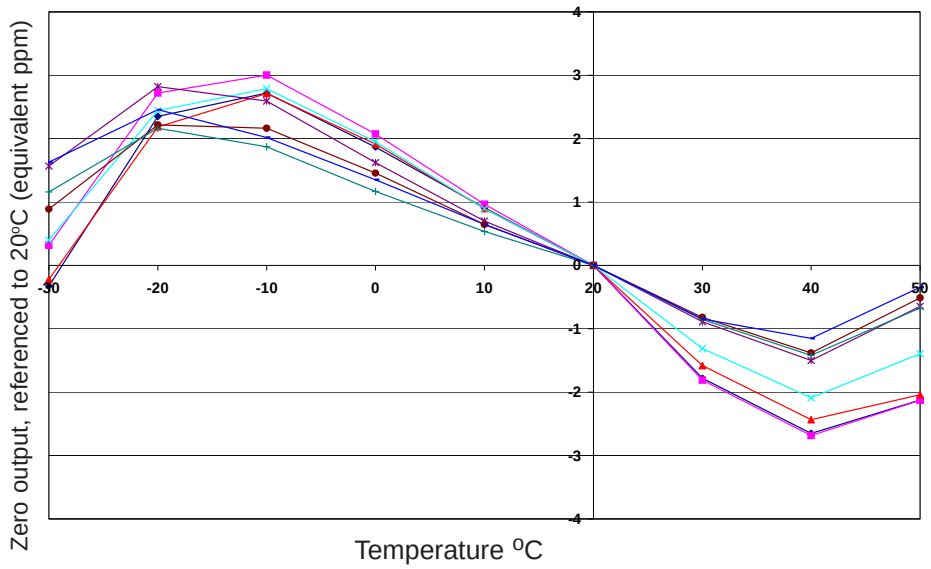

Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 4 Response to Step Changes up to 10,000 ppm SO_2

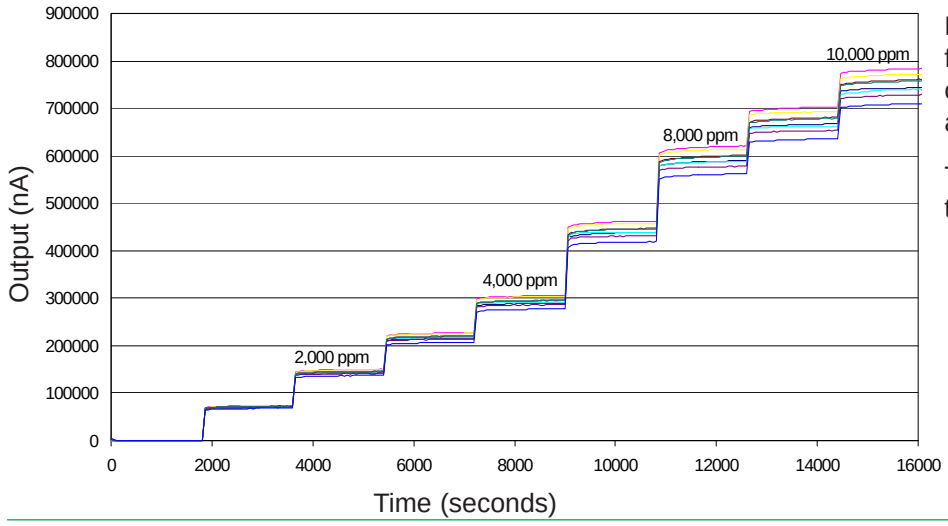

Figure 4 shows the response for a batch of sensors to high concentrations of SO_2 applied as sequential step increases.

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

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