

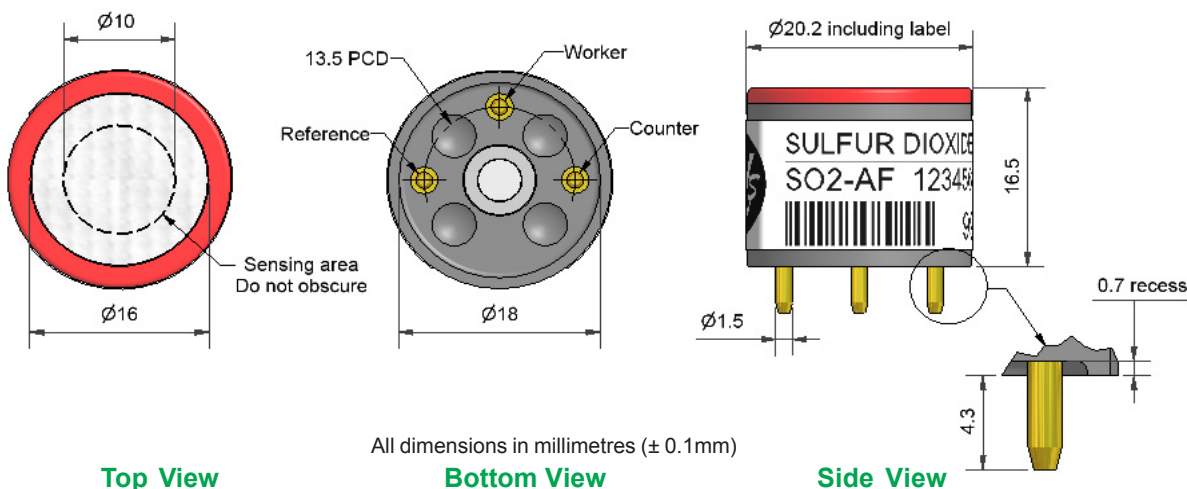


# SO2-AF Sulfur Dioxide Sensor



**PATENTED**

**Figure 1 SO2-AF Schematic Diagram**



**Technical Specification**

<b>PERFORMANCE</b>	Sensitivity	nA/ppm in 10ppm SO <sub>2</sub>	300 to 550
	Response time	t <sub>90</sub> (s) from zero to 10ppm SO <sub>2</sub>	< 35
	Zero current	ppm equivalent in zero air	< $\pm 0.6$
	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	< $\pm 0.3$
	Overgas limit	maximum ppm for stable response to gas pulse	75
<b>LIFETIME</b>	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
<b>ENVIRONMENTAL</b>	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	< $\pm 0.8$
	Zero @ 50°C	ppm equivalent change from 20°C	< $\pm 3$
<b>CROSS SENSITIVITY</b>	Filter capacity	ppm·hrs	H <sub>2</sub> S 1000
	H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S < 3
	NO <sub>2</sub> sensitivity	% measured gas @ 10ppm	NO <sub>2</sub> < -130
	Cl <sub>2</sub> sensitivity	% measured gas @ 10ppm	Cl <sub>2</sub> < -60
	NO sensitivity	% measured gas @ 50ppm	NO < $\pm 2$
	CO sensitivity	% measured gas @ 400ppm	CO < 1.6
	H <sub>2</sub> sensitivity	% measured gas @ 400ppm	H <sub>2</sub> < 0.3
	C <sub>2</sub> H <sub>4</sub> sensitivity	% measured gas @ 400ppm	C <sub>2</sub> H <sub>4</sub> < 40
NH <sub>3</sub> sensitivity	% measured gas @ 20ppm	NH <sub>3</sub> < 0.1	
<b>KEY SPECIFICATIONS</b>	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	$\Omega$ (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.

**ApolloSense Ltd**



# SO2-AF Performance Data

Technical Specification

**Figure 2 Sensitivity Temperature Dependence**

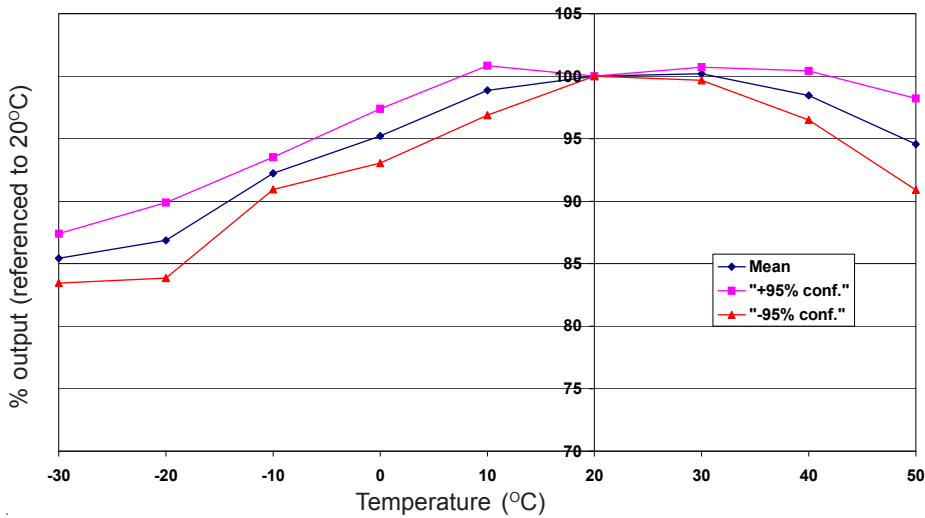


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

**Figure 3 Zero Temperature Dependence**

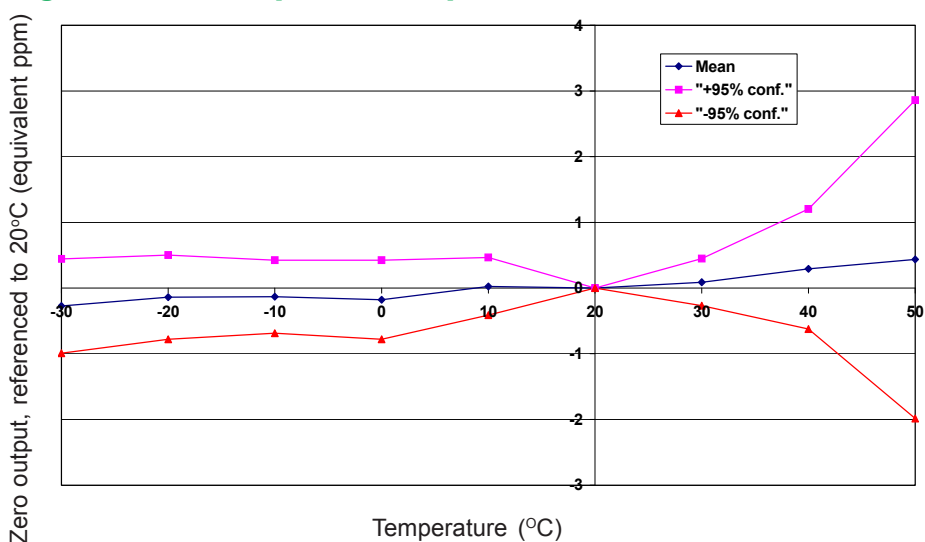
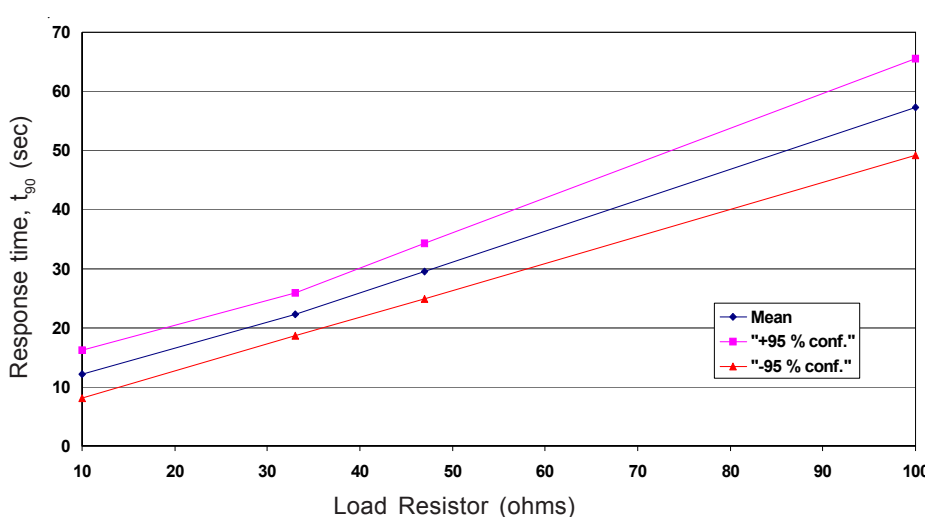


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

**Figure 4 Response 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.