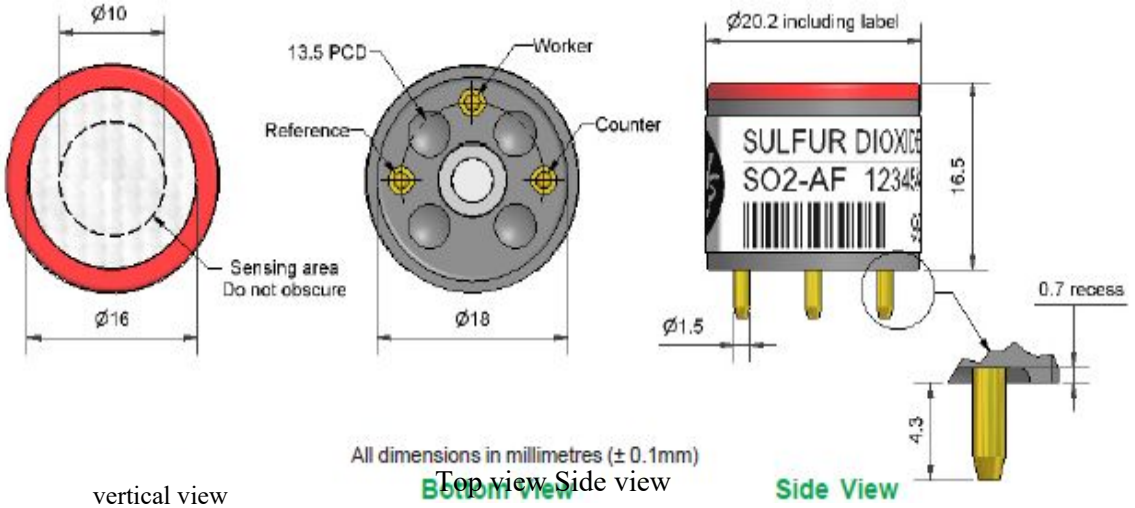
SO2-AF Sulfur Dioxide Sensor

Figure 1 Schematic Diagram of SO2-AF



vertical view Top view Side view

function	sensitivity	Sensitivity $_2$ in 10ppmSO(nA/ppm)	300~550
	reaction time	Time $_2$ to 90% from zero to 10ppmSO (s)	< 35
	zero current	Equivalent ppm value in zero air	< ±0.6
	resolution ratio	RMS noise (equivalent ppm value)	< 0.1
	range	Measuring limits (ppm) that guarantee product performance	50
	degree of linearity	The ppm value of the full scale error is linear from 0 to 10ppm	< ± 0.3
	overload	Maximum ppm value of gas pulse stabilized reaction	75
life span	zero drift	Equivalent ppm values that change in the laboratory air from year to year	< 0.1
	sensitivity drift	Percentage change in laboratory air over the year, measured monthly	< 4
	working life	Number of months to which the output is reduced to 80% of the original signal (24 months guaranteed)	> 24
environment	-20°C sensitivity	10ppmSO $_2$ when (output at-20°C/ output at 20°C)%	70~90
	Sensitivity at 50°C	10ppmSO $_2$ when(output at 50°C/ output at 20°C)%	90~102
	-20°C when zero point	Change in equivalent ppm values with reference to 20°C zero	< ±0.8
	50°C at zero point	Change in equivalent ppm values with reference to 0°C 20	< ±3
cross sensitivity	filter capacity	ppm· hour H_2S	1,000
	H_2S	Gas sensitivity percentage at 20ppmH $_2$ S	< 3
	NO_2	Gas sensitivity percentage $_2$ at 10ppmNO	< -130
	Cl_2	Sensitivity percentage of gas measured $_2$ at 10ppmCl	< -60
	NO	Sensitivity percentage of gas measured at 500ppmNO	< ±2
	CO	Gas sensitivity percentage measured at 400ppmCO	< 1.6
	H_2	Gas sensitivity percentage measured at 400ppmH $_2$	< 0.3
	C_2H_4	Gas sensitivity percentage measured at 400ppmC $_2$ H $_4$	< 40
	NH_3	Percentage sensitivity of gas $_3$ at 20ppmNH	< 0.1
key parameter	temperature range	℃	-30~50
	pressure limit	kPa	80~120
	Humidity range	Percentage of continuous relative humidity	15~90
	Storage period	Number of months for preservation from 3 to 20°C (to be kept in a sealed tank)	6
	load resistance	Ω （recommend）	10~47
	weight	g	< 6

Figure 2 Sensitivity Temperature Characteristics

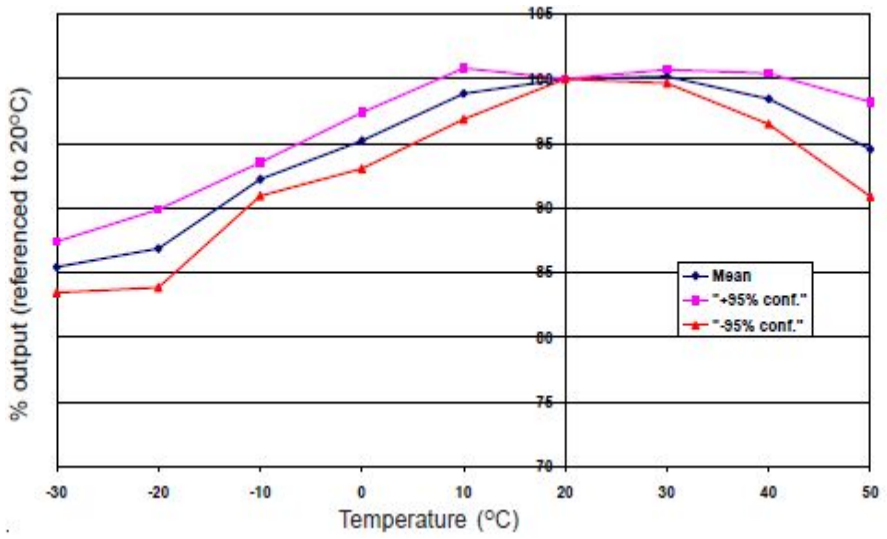


Figure 2 shows the change in sensor sensitivity caused by temperature variation.

The data are taken from a typical batch of sensors. Figure 2 shows the percentage of output (see reference 20 ℃) mean and± 95% confidence interval.

Figure 3 Zero Temperature Characteristics

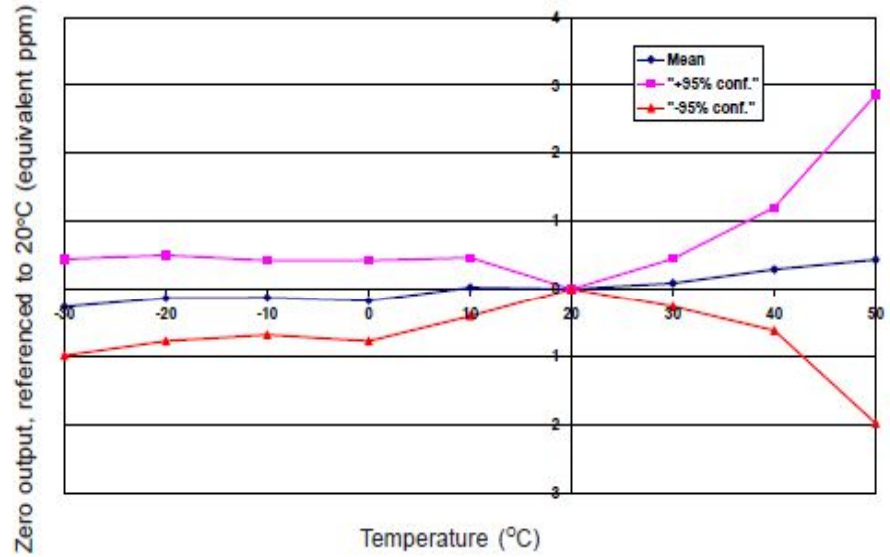
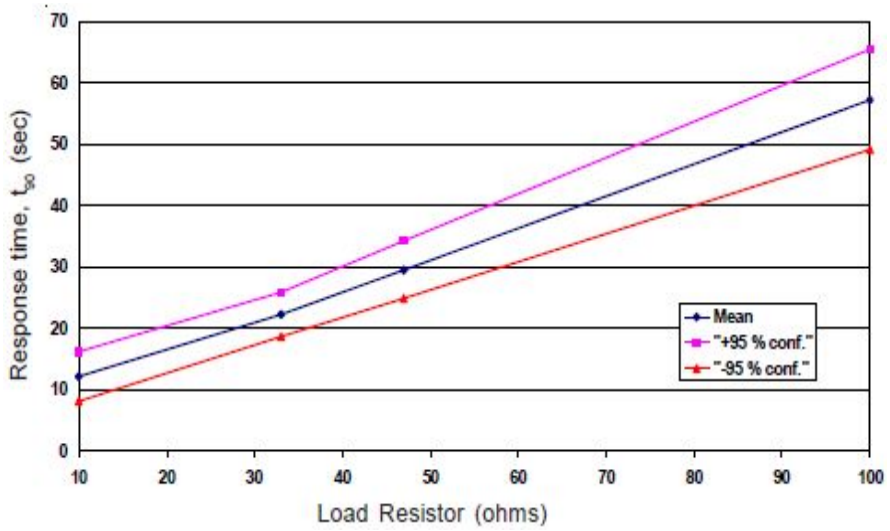


Figure 3 shows the zero point output change caused by temperature change, expressed as equivalent ppm values, and refers to the zero point at 20℃.

Data is taken from a typical batch of sensors.

Figure 4 Response Time Vs. Load Resistance



For all Alphasense toxic gas transducers, an increase in the resistance value of the load increases the response time of the sensor and also reduces the noise of the transducer for better resolution.

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