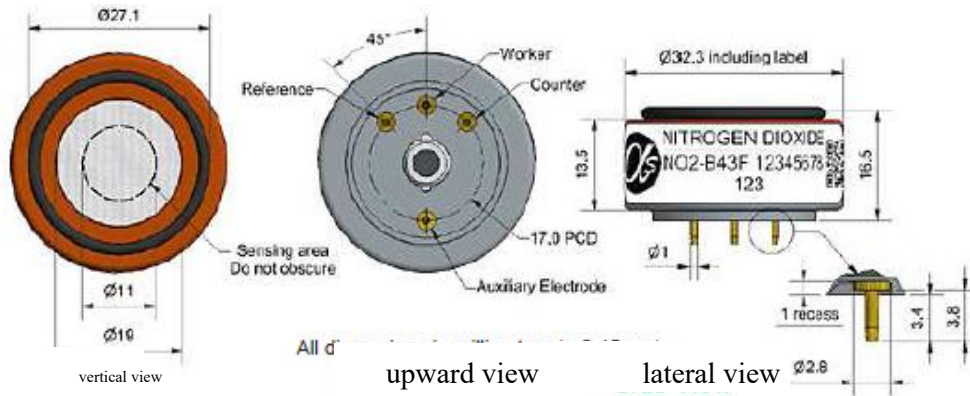


## NO2-B43F Four-Electrode Nitrogen Dioxide Sensor



Figure 1 NO2-B43F Schematic Diagram



function	sensitivity	Sensitivity in 2ppm NO(nA /ppm)	-200~-650
	reaction time	Time to 2ppmNO <sub>2</sub> from zero (s)	< 80
	zero current	Output at 20°C in zero grade air (nA)	-80~+80
	noise *	Standard deviation ± 2 (equivalent ppb)	15
	range	Measuring limits (ppm) that guarantee product performance	20
	degree of linearity	The ppb value of the full scale error is linear from 0 to 5ppm	< ±0.5
	overload	Maximum ppm value of gas pulse stabilized reaction	50
<b>* The test uses Alphasense ISB low noise circuit board</b>			
life span	zero drift	Equivalent ppb values that change in the laboratory air from year to year	0~20
	sensitivity drift	Percentage change in laboratory air over time, measured monthly	< -20~-40
	working life	Number of months to which the output is reduced to 50% of the original signal (24 months guaranteed)	> 24
envir- onment	-20°C sensitivity	2ppmNO <sub>2</sub> at (-20°C output/20°C output)%	60~80
	Sensitivity at 40°C	2ppmNO <sub>2</sub> at(40°C output/20°C output)%	95~115
	-20°C when zero point	nA	0~25
	40°C at the zero point	nA	-10~50
cross sen- sitivity	O <sub>3</sub>	Filtering capacity <sub>3</sub> at 2ppmO (ppm·hr)	< 500
	H <sub>2</sub> S	Gas sensitivity percentage measured at 5ppmH <sub>2</sub> S	< -80
	NO	Gas sensitivity percentage measured at 5ppmNO	< 5
	Cl <sub>2</sub>	Gas sensitivity percentage measured <sub>2</sub> at 5ppmCl	< 100
	SO <sub>2</sub>	Gas sensitivity percentage <sub>2</sub> at 5ppmSO	< -3
	CO	Gas sensitivity percentage measured at 5ppmCO	< -3
	H <sub>2</sub>	Gas sensitivity percentage measured at 100ppmH <sub>2</sub>	< 0.1
	C <sub>2</sub> H <sub>4</sub>	Sensitivity percentage of gas measured at 100ppmC <sub>2</sub> H <sub>4</sub>	< 0.1
	NH <sub>3</sub>	Percentage sensitivity of gas <sub>3</sub> at 20ppmNH	< 0.1
	CO <sub>2</sub>	Sensitivity percentage of gas measured at 5%Vol CO <sub>2</sub>	< 0.1
	halothane	Gas sensitivity percentage measured at 100ppm fluorine	nd
key param- eter	temperature range	°C	-30~40
	pressure limit	kPa	80~120
	Humidity range	Percentage of continuous relative humidity	15~85
	Storage period	Number of months for preservation from 3 to 20°C (to be kept in a sealed tank)	6
	load resistance	Ω (ISB circuit board is recommended)	33~100
	weight	g	< 13

Figure 2 Sensitivity Temperature Characteristics

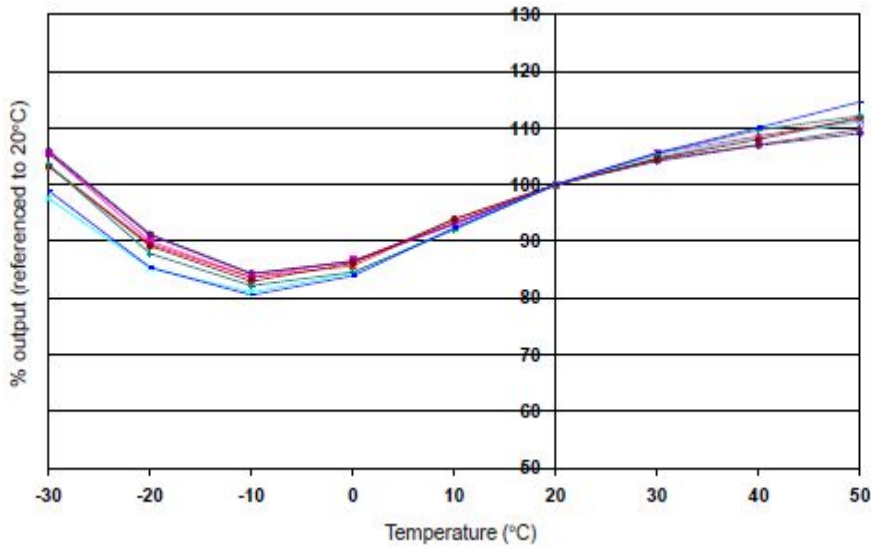


FIG. 2 shows the temperature characteristics of sensitivity at 2 ppm NO<sub>2</sub>.

Data was collected from typical batch sensors.

Figure 3 Zero Temperature Characteristics

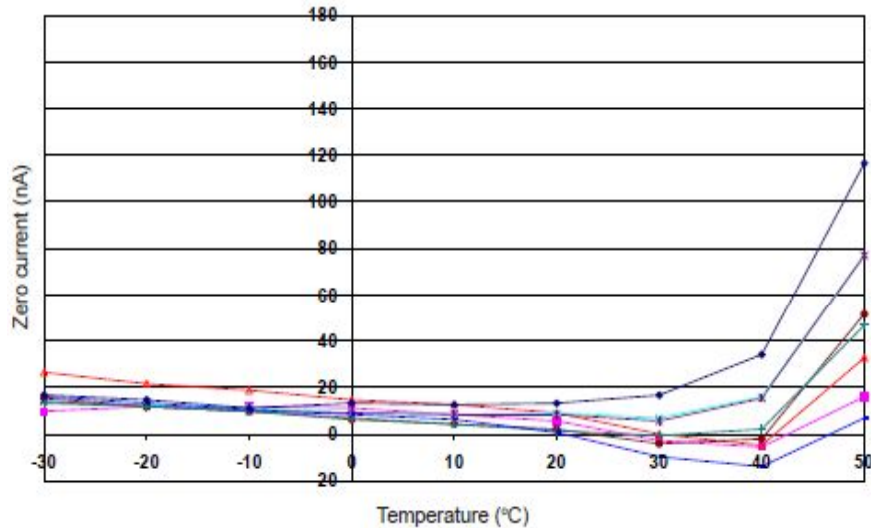
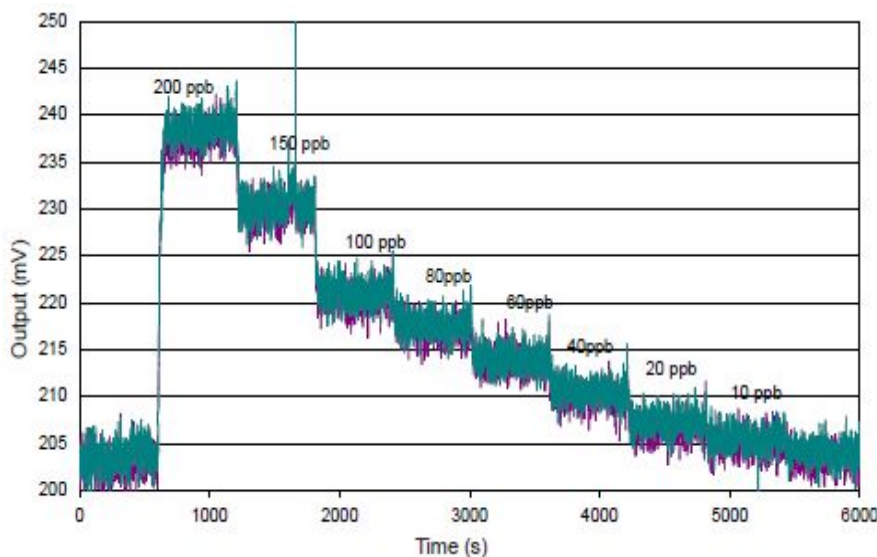


Figure 3 shows the change of zero point output of the working electrode caused by temperature change, in units of nA.

Data was taken from a typical batch of sensors.

For more information about zero current correction, contact Alphasense.

Figure 4 Reaction<sub>2</sub> of 200ppb NO<sub>2</sub>



Because 33Ω Negative Was Used

Even when the gas concentration is at the level of ppb, NO<sub>2</sub>-B43 F still shows excellent resolution: it is an ideal choice for outdoor air environment testing.

Using the Alphasense ISB circuit board can reduce noise to 15 ppb, using digital filtering can further reduce noise.

The magnitude of the offset voltage depends on the intentional offset value of the ISB circuit board.

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