



Technical specifications Version 1.0

NO2-B43F Nitrogen Dioxide Sensor – 4-Electrode



Dimensions are in millimetres (± 0.15 mm).

Performance	Sensitivity Response time Zero current Noise [°] Range Linearity Overgas limit *Tested with Alphasense	nA/ppm at 2ppm NO ₂ t90 (s) from zero to 2ppm NO ₂ nA in zero air at 20°C ±2 standard deviations (ppb equivalent) ppm NO ₂ limit of performance warranty ppb error at full scale, linear at zero and 20ppm NO ₂ maximum ppm for stable response to gas pulse ISB low noise circuit	-200 to -650 < 80 -80 to +80 15 20 < ± 0.5 50
Lifetime	Zero drift	ppb equivalent change/year in lab air	0 to 20
	Sensitivity drift	% change/year in lab air, monthly test	-20 to -40
	Operating life	months until 50% original signal (24-month warranted)	> 24
Environmental	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 2ppm NO ₂	60 to 80
	Sensitivity @ 40°C	% (output @ 50°C/output @ 20°C) @ 2ppm NO ₂	95 to 115
	Zero @ -20°C	nA	0 to 25
	Zero @ 40°C	nA	-10 to 50
Cross-sensitivity	O3filter capacitH2SsensitivityNOsensitivityCl2sensitivityCOsensitivityCOsensitivityH2sensitivityC2H4sensitivityNH3sensitivityC02sensitivityHalothanesensitivity	ty (ppm hrs) © 0.5ppm O ₃ % measured gas © 5ppm H ₂ S % measured gas © 5ppm NO % measured gas © 5ppm Cl ₂ % measured gas © 5ppm SO ₂ % measured gas © 5ppm CO % measured gas © 100ppm H ₂ % measured gas © 100ppm C ₂ H ₄ % measured gas © 20ppm NH ₃ % measured gas © 5% volume CO ₂ % measured gas © 100ppm Halothane	< 500 < -80 < 5 < 100 < -3 < -3 < 0.1 < 0.1 < 0.1 < 0.1 nd
Key Specifications	Temperature range	°C	-30 to 40
	Pressure range	kPa	80 to 120
	Humidity range	% rh continuous	15 to 85
	Storage period	months @ 3 to 20°C (stored in sealed pot)	6
	Load resistor	Ω (ISB circuit is recommended)	33 to 100
	Weight	g	< 13

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".







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Figure 1 Sensitivity Temperature Dependence



Figure 1 shows the temperature dependence of sensitivity at 2ppm NO_2 .

This data is taken from a typical batch of sensors.

Figure 2 Zero Temperature Dependence



Figure 2 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.

This data is taken from a typical batch of sensors.

Contact Alphasense for futher information on zero current correction.





With a 33 Ω load resistor, the NO2-B43F shows excellent resolution, even at the ppb level: ideal for outdoor air environmental testing.

Use of Alphasense ISB circuit reduces noise to 15ppb, with the opportunity of digital smooting to reduce noise even further.

Offset voltage is due to intentional ISB circuit electronic offset.

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 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.

In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Alphasense Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within.(©ALPHASENSE LTD) Doc. Ref. NO2-B43F/SEP22