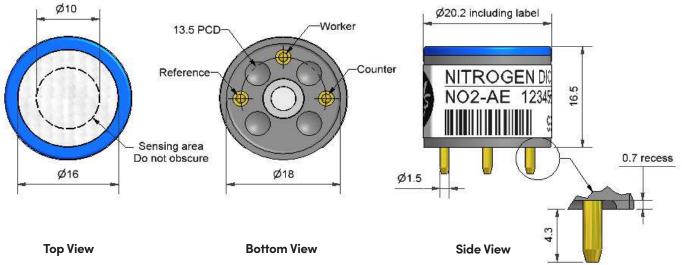


## **NO2-AE Nitrogen Dioxide Sensor**



Dimensions are in millimetres (± 0.1 mm).

Performance         Sensitivity         nA/ppm @ 20°C in 10ppm NO₂ (33Ω Load Resistor)         -70 to -170           Response time         ±90 (s) from zero to 10ppm NO₂ (33Ω Load Resistor)         < 40           Zero current         ppm equivalent in zero air         < ± 1.5           Resolution         RMS noise (ppm equivalent) (33Ω)         < 0.1           Range         ppm limit of performance warranty         200           ppm error at 200ppm, linear at 30 and 100ppm NO₂         < 2 to 11           Overgas limit         maximum ppm for stable response to 10 minute gas pulse         > 1,000           Lifetime         Zero drift         ppm equivalent change/year in lab air         nd           Sensitivity drift         % change/month in lab air, twice monthly gassing         < 2           Operating life         months until 80% original signal (24 month warranted)         > 24           Environmental         Sensitivity @ -20°C         % (output @ -20°C/output @ 20°C) @ 10ppm NO₂         75 to 95           Sensitivity         Sensitivity @ -20°C         % (output @ 50°C/output @ 20°C) @ 10ppm NO₂         75 to 95           Zero @ -20°C         Zero @ 50°C         % (output @ 50°C/output @ 20°C) @ 10ppm NO₂         75 to 95           Very Care @ -20°C         Sensitivity         % measured gas @ 50ppm         NO         < 2					
Sensitivity drift Operating life  Sensitivity drift Operating life  Sensitivity @ -20°C  Sensitivity @ -20°C  Sensitivity @ 50°C  Zero @ -20°C  Zero @ -20°C  Zero @ 50°C  Zero @ 20°C  Zero @ 20°C) @ 10ppm NO  Zero &	Performance	Response time Zero current Resolution Range Linearity	t90 (s) from zero to 10ppm $NO_2$ (33 $\Omega$ Load Resistor) ppm equivalent in zero air RMS noise (ppm equivalent) (33 $\Omega$ ) ppm limit of performance warranty ppm error at 200ppm, linear at 30 and 100ppm $NO_2$		< 40 < ± 1.5 < 0.1 200 < 2 to 11
Sensitivity @ 50°C % (output @ 50°C/output @ 20°C) @ 10ppm NO2 98 to 110  Zero @ -20°C ppm equivalent	Lifetime	Sensitivity drift	% change/month in lab air, twice monthly gassing		< 2
NO       sensitivity       % measured gas @ 50ppm       NO       < 2         SO2       sensitivity       % measured gas @ 20ppm       SO2       < -30         CI2       sensitivity       % measured gas @ 5ppm       CI2       < 90         H2       sensitivity       % measured gas @ 400ppm       H2       < -0.8         H2S       sensitivity       % measured gas @ 200ppm       H2S       < -220         C2H4       sensitivity       % measured gas @ 20ppm       NH3       < -1         CO2       sensitivity       % measured gas @ 5% volume       CO2       < 0         CO3       sensitivity       % measured gas @ 100ppb       O3       < 120     Key Specifications  Temperature range  Pressure range  kPa  **C  **C  **C **20 to 50  **Boto 120	Environmental	Sensitivity @ 50°C Zero @ -20°C	% (output @ 50°C/output @ 20°C) @ 10ppm NO <sub>2</sub> ppm equivalent		98 to 110 < ± 0.5
Pressure range kPa 80 to 120	Cross-sensitivity	NO sensitivity SO <sub>2</sub> sensitivity Cl <sub>2</sub> sensitivity H <sub>2</sub> sensitivity H <sub>2</sub> S sensitivity C <sub>2</sub> H <sub>4</sub> sensitivity NH <sub>3</sub> sensitivity CO <sub>2</sub> sensitivity	% measured gas @ 50ppm % measured gas @ 20ppm % measured gas @ 5ppm % measured gas @ 400ppm % measured gas @ 200ppm % measured gas @ 400ppm % measured gas @ 20ppm % measured gas @ 20ppm % measured gas @ 5% volume	$\begin{aligned} &\text{NO} \\ &\text{SO}_2 \\ &\text{CI}_2 \\ &\text{H}_2 \\ &\text{H}_2 \\ &\text{S} \\ &\text{C}_2 \\ &\text{H}_4 \\ &\text{NH}_3 \\ &\text{CO}_2 \end{aligned}$	< 2 < -30 < 90 < -0.8 < -220 < 0.1 < -1 < 0
Humidity range % rh continuous 15 to 90  Storage period months @ 3 to $20^{\circ}$ C (stored in sealed pot) 6  Load resistor $\Omega$ (for optimum performance) 33  Weight g < 6	Key Specifications	Pressure range Humidity range Storage period Load resistor	kPa % rh continuous months @ 3 to 20°C (stored in sealed pot Ω (for optimum performance)	)	80 to 120 15 to 90 6 33



## Figure 1 Sensitivity Temperature Dependence

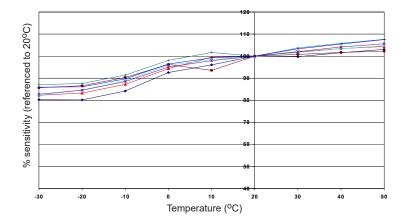


Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

## Figure 2 Zero Temperature Dependence

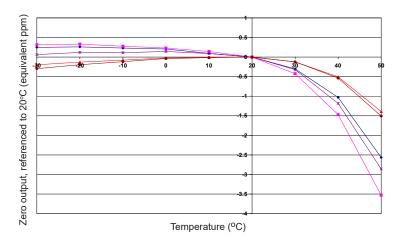


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

## Figure 3 Linearity to 200ppm NO,

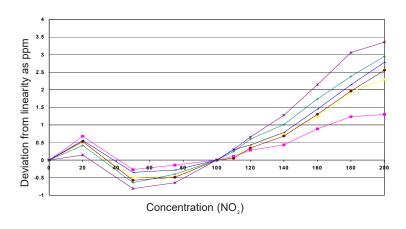


Figure 3 shows excellent and repeatable linearity to 200ppm  $\mathrm{NO_2}$  which allows this sensor to be used at high concentrations.

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.

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