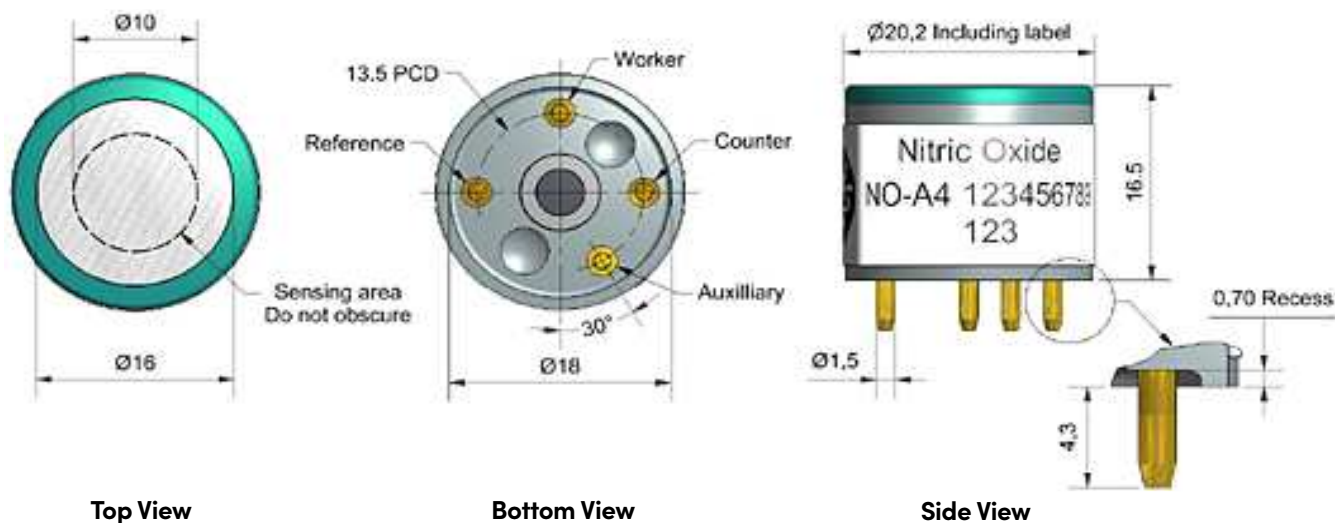


## NO-A4 Nitric Oxide Sensor – 4-Electrode



Dimensions are in millimetres (± 0.1 mm).

|                    |                                               |                                                     |            |
|--------------------|-----------------------------------------------|-----------------------------------------------------|------------|
| <b>Performance</b> | Sensitivity                                   | nA/ppm in 2ppm NO                                   | 350 to 550 |
|                    | Response time                                 | t90 (s) from zero to 2ppm NO                        | < 25       |
|                    | Zero current                                  | nA in zero air at 20°C                              | 10 to 150  |
|                    | Noise*                                        | ± 2 standard deviations (ppb equivalent)            | 80         |
|                    | Range                                         | ppm NO limit of performance warranty                | 20         |
|                    | Linearity                                     | ppb error at full scale, linear at zero and 5ppm NO | < ± 1      |
|                    | Overgas limit                                 | maximum ppm for stable response to gas pulse        | 50         |
|                    | *Tested with Alphasense AFE low noise circuit |                                                     |            |

|                 |                   |                                                       |          |
|-----------------|-------------------|-------------------------------------------------------|----------|
| <b>Lifetime</b> | Zero drift        | ppb equivalent change/year in lab air                 | 0 to 50  |
|                 | Sensitivity drift | % change/year in lab air, monthly test                | 0 to -20 |
|                 | Operating life    | months until 50% original signal (24-month warranted) | > 24     |

|                      |                     |                                            |            |
|----------------------|---------------------|--------------------------------------------|------------|
| <b>Environmental</b> | Sensitivity @ -20°C | % (output @ -20°C/output @ 20°C) @ 2ppm NO | 35 to 60   |
|                      | Sensitivity @ 50°C  | % (output @ 50°C/output @ 20°C) @ 2ppm NO  | 120 to 135 |
|                      | Zero @ -20°C        | nA change from 20°C                        | -10 to -50 |
|                      | Zero @ 50°C         | nA change from 20°C                        | 200 to 350 |

|                          |                  |             |                            |                                 |       |
|--------------------------|------------------|-------------|----------------------------|---------------------------------|-------|
| <b>Cross Sensitivity</b> | H <sub>2</sub> S | sensitivity | % measured gas @ 5ppm      | H <sub>2</sub> S (after 3 mins) | < 20  |
|                          | NO <sub>2</sub>  | sensitivity | % measured gas @ 5ppm      | NO <sub>2</sub> (after 3 mins)  | < 7   |
|                          | Cl <sub>2</sub>  | sensitivity | % measured gas @ 5ppm      | Cl <sub>2</sub>                 | < 4   |
|                          | SO <sub>2</sub>  | sensitivity | % measured gas @ 5ppm      | SO <sub>2</sub>                 | < 4   |
|                          | H <sub>2</sub>   | sensitivity | % measured gas @ 100ppm    | H <sub>2</sub>                  | < 0.1 |
|                          | CO               | sensitivity | % measured gas @ 5ppm      | CO                              | < 0.3 |
|                          | NH <sub>3</sub>  | sensitivity | % measured gas @ 5ppm      | NH <sub>3</sub>                 | < 0.1 |
|                          | CO <sub>2</sub>  | sensitivity | % measured gas @ 5% volume | CO <sub>2</sub>                 | < 0.1 |
|                          | Halothane        | sensitivity | @ 100ppm                   | Halothane                       | < 0.1 |

|                           |                   |                                                               |           |
|---------------------------|-------------------|---------------------------------------------------------------|-----------|
| <b>Key Specifications</b> | Bias voltage      | mV (working electrode potential is above reference electrode) | +200      |
|                           | Temperature range | °C                                                            | -30 to 50 |
|                           | 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 (AFE circuit is recommended)                                | 33 to 100 |
|                           | Weight            | g                                                             | < 6       |

**Figure 1 Sensitivity Temperature Dependence**

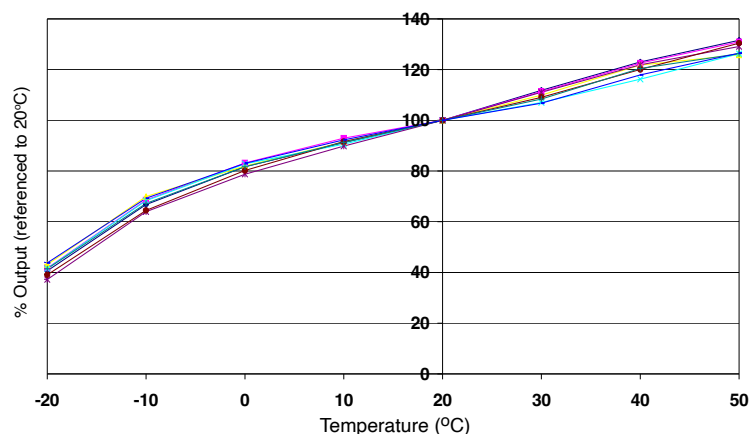


Figure 1 shows the temperature dependence of sensitivity at 2ppm NO.

This data is taken from a typical batch of sensors.

**Figure 2 Zero Temperature Dependence**

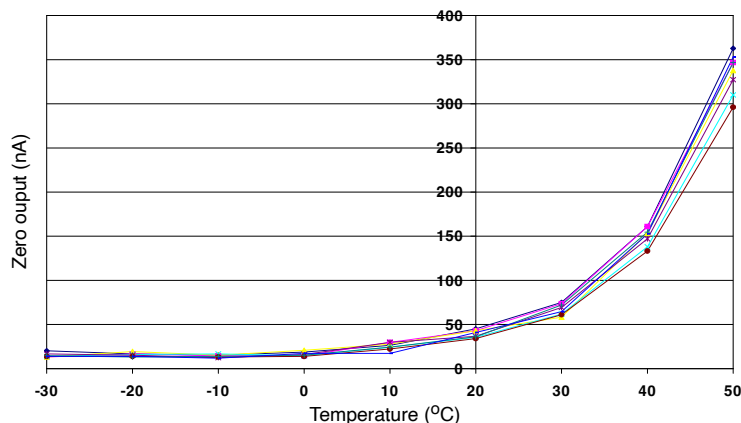


Figure 2 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.

This data is taken from a typical batch of sensors.

Contact Alphasense for further information on zero current correction.

**Figure 3 Response to 200ppb NO**

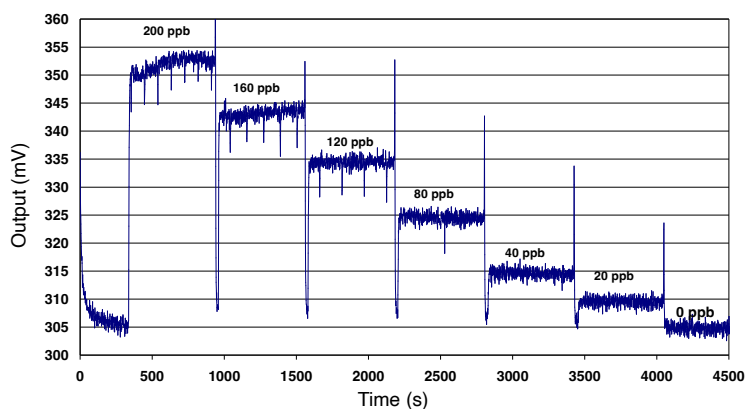


Figure 3 shows response to 200ppb NO. This was tested with the ISB circuit.

NOTE: All sensors are tested at ambient environmental conditions, with 10 ohm load resistor, 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.

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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