



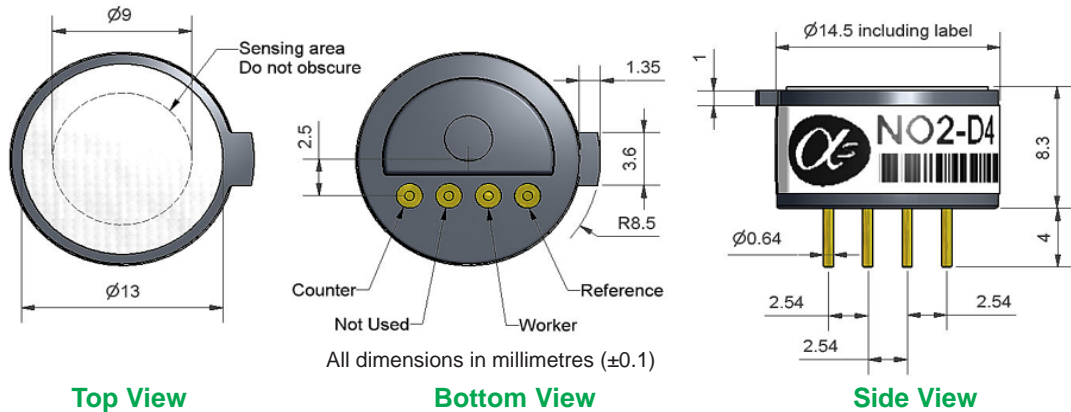
NO2-D4 Nitrogen Dioxide Sensor

Miniature Size



Figure 1 NO2-D4 Schematic Diagram

PATENTED



Technical Specification

| PERFORMANCE | Parameter | Specification | Range |
|-------------|---------------|---|--------------|
| | Sensitivity | nA/ppm in 10ppm NO ₂ | -200 to -450 |
| | Response time | t ₉₀ (s) from zero to 10ppm NO ₂ | < 35 |
| | Zero current | ppm equivalent in zero air | ± 0.8 |
| | Resolution | RMS noise (ppm equivalent) | 0.1 |
| | Range | ppm NO ₂ limit of performance warranty | 20 |
| | Linearity | ppm error at full scale, linear at zero and 10ppm NO ₂ | 0 to -0.6 |
| | Overgas limit | maximum ppm for stable response to gas pulse | 60 |

| LIFETIME | Parameter | Specification | Value |
|----------|-------------------|---|-------|
| | Zero drift | ppm equivalent change/year in lab air | nd |
| | Sensitivity drift | % change/month in lab air, twice monthly test | nd |
| | Operating life | months until 80% original signal (24 month warranted) | > 24 |

| ENVIRONMENTAL | Parameter | Specification | Value |
|---------------|---------------------|--|-----------|
| | Sensitivity @ -20°C | % (output @ -20°C/output @ 20°C) @ 10ppm | 75 to 95 |
| | Sensitivity @ 50°C | % (output @ 50°C/output @ 20°C) @ 10ppm | 90 to 105 |
| | Zero @ -20°C | ppm equivalent change from 20°C | < ± 0.6 |
| | Zero @ 50°C | ppm equivalent change from 20°C | < ± 1.5 |

CROSS SENSITIVITY

| Gas | Parameter | Specification | Value |
|---|-------------|-------------------------|--------|
| H ₂ S, CL ₂ , NO, SO ₂ , CO, H ₂ , C ₂ H ₄ , NH ₃ , CO ₂ , O ₃ | sensitivity | % measured gas @ 20ppm | < -200 |
| | sensitivity | % measured gas @ 10ppm | < 120 |
| | sensitivity | % measured gas @ 50ppm | < 0.5 |
| | sensitivity | % measured gas @ 20ppm | < -3 |
| | sensitivity | % measured gas @ 400ppm | < 0.1 |
| | sensitivity | % measured gas @ 400ppm | < 0.1 |
| | sensitivity | % measured gas @ 400ppm | < 0.1 |
| | sensitivity | % measured gas @ 20ppm | < 0.1 |
| | sensitivity | % measured gas @ 10% | < 0.1 |
| | sensitivity | % measured gas @ 200ppb | < 70 |

| KEY SPECIFICATIONS | Parameter | Specification | Value |
|--------------------|-------------------|---|-----------|
| | Temperature range | °C | -20 to 50 |
| | Pressure range | kPa | 80 to 120 |
| | Humidity range | %rh (see note below) | 15 to 90 |
| | Storage period | months @ 3 to 20°C (stored in sealed pot) | 6 |
| | Load resistor | Ω (for optimum performance) | 33 |
| | Weight | g | < 2 |

Note: Above 85% rh and 40°C a maximum continuous exposure period of 10 days is warranted. Where such exposure occurs the sensor will recover normal electrolyte volumes when allowed to rest at lower %rh and temperature levels for several days.



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 tested and stored at ambient environments 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.



NO2-D4 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

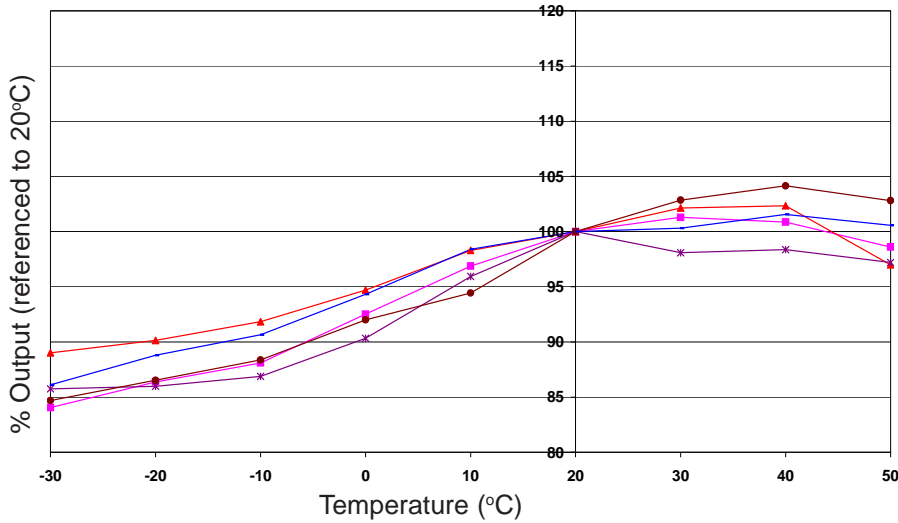


Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of NO2-D4 sensors. Good repeatability means accurate temperature compensation.

Figure 3 Zero Temperature Dependence

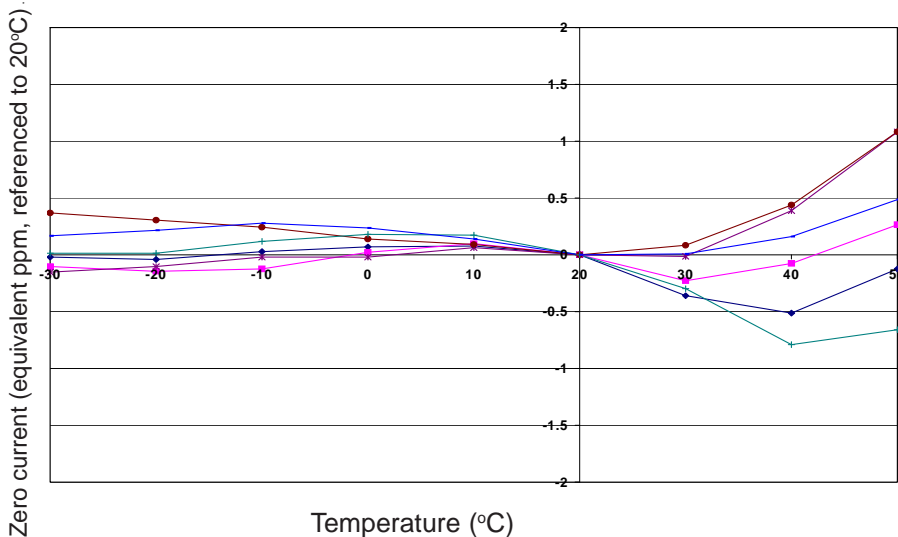
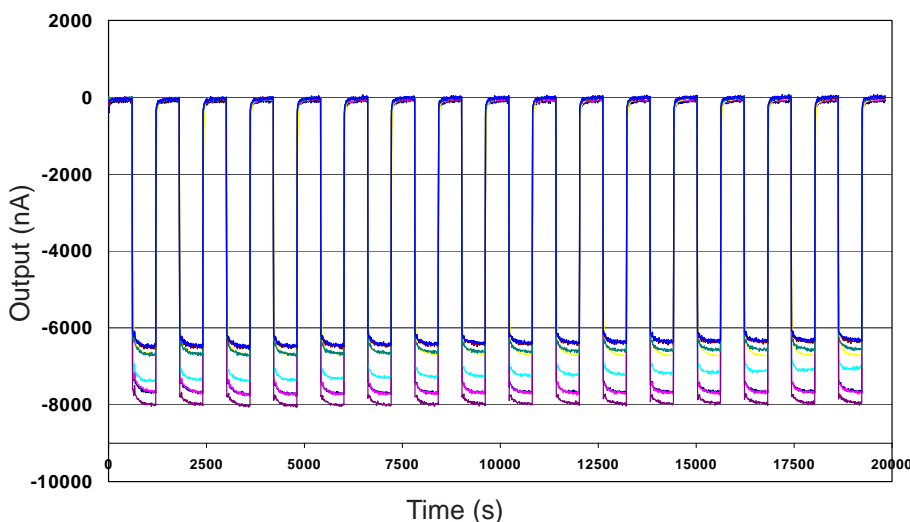


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 4 Repeated gassing with 20ppm NO₂



This hysteresis graph shows stable response when gassed repeatedly with 20ppm NO₂

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd or access our web site at "www.alphasense.com".

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