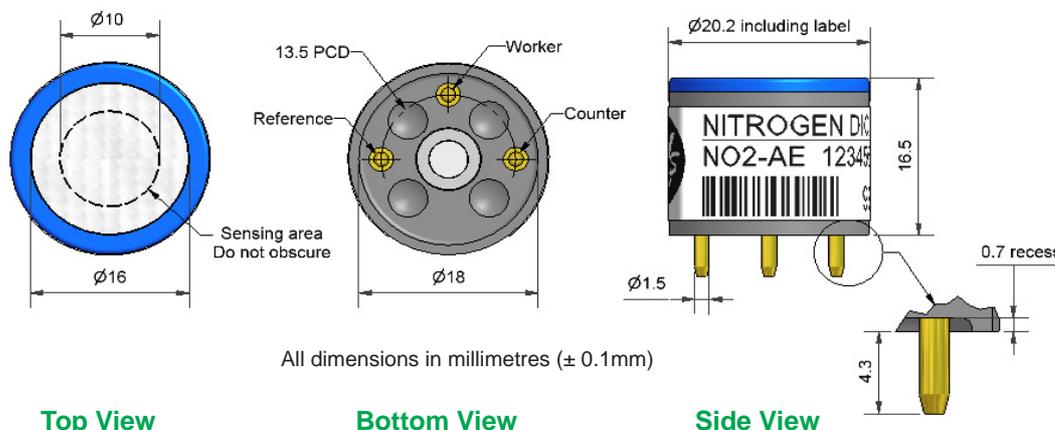


NO2-AE Nitrogen Dioxide Sensor High Concentration



Figure 1 NO2-AE Schematic Diagram

PATENT PENDING



Technical Specification

| PERFORMANCE | Parameter | Value | Unit |
|-------------|---------------|--|--------------|
| PERFORMANCE | Sensitivity | nA/ppm @ 20°C in 10ppm NO ₂ (33Ω Load Resistor) | -100 to -170 |
| | Response time | t ₉₀ (s) from zero to 10ppm NO ₂ (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 |
| | Linearity | ppm error at 200ppm, linear at 30 and 100ppm NO ₂ | < 2 to 11 |
| | Overgas limit | maximum ppm for stable response to 10 minute gas pulse | > 1,000 |

| LIFETIME | Parameter | Value | Unit |
|----------|-------------------|---|------|
| 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 | Parameter | Value | Unit |
|---------------|--|----------------|-----------|
| ENVIRONMENTAL | Sensitivity @ -20°C (output @ -20°C/output @ 20°C) @ 10ppm NO ₂ | 75 to 95 | |
| | Sensitivity @ 50°C (output @ 40°C/output @ 20°C) @ 10ppm NO ₂ | 98 to 110 | |
| | Zero @ -20°C | ppm equivalent | < ± 0.5 |
| | Zero @ 50°C | ppm equivalent | < 0 to -5 |

| CROSS SENSITIVITY | Gas | Sensitivity | Value | Unit |
|-------------------|-------------------------------|----------------------------|--------|------|
| CROSS SENSITIVITY | CO | % measured gas @ 400ppm | < 3.5 | |
| | NO | % measured gas @ 50ppm | < 1 | |
| | SO ₂ | % measured gas @ 20ppm | < -10 | |
| | Cl ₂ | % measured gas @ 5ppm | < 90 | |
| | H ₂ | % measured gas @ 400ppm | < -0.8 | |
| | H ₂ S | % measured gas @ 200ppm | < -220 | |
| | C ₂ H ₄ | % measured gas @ 400ppm | < 0.1 | |
| | NH ₃ | % measured gas @ 20ppm | < -1 | |
| | CO ₂ | % measured gas @ 5% volume | 0 | |
| | O ₃ | % measured gas @ 100ppb | < 60 | |

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

 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, 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.

NO2-AE Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

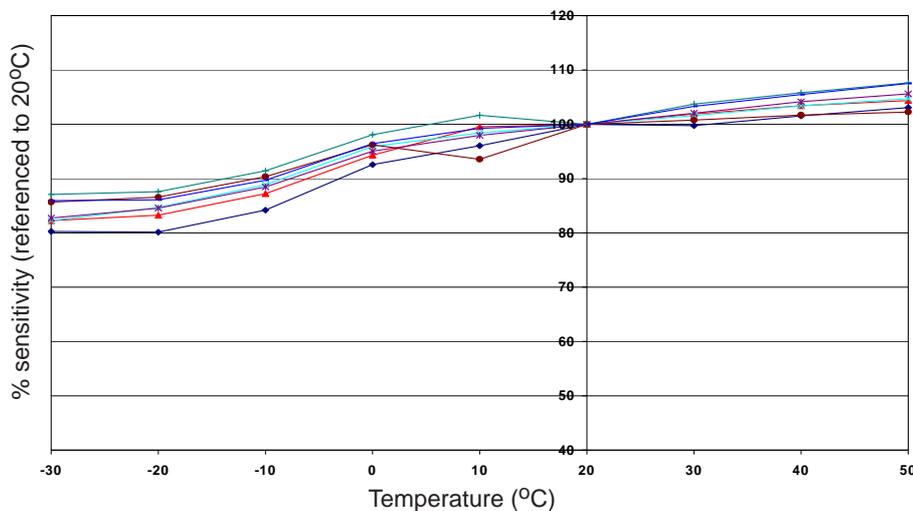


Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

Figure 3 Zero Temperature Dependence

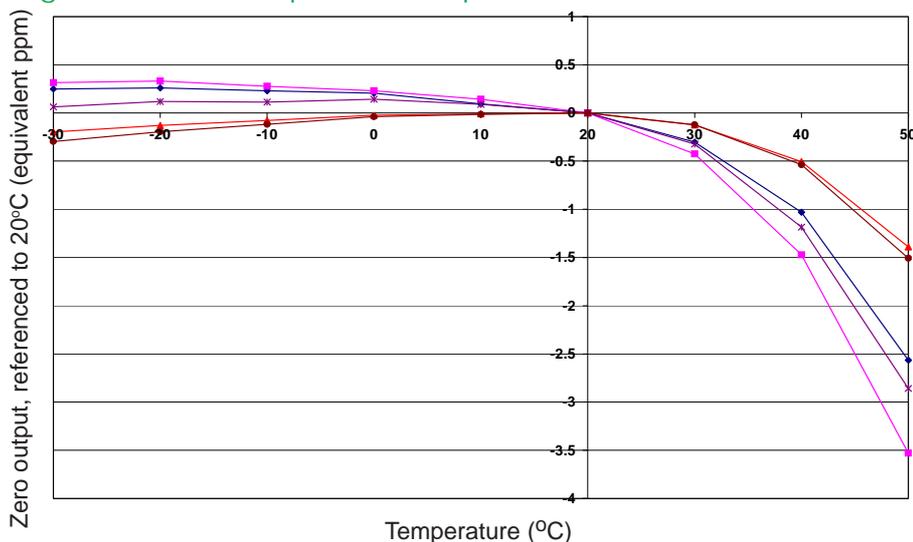


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 4 Linearity to 200ppm NO₂

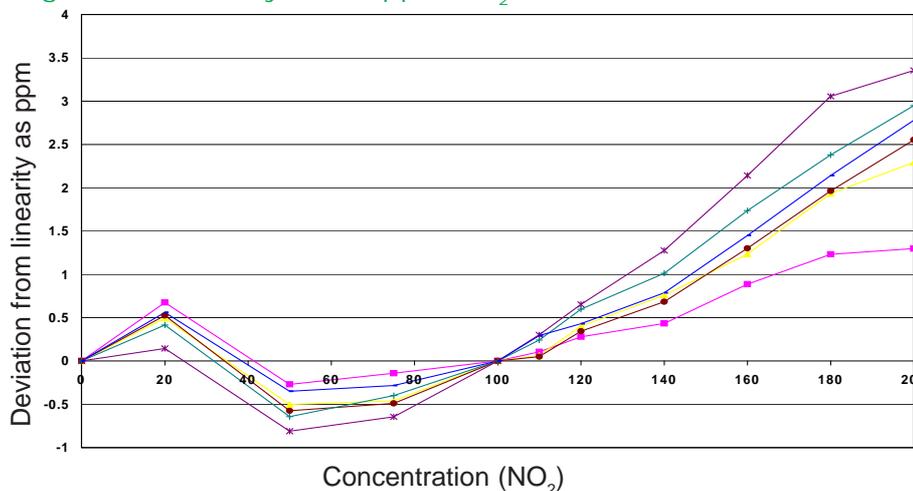


Figure 4 shows excellent and repeatable linearity to 200ppm NO₂ which allows this sensor to be used at high concentrations.