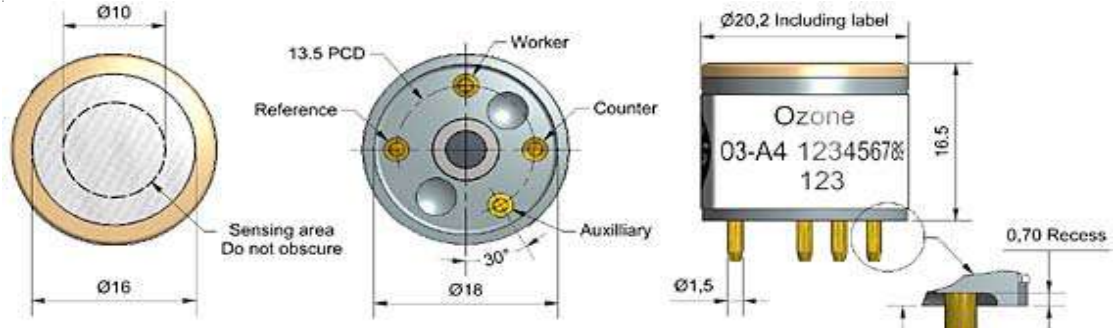
ЗАКАЗАТЬ: O3-A4 сенсор озона 0-5 ppm

# O3-A4 Ozone Sensor

## 4-Electrode

Technical Specification

Figure 1 O3-A4 Schematic Diagram




All dimensions in millimetres (± 0.15mm)

Top View | Bottom View | Side View

### PERFORMANCE

| | | |
|---|---|---|
| Sensitivity | nA/ppm at 100ppb $O_3$ | -200 to -400 |
| Response time | $t_{90}$ (s) from zero to 100ppb | < 15 |
| Zero current | nA in zero air at 20°C | 10 to 30 |
| Noise* | ±2 standard deviations (ppb equivalent) | 5 |
| Range | ppm $O_3$ limit of performance warranty | 5 |
| Linearity | ppb error at full scale, linear at zero and 1ppm $O_3$ | 200 to 500 |
| Overgas limit | maximum ppm for stable response to gas pulse | 10 |

*** Tested with Alphasense AFE low noise circuit**

### LIFETIME

| | | |
|---|---|---|
| Zero drift | ppb equivalent change/year in lab air | 0 to 50 |
| Sensitivity drift | % change/year in lab air, monthly test | -20 to -35 |
| Operating life | months until 50% original signal (12 month warranted) | > 18 |

### ENVIRONMENTAL

| | | |
|---|---|---|
| Sensitivity @ -20°C | (% output @ -20°C/output @ 20°C) @ 500ppb $O_3$ | |
| Sensitivity @ 50°C | (% output @ 50°C/output @ 20°C) @ 500ppb $O_3$ | |
| Zero @ -20°C | nA change from 20°C | -10 to -30 |
| Zero @ 50°C | nA change from 20°C | 170 to 360 |

### CROSS SENSITIVITY

| | | | |
|---|---|---|---|
| $H_2S$ sensitivity | % measured gas @ 5ppm | $H_2S$ | < -70 |
| $NO_2$ sensitivity | % measured gas @ 5ppm | $NO_2$ | 70 to 120 |
| $Cl_2$ sensitivity | % measured gas @ 5ppm | $Cl_2$ | < 30 |
| NO sensitivity | % measured gas @ 5ppm | NO | < -5 |
| $SO_2$ sensitivity | % measured gas @ 5ppm | $SO_2$ (initial transient) | < -4 |
| CO sensitivity | % measured gas @ 5ppm | CO | < 0.1 |
| $H_2$ sensitivity | % measured gas @ 100ppm | $H_2$ | < 2 |
| $C_2H_4$ sensitivity | % measured gas @ 100ppm | $C_2H_4$ | < 0.1 |
| $NH_3$ sensitivity | % measured gas @ 20ppm | $NH_3$ | < 1 |
| $CO_2$ sensitivity | % measured gas @ 5% | $CO_2$ | < 0.1 |

### KEY SPECIFICATIONS

| | | |
|---|---|---|
| Temperature range | °C | -20 to +50 |
| Pressure range | kPa | 80 to 120 |
| Humidity range | % rh non-condensing | 15 to 85 |
| Flow rate | minimum sccm during calibration | 500 (0.5L/m) |
| Bias voltage | V | 0 |
| 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 |

Alphasense Ltd, Sensor Technology House, 300 Avenue West, Skyline 120, Great Notley. CM77 7AA. UK
Telephone: +44 (0) 1376 556 700 Fax: +44 (0) 1376 335 899

# O3-A4 Perfomance Data

Technical Specification

## Figure 2 Sensitivity Temperature Dependence

Figure 2 shows the temperature dependence of sensitivity at 100ppb $O_3$.

This data is taken from a typical batch of sensors.

## Figure 3 Zero Temperature Dependence

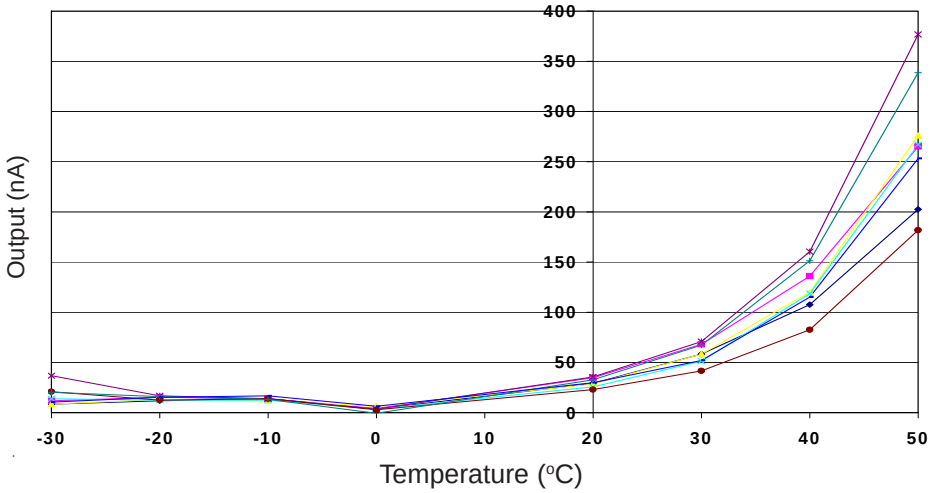



Figure 3 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.

This data is taken from a typical batch of sensors.

Contact Alphasense for futher information on zero current correction.

## Figure 4 Response to 200ppb Ozone

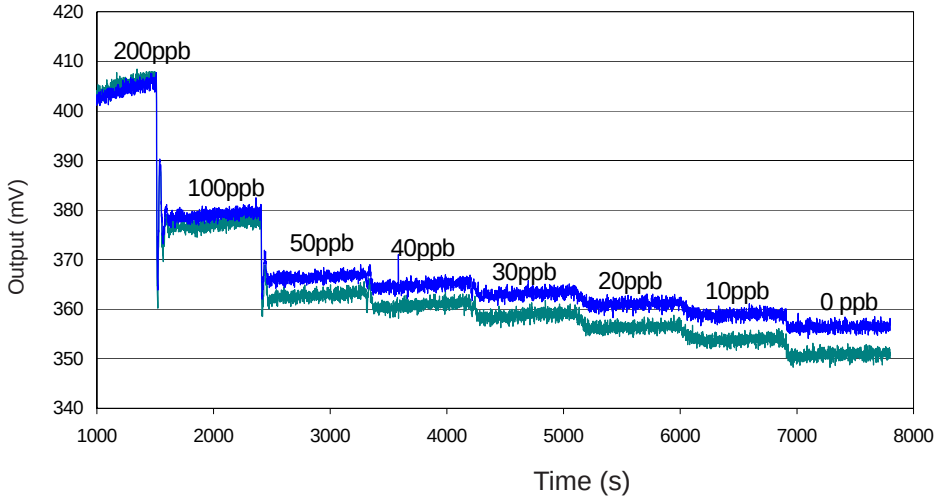



Figure 4 shows response to 200ppb $O_3$.

Use of Alphasense AFE circuit reduces noise to 5ppb, with the opportunity of digital smooting to reduce noise even further.

**NOTE:** all sensors are tested at ambient environmental conditions, with 47 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.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd.

*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. O3-A4/NOV13*

***ЗАКАЗАТЬ: O3-A4 сенсор озона 0-5 ppm***