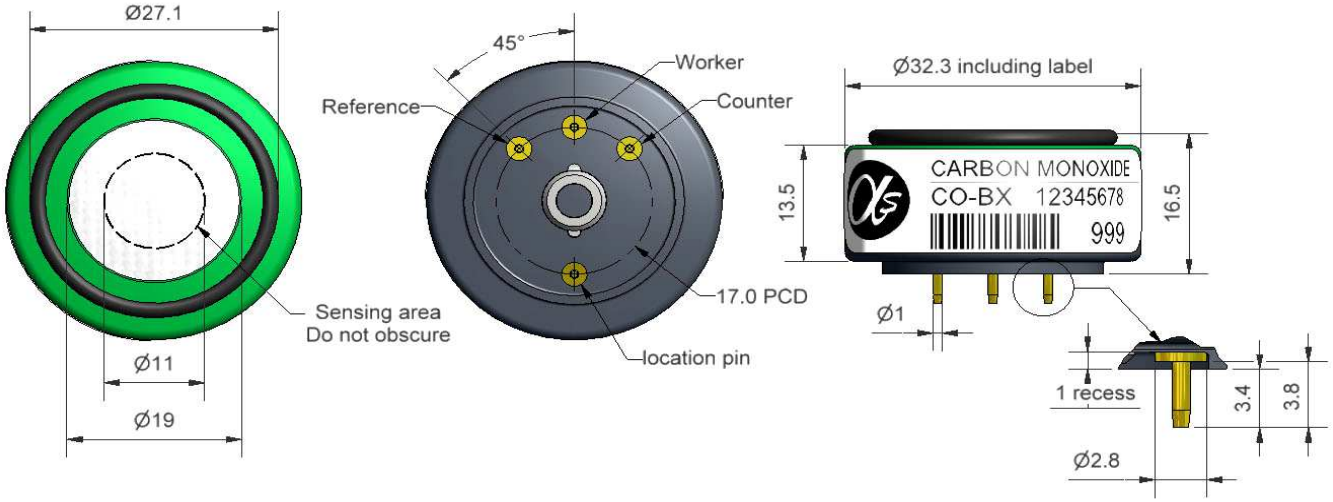
# CO-BX Carbon Monoxide Sensor – Low Hydrogen Cross Sensitivity




**Top View** **Bottom View** **Side View**

Dimensions are in millimetres (± 0.1 mm).

| | | | | |
|---|---|---|---|---|
| **Performance** | Sensitivity | nA/ppm in 400ppm CO | | 70 to 130 |
| | Response time | t90 (s) from zero to 400ppm CO | | < 25 |
| | Zero current | ppm equivalent in zero air | | < ± 3 |
| | Resolution | RMS noise (ppm equivalent) | | < 0.5 |
| | Range | ppm limit of performance warranty | | 2,000 |
| | Linearity | ppm CO error at full scale, linear at zero, 1000ppm CO | | < ± 20 |
| | Overgas limit | maximum ppm for stable response to gas pulse | | 5,000 |
| **Lifetime** | Zero drift | ppm equivalent change/year in lab air | | < 0.2 |
| | Sensitivity drift | % change/year in lab air, monthly test | | < 3 |
| | Operating life | months until 80% original signal (24-month warranted) | | > 24 |
| **Environmental** | Sensitivity @ -20°C | (% output @ -20°C/output @ 20°C) @ 400ppm CO | | 40 to 60 |
| | Sensitivity @ 0°C | (% output @ 0°C/output @ 20°C) @ 400ppm CO | | 65 to 85 |
| | Sensitivity @ 50°C | (% output @ 50°C/output @ 20°C) @ 400ppm CO | | 110 to 130 |
| | Zero @ -20°C | ppm equivalent change from 20°C | | < 0 to 4 |
| | Zero @ 0°C | ppm equivalent change from 20°C | | < 0 to 3 |
| | Zero @ 50°C | ppm equivalent change from 20°C | | < 0 to -6 |
| **Cross Sensitivity** | Filter capacity | ppm·hrs | $H_2S$ | 160,000 |
| | Filter capacity | ppm·hrs | $NO_2$ | 120,000 |
| | Filter capacity | ppm·hrs | NO | 120,000 |
| | Filter capacity | ppm·hrs | $SO_2$ | 160,000 |
| | $H_2S$ sensitivity | % measured gas @ 20ppm | $H_2S$ | < 0.1 |
| | $NO_2$ sensitivity | % measured gas @ 10ppm | $NO_2$ | < -3 |
| | $Cl_2$ sensitivity | % measured gas @ 10ppm | $Cl_2$ | < -0.1 |
| | NO sensitivity | % measured gas @ 50ppm | NO | < -5 |
| | $SO_2$ sensitivity | % measured gas @ 20ppm | $SO_2$ | < 0.1 |
| | $H_2$ sensitivity | % measured gas @ 400ppm | $H_2$ at 20°C | < 5 |
| | $C_2H_4$ sensitivity | % measured gas @ 400ppm | $C_2H_4$ | < 10 |
| | $NH_3$ sensitivity | % measured gas @ 20ppm | $NH_3$ | < 0.1 |
| **Key Specifications** | Temperature range | °C | | -30 to 50 |
| | Pressure range | kPa | | 80 to 120 |
| | Humidity range | % rh continuous | | 15 to 90 |
| | Storage period | months @ 3 to 20°C (stored in sealed pot) | | 6 |
| | Load resistor | Ω (recommended) | | 10 to 47 |
| | Weight | g | | < 13 |

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

## Figure 1 Sensitivity Temperature Dependence

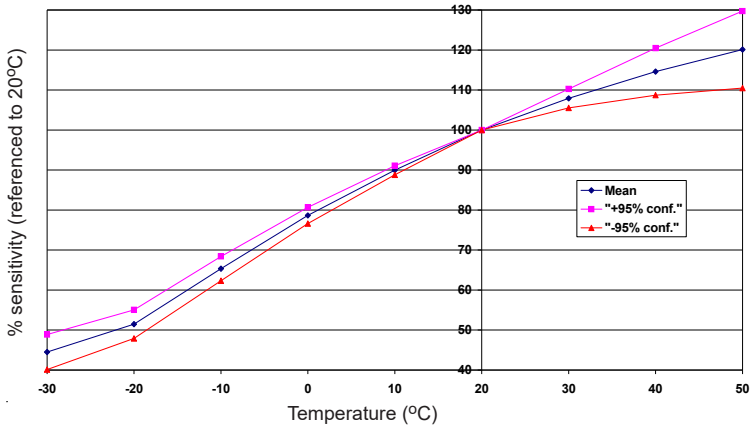



Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors. The mean and ±95% confidence intervals are shown.

## Figure 2 Zero Temperature Dependence

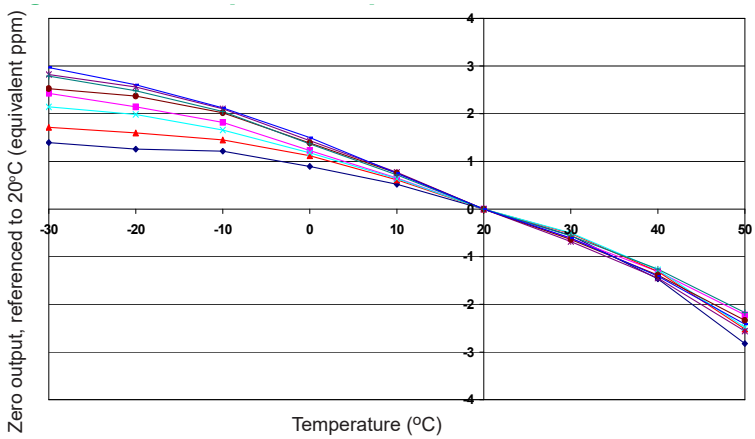
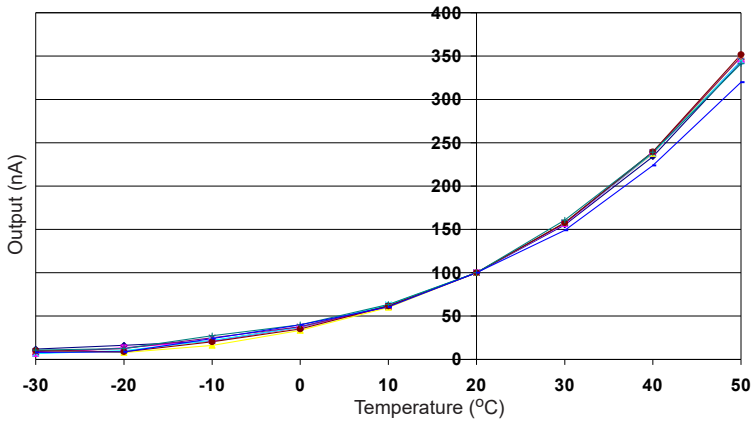



Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

## Figure 3 Hydrogen Temperature Dependence




Hydrogen sensitivity is very dependent on temperature.

At low temperatures hydrogen sensitivity can be ignored, but above 30°C it is important.

**Important. The CO-BX must be operated with a 0 Volt bias between Reference & Working electrodes. Failure to comply with this requirement will result in a loss of its low Hydrogen cross sensitivity performance.**

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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