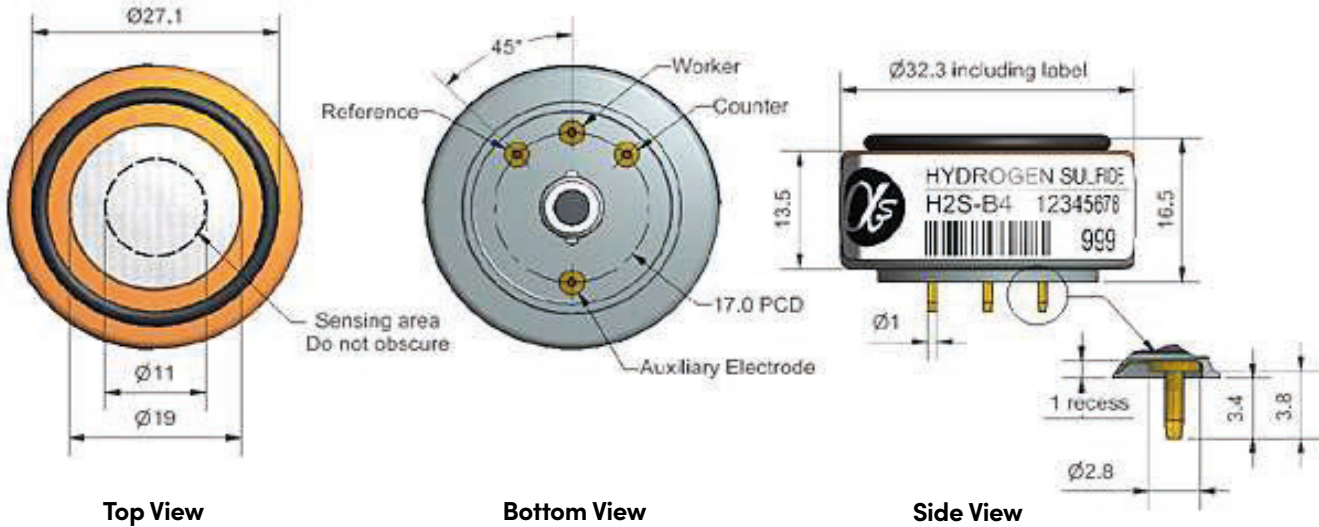


Technical specifications Version 1.0

H2S-B4 Hydrogen Sulfide Sensor – 4-Electrode



Dimensions are in millimetres (± 0.15 mm).

| | | | | |
|--------------------|---|--|-------------------------------|-------|
| Performance | Sensitivity | nA/ppm at 2ppm H ₂ S | 1450 to 2600 | |
| | Response time | t90 (s) from zero to 2ppm H ₂ S | < 60 | |
| | Zero current | nA in zero air at 20°C | -250 to 200 | |
| | Noise* | ±2 standard deviations (ppb equivalent) | 1 | |
| | Range | ppm H ₂ S limit of performance warranty | 100 | |
| | Linearity | ppb error at full scale, linear at zero and 40ppm H ₂ S | < ± 4 | |
| | Overgas limit | maximum ppm for stable response to gas pulse | 200 | |
| | *Tested with Alphasense ISB low noise circuit | | | |
| Lifetime | Zero drift | ppm equivalent change/year in lab air | < ± 100 | |
| | Sensitivity drift | % change/year in lab air, monthly test | < 20 | |
| | Operating life | months until 50% original signal (24-month warranted) | > 24 | |
| Environmental | Sensitivity @ -20°C | % (output @ -20°C/output @ 20°C) @ 2ppm H ₂ S | 77 to 90 | |
| | Sensitivity @ 50°C | % (output @ 50°C/output @ 20°C) @ 2ppm H ₂ S | 100 to 110 | |
| | Zero @ -20°C | nA change from 20°C | 50 to 60 | |
| | Zero @ 50°C | nA change from 20°C | -120 to -160 | |
| Cross Sensitivity | NO ₂ sensitivity | % measured gas @ 5ppm | NO ₂ | < -10 |
| | Cl ₂ sensitivity | % measured gas @ 5ppm | Cl ₂ | < -12 |
| | NO sensitivity | % measured gas @ 5ppm | NO | < 12 |
| | SO ₂ sensitivity | % measured gas @ 5ppm | SO ₂ | < 20 |
| | CO sensitivity | % measured gas @ 5ppm | CO | < 3 |
| | H ₂ sensitivity | % measured gas @ 100ppm | H ₂ | < 0.5 |
| | C ₂ H ₄ sensitivity | % measured gas @ 100ppm | C ₂ H ₄ | < 0.1 |
| | NH ₃ sensitivity | % measured gas @ 20ppm | NH ₃ | < 0.1 |
| | CO ₂ sensitivity | % measured gas @ 5% | CO ₂ | < 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 (ISB circuit is recommended) | 33 to 100 | |
| | Weight | g | < 13 | |



Figure 1 Sensitivity Temperature Dependence

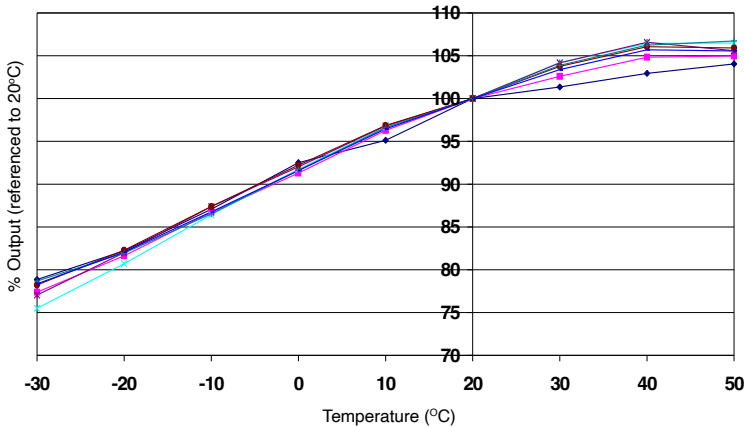


Figure 1 shows the temperature dependence of sensitivity at 2ppm H₂S.
This data is taken from a typical batch of sensors.

Figure 2 Zero Temperature Dependence

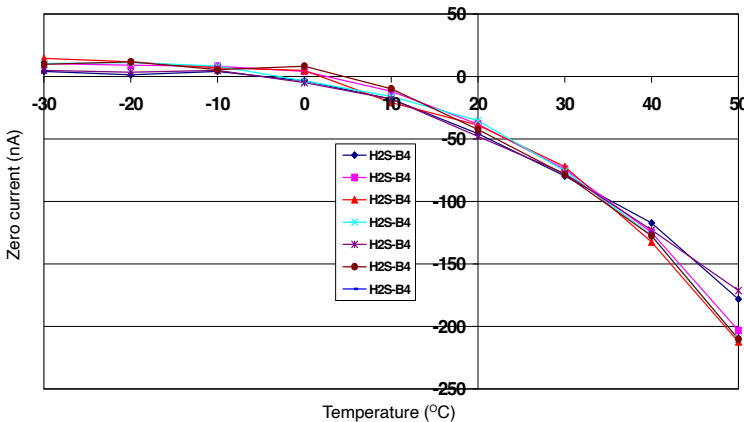


Figure 2 shows the variation in zero output of the working electrode caused by changes in temperature, expressed as nA.
This data is taken from a typical batch of sensors.
Contact Alphasense for further information on zero current correction.

Figure 3 Linearity to 200 ppb H₂S

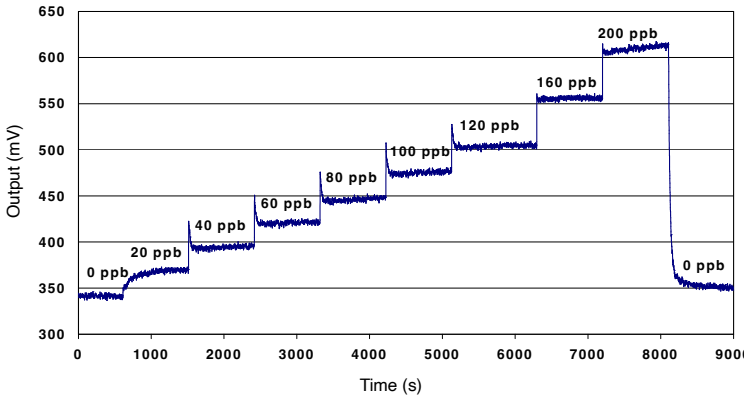


Figure 3 shows response to 200ppb H₂S.
Use of Alphasense ISB circuit reduces noise to 1ppb, with the opportunity of digital smoothing to reduce noise even further.