

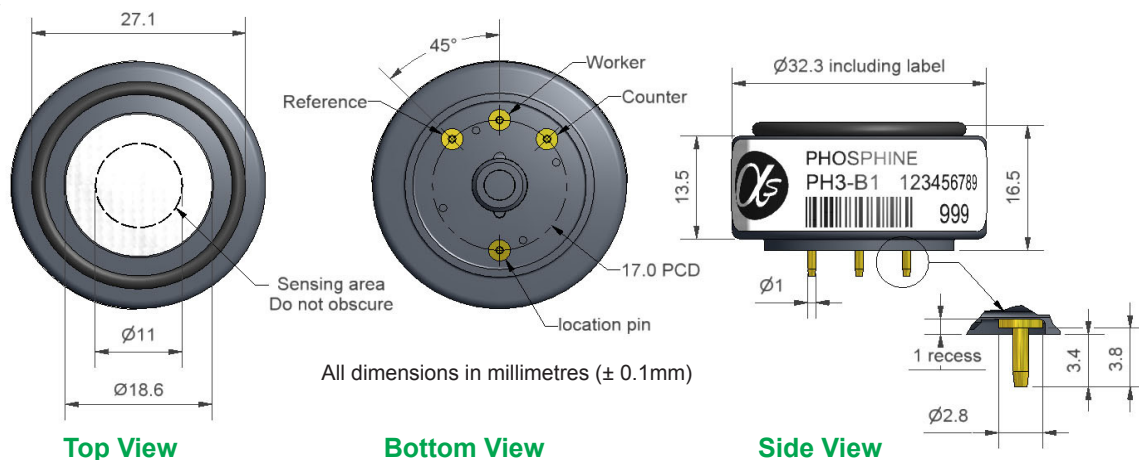


PH3-B1 Phosphine Sensor



PATENTED

Figure 1 PH3-B1 Schematic Diagram



Technical Specification

| PERFORMANCE | Parameter | Specification | Range |
|-------------|---------------|---|----------------|
| | Sensitivity | nA/ppm in 5ppm PH ₃ | 600 to 1000 |
| | Response time | t ₉₀ (s) from zero | < 20 |
| | Zero current | ppm equivalent in zero air | < -0.3 to +0.3 |
| | Resolution | RMS noise (ppm equivalent) | < 0.03 |
| | Range | ppm limit of performance warranty | 10 |
| | Linearity | ppm PH ₃ error at full scale, linear at zero, 4ppm PH ₃ | -1 to -1.8 |
| | Overgas limit | maximum ppm for stable response to gas pulse | 150 |

| LIFETIME | Parameter | Specification | Range |
|----------|-------------------|---|--------|
| | Zero drift | ppm equivalent change/year in lab air | < 0.05 |
| | Sensitivity drift | % change/year in lab air, monthly test | < 4 |
| | Operating life | months until 80% original signal (24 month warranted) | > 24 |

| ENVIRONMENTAL | Parameter | Specification | Range |
|---------------|---------------------|---|-------------|
| | Sensitivity @ -20°C | % (output @ -20°C/output @ 20°C) @ 5ppm PH ₃ | 65 to 85 |
| | Sensitivity @ 50°C | % (output @ 50°C/output @ 20°C) @ 5ppm PH ₃ | 120 to 140 |
| | Zero @ -20°C | ppm equivalent change from 20°C | < ±0.5 |
| | Zero @ 50°C | ppm equivalent change from 20°C | < 0 to +0.2 |

| CROSS SENSITIVITY | Gas | Sensitivity | Specification | Range |
|-------------------|-------------------------------|-------------------------|-------------------------------|-------|
| | CO | % measured gas @ 400ppm | CO | < 1 |
| | H ₂ S | % measured gas @ 20ppm | H ₂ S | < 170 |
| | NO ₂ | % measured gas @ 20ppm | NO ₂ | < -30 |
| | Cl ₂ | % measured gas @ 10ppm | Cl ₂ | < 0.1 |
| | NO | % measured gas @ 50ppm | NO | < 30 |
| | SO ₂ | % measured gas @ 20ppm | SO ₂ | < 30 |
| | H ₂ | % measured gas @ 400ppm | H ₂ at 20°C | < 0.3 |
| | C ₂ H ₄ | % measured gas @ 400ppm | C ₂ H ₄ | < 20 |
| | NH ₃ | % measured gas @ 20ppm | NH ₃ | < 0.2 |
| | CO ₂ | % measured gas @ 5% | CO ₂ | < 0.1 |

| KEY SPECIFICATIONS | Parameter | Specification | Range |
|--------------------|-------------------|---|-----------|
| | 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 | 10 to 33 |
| | Weight | g | < 13 |



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.

ApolloSense Ltd



PH3-B1 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

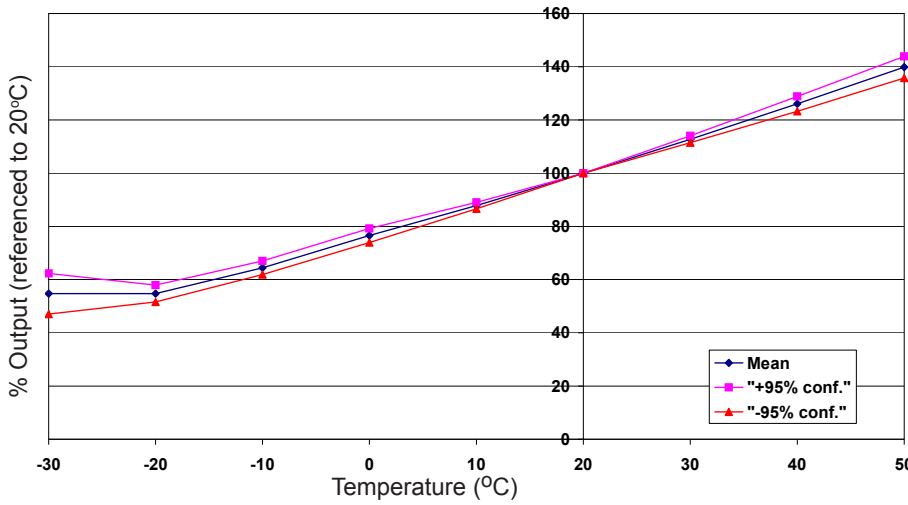


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Figure 3 Zero Temperature Dependence

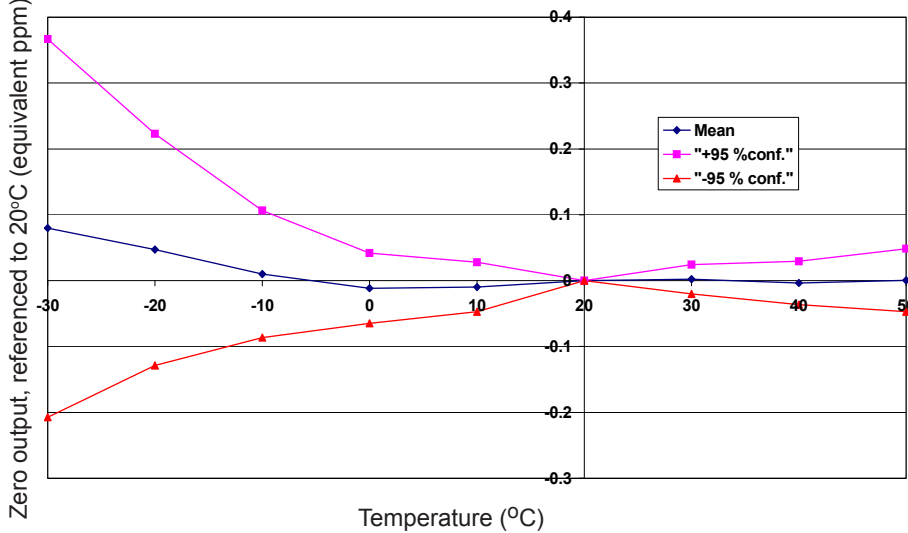
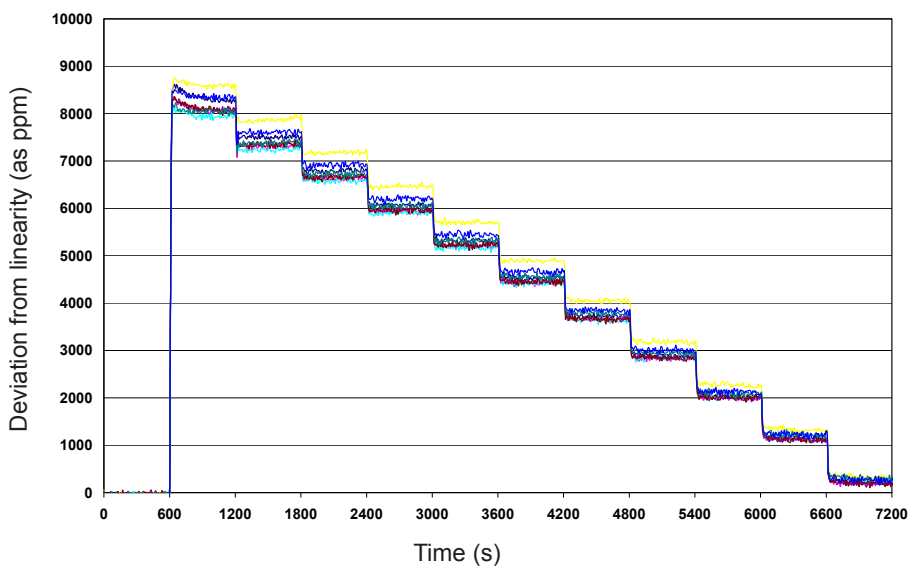


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

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

Figure 4 Response from 10ppm PH₃ to Zero



Eight PH3-B1 were tested for response from 10 to 1ppm.

Fast response and stable readings are observed.