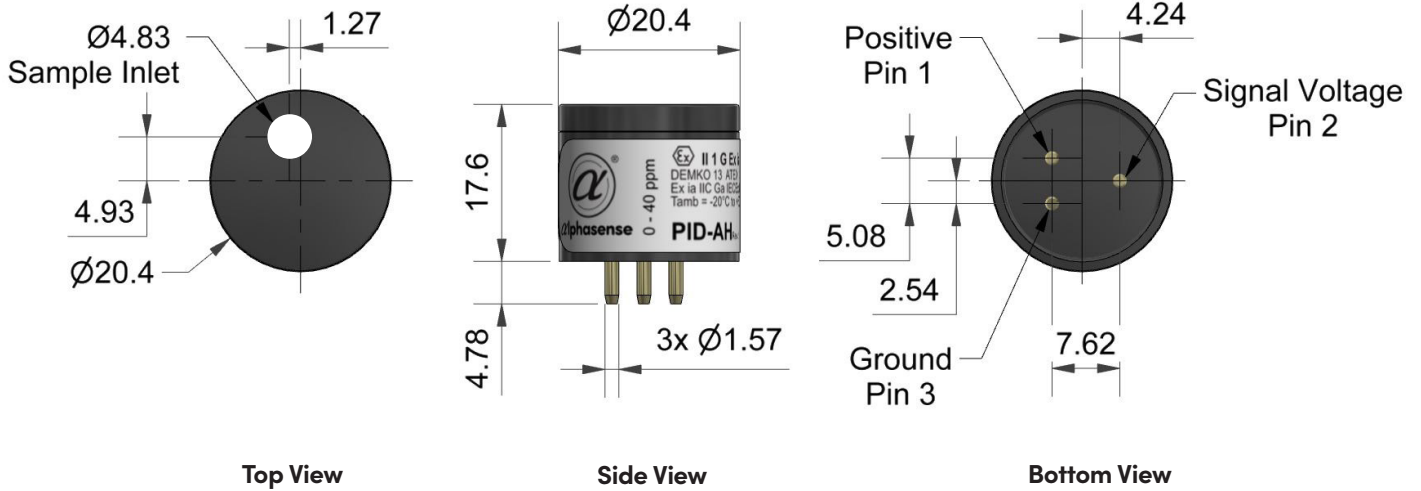


## PID-AH5 Photo Ionisation Detector



Dimensions are in millimetres (+/- 0.1 mm). Use of socketed connection is required. Soldering or cutting the connection pins may permanently damage the sensor and void the warranty.

|                                     |                               |   |
|-------------------------------------|-------------------------------|---|
| <b>Performance</b>                  | Target gases                  | VOCs with ionisation potentials < 10.6 eV   |
|                                     | Minimum Detection Level (ppb) | 1   |
|                                     | Linear Range (ppm)            | 40  |
|                                     | Overrange (ppm)               | 40  |
|                                     | Sensitivity minimum range*    | 25 mV/ppm   |
|                                     | Sensitivity typical range*    | 50 mV/ppm   |
|                                     | Full stabilisation time       | 5 minutes   |
|                                     | Warm up time                  | 5 seconds   |
|                                     | Offset Voltage (mV)           | 40-75   |
| Response Time (t <sub>90</sub> sec) | 2                             |   |
| <b>Electrical</b>                   | Power Consumption             | 80 mW - 200 mW depending on supply voltage  |
|                                     | Supply Voltage                | 3.2 to 5.5 VDC  |
|                                     | Output Signal                 | 0.040 to 2.85 V   |
| <b>Environmental</b>                | Temperature Range             | -20°C to 60°C   |
|                                     | Temperature Dependence        | see chart   |
|                                     | Relative Humidity Range       | 0 to 95% non-condensing   |
|                                     | Humidity Sensitivity          | Near zero (to 75%RH)  |
| <b>Key Specifications</b>           | Operating Life                | 5 years (excluding replaceable lamp and electrode stack)  |
|                                     | IS Approval                   | <p><b>Ex II 1 G Ex ia IIC Ga</b><br/>                     UL 22 ATEX 2740U<br/>                     Ex ia IIC Ga IECEx UL 22.0030U<br/>                     Tamb = -20°C to +60°C <b>CE</b> 2813</p> <p><b>CAUS</b></p> |
|                                     | Onboard Filter                | To remove liquids and particulates  |
|                                     | Lamp                          | User Replaceable. Expected life = 10,000 hours  |
|                                     | Electrode Stack               | User Replaceable  |
|                                     | Weight                        | <8 grams  |
|                                     | Position Sensitivity          | None  |
|                                     | Warranty Period               | Electronics and Housing 24 Months, Lamp 12 months. Electrode and lamp are user replaceable. 10.6 eV lamp typical life 10,000 hours.   |
|                                     | Patent information            | US Pat 6,646,444. Japan Pat 3,793,757   |

(No additional circuitry or external fusing required for intrinsic safety)

**Fig. 2 PID-AH5 Linearity (0-40ppm)**

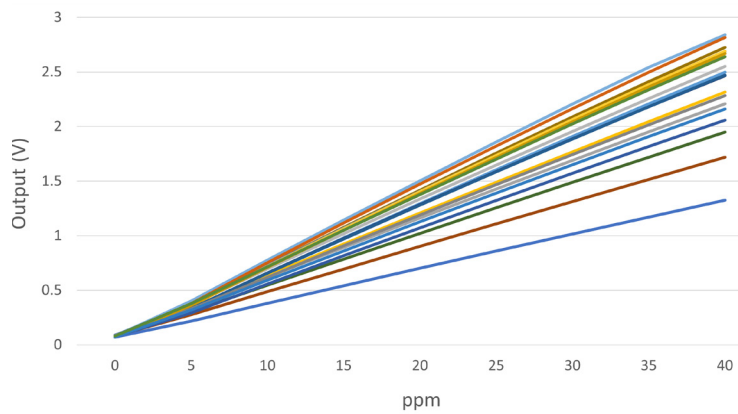


Figure 2 shows the response curve of 20 sensors throughout the entire operating range. Sensors are linear throughout the entire range.

**Fig. 3 Sensitivity Temperature Dependence**

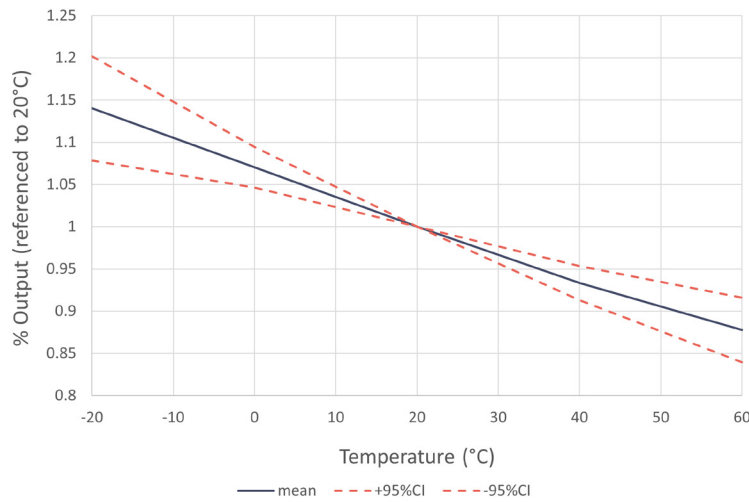


Figure 3 shows the mean and  $\pm 95\%$  confidence intervals of the response of the sensors to 30 ppm isobutylene over the entire temperature range. The temperature response follows the ideal gas law.

**PID-AH5 Replacement Parts/Consumables List**

| Part Number | Description                                 | Part Number | Description  |
|-------------|---|-------------|--|
| 001-0036-00 | Gas Hood                                    | 001-0043-00 | Maintenance Kit, which includes:<br>2 ea Polishing Disc  |
| 001-0037-00 | Cap with Key                                |             | 2 ea 10 $\mu\text{m}$ , Cloth, Bottom Filter             |
| 001-0038-00 | Spacer                                      |             | 2 ea 1 $\mu\text{m}$ , Teflon, Top Filter, Large         |
| 001-0039-00 | 1 $\mu\text{m}$ , Teflon, Top Filter, Large | 001-0044-00 | Sensor Rebuild Kit, which includes:<br>2 ea 10.6 eV Lamp |
| 001-0040-00 | 10 $\mu\text{m}$ , Cloth, Bottom Filter     |             | 1 ea Detector Ionisation Cell Assembly                   |
| 001-0041-00 | Detector Ionisation Cell Assembly           |             | 1 ea 1 $\mu\text{m}$ , Teflon, Top Filter, Large         |
| 001-0042-00 | 10.6 eV Lamp                                | 001-0045-00 | 1 ea 10 $\mu\text{m}$ , Cloth, Bottom Filter             |
| 001-0046-00 | 10.6 eV Lamp Individual Package             | 001-0047-00 | Lamp Cleaning Kit  |
|             |   |             | Fast Response 0 to 2,000 ppm sensor                      |

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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