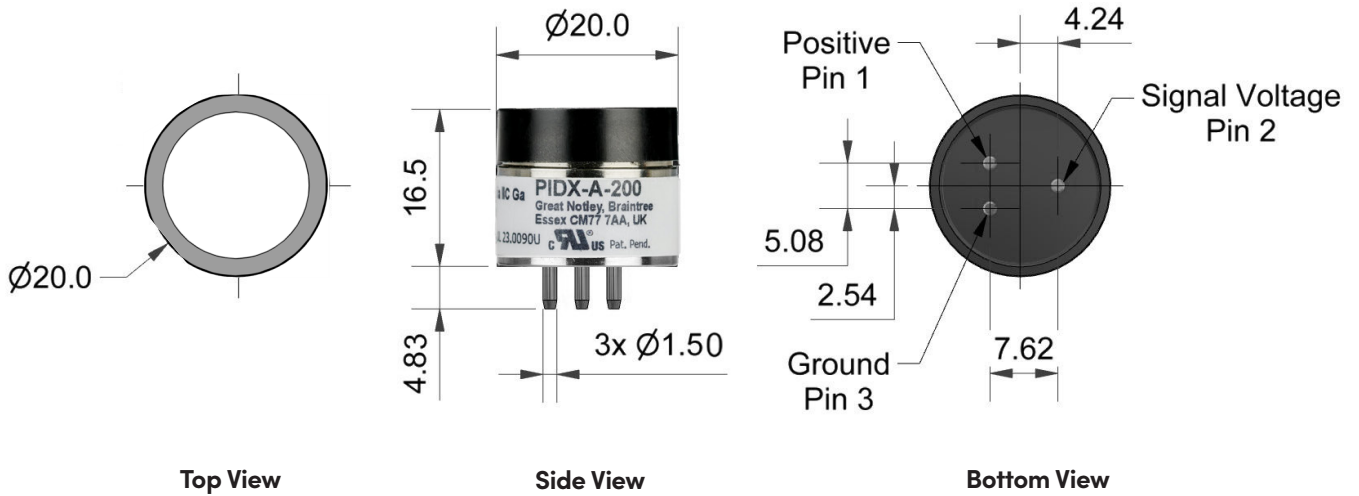


# PIDX-A-200 Photo Ionisation Detector



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.

| Performance | Target gases                  | VOCs with ionisation potentials < 10.6 eV |
|-------------|-------------------------------|---|
|             | Minimum Detection Level (ppb) | 10  |
|             | Linear Range (ppm)            | 0-200                                     |
|             | Operating Range (ppm)         | 0-200                                     |
|             | Typical Sensitivity           | 12 mv/ppm $\pm 10\%$ (tested at 100 ppm)  |
|             | Full Stabilisation Time       | 5 minutes                                 |
|             | Warm Up Time                  | 5 seconds                                 |
|             | Offset Voltage (mV)           | 40-75                                     |
|             | Response Time ( $t_{90}$ sec) | 6.5                                       |

| Electrical | Power Consumption | 92 mW           |
|------------|-------------------|-----------------|
|            | Supply Voltage    | 3.2 to 5.5 VDC  |
|            | Output Signal     | 0.040 to 2.85 V |

| Environmental | Temperature Range       | -20°C to 60°C Intrinsicly safe (-40 to 65°C operating temperature) |
|---------------|-------------------------|--|
|               | Temperature Dependence  | See chart  |
|               | Relative Humidity Range | 0 to 95% non-condensing  |
|               | Humidity Sensitivity    | Near zero (0 to 95% RH)  |

| Key Specifications | Operating Life       | 5 years (excluding replaceable lamp and electrode stack)   |
|--------------------|----------------------|--|
|                    | IS Approval          | <div style="border: 1px solid black; padding: 5px; display: inline-block;">                     2813<br/>                     0518  II 1 G Ex ia IIC Ga<br/>                     UL 24 ATEX 3204U<br/>                     UL24UKEX2979U<br/>                     Ex ia IIC Ga IECEx UL 24.0028U                 </div> (No additional circuitry or external fusing required for intrinsic safety) |
|                    | Onboard Filter       | To remove liquids and particulates   |
|                    | Lamp                 | User Replaceable. Expected life = 10,000 hours   |
|                    | Electrode Stack      | User Replaceable   |
|                    | Weight               | <12 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   | Patents pending  |

**Fig. 1 PIDX-A-200 Linearity (0-200 ppm)**

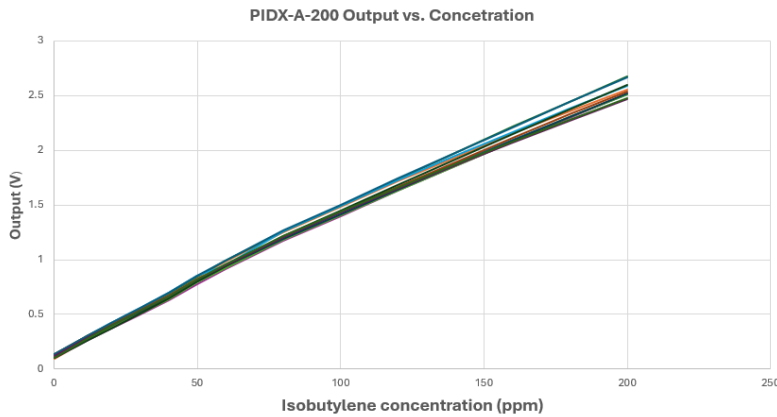


Figure 1 shows the response curve of 20 sensors throughout the entire operating range. Sensors are linear throughout the entire range.

**Fig. 2 Sensitivity Temperature Dependence**

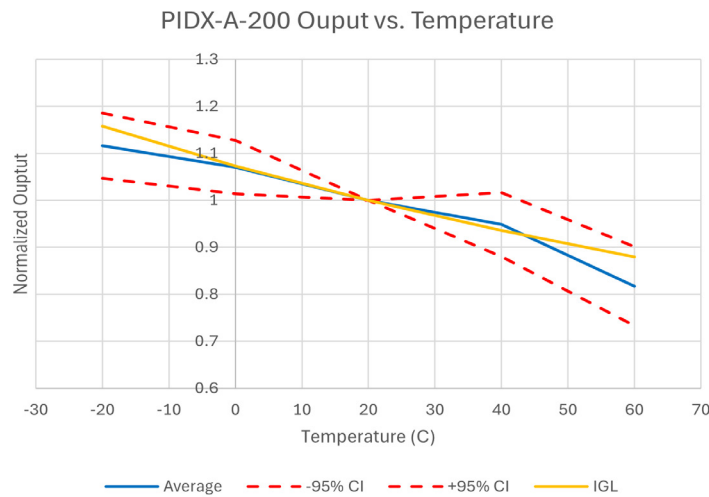


Figure 2 shows the mean and  $\pm 95\%$  confidence intervals of the response of the sensors to 100 ppm isobutylene over the entire temperature range. The temperature response follows the ideal gas law.

**PIDX-A-200 Replacement Parts/Consumables List**

| Part Number | Description                       | Part Number | Description   |
|-------------|-----------------------------------|-------------|---|
| 001-0036-00 | Gas Hood                          | 001-0048-00 | Maintenance Kit, which includes:<br>2 ea Polishing Disc<br>Cap with Filter<br>1 ea Padded Swab                        |
| 001-0050-00 | Cap with Filter                   |             |   |
| 001-0051-00 | Detector Ionisation Cell Assembly | 001-0049-00 | Sensor Rebuild Kit, which includes:<br>2 ea 10.6 eV Lamp<br>1 ea Detector Ionisation Cell Assembly<br>Cap with Filter |
| 001-0042-00 | 10.6 eV Lamp                      |             |   |

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.

In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. Please note that the information provided in this Technical Data Sheet is preliminary and subject to change. 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. PIDX-A-200/OCT25