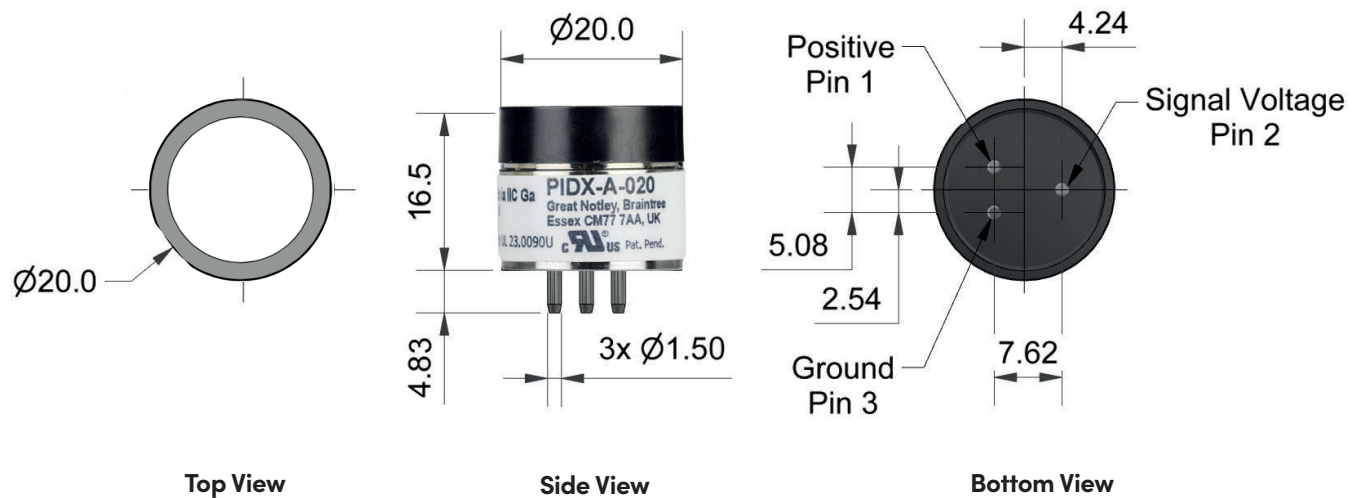


## PIDX-A-020 Photo Ionisation Detector




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)	0-20
	Operating Range (ppm)	0-20
	Typical sensitivity	118 mv/ppm $\pm 10\%$ (tested at 10 ppm)
	Full stabilisation time	5 minutes
	Warm up time	5 seconds
	Offset Voltage (mV)	40-100
	Response Time ( $t_{90}$ sec)	6.5

<b>Electrical</b>	Power Consumption	92 mW
	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 Intrinsically 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)

<b>Key Specifications</b>	Operating Life	5 years (excluding replaceable lamp and electrode stack)
	IS Approval	<div style="border: 1px solid black; padding: 5px; display: inline-block;">           2813 0518  II 1 G Ex ia IIC Ga UL 24 ATEX 3204U UL24UKEX2979U 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 12 Months are user replaceable. 10.6 eV lamp typical life 10,000 hours.
	Patent information	Patents pending

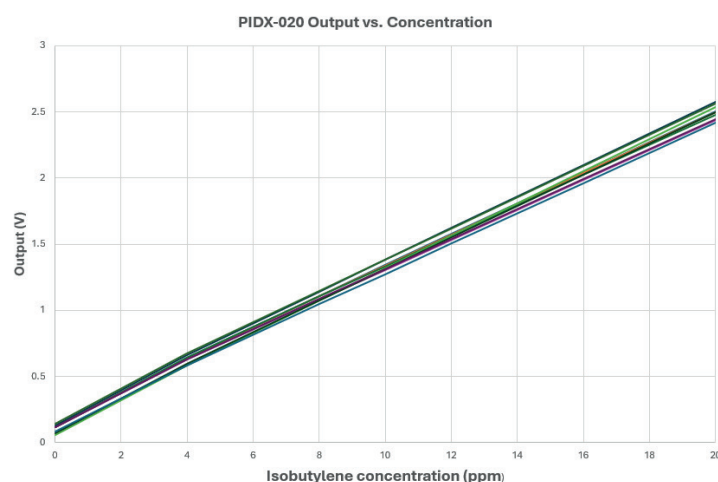
**Fig. 1 PIDX-A-020 Linearity (0-20 ppm)**

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

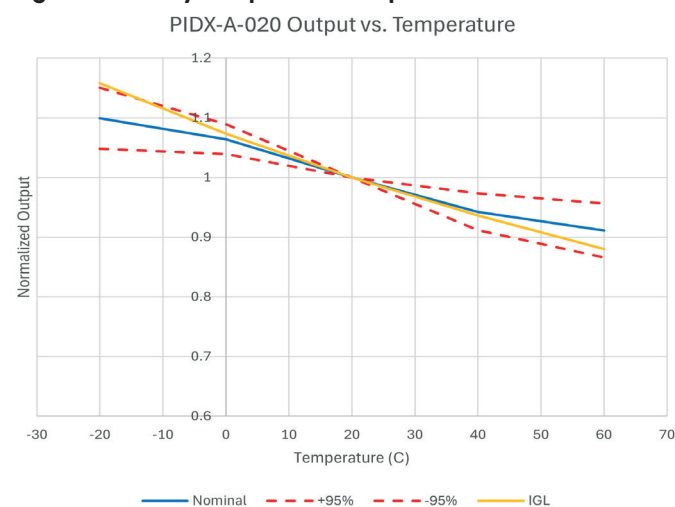
**Fig. 2 Sensitivity Temperature Dependence**

Figure 2 shows the mean and  $\pm 95\%$  confidence intervals of the response of the sensors to 10 ppm isobutylene over the entire temperature range. The temperature response follows the ideal gas law.

### PIDX-A-020 Replacement Parts/Consumables List

Part Number	Description	Part Number	Description
001-0036-00	Gas Hood	001-0048-00	Maintenance Kit, which includes: 2 ea Polishing Disc Cap with Filter 1 ea Padded Swab
001-0050-00	Cap with Filter		
001-0041-00	Detector Ionisation Cell Assembly	001-0049-00	Sensor Rebuild Kit, which includes: 2 ea 10.6 eV Lamp 1 ea Detector Ionisation Cell Assembly Cap with Filter
001-0042-00	10.6 eV Lamp		
001-0046-00	10.6 eV Lamp Individual Package		

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-020/AUG24