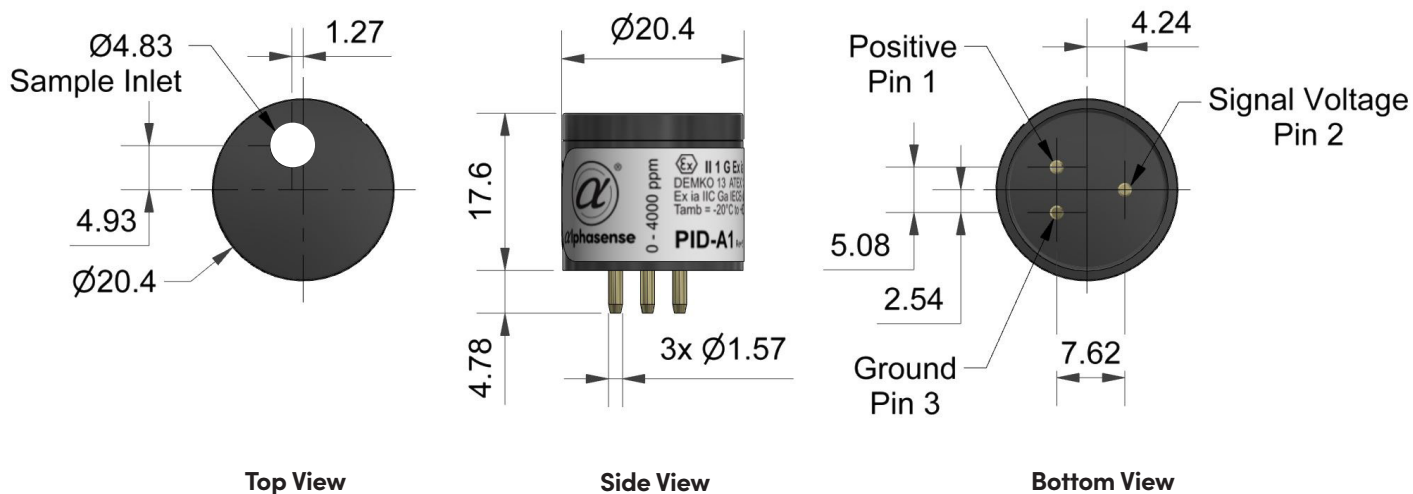


## PID-A15 Photo Ionisation Detector



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)	100
	Linear Range (ppm)	200
	Overrange (ppm)	4000
	Sensitivity minimum range*	0.69 mV/ppm
	Sensitivity typical range*	1.1 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>            UL 22 ATEX 2740U            Ex ia IIC Ga IECEx UL 22.0030U            Tamb = -20°C to +60°C <b>CE</b> 2813</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



**Fig. 2 PID-A15 Linearity (0-4000ppm)**

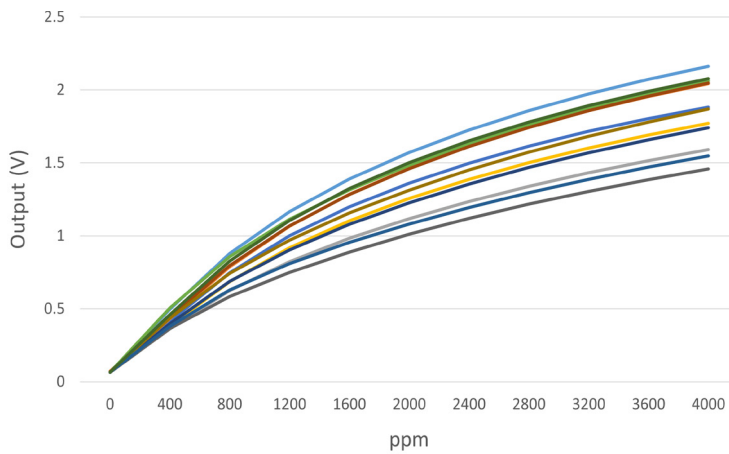


Figure 2 shows the response curve of 20 sensors throughout the entire operating range. PID output is nonlinear at higher concentrations but is repeatable and can be corrected in software.

**Fig. 3 Sensitivity Temperature Dependence**

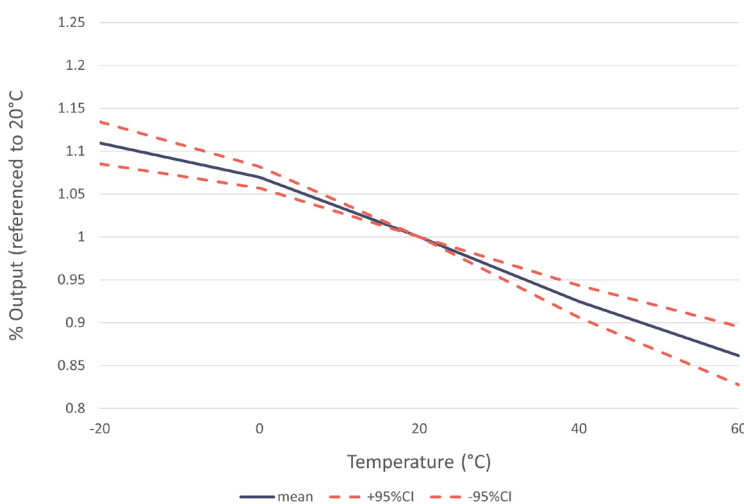


Figure 3 shows the mean and  $\pm 95\%$  confidence intervals of the response of the sensors to 100 ppm isobutylene over the entire temperature range. The temperature response follows the ideal gas law.

**PID-A15 Replacement Parts/Consumables List**

Part Number	Description	Part Number	Description
001-0036-00	Gas Hood	001-0043-00	Maintenance Kit, which includes: 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: 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	Lamp Cleaning Kit
001-0046-00	10.6 eV Lamp Individual Package	001-0047-00	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.

In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. 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. PIDA15/OCT22