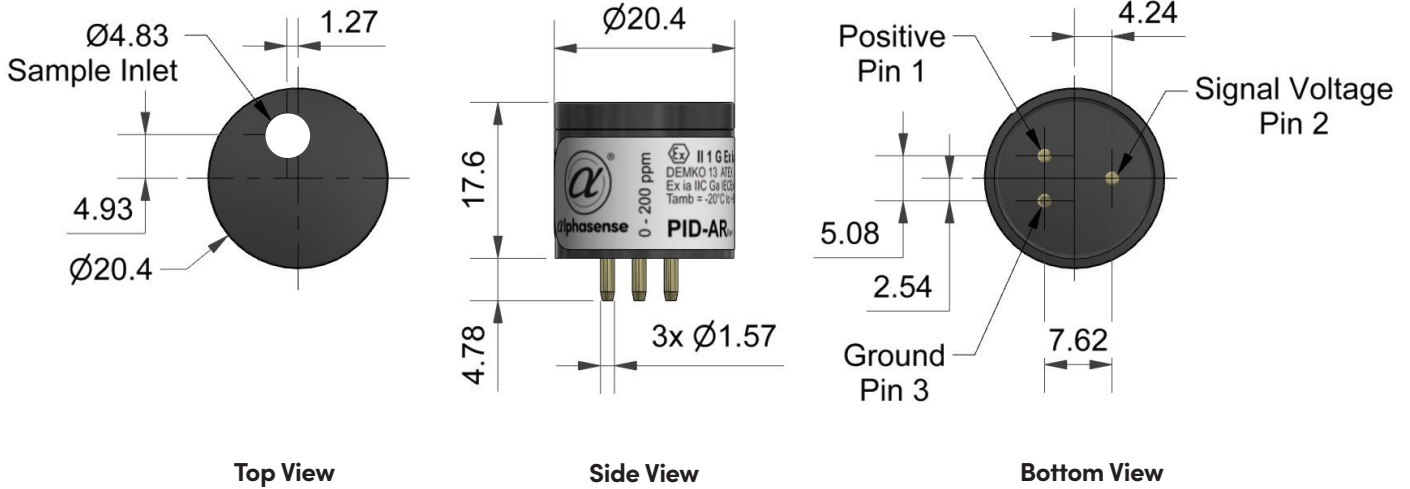


## PID-AR5 Photo Ionisation Detector





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)	200
	Overrange (ppm)	200
	Sensitivity minimum range*	6 mV/ppm
	Sensitivity typical range*	11 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

Electrical	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

Environmental	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)

Key Specifications	Operating Life	5 years (excluding replaceable lamp and electrode stack)
	IS Approval	<p>  II 1 G Ex ia IIC Ga UK CA            UL 22 ATEX 2740U            Ex ia IIC Ga IECEx UL 22.0030U            Tamb = -20°C to +60°C CE 0539         </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 and electrode stack user replaceable. 10.6 eV lamp: 6,000 lit 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-AR5 Linearity (0-200ppm)**

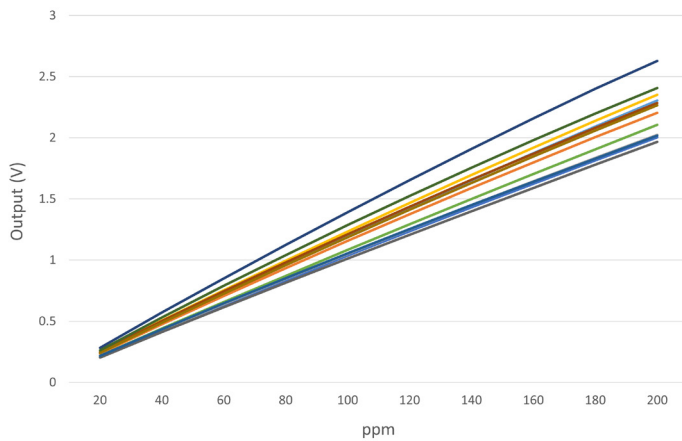


Figure 2 shows the response curve of 20 sensors throughout the entire operating range. Sensors are linear throughout the entire range.

**Fig. 3 Sensitivity Temperature Dependence**

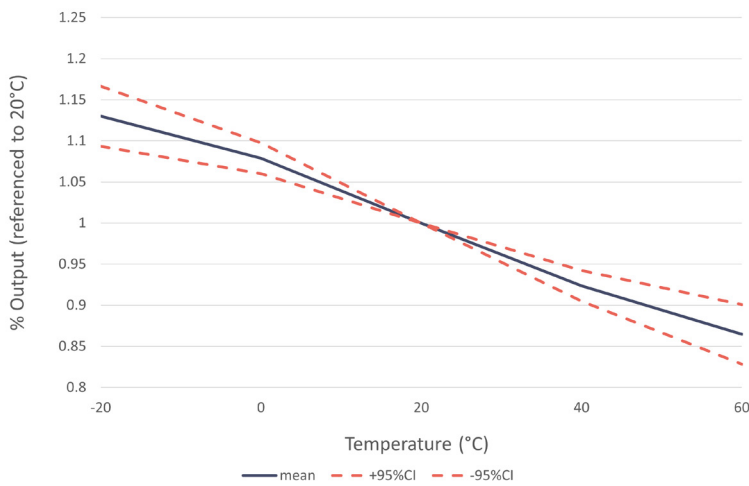


Figure 3 shows the mean and  $\pm 95\%$  confidence intervals of the response of the sensors to 30 ppm isobutylene over the entire temperature range. The temperature response follows the ideal gas law.

**PID-AR5 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 $\mu$ m, Cloth, Bottom Filter
001-0038-00	Spacer		2 ea 1 $\mu$ m, Teflon, Top Filter, Large
001-0039-00	1 $\mu$ m, Teflon, Top Filter, Large	001-0044-00	1 ea Padded Swab
001-0040-00	10 $\mu$ m, Cloth, Bottom Filter		Sensor Rebuild Kit, which includes:
001-0041-00	Detector Ionisation Cell Assembly		2 ea 10.6 eV Lamp
001-0042-00	10.6 eV Lamp		1 ea Detector Ionisation Cell Assembly
001-0046-00	10.6 eV Lamp Individual Package		1 ea 1 $\mu$ m, Teflon, Top Filter, Large
		001-0045-00	1 ea 10 $\mu$ m, Cloth, Bottom Filter
		001-0047-00	Lamp Cleaning Kit
			Fast Response 0 to 2000 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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