alphasense
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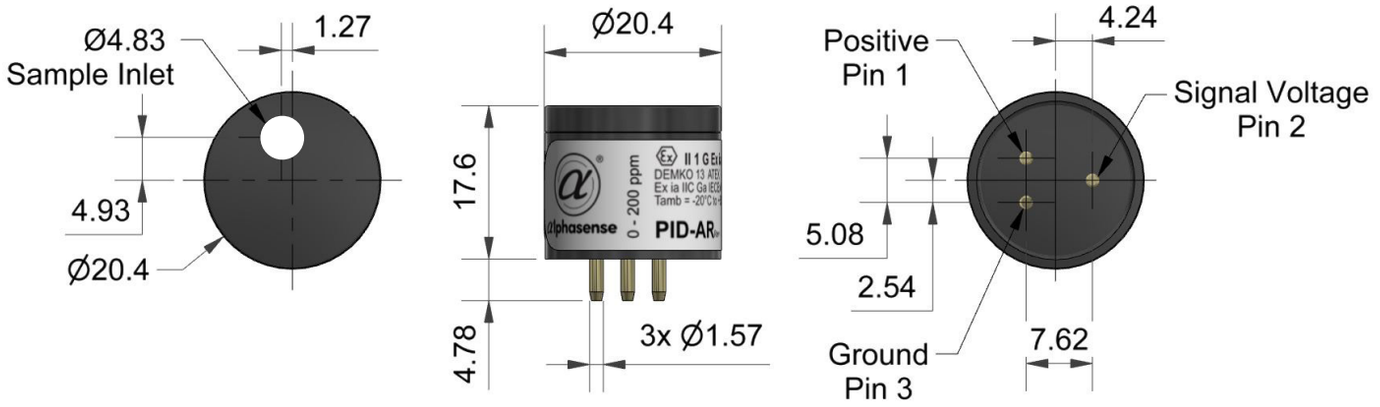
Technical specifications Version 2.0

PID-AR5 Photo Ionisation Detector



Top View **Side View** **Bottom View**

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_{90} 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	Ⓔx II 1 G Ex ia IIC Ga UL 22 ATEX 2740U Ex ia IIC Ga IECEx UL 22.0030U Tamb = -20°C to +60°C CE 2813 c UL us (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	<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

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*Gain numbers measured with isobutylene at room temperature and sea level.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. or visit our website at "www.alphasense.com".

Fig. 2 PID-AR5 Linearity (0-200ppm)

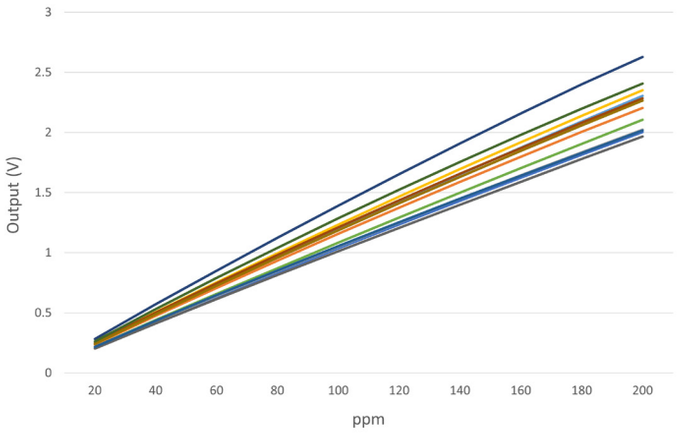

Figure 2 shows the response curve of 20 sensors throughout the entire operating range. Sensors are linear throughout the entire range.

Fig. 3 Sensitivity Temperature Dependence

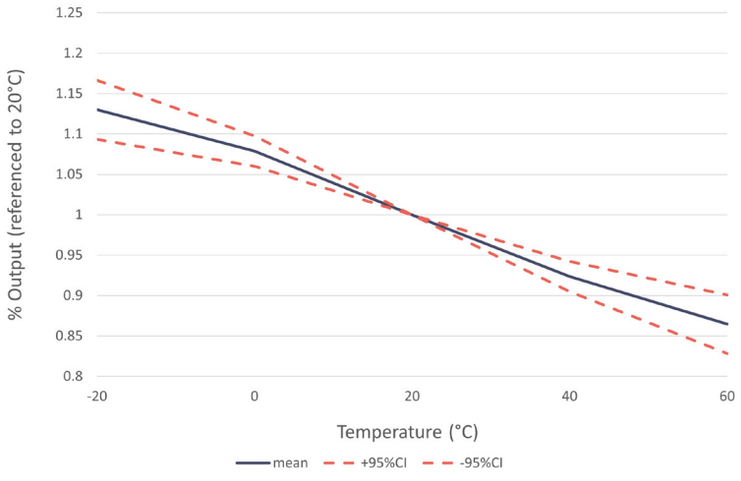

Figure 3 shows the mean and ±95% confidence intervals of the response of the sensors to 30 ppm isobutylene over the entire temperature range. The temperature response follows the ideal gas law.

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 2 ea 10 µm, Cloth, Bottom Filter 2 ea 1 µm, Teflon, Top Filter, Large 1 ea Padded Swab
001-0037-00	Cap with Key		
001-0038-00	Spacer		
001-0039-00	1 µm, Teflon, Top Filter, Large	001-0044-00	Sensor Rebuild Kit, which includes: 2 ea 10.6 eV Lamp 1 ea Detector Ionisation Cell Assembly 1 ea 1 µm, Teflon, Top Filter, Large 1 ea 10 µm, Cloth, Bottom Filter
001-0040-00	10 µm, Cloth, Bottom Filter		
001-0041-00	Detector Ionisation Cell Assembly		
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

*Gain numbers measured with isobutylene at room temperature and sea level.

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