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> $\alpha$ lphasense **AMETEK**®

Technical specifications Version 2.0

## **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.

Performance	Target gases Minimum Detection Level (ppb) Linear Range (ppm) Overrange (ppm) Sensitivity minimum range* Sensitivity typical range* Full stabilisation time Warm up time Offset Voltage (mV) Response Time (t <sub>90</sub> sec)	VOCs with ionisation potentials < 10.6 eV 100 200 4000 0.69 mV/ppm 1.1 mV/ppm 5 minutes 5 seconds 40-75 2
Electrical	Power Consumption Supply Voltage Output Signal	80 mW – 200 mW depending on supply voltage 3.2 to 5.5 VDC 0.040 to 2.85 V
Environmental	Temperature Range Temperature Dependence Relative Humidity Range Humidity Sensitivity	-20°C to 60°C see chart 0 to 95% non-condensing Near zero (to 75%RH)
Key Specifications	Operating Life IS Approval	5 years (excluding replaceable lamp and electrode stack) <b>IL 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 (€2813) <b>EXECUTE:</b> (No additional circuitry or external fusing required for intrinsic safety)
	Onboard Filter Lamp Electrode Stack Weight Position Sensitivity Warranty Period	To remove liquids and particulates User Replaceable. Expected life = 10,000 hours User Replaceable <8 grams None 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	user replaceable. 10.6 ev lamp typical lite 10,000 hours. 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".





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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.





Figure 3 shows the mean and ±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 μm, Cloth, Bottom Filter
001-0038-00	Spacer		2 ea 1 µm, Teflon, Top Filter, Large 1 ea Padded Swab
001-0039-00	1 μm, Teflon, Top Filter, Large	001-0044-00	Sensor Rebuild Kit, which includes:
001-0040-00	10 μm, Cloth, Bottom Filter		2 ea 10.6 eV Lamp 1 ea Detector Ionisation Cell Assembly
001-0041-00	Detector Ionisation Cell Assembly		1 ea 1 μm, Teflon, Top Filter, Large 1 ea 10 μm, Cloth, Bottom Filter
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

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