

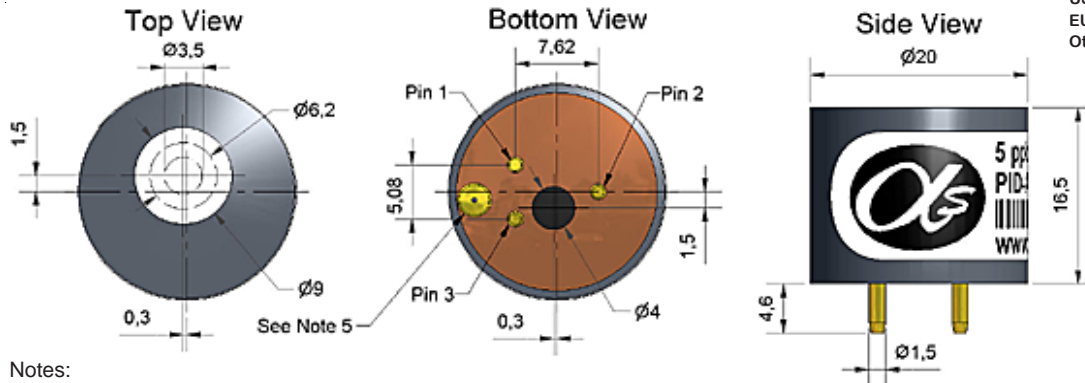


PID-AH Photo Ionisation Detector



US patent 7,046,012
US patent 7,821,270
EU patent 1474681
Other patents

Figure 1 PID-AH Schematic Diagram



Notes:

1. Do not obstruct $\varnothing 3.5$ sensing area
2. Seal between $\varnothing 6.2$ and $\varnothing 9.0$ (if different to atmosphere)
3. Pin out details:
Pin 1: + V supply (See note 5)
Pin 2: Signal output
Pin 3: 0 V supply
4. All dimensions ± 0.1 mm unless otherwise stated

5. Input voltage selector hole:

- a) When filled with solder the onboard regulator is disabled. A regulated supply of 2.8 - 3.6 V (typically 3.0 - 3.2 V) is then required
- b) When not filled with solder the onboard regulator is enabled. A regulated or unregulated supply between 3.6 - 20 V is then required

Nomally shipped with regulator enabled

PERFORMANCE

Target gases	VOCs with ionisation potentials < 10.6eV	
Minimum detection level	(ppb isobutylene)	5
Linear range	(ppm isobutylene)(3% deviation)	50
Overrange	(ppm isobutylene)	50
Sensitivity	(linear range) (mV / ppm Isobutylene)	> 20
Full stabilisation time	(minutes to 20ppb)	20
Warm up time	(seconds) time to full operation	5
Offset voltage	(mV)	50-80
Response time (t_{90})	(seconds) diffusion mode	<3

ELECTRICAL

Power consumption	Typical at 3.3V	110mW
Supply voltage	3.0 to 3.6VDC Ideally regulated ± 0.01 V (onboard regulator disabled)	
Output signal	3.6 to 20VDC Onboard regulator can be enabled by removing solder blob Offset Voltage to V_{max} ($V_{max} = V_{supply} - 0.1$ V)	

ENVIRONMENTAL

Temperature range		-40°C to +55°C (Intrinsically safe) -40°C to +65°C (Non IS)
Temperature dependence	0°C to 40°C -20°C	95% to 100% of signal 125% of signal at 20°C
Relative humidity range	non-condensing	0 to 95%
Humidity sensitivity		Near zero

KEY SPECIFICATIONS

Expected operating life	5 years (excluding replaceable lamp and electrode stack)
IS Approval	IECEX Ex ia IIC T4; ATEX Ex ia II 1G -40°C < T_a < +55°C (<10VDC supply)
Onboard filter	To remove liquids and particulates
Lamp replacement	User replaceable (10.6eV) (Optional 9.6eV)
Electrode stack	User replaceable
Package type	Alphasense™ CH-A3 or City Technology™ 4P
Weight	< 8g
Position sensitivity	None
Warranty period	24 months or 18 months from installation, whichever comes first

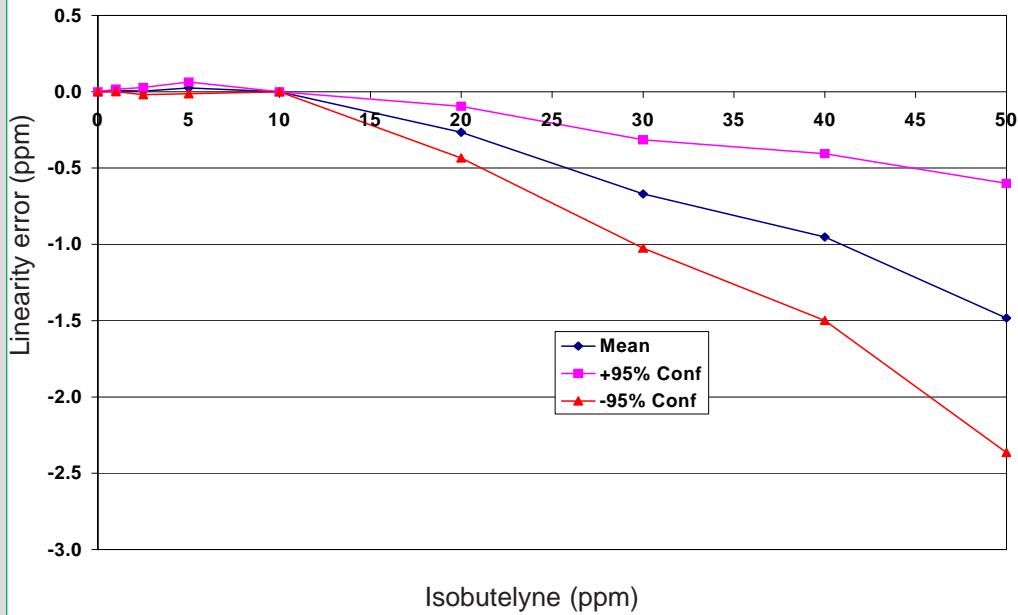
NOTE: all sensors are tested at ambient environmental conditions, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.



PID-AH Performance Data

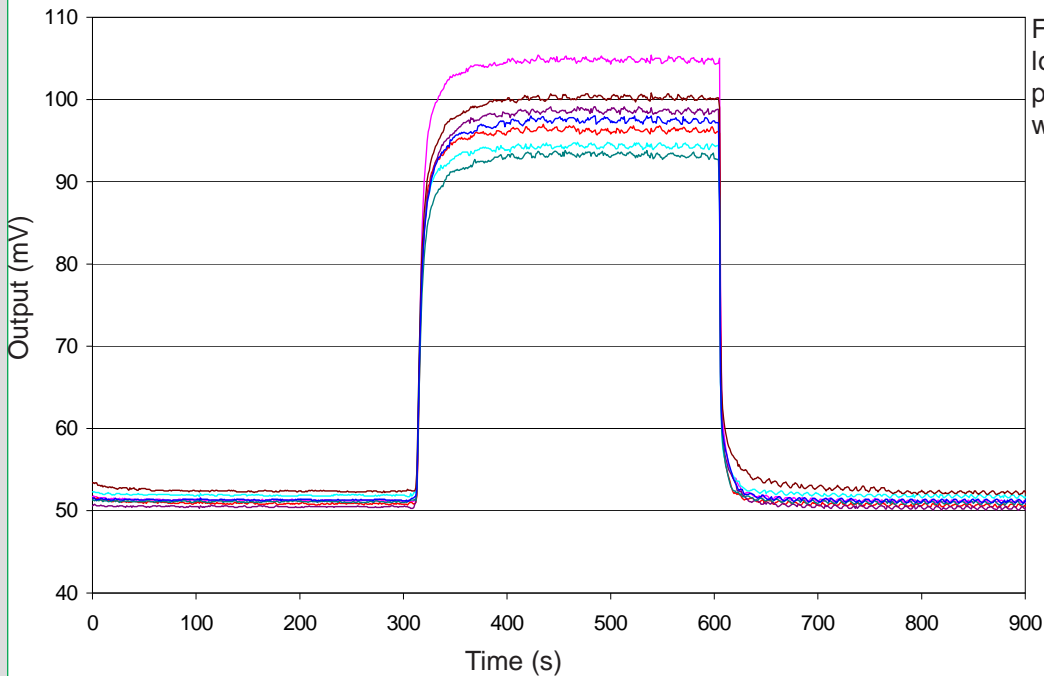
Technical Specification

Figure 2 Linearity



Reduced sensitivity at higher concentrations is a chemical/physical effect and can be corrected generically in software.

Figure 3 Response to 1ppm Isobutylene



Fast response and low noise allow low ppb measurements with the PID-AH.



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.

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

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