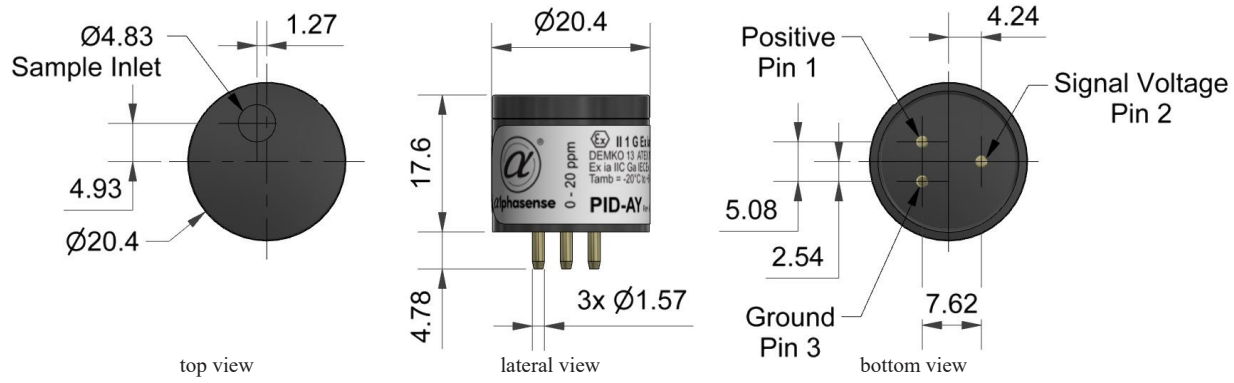
PID-AY5 Photoion detector

Technical Specification

Figure 1 PID-AY5 Diagram



remarks：

1. Please do not block the Ø4.83 sensing area
2. Pin definition:
   Pin 1 : Power input
   Pin 2: Signal output
   Pin 3: Grounding
3. Unless otherwise stated, all dimensional errors are ±0.1mm
4. You need to use a socket connection
5. Welding or cutting the connection pins may permanently damage the sensor and cause the warranty to become void

Performance (using 10.6 eV bulb)

Target gas	VOCs with ionization potential less than 10.6eV		
Minimum detection level linear range over the scale	ppb isobutene		1
	ppm isobutene		20
	ppm isobutylene		20
Minimum sensitivity	linear range	mV / ppm isobutylene	60
Typical sensitivity	Linear range	mV / ppm isobutylene	110
full stabilization time	nge minutes		5
preheating time	Seconds (from start to full operation t)		5
offset voltage	mV		40~100
Response time (t90)	second	dispersal pattern	4

electrical

power dissipation	80 MW ~ 200 mW depends on the supply voltage
service voltage	3.2 ~ 5.5 VDC
output signal	0.040~2.85V

environment

temperature range	-20ÜC ~ +60ÜC	
temperature characteristic	See figure below	
Relative humidity range humidity sensitivity	No condensation Working period: 0% ~ 75% rh instantaneously	0 ~ 95% close to zero

key parameter

Working life,	5 years (excluding replaceable bulbs and grilles)
S approved	, ECEx Ex ia, C Ga; ATEX II 1 G Ex ia IIC Ga-20OC <Ta <+60OC filter
onboard filter	out liquids and micro-particles
membrane	Users can be replaced, life expectancy =10000 hours
bulb grid	Users can replace
weight	< 8g
Location sensitivity warranty	not have Electronic components and casing 24 months, bulb 12 months. Bulb and grid replaceable. 10.6eV Bulb typical lifespan 10,000 hours.
Patent information	US Patent 6,646,444; Japanese Patent 3,793,757

Note: Unless otherwise specified to ensure sensor suitability , all sensors shall comply with their own requirements. All testing shall be conducted under ambient conditions. As customer applications fall outside our control, the provided information does not carry any legal liability. Customers shall conduct tests under their own conditions.

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PID-AY5 Performance parameters

Technical Specification

Figure 2 Linearity (0-20ppm)

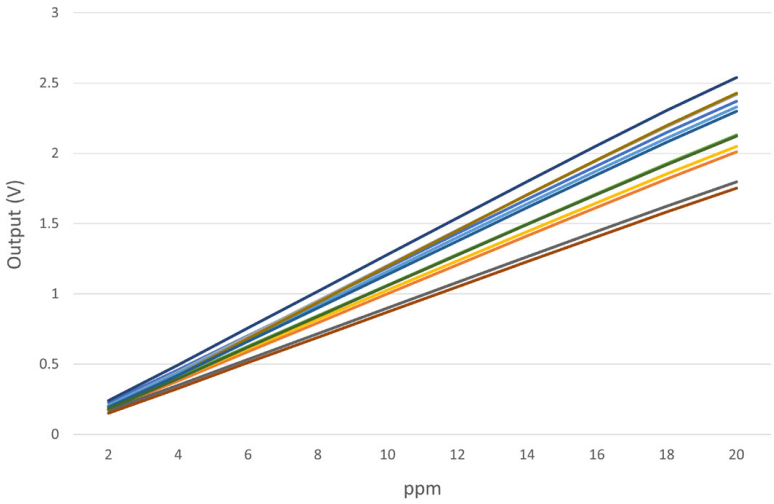

Figure 2 shows the response curves of the 20 sensors over their entire working range. The sensors are linear over their entire range.

Figure 3 Sensitivity Temperature Characteristics

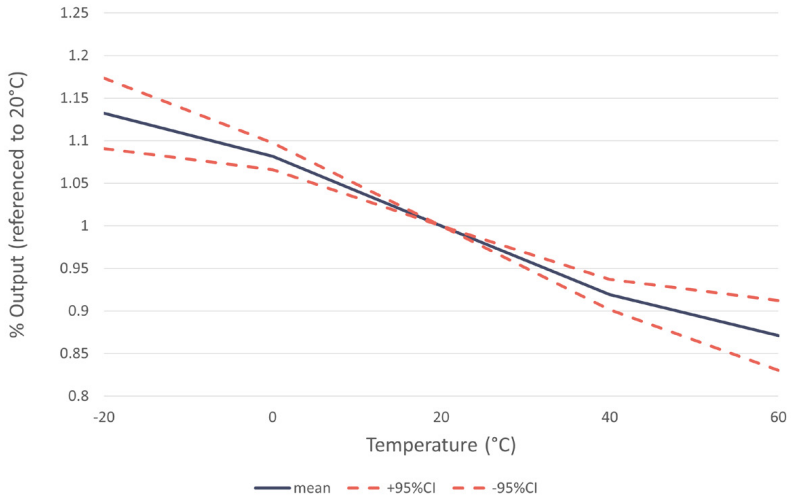

Figure 3 shows the temperature characteristics of sensitivity, which has been corrected for the gas law.

This data is derived from the test results of a typical batch PIDAY5 sensor in 10ppm isobutylene.

Figure 3 shows the mean and ± 95% confidence interval of the percentage output (see 2 0℃).

Table 1: List of replacement parts/consumables

P / N	explain	P / N	explain
001-0036-00	gas hood	001-0043-00	Maintenance toolbox, including: 2 :: Polishing sheets 2 * 10 µm, bottom cloth filter 2 * 1 µm, top Teflon large filter 1* padded swab
001-0037-00	Lid with snap-on buckle		
001-0038-00	pad		
001-0039-00	1 µm, Teflon, top filter, large	001-0044-00	Sensors repair kit, including: 2 :: 10.6 eV lamp 1 :: Detector ionization chamber assembly 1 * 1 µm, Teflon made large top filter 1 * 1 0 µm, cloth bottom filter
001-0040-00	10 µm, cloth, bottom filter		
001-0041-00	Detector ionization chamber assembly		
001-0042-00	10.6 eV lamp	001-0045-00	Lightbulb cleaning kit
001-0046-00	10.6 Independent packaging of bulbs eV	001-0047-00	Quick response to 0 ~ 2000 ppm sensors

When a product reaches the end of its service life, do not dispose of electronic sensors, components, or instruments in household waste. Instead, contact the instrument manufacturer, Alphasense, or its authorized distributors for disposal instructions. Important: Unless otherwise specified, all sensors are tested under ambient conditions. As customer applications may exceed our control parameters, the provided information does not constitute legal liability. Customers should conduct their own testing to ensure the sensors meet specific requirements.