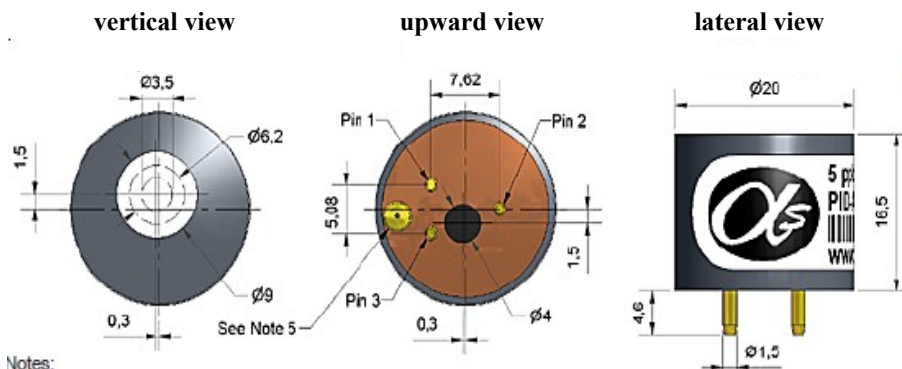


## PID-AH2 Photoion Detector

Figure 1 PID-AH Diagram



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

pour :

Notes:

1. Do Not Block the 3.5mm Induction Area
2. Sealing Is Required Between Diameters 6.2 and 9.0mm (if Different from Atmospheric Pressure)
3. Pin Definition:  
Pin 1: Power input; Pin 2: Signal output; Pin 3: 0V power supply
4. Unless Otherwise Stated, All Dimensional Errors Are  $\pm 0.1$ mm

### 5. Input Voltage Selection Hole:

a) After Filling the Solder, the Internal Voltage Regulator Is Not Enabled and a Stable Input Voltage Is Required

**3.2~3.6V (generally 3.2V)**

b) When No Solder Is Filled, the Internal Voltage Regulator Is Enabled and the Application of Intrinsic Safety Is Required

**3.6-10V Stabilized or Unregulated Power Supply, Non-IEC Safety Application Voltage up to 18V The Sensor Will Internally Adjust the Voltage to 3.3V**

The voltage regulator is usually activated at the time of shipment

function

<b>Target gas</b>	VOC with ionization potential less than 10.6 eV	
<b>Minimum detectable value</b>	<b>ppb isobutene</b>	1
<b>linearity range</b>	<b>ppm isobutylene (3% deviation)</b>	40
<b>Overdrive</b>	<b>ppm isobutene</b>	40
<b>sensitivity</b>	<b>Linear range (mV / ppm isobutylene)</b>	> 25
<b>stabilization time</b>	<b>Time to 20ppb (minutes)</b>	5
<b>preheating time</b>	<b>Seconds (the time from startup to full operation)</b>	5
<b>offset voltage</b>	<b>mV (depending on the sensor, the offset voltage may vary)</b>	46~60
<b>Response time (t90)</b>	<b>Seconds (diffusion mode)</b>	< 3

electrical character power dissipation

(When connected)

supply electricity

Enable onboard voltage regulator (default): 3.6V <100mW, continuous 200ms <550mW instantaneous power consumption  
Do not enable the onboard voltage regulator: 3.2V <85mW, continuous 200ms <300mW instantaneous power consumption  
3.2~3.6VDC Ideal adjustment range  $\pm 0.01$ V (board voltage regulator is not enabled)  
**3.2~10VDC (board voltage regulator enabled)**  
(The maximum 10V for the intrinsically safe application, and the maximum 18V for the non-intrinsically safe application)

output signal

**Offset voltage (minimum 46mV) ~Vmax**  
(3.15V when  $V_{max}=V_{supply}-0.15$ V enabled or not enabled on board voltage regulator)

environment

temperature range

temperature characteristic

-40°C ~ +55°C (intrinsically safe); -40°C ~ +65°C (non-intrinsically safe)  
0°C ~ 40°C 20°C when the signal is 90%~100%  
-20°C 140% of the signal at 20°C

Relative humidity range

Humidity sensitivity

**Non-condensing** 0~95%  
**Working period: 0~75%rh transient** Near the zero point

Key parameters

Expected life

IS certification

board-mounted

filter membrane

bulb grid

**Error status**

**signal weight**

Location sensitivity

Quality assurance

period

**5 years (excluding replaceable bulbs and grilles)**  
**IECEX Ex ia IIC T4; ATEX Ex ia II 1G-40°C <Ta <+55°C (operating on <10VDC power) for filtering liquids and particulate matter**  
**Users can replace**  
**Users can replace**  
**Bulb extinguished: n/a Circuit board fault: 41 $\pm$ 3mV**  
**Less than 8 grams**  
**not have**  
**Electronic copy and physical copy: 12 months**  
The bulb and the grid are replaceable. 10.6eV bulb: 5000 hours

Figure 2 Linearity of Isobutylene at 3.6V

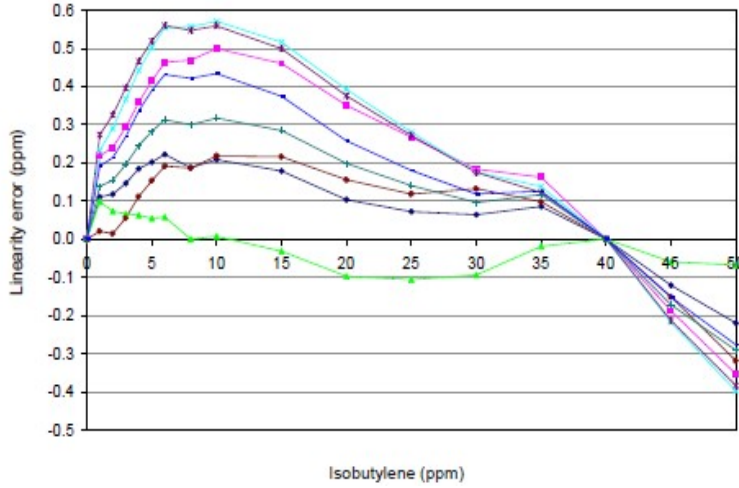


Figure 2 shows that the decrease of sensitivity at high concentration is a chemical/physical effect, which can be corrected in the software for specific VOCs.

The nonlinear correction depends on the VOC being measured.

Figure 3 Choose the Right Bulb

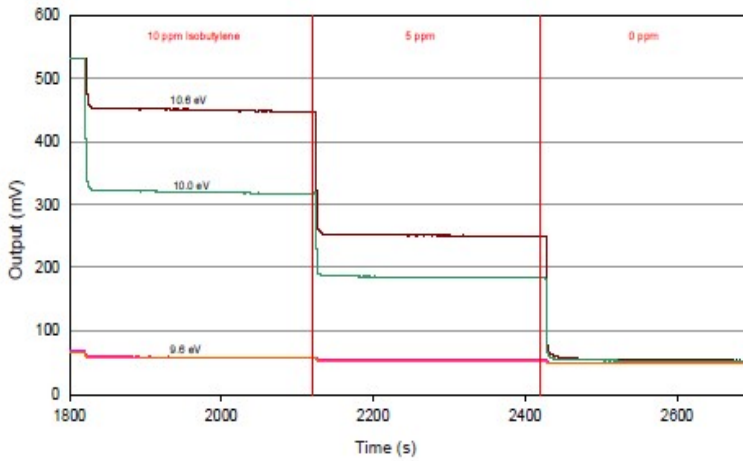


Figure 3 shows the output comparison of 9.6 eV, 10.0 eV and 10.6eV lamps in 5ppm and 10 ppm isobutylene.

List of PID consumables

应用	料号	最低灵敏度 mV/ppm	最大量程 ppm(5丁烷)	灯泡寿命
9.6eV	001-0030-00	0.25	8000	TBD
10.0eV	001-0030-02	10	100	5000
10.6eV (HPPM)	001-0019-04	25	40	5000
10.6eV (LLHS)	001-0030-01	25	40	5000
栅极	001-0018-02			
栅极拆卸工具	001-0020-00			
灯泡弹簧	001-0023-00			
灯泡清洗套装	001-0024-00			

料号	转换器	灯泡	应用电压	认证
PID-AH2	未启用	HPPM10.6eV	3.2~3.6	是
PID-AH2	启用	HPPM10.6eV	3.6~10 (10.1~18)	是(否)
PID-AH20	未启用	LLHS10.6eV	3.2~3.6	是
PID-AH20	启用	LLHS10.6eV	3.6~10 (10.1~18)	是(否)
PID-AH29	未启用	9.6eV	3.2~3.6	是
PID-AH29	启用	9.6eV	3.6~10 (10.1~18)	是(否)
PID-AH2X	未启用	10.0eV	3.2~3.6	是
PID-AH2X	启用	10.0eV	3.6~10 (10.1~18)	是(否)

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