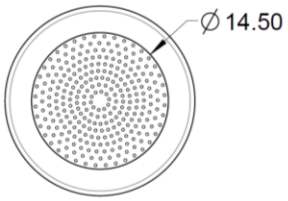
Photoionization Detector (PID) Sensors

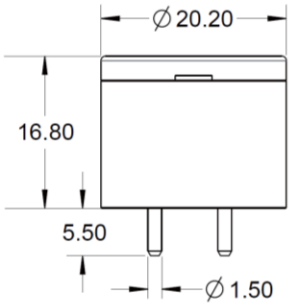
4-Series PID ATEX and IECEx Certified Version

Senovol PID sensors are designed for the detection of a wide variety of volatile organic compounds (VOCs). In general, any compound with an ionization energy (IE) lower than that of the lamp photons can be measured. Based on its proprietary ultraviolet (UV) lamp technology, Senovol PID sensors have the advanced features of high UV outputs, and long lamp life spans.

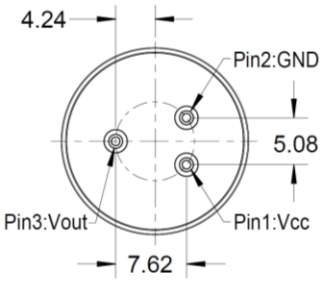
Product Dimensions



Top View



Side View



Bottom View

All dimensions in mm

Performance

Photon energy	10.6 eV
Measurement range	0 ~ 10,000 ppm isobutylene
Resolution	1 ~ 2,000 ppb isobutylene
Response time (T90)	< 5 seconds
Baseline (20ºC)	95±55mV for detection range of *0~50 ppm* 110±70mV for detection range of *0~200 ppm* 70±30mV for detection range of *0~2000 ppm，0~10000 ppm*
Linearity	linear from 0.045 ~ 2.5 V

Electrical

Supply voltage	3.2 ~ 5.5 V
Working current	< 35 mA at 5.0 V
Output signal	0.045 ~ 2.5 V

Mechanical

Enclosure	Stainless steel
Weight	15 grams

Environmental

Temperature range	-20ºC ~ +50ºC
Pressure range	1 atm ± 10%
Humidity range	15 % ~ 95 %RH Non-condensing

Life Time

Storage Temp	0 ℃ ~ 30 ℃
Operating lifetime	5 years (excluding lamp and electrodes)
Typical lamp life	10,000 hours
Storage life	2 years in original packaging
Warranty	12 months

Certifications & Approvals

IECEx: CSAE 23.0038U
Ex ia IIC Ga

ATEX: CSANe 23ATEX1144U
II 1G Ex ia IIC Ga
-20℃≤Ta≤50℃

Installation

The output signals from the sensor pins are different. Inappropriate use of the pins in product design will affect the sensor functionality. Exposure to high concentrations of solvent vapors should be avoided under any condition. Mechanical overstress may cause deformation of the sensor enclosure and damage the internal components including the lamp. If the sensor is used in extreme environmental conditions, please contact us for more details.

Pin Out Details

Pin 1 – VCC Pin 2 – GND Pin 3 – VOUT

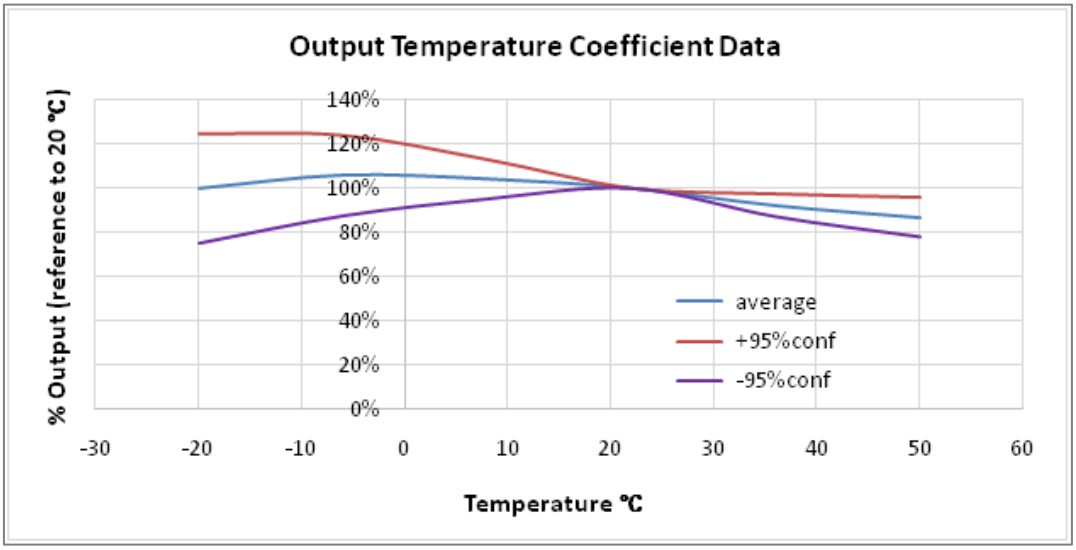
Product Selection

Product Name	Part Number	Measurement Range	Photon Energy	Resolution	Sensitivity	Response Time
4PID-50C	PID-E06S-0500	0 ~ 50 ppm	10.6 eV	10 ppb or better	> 20 mV/ppm	< 5 s
4PID-200C	PID-E06S-2000	0 ~ 200 ppm	10.6 eV	50 ppb or better	> 5 mV/ppm	< 5 s
4PID-2000C	PID-E06S-2001	0 ~ 2,000 ppm	10.6 eV	500 ppb or better	> 0.5 mV/ppm	< 5 s
4PID-10000C	PID-E06S-1002	0 ~ 10,000 ppm	10.6 eV	2,000 ppb or better	> 0.1 mV/ppm	< 5 s

Note

The performance data in this document is taken by applying isobutylene to the PID sensor using Senovol lab testers. The PID sensor may perform differently if gases other than isobutylene are used.

Sensitivity Temperature Data



Safety Note

If the sensor is used in certain instruments for life critical applications, it is required to read the instrument user's guide carefully and comply with the calibration procedures by using the certified target calibration gas before each use. Failure to do so may cause serious injury and/or fatality. It is highly recommended for customers to validate the sensor performance using this document as a reference for their product designs or applications.