

Aero-S3DP

Overview

INDOOR

Sens Solutions' Aero-S3DP is designed to meet the requirements of Part 4 and 18 of the Well Building Standard for Air Quality Monitoring and feedback. The Well Building Standard is designed to enhance the health, well being and comfort of a building's occupants by optimizing the design and specification of a building, including the management of air quality.

Indoor air quality can be degraded significantly by volatile organic compounds (VOCs). VOCs include benzene (classified by the EPA as a known human carcinogen), formaldehyde and other chemical compounds, which at high concentrations can lead to irritation of the nose and pharynx, and have been associated with leukemia, childhood asthma and other respiratory disorders. VOC levels can be 5 times higher indoors than outdoors.

The Aero-S3DP Sensor meets the Well Building requirements for:

- VOC monitoring (Part 4)
- Particle count monitoring (Part 18, 1a)
- CO₂ monitoring (Part 18, 1b)

OUTDOOR

91% of the world's population lives in places where air quality exceeds WHO guideline limits.

The thought of having a sustainable environment motivates Sens Solutions' Team to work towards its betterment. Working, playing sports or simply enjoying your city can be detrimental to your health. The Aero-S3DP allows you to know the air conditions that will allow you to optimize and improve your performance without harming your health.

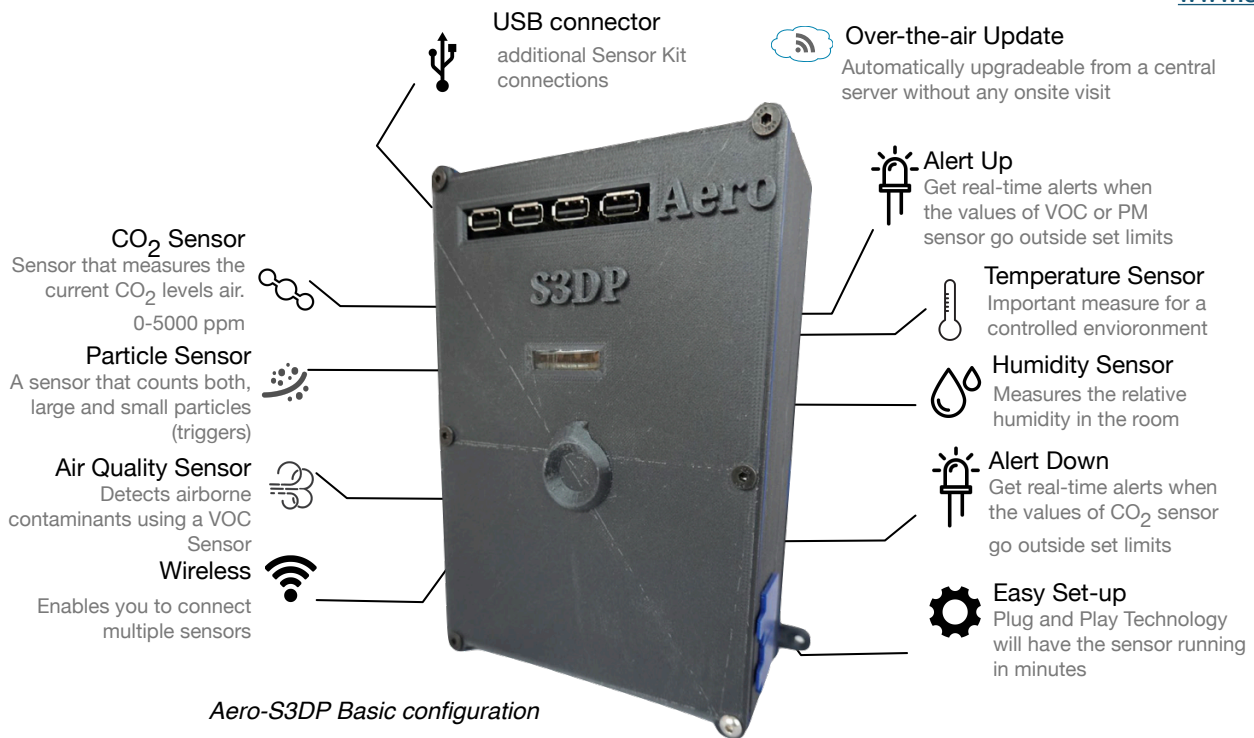
You choose the parameters you wish to measure. The modular design makes any combination possible and means you can add parameters in the future. We integrate and test the modules and environmental sensors here at our factory and ship the fully integrated system to you for installation and commissioning.

Here is a list of gaseous and particulate pollutants that can be measured using the an Aero-S3DP.

Ammonia (NH ₃)	Hydrogen Sulfide (H ₂ S)	Particulate Matter PM (PM ₁ , PM _{2.5} , PM ₄ , PM ₁₀)
Carbon Dioxide (CO ₂)	Methane (CH ₄)	Radon (Rn)
Carbon Monoxide (CO)	Nitrogen Dioxide (NO ₂)	Volatile Organic Compound (VOC)
Sulfur Dioxide (SO ₂)	Ozone (O ₃)	

In addition, the Aero-S3DP complies with Par 18, 2b for data monitoring and record keeping by integrating with Sens Solutions' online monitoring system which includes data storage, exports warnings and alarms.

Features



Sens Solutions' Remote Monitoring System

You can monitor your connected Aero-S3DP sensor online and in real time using a Sens Solutions' cloud based 'HEX' monitoring account. Set up is quick and easy – connect the data hub to an Ethernet point and your sensor will connect wirelessly and send data online. Once connected, data can be analysed online or be downloaded for more detailed analysis as well as linked with existing IT systems.



- Remote monitoring, analysis and alerts
Plug & Play set up
- No need for additional monitoring software systems
- Optional GSM data connection available
- Optional WiFi connection available

NH₃ Sensor

Target Gas	Ammonia (NH ₃) - IR Gas detector
Measurement Range	0-100 ppm
Accuracy	± 3% of full scale

CO₂ Sensor

Target Gas	Carbon Dioxide (CO ₂) - IR Gas Sensor
Measurement Range	400 to 10000 ppm / 0,04 to 2% Volumen CO ₂
Accuracy	± 3% of reading ± 30 ppm

CO Sensor

Target Gas	Carbon oxide (CO) - IR Gas Sensor
Measurement Range	0 to 500 ppm
Accuracy	< 3% of reading

SO₂ Sensor

Target Gas	Sulfur Dioxide (SO ₂) - Electrochemical Gas Sensor
Measurement Range	0 to 20 ppm
Accuracy	< ± 2% of reading 60 minutes power-on stabilization time

H₂S Sensor

Target Gas	Hydrogen Sulfit (H ₂ S) - Electrochemical Gas Sensor
Measurement Range	0 to 50 ppm
Accuracy	< ± 2% of reading

CH₄ Sensor

Target Gas	Methane (CH ₄) - IR Gas Sensor
Measurement Range	0 to 100 % v/v 30 ppm - 1500 pmm
Accuracy	± 0,15 (range 30 - 75 ppm) to 5% v/v (range 75 -1500 ppm)

NO₂ Sensor

Target Gas	Nitrogen Dioxide (CO ₂) - Electrochemical Sensor
Measurement Range	0 to 5 ppm
Accuracy	± 20 ppb

O₃ Sensor

Target Gas	Ozone (O ₃) - Electrochemical Sensor
Measurement Range	0 to 5 ppm
Accuracy	± 20 ppb

Particle Sensor

Sensing Range	Particle concentration	0-1000 µg/m ³
No. of Channels	Particle Bins	4
Particle Sizes	Range	PM ₁ , PM _{2.5} , PM ₄ , PM ₁₀
Accuracy	Across full range	± 10%

Rn Sensor

Target Gas	Radon (Rn)
Measurement Range	0.1 to 99.99 pCi/l
Accuracy	± 5 (range 0.1 to 30pCi/l) to ± 10 pCi/l (range 30 to 99.99 pCi/l)

VOC Sensor

Sensing Range	VOC, measured in parts per million	0-1000 ppm
Accuracy	Across full range	± 15 ppm
Resolution	RMS noise (ppb equivalent) @250 ppb	6 ppm
Warm-up time	To reach optimal detection performance	5min

Environment

Temperature Range	Operating Temperature °C	0 to 50 °C
Humidity Range	% RH continuous	5 to 95%
Enclosure	IP rating at proper indoor installation	IP40
Weight	Enclosure weight without adapters	202 g

Inputs and Outputs

Input	100-240V International Adapter	DC 12V ± 10%, 420 mA (Supplied)
Power Consumption	40mA @ 12V nominal	
Wireless Outputs	GSM / LoRa / NBIoT / Ethernet / ZigBee / WiFi	Gateway Dongle

Other sensor are coming in the next months.