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Air purifiers

Environmental sensors help to make air purifiers smart

Air quality monitoring in combination with air filtration using air purifiers protects our health and improves well-being. Air purifiers clean the air inside offices and homes by trapping pollutants such as fine dust, smoke, and odors. For air purifiers to work energy efficiently, precise measurement of air quality parameters is key.

Target customers:
- Air purifier manufacturers (OEMs & ODMs)
- Climate control solution providers

Application challenges

1. Limited time to market
2. Cost pressure
3. Detecting harmful indoor air pollutants
4. Energy efficient design

Sensirion's solutions

1. Simple design-in with standardized size and integration of up to 9 parameters and all relevant algorithms
2. Saves time and resources for design-in and assembly with optimal airflow, customizable features, and compact plug-and-play design
3. Measuring particulate matter, formaldehyde and nitrogen dioxide concentrations
4. Precise laser-based PM measurement

SENSIRION

Sensirion sensor solution:

SEN66 (upcoming Q1 2025): Sensing platform for simplified indoor air quality measurements

Size (LxWxH): 55.5 x 25.6 x 21.5 mm³

Key sensor features

- Integrated temp. compensation algorithm and acceleration engines
- Reduced power modes
- Identicial mechanical interface for all SEN6x variants
- Dust protection and long life-time
- One of the smallest combo modules on the market

Other applications

- IAQ monitors
- VAV controllers
- HVAC control
- Smart home systems
- Vape and smoke detectors
- Room sensors

FAQs

- **What parameters does SEN6x measure, and do I have to buy the module with all parameters?**
  SEN6x measures PM1, PM2.5, PM4, PM10, RH, T, VOC, NOx, CO_2, or HCHO. It is modular, so you can choose what works best for your application:
  - SEN60 – PM
  - SEN65 – PM, RH&T, VOC & NOx
  - SEN66 – PM, RH&T, VOC & NOx, CO_2
  - SEN68 – PM, RH&T, VOC & NOx, HCHO
- **What would be the lowest cost version for an automated mode?**
  To control your air purifier based on measured PM pollution, a SEN6x (module with fan) or the laser-based PM sensor component SPS6x are the preferred choice.
- **Do I need to include my own microcontroller?**
  No, for the SEN6x all algorithms, including temperature acceleration and compensation, VOC & NOX index calculation and tuneability, are integrated.
- **What do I need to consider for a successful integration?**
  Sensor module orientation, sealing, good coupling to ambient air without restrictions, isolation from heat sources. For more information, see mechanical design and assembly guide.
- **Do the sensor components have different lifetimes and how do I cope with that?**
  All components will last at least 10 years with sheath flow protecting them from contaminants.
- **What use cases can I enable using an all-in-one solution?**
  The data generated by the SEN6x can be used to power smart features, such as presence detection, IAQ prediction, open window detection (pollen) and viral infection risk.

Getting started

Simplifying indoor air quality sensing with the SEN6x

Useful documents

Datasheets, application notes, handling instructions, sample codes, step files, certificates

Related sensors

↗SEN6x series

SENSIRION