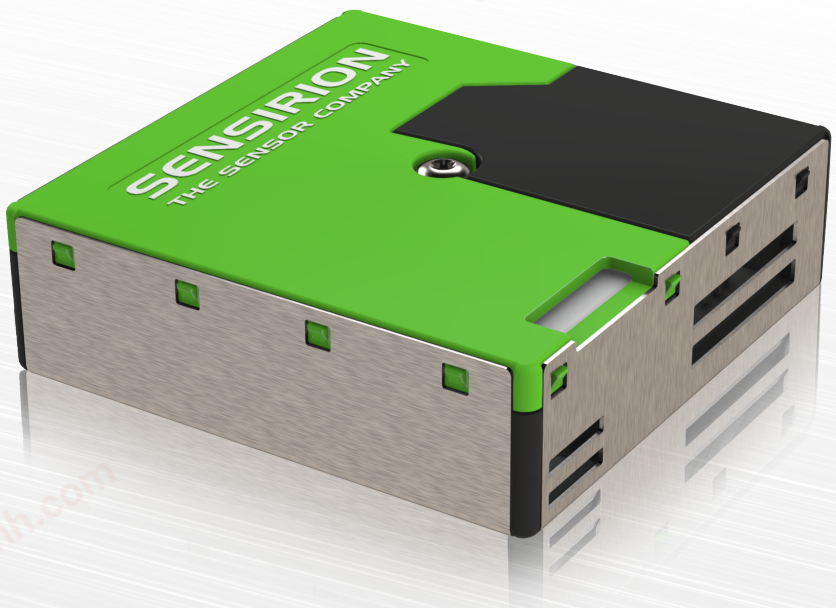
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Particulate Matter Sensor

Experts in Environmental Sensing

SPS30 – Particulate Matter Sensor for HVAC and Air Quality Applications

- Unique long-term stability due to Sensirion's innovative contamination-resistance technology
- Advanced particle size binning provided through calibrated digital output
  - Mass concentration: PM1.0, PM2.5, PM4 and PM10
  - Number concentration: PM0.5, PM1.0, PM2.5, PM4 and PM10
- Small, ultra-slim package

www.sensirion.com/sps30

SENSIRION
THE SENSOR COMPANY

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1807-PM-EN

Particulate Matter Sensor SPS30

The SPS30 particulate matter (PM) sensor represents a new technological breakthrough in optical PM sensors. Its measurement principle is based on laser scattering and makes use of Sensirion's innovative contamination-resistance technology. This technology, together with high-quality and long-lasting components, enables accurate measurements from the device's first operation and throughout its lifetime of more than eight years.

APPLICATIONS

The SPS3x has been designed for use in various applications and devices, such as:

- Air purifiers
- HVAC equipment
- Demand-controlled ventilation systems
- Air conditioners
- Air quality and environmental monitors
- Smart home and IoT devices

TECHNOLOGY AND BENEFITS

Technology	Benefits
Proprietary contamination-resistance technology and long-lasting components	Lifetime of more than eight years while operating continuously for 24 hours/day. No need for cleaning and/or maintenance, thus avoiding problems related to sensor drift or malfunction.
Laser-based scattering principle and advanced algorithms	Accurate measurements for different types of dust and other particles.
Accurate high-resolution particle size binning	Enables new use cases and device-specific actions based on detected particle composition.
Small, ultra-slim package	Easy to integrate into devices where size and space are limited.
Fully calibrated digital output. UART and I²C interfaces	Simple interfacing and read-out.

SENSOR SPECIFICATIONS

Particulate Matter Sensor Specifications	
Mass concentration accuracy[1]	±10 µg/m³ @ 0 to 100 µg/m³ ±10% @ 100 to 1'000 µg/m³
Mass concentration range	0 to 1'000 µg/m³
Mass concentration resolution	1 µg/m³
Particle detection size range	Mass concentration: PM1.0, PM2.5, PM4 and PM10 Number concentration: PM0.5, PM1.0, PM2.5, PM4 and PM10
Lower limit of detection	0.3 µm
Minimum sampling interval	1 s (continous mode)
Lifetime	>8 years operating continously 24h/day
Dimensions	40.6 x 40.6 x 12.2 mm³
Operating temperature range	-10 to +60 °C
Storage temperature range	-40 to +70 °C
Electrical Specifications	
Interface	UART, I²C
Supply voltage	4.5–5.5 V
Average supply current @ 1 Hz measurement rate	<60 mA

[1] Specified for PM2.5 at 25 °C using potassium chloride salt particles and the TSI DustTrak™ DRX Aerosol Monitor 8533 as a reference.

[2] PMx defines particles with a size smaller than "x" micrometers (e.g., PM2.5 = particles smaller than 2.5 µm).

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