

Commercial ventilation with variable air volume controller (VAV)

Building airflow control solutions

Variable air volume (VAV) is the HVAC system that optimizes air conditioning of the indoor space. The VAV system is engineered to ensure air distribution across a building's entire ventilation network, using an SDP sensor to measure airflow and dynamically adjust dampers for optimal air delivery. VAV enables increased comfort and +30% energy savings compared with traditional constant air volume systems. A highly-accurate and stable differential pressure sensor is key to secure the return on investment with energy efficiency gains.



Application challenges

- 1 Drifting sensors reduces comfort with too high or too low ventilation
- 2 High energy consumption of the HVAC systems
- 3 Maintenance in the duct is difficult and costly



Sensirion's solutions

- 1 Zero offset and no drift over lifetime protects the system performance
- 2 Precise control keeps the system on the desired setpoint, avoid oscillations and unprecise ventilation
- 3 Highest reliability of our component and our 20 years of field experience

Sensirion sensor solution:



SDP810, SDP811, SDP816: Proven and improved differential pressure sensor

Size (LxWxH): 29 x 18 x 27.05 mm³

Additional sensor features

- Measurement range with up to ± 500 Pa / 2 inch H₂O
- Manifold and tube connector
- Mounting position independent
- High sensitivity: accuracy better than 0.2% FS near zero

FAQs

- **Why is the SDP810 suited for VAV controllers?**

VAV system require reliable control of airflow rates to reach the intended level of comfort and energy savings. Control at low airflow has the most impact on energy savings, since buildings are unoccupied most of the time. The SDP810 answers this problem with its high zero-point accuracy and repeatability.

- **How resistant to dust is the SDP810 in a VAV setup?**

Following our design recommendations, it becomes unlikely for dust to disturb the functioning of our sensor. Market leaders have trusted the SDP810 for years, and we have not had field returns due to dust.

Other applications

- Energy recovery ventilation
- Filter monitoring
- Heat pumps

- **What additional value does Sensirion brings with the SDP810?**

With more than 15 years of field experience with market leaders, industry-leading production times and impeccable supply chain track records, Sensirion provides the tools to develop and scale high-quality HVAC controllers.

- **How does the sensor contribute to increasing comfort and energy savings?**

The SDP810 unique zero-point stability and no drift over lifetime guarantees the ventilation system setpoints will stay consistent in the long run. Avoiding the ventilation going too hard or too low when it is not required.

Getting started



SDP8xx evaluation kit

Related sensors

SDP8xx series

Useful documents



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