

Variable Air Volume (VAV) systems

Application Note



Overview

Variable Air Volume (VAV) systems are widely used in commercial buildings to provide efficient and customisable heating, ventilation, and air conditioning (HVAC) solutions.

These systems rely on accurate, real-time airflow measurement and control to optimise energy consumption and maintain occupant comfort.

In this application note, we explore the advantages of utilising Flusso flow sensors in VAV applications, showcasing how Flusso can help enhance system performance, energy efficiency, and overall user experience.

Importance of gas flow measurement

Accurate airflow measurement is vital for optimal VAV system control. Flusso flow sensors offer precise real-time airflow measurement, ensuring reliable data for efficient modulation of air volumes to different zones. This helps minimise energy waste while maintaining comfortable conditions.

Flusso flow sensors can significantly contribute to energy optimisation in VAV applications too. With more accurate airflow measurements, these sensors provide real-time inputs to enable intelligent control systems to adjust ventilation rates based on zone requirements.



Incorporating Flusso flow sensors optimises accuracy, energy efficiency, zone-level control, indoor air quality, maintenance, and system integration.

VAV systems excel in zone-level control, and Flusso flow sensors can enhance this feature by providing precise airflow measurement at the zone level. Allowing individual adjustment, optimising comfort and minimising energy usage.

Flusso flow sensors can also help improve indoor air quality. Because faster and more accurate adjustments to ventilation rates can help to control CO₂ levels, pollutants and allergens to ensure a healthier working environment.

Proper maintenance is crucial for VAV system performance, and Flusso flow sensors offer valuable diagnostic capabilities. Continuous real-time monitoring of flow helps to detect anomalies, enabling timely maintenance and reducing system failures.

Flusso flow sensors seamlessly integrate with building automation or energy management systems that provide centralised monitoring, control, and data logging. They can help optimise system operations, implement energy management strategies, and generate valuable insights.

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How Flusso can help?

Flusso gas flow sensors offer several compelling benefits for ventilator applications including:

High accuracy: Because the thermal conductivity of gases is well-characterised and predictable, Flusso sensors provide accurate and reliable measurement of airflow and differential pressure.

Airflow, Temperature and Differential Pressure:

Flusso sensors can be configured to measure airflow or differential pressure as well as temperature allowing the same part to be used in several different products to realise lower costs.

Small size: The FLS110/122 has a market leading footprint of just 3.5 x 3.5 mm while the FSE-112 module has a footprint of just 16 x 22 mm. This small size minimises the space required for installation reducing system size and weight.

Durability: Flusso gas flow sensors are exceptionally robust and designed for use in products and systems that must operate for extended periods of time. This can help reduce maintenance and repair costs while extending product lifespans.

Production scalability: Flusso gas flow sensors are manufactured using standard semiconductor processing techniques, making them the ideal solution for high-volume production.

By adopting Flusso flow sensors, HVAC manufacturers can achieve improved occupant comfort, significant energy savings, and streamlined HVAC system management.



Scan QR Code for more information or to order a flow sensor evaluation kit

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Gas flow sensors

FLS110

3.5 x 3.5 mm
1% Repeatability
3% Accuracy



Differential pressure
Mass/Volumetric flow
Flow temperature
Manifold installation

FLS122

3.5 x 3.5 mm
1% Repeatability
3% Accuracy



Bi-dir. Gas flow velocity
Mass/Volumetric flow
Flow temperature
In situ installation

Gas flow modules

FSE-112

16 x 22 mm
1% Repeatability
3% Accuracy



Differential pressure
Bi-dir. Mass/Vol flow
Flow temperature
Manifold installation

FSE-122

15 x 36 mm
1% Repeatability
3% Accuracy



Bi-dir. Gas flow velocity
Mass/Volumetric flow
Flow temperature
In situ installation

Evaluation Kit

Evaluation kits are available for all airflow sensor products and contain everything you'll need to assess Flusso's flow sensors in your application. They are supplied with a fluidic fixture (to fit your flow range), push-fit connectors and a USB adapter to connect the sensor module directly to your PC.

Once you have everything connected together, you can easily recalibrate the sensor to take account of your complete system.



Using our evaluation kits, you can be measuring flow within minutes