

# FUME HOOD CONTROL



**CRC**<sup>TM</sup>  
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# FUME HOOD CONTROL

BROCHURE

## PRODUCT OVERVIEW

The Fume Hood Control Solution, equipped with the advanced Fume hood Valve (FHV) and Fume Hood Controller (FHC) delivers comprehensive airflow monitoring and alarm functionality, supporting multiple sensing methodologies, including sash position sensing, sidewall velocity sensing, and constant volume control. It incorporates advanced control algorithms designed to enhance energy efficiency and maintain safety through precise and responsive airflow regulation. Featuring Immediate Valve Control™ (IVC) and Predictive Sash Valve Control™ (PSVC) technologies, the system achieves industry-leading response times, providing exceptional performance and reliability for critical containment environments.



## APPLICATIONS

- Variable Volume Fume hoods
- Constant Volume Fume Hoods
- Bio-Safety Hoods
- Floor Mount Hoods
- Dual-sided Hoods

### Components of the Fume Hood Control Solution:

- Fume hood Valve (FHV)
- Fume Hood Controller (FHC)
- Vertical (VS5) or Sidewall Sash Sensor (SVS)
- Optional Equipment

## KEY FEATURES

- **Fume Hood Safety Monitoring and Control:** Provides real-time visualization of fume hood operating conditions, with clear status indications and integrated alarming to enhance user safety.
- **Flexible Control Strategies:** Supports variable volume fume hood control based on sash position or sidewall velocity sensing, as well as constant volume operation for adaptable performance.
- **Ventilation Verification:** Utilizes patented closed-loop Venturi air valve airflow measurement to ensure proper fume hood functionality.
- **Rapid Response:** High-speed control of the fume hood air valve maintains consistent and safe ventilation, even during dynamic operational changes.
- **Versatile Control Strategies:** Supports multiple operational modes, including sash sensing, sidewall velocity sensing, and constant volume applications for adaptable performance.
- **Energy-Efficient Operation:** Optimized to maintain safety and efficient hood management while minimizing energy consumption.
- **Non-Proprietary Room-Level Controller:** Allows authorized personnel to configure, commission, and validate complex room control systems via an intuitive touchscreen interface.
- **Optimized Airflow Management:** Patented air valve technology minimizes pressure drop, enhancing energy efficiency and long-term operational savings.
- **Precision Environmental Control:** Maintains a safe, low-maintenance environment while ensuring optimal ventilation and containment conditions.
- **Adaptive Operating Modes:** Provides up to three configurable modes—In-Use, Standby, and Decommission—to balance safety and energy efficiency based on occupancy and operational requirements.
- **Advanced Alarm System:** Features simultaneous local visual and audible alarms, with network-based notifications to improve situational awareness and response time.

## APPLICATION OVERVIEW



### FUME HOOD VALVE (FHV)

The Fume Hood Valve (FHV) incorporates CRC's patented CLV air valve technology, delivering high-speed, precision airflow control. It supports both Variable Volume Constant Face Velocity and Constant Volume fume hood control strategies, as managed by the CRC Fume Hood Controller (FHC).

### VARIABLE VOLUME CONSTANT VELOCITY SASH SENSING

The CRC vertical sash sensor accurately measures the open sash area of the fume hood in real time. This measurement, combined with airflow volume data from the associated CRC fume hood air valve, allows the CRC FHC to precisely calculate and control face velocity, delivering a constant face velocity variable volume control solution. For fume hoods with horizontally sliding sashes or combination horizontal and vertical sash configurations, we recommend utilizing our sidewall sensing technology for optimal performance.

### VARIABLE VOLUME CONSTANT VELOCITY SIDEWALL VELOCITY SENSING

The CRC sidewall velocity sensor provides real-time measurement of a fume hood's face velocity. This continuous velocity feedback enables the Fume Hood Controller (FHC) to precisely control face velocity by modulating the CRC fume hood air valve, ensuring a constant face velocity variable volume control solution. Utilizing a patented dual-path velocity sensing technology, the sidewall sensor is an ideal solution for single vertical sash hoods, horizontal sash hoods, and combination horizontal/vertical sash configurations.

### CONSTANT VOLUME AIRFLOW CONTROL

The CRC Fume Hood Controller can be configured for constant volume applications where neither sash position sensing nor sidewall velocity sensing is required. This configuration supports traditional bypass fume hoods as well as non-standard exhaust equipment, including biosafety cabinets, glove boxes, snorkels, and canopy hoods. In this mode, the FHC regulates the associated air valve to maintain a fixed, constant airflow volume, ensuring consistent and reliable exhaust performance.

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