

Vari-Flow

The Vari-Flow Air Management system monitors the cooking load and varies the exhaust and supply rates based on demand. Since the cooking load varies throughout the day, kitchen exhaust systems do not need to run at the maximum exhaust air volume all day. Varying the speed of the fans based on the cooking load will save money by reducing electrical, heating and cooling costs.

HOW IT WORKS

The Vari-Flow Air Management System senses the heat output of the appliance lineup and only exhausts and supplies the amount of air necessary to maintain proper capture, thus providing valuable energy savings.

Key Selling Features

- Fully modulating turndown up to 50% (uses 1/8 the HP than at 100% operation)
- Compatible with electrically commutating motors (ECMs), eliminating the need for VFDs
- 5 times quicker response
- Reduces electrical costs by slowing exhaust and supply fan motors
- Reduces heating and cooling costs by reducing the amount of air being heated or cooled
- Space pressure control for make-up air ensuring proper building balance

Key Variable Volume Benefits

- Energy savings - Electrical, heating and cooling
- Ventilation equipment life is extended by soft-starting starting fans, therefore reducing stress on belts and bearings
- Reduced sound levels to improve customer and employee comfort

COMPETITOR PRODUCT

- Energy Management System (EMS)

COMPETITOR ENERGY MANAGEMENT SYSTEM WEAKNESSES

- Airflow only varies 80-100% (uses 1/2 the HP than at 100% operation)
- Direct gas-fired make-up air only varies 80-100%
- Grease duct mounted or duct collar mounted temperature sensor is shielded from temperature fluctuations
- One temperature sensor per FAN!
 - If multiple exhaust collars are used for one fan, the sensor must be located in the duct common to both sources which means the sensor may be located far from the heat source which can result in slower response to change
- Supply runs solely on tracking which can lead to periods of improper balance
- 3 phase motors with VFDs is standard, ECM requires a special design

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VARI-FLOW'S COMPETITIVE ADVANTAGE

- Number of sensors based on hood size rather than one sensor per fan
- Sensor location allows for 5 times quicker response
- Varies airflow 50-100% resulting in greater energy savings (uses 1/8 the HP than at 100% operation)
- Make-up air can modulate based on static pressure which correctly pressurizes the space and adapts to different facility needs
- Ability to use ECM motors which eliminates the need for VFDs
- Building management system interfacing (LON and N20pen protocols)

Vari-Flow	Energy Management System (EMS)
Varies airflow 50 - 100% (potentially more if application allows) providing greater savings over the competition. (uses 1/8 the HP than at 100% operation)	Varies airflow 80 - 100%. Manufacturer suggests 20% turndown. (uses 1/2 the HP than at 100% operation)
Temperature sensors mounted in the hood capture tank enables up to 5 times faster response yielding better performance and system control.	Duct collar or grease duct mounted sensor. (less responsive to cooking load changes)
Every hood has temperature sensors, multiple sensors over 10 ft. to ensure better performance and system control when appliance use varies.	Utilizes only one temperature sensor per fan.
Controls supply by proportional tracking or building pressure. Building pressure allows the system to accommodate other ventilation components not directly tied into the system for precise control. The signal can be used to control other building system components.	Single tracking option for controlling supply.
Factory calculates and presets turndowns which can be adjusted if necessary in the field. This enables smooth and quick start-ups.	Default turndowns set to 20% reduction in fan speed.
System can be integrated with ECM motors to operate on single phase without the use of VFD's.	3 phase motors with VFDs is standard. ECM requires special design.
Meets ASHRAE 189.1 Sustainable Building Standard requiring all hoods to have variable volume systems and available 50% turndown.	Does not meet ASHRAE 189.1 with suggested manufacturer turndown.