



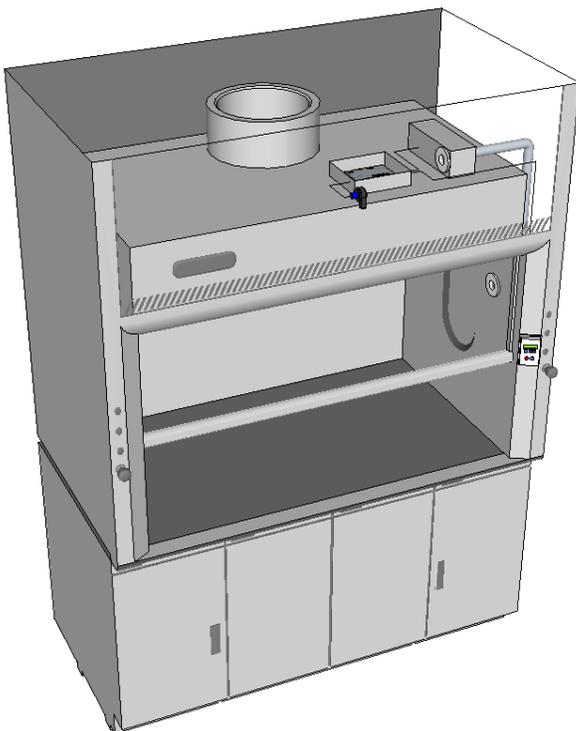
# FHMC-01

## Fume Hood

### Monitor/Controller



## FHMC-01 Fume Hood Monitor/Controller

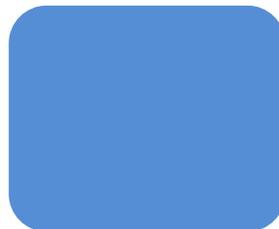


State of the art laboratories demand state of the art controls for their fume hoods, ensuring operator safety, laboratory containment and energy conservation.

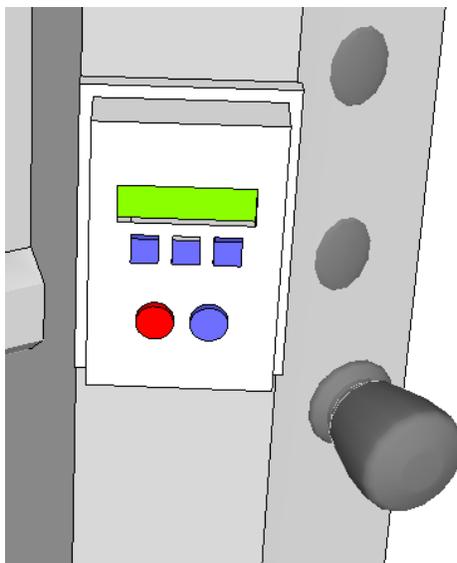
The FHMC-01 Fume Hood Monitor/Controller controls the face velocity of the fume hood to meet these objectives.

Utilizing side wall velocity sensors, sash position sensors and combined with the ability to process exhaust flow information, optimum face velocity is maintained, regardless of sash position, operator presence, or experimental apparatus.

The easy to understand user- interface, coupled with an extremely powerful controller, ensures the optimum control for your fume hoods realizing safety and energy efficiency. Integration into complete laboratory control systems is seamless through the BACnet communication standard.



# FHMC-01 User Interface



The FHMC-01 User Interface consists of an LCD Message Screen, Operator Keys, LED indicators and an audible alarm.

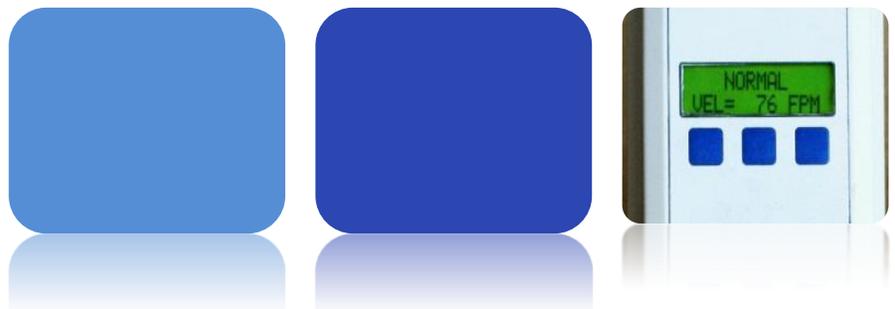
At a glance, the message screen gives the current operating status of the fume hood, i.e. NORMAL, WARN HI, WARN LO, ALARM HI, ALARM LO, SASH HI, EMERGENCY, MUTE etc., along with the current value of the selected variable, Face Velocity, Exhaust Flow or Sash Height

The soft keys allow configuration of operating setpoints and system configuration parameters. No additional hardware or software is required to use the system.

Mute Button – 3 available functions, Automatic clear, resets on recovery to safe air flows, Manual clear with chirp reminder, chirps intermittently to remind user that system is muted and Manual clear without chirp reminder.

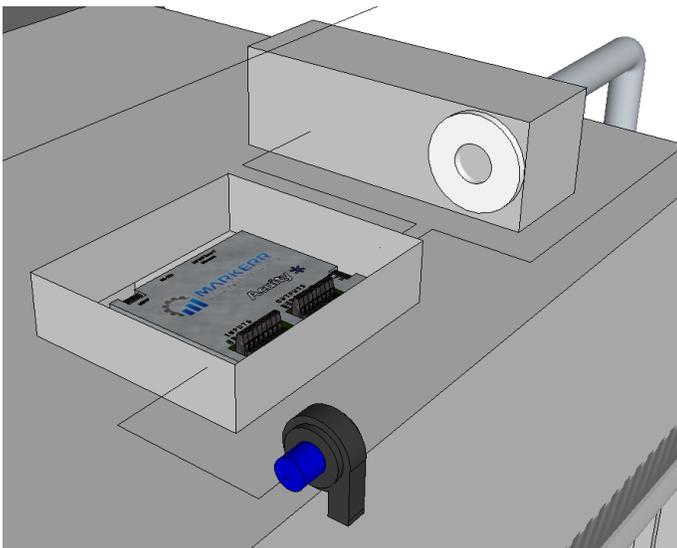
Emergency button – fume hood goes to max flow setpoint

Feedback –audible, visual warnings and alarms via LCD Screen and LED's. Green, Yellow and Red for Normal, Warn and Alarm conditions



# FHMC-01

## System Controls



The FHMC-01 system controls consist of the basic components of a User Interface, Velocity Sensor, Sash Position Sensor, and Controller. Analogue inputs for exhaust flow for flow control are available as well.

The controller processes available sensor information, controlling the face velocity via exhaust flow control either by damper, venturi valve, or variable speed drive providing containment and safety.

The velocity sensor integrates with the side-wall velocity tap providing ease of installation. If

required, a vent kit to the lab space is available to equalize any pressure differentials between the interstitial space and hood face.

The sash sensor is easily adaptable to many sash configurations. The sensor can reference sash position directly, or by referencing sash counterweights, counterweight cabling or any feedback that is directly related to sash opening.

An optional proximity sensor is available and can be used to sense the presence of an operator, bringing the hood into setback mode when no operator is in the vicinity.

All relevant data points are available through data communication via the BACnet protocol. Any 3<sup>rd</sup> party BACnet device or service can poll the controller for the relevant operating and status information and with the proper permissions, adjust select operating variables.



## Laboratory Control Systems

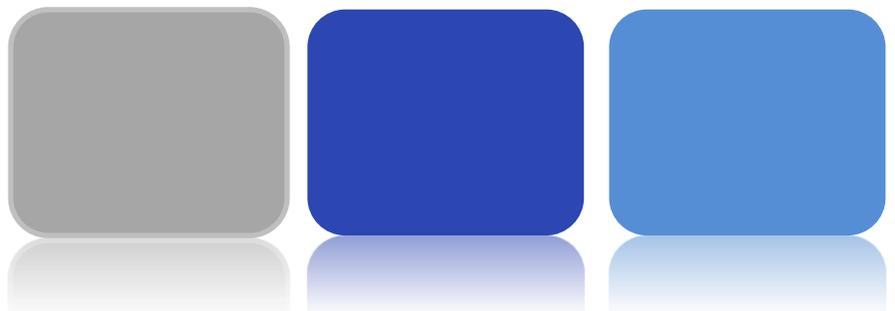


Modern laboratory control systems require an accurate accounting of the air flow balance between laboratories, corridors and adjacent spaces to control the flow in between these spaces and ensure containment. With energy efficient hoods and controls, the airflow in a particular laboratory space can be quite dynamic. Traditional HVAC systems may struggle to adjust to the ever changing air balance requirements resulting in an upset flow balance due to the inability to respond. Potentially dangerous situations can arise.

In addition, with the constant changing of exhaust air and make-up air quantities, room temperature stability can be compromised resulting at the least –uncomfortable lab workers or worse, unstable experiments. A Laboratory Control System from MARKERR CONTROLS is able to anticipate the upsets in temperature prior to any noticeable change in space temperature.

While the FHMC-01 Fume Hood control system can be integrated into any BAS system, an engineered solution from MARKERR CONTROLS ensures a system operating in harmony by a company that understands the complexities of a Laboratory Control System, with a single source of responsibility.

Containment strategies together with temperature control strategies ensure the most efficient and economical use of your facility.



# FHMC-01

## Fume Hood Monitor/Controller

### Specifications



#### Display

Character LCD

Units: Metric or Imperial

Range: 0 to 1000 FPM (0 to 5.08 m/s)

0 to 10,000 CFM ( 0 to 4720 l/s)

Resolution: 1 FPM imperial, 0.01 m/s metric

#### Inputs

Analogue: Sash Position  
Face Velocity  
Exhaust Flow

Digital: Setback in  
Sash contact/switch  
Emergency

#### Outputs

Analogue: Control Out  
Sash Position  
Face Velocity  
Exhaust Flow

Digital: Alarm

#### Velocity Sensor

Range: 0 – 1000FPM (0-5.08 m/s)

Resolution: 1 FPM (0.00508 m/s)

#### Sash Position Sensor

Range: 0 – 50” ( 0 – 1270mm)

#### Network Capability

BACnet over MSTP standard  
BACnet over IP – Optional

#### Power Supply

24VAC/VDC, 50VA Isolated

#### Options

Vent Kit  
PIR Motion Sensor  
Venturi Valve



