

TRIA TEK® HMS-1600LX

Adaptive Fume Hood Control



Standard 4x16 LCD Display Shown

- HMS Controller
- Display Unit
- Position Transducer
- Airflow Sensor(s)
- Transformer

Overview

The Triatek HMS-1600LX fume hood control system provides unrivaled performance in fume hood safety through dual sensor technology. A position sensor (POS-100) monitors the position of the sash and immediately modulates the venturi valve or exhaust damper to maintain safe face velocity in the hood whenever the sash is moved. Meanwhile, an airflow sensor (HMS-1600LX) continuously monitors actual fume hood face velocity to intelligently account for disturbances that may cause a loss of containment around the fume hood when the sash has not moved (See, diagram on facing page). This intelligent advance is achieved by a user defined velocity range that is programmed into the controller. If the lower or higher limits of acceptable face velocity are violated, the TRIATEK HMS-1600LX system will immediately adjust the valve to restore the desired customer setpoint with its fast (less than one second) acting actuator. Thus, unlike traditional open loop sash sensing systems, the TRIATEK HMS-1600LX system utilizes dual protection to ensure that safe face velocity setpoints are maintained through rapid response times and the safety of direct face velocity measurement.

Features & Benefits

- Adaptive fume hood sash control with face velocity override compensation.
- Direct face velocity measurement for continuous closed loop control.
- Accounts for disturbances to face velocity even when the sash has not moved.
- Fast response (less than one second) to all sash movements.
- Measures and displays actual fume hood face velocity to ensure user safety.
- Visual and audible alarms to alert occupants of unsafe conditions.
- Direct integration to most building management systems.
- Energy savings through VAV, unoccupied and night setback options.
- Complies with OSHA, NFPA 45, ANSI and other regulations.
- UL listed.

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APPLICATIONS

Vertical, horizontal and combination sash fume hoods

Two position fume hood control

Constant volume hood monitor

Occupied/unoccupied hood control

RELATED PRODUCTS

Venturi Valves

ACT-FA Electronic Actuator (1 second)

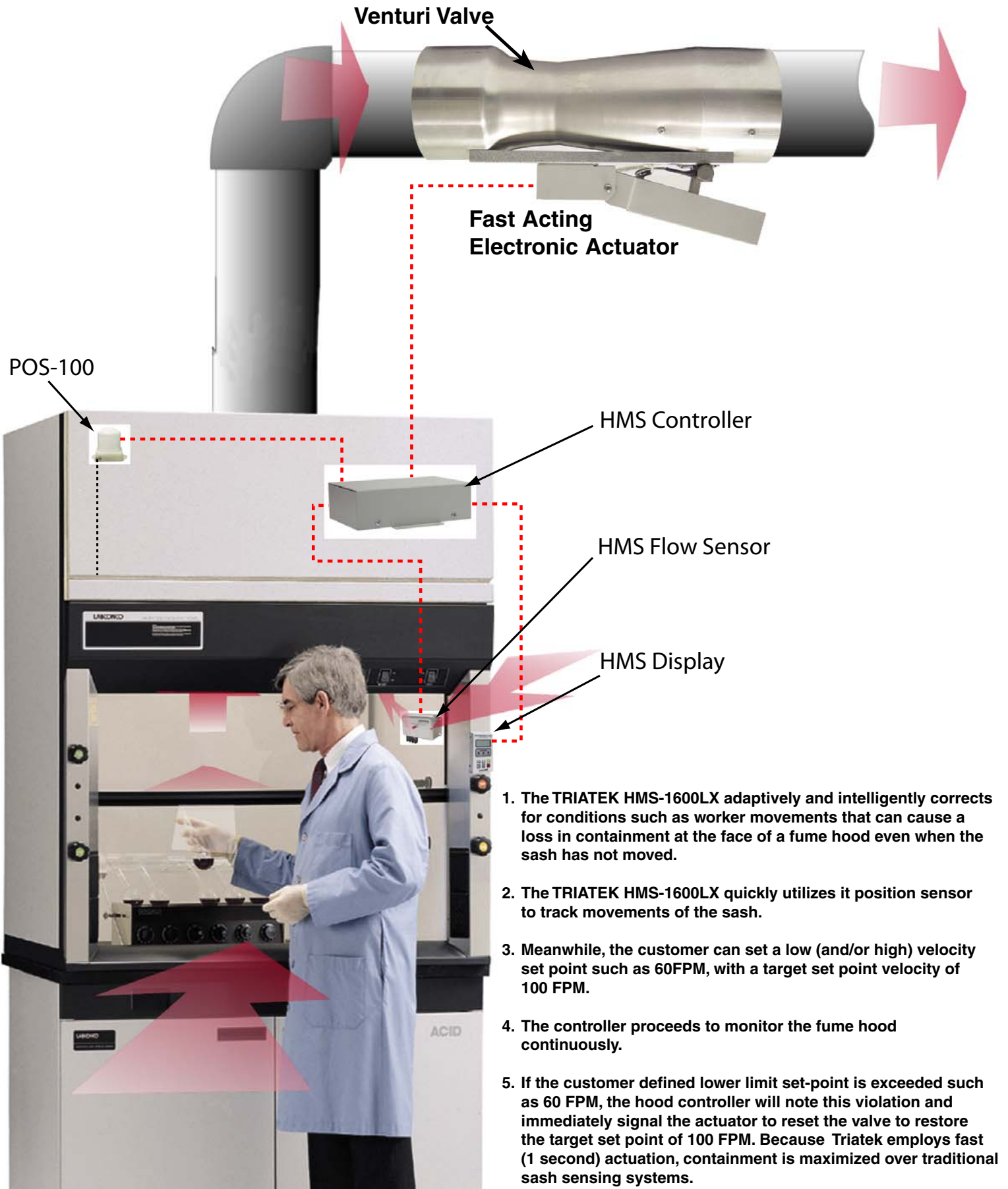
VAV-1000L Volumetric Controller

FMS-1630 Pressure Monitor/Controller

100 TX Temperature Transmitters

HD Series Humidity Sensors

System Diagram



***Note:** Please refer to installation guide for actual installation guidelines. This diagram is provided for illustrative purposes only.

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Due to continuous product improvement, TRIATEK reserves the right to change product specifications without notice.

Specifications

HMS-1600 Controller

Dimensions 4.125" H x 6.00" W x 1.875" D
4 Analog Inputs 4-20mADC, 0-5VDC or 0-10VDC
4 Analog Outputs 0-5VDC or 0-10VDC
4 Digital Inputs 0-5 or 0-24 VDC
4 Relay Outputs 1A@24VDC, 1A@24VAC
Input Impedance 10k - 0 W
Output Impedance W 0 -10k
Control Signal Wire Size 18 AWG Minimum
Power Supply Class 2 24 VAC/DC \pm 10%, 10 VA
..... 110 to 24 VAC, 60 Hz, Step-Down Isolation Transformer provided

Communications

LON FTT-10A Free Topology Two Wire Twisted Pair
Recommended Cable Type Belden 85102
Integration options..... LON, BACnet, Modbus, N2, custom drivers.

HMS Air Flow Sensor

Type of Sensor..... Thru-the-hood ultra sensitive
Face Velocity Accuracy..... 0-200 FPM \pm 2 FPM*
Dimensions..... 2 5/32"H x 4 3/4"W x 3 5/16"D
NIST Traceable / Individual certification available as option *@72°F \pm 5°F

HMS Standard Display & Alarm Annunciator

LCD Display 4- Line X 16 characters per line
LCD Character Height..... 0.19 inches
Programmable Alarms..... Audible and Visual
Low Flow Alarms Audible and Visual
Programmable LED's..... Normal, Caution, Alarm
Display/Keypad Dimensions 4 7/8"H x 3 3/16"W x 1"D

POS-100

Sensing Device Multiturn Precision Potentiometer
Potentiometer Value..... 1k ohm, 2K ohm, 5k ohm or 10k ohm
Cable 0.018" (0.46 mm) Jacketed Stainless Steel
Linearity \pm 0.25%
Repeatability..... \pm 0.03%
Cable Nominal Breaking Strength..... 40 lbs

Electrical

Input Impedance 10k - 0 W
Output Impedance W 0 -10k
Control Signal Wire Size 18 AWG Minimum

Environmental

Operating Temperature 0° to 140° F or -18° to 60° C
Operating Humidity 95% R.H. max. non-condensing

Safety Standards

Underwriters Laboratories..... UL Listed & cUL Listed

Ordering Instructions

HMS-16□□LX-□

Analog Output

1 = 0-5 VDC ($>$ 500 Ω)
2 = 0-10 VDC ($>$ 1K Ω)

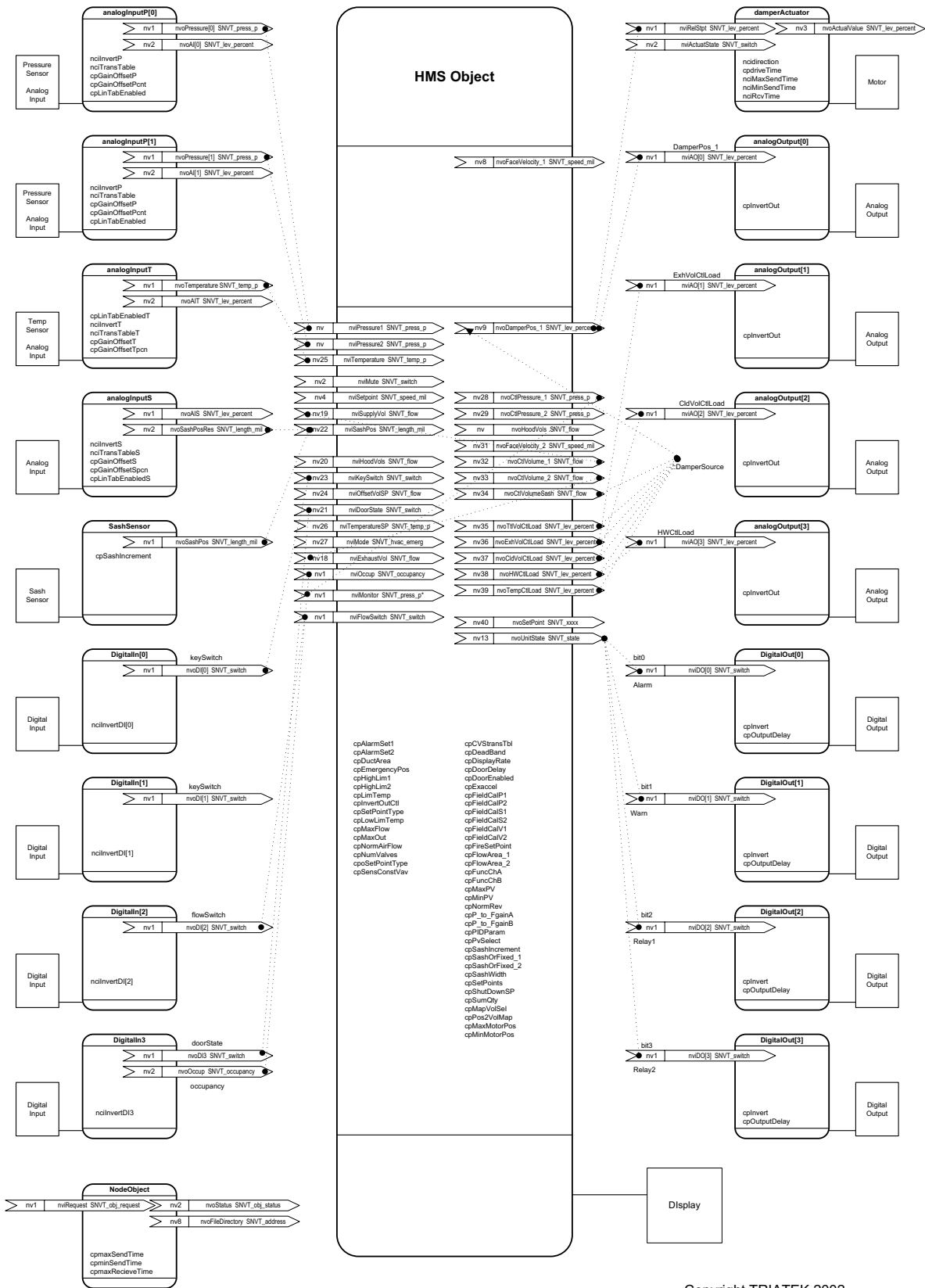
Face Velocity

1 = 0-120 FPM
2 = 0-200 FPM
3 = 0-1000 FPM
5 = 0-500 FPM

Number of Sensors

(blank) = 1 sensor
D = 2 sensors

LON Object Model



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