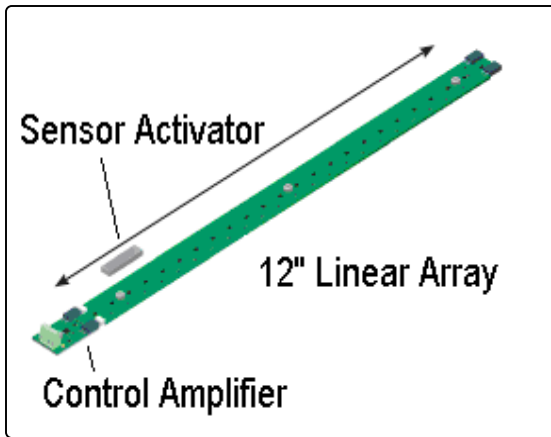


## LSA Linear Sensor Array Sash Position Sensor

BULLETIN 873-D



Measuring the sash position coupled with the damper position pressure independence is a proven and accurate method of determining exhaust flow rates in a fume hood. Using this information the velocity across the face of a fume hood can be determined.

This easily actuated linear sensor array system can be adapted for use on any size fume hood, utilizing any number of sashes. The LSA is a solid state design and is not based on mechanical components.

### Product Design

The linear sensor array, or LSA, is a non contact linear sensor which is highly adaptable for a wide range of linear measurements. LSAs can be made to fit any project size including fume hoods that utilize multiple sash doors.

The sash position is determined by a sensor activator which moves with the sash parallel to the linear sensor array. The array reads the placement of the sensor activator and outputs an analog signal proportional to the position of the sash. The analog signal is

### Features

- Non Contact System
- Universal Mounting
- Conformal coated for Chemical and Corrosion Resistance
- Low Hysteresis

### Benefits

- Compact and Discrete
- Durable
- Proven Accurate Technology
- Easy to Install and Low Maintenance
- No Interference with the User or Sash Movement

received by a local controller which calculates the open face area. This area is used to determine the required volumetric flow rate and valve position or fan speed. The local controller then reads the face velocity from the hood monitor and adjusts the valve or fan accordingly using a proportional integral program until the set face velocity is met. Additionally the sash position can be set to alarm if the sash is left open or logged in order to track fume hood usage.

### Application Recommendations

In addition to the sash position sensor, a duct pressure compensation system should be used in applications where the duct pressures vary.



The LSA consists of an LSA-AMP Control Amplifier, up to both 12" linear array sections, and a sensor activator. The linear array can be fit to sizes from 12" to 96" by combining up to either 12" sections which run parallel to the movement of the sash. A sensor activator is located on the sash door and runs the length of the linear array. The LSA-AMP Control Amplifier, when connected to a sensor array, provides an output that is representative of the position of the sash. The Control Amplifier will automatically scale the output voltage ranger to account for the number of linear array sections being used.

The linear sensor arrays are available in either .5" or 1.0" resolution ranges to meet accuracy needs. The LSA-AMP has two full scale output ranges, automatically adjust to account for the number of LSA sections used. Since there are no moving parts the sensor is not limited to the number cycles it endures. The conformal coating on the circuit protects the sensor from moisture, dust, chemicals, and temperature extremes.

Airflow error is the percent difference in actual versus calculated volumetric flow calculated using an 18" by 48" sash.

<b>Sensor Output Required</b>	0-5 V	0-10 V
<b>Supply Voltage</b>	7-16 V	12-16 V
	20 mA	20 mA
<b>Current Consumption</b>	max	max
	-40 to	
<b>Temperature Range</b>	85C	-40 to 85C

	<b>LSA-12-</b>	<b>LSA-12-</b>
	<b>0.5</b>	<b>1.0</b>
<b>Airflow Error</b>	+/- 1.4%	+/- 2.8%
<b>Resolution</b>	.5 in	1 in.

