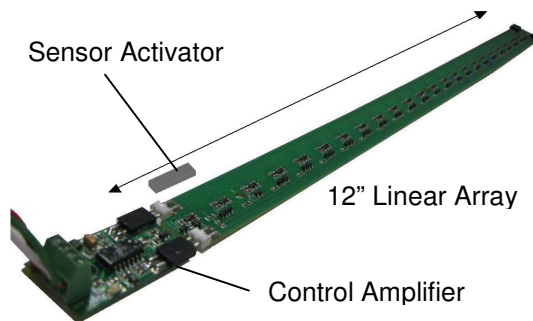


LSA Linear Sensor Array Sash Position Sensor

BULLETIN 873-b



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

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. The linear sensor array (LSA) is a non contact linear sensor which is solid state and does not use mechanical components to output a signal.

The Activator is located on the moveable sash and outputs a signal to the fixed array. The signal from the array is therefore proportional to the sash position. The position of the sash is sent to the local controller.

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 logged by the controller to track the hood usage or sash position during unoccupied times.

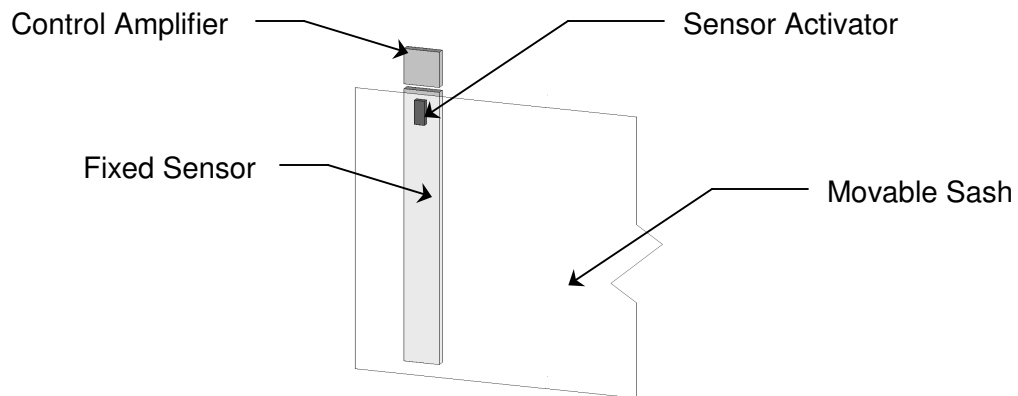
Application Recommendations

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 sash heights or widths 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 operates for 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 range to include the number of linear array sections being used.

The linear sensor arrays are available in either 0.5" or 1.0" resolution ranges to meet accuracy needs. The LSA-AMP has two full-scale output ranges which 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 of cycles it endures. The conformal coating on the circuit protects the sensor from moisture, dust, chemical and temperature extremes.

SCHEMATIC VIEW OF VERTICAL SENSOR



SPECIFICATIONS

	<u>LSA-12-0.5</u>	<u>LSA-12-1.0</u>
<i>Airflow Error</i>	+/- 1.4%	+/- 2.8%
<i>Resolution</i>	0.5 in.	1 in.
<i>Sensor Output Required</i>	0-5 V	0-10 V
<i>Supply Voltage</i>	7-16 V	12-16 V
<i>Current Consumption</i>	20 mA max	20 mA max
<i>Temperature Range</i>	-40 °C to 85 °C	-40 °C to 85 °C

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

waddell Phone: (856)-461-7500
ENGINEERING COMPANY
AIR DISTRIBUTION PRODUCTS DIVISION
26 D Deacon's Alley • Moorestown • NJ 08057

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