

Technology Advantages

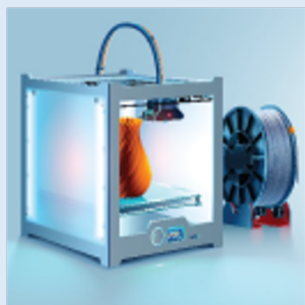
Unique Features for Industrial Applications

The Architecture

Superior Sensor's proprietary NimbleSense™ architecture is the industry's first System-in-a-Sensor integrated platform. Incorporating a highly differentiated advanced pressure sensing system with application-specific building blocks provides the highest accuracy and reliability with exclusive integrated features.

The NimbleSense architecture was developed with the overarching goal of knocking out every bit of noise before reaching the sensing subsystem. Noise is anything that is not the ideal sensor information, including long-term drift, thermal errors, thermal or pressure hysteresis, etc. The result is a pressure sensor architecture that has a very clear signal and practically no noise. For industrial-focused applications, Superior Sensor provides the following core technology advantages:

Sample Applications



3D Printing



Advanced Manufacturing



Air Quality Monitoring

Industry's Lowest Noise Floor

Utilizing advanced digital filtering technology, Superior's pressure sensors eliminate noise created by fans, motors, vibrations, wind, and other external factors before reaching the host system. By neutralizing these sources of noise before they can be mixed with the signal, the architecture can considerably push down the noise floor so it does not impact the signal.

Highest Levels of Accuracy

Sensor accuracy is very important for most industrial applications, as small pressure measurement errors can significantly impact the overall system. Superior's pressure sensors have market-leading performance with typical accuracy within 0.05% of the selected range and typical TEB (total error band) and first-year long-term stability within 0.10% of the FSS.

Multi-Range™ Technology

Standard in all our differential pressure sensors, Multi-Range technology, allows one sensor to replace several with the ability to change pressures 'on the fly.' Each pressure range is factory-calibrated and optimized, eliminating the complexity of working with multiple sensors. By standardizing on one sensor, manufacturers can simplify product design, reduce inventory costs, and quickly bring new products to market.

Sample Applications



Auto Smog Testing



Aviation Instrumentation



Chemical Monitoring

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Sample Applications



Clean Rooms



Industrial Monitoring



Lab Equipment Calibration

Advanced Multi Order Filter

An optional advanced multi order filter can be implemented to further eliminate critical noise from fan output. This filter simplifies product design, eliminates external components, and reduces system overhead and loop delay. This improves response times up to 100x relative to non-integrated implementations.

Integrated 50/60Hz Notch Filter

The integrated 50/60Hz notch filter eliminates power line interference that can be 'heard' when taking measurements. The filter blocks out these frequencies, eliminating potential negative impacts. This solution removes the need for an external notch filter, making the system more efficient, reliable, and less costly.

Optional Closed Loop Control

Closed Loop Control adds capabilities to set and maintain flow rates via pressure management by directly controlling motors, valves, and actuators. Superior's integrated Closed Loop Control significantly reduces loop delays in the electronic circuit by up to 100x compared to external solutions.

Optional 3-Mode Pressure Switch

Like external switches, the integrated pressure switch changes state based on the measured pressure being above or below a certain threshold. Having fixed and variable modes, this integrated solution reduces system power and eliminates the cost of an external switch.

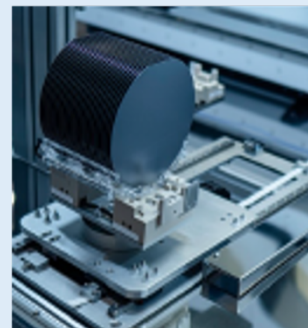
Sample Applications



Leak Detection



UAVs/Drones



Wafer Fabrication

Additional Capabilities

- **Selectable bandwidth filter** from 1Hz to 200Hz allows for data channel optimization without impacting system CPU utilization
- **Position insensitivity** eliminates the impact of device orientation for handheld products and other orientation-sensitive applications (select sensor models)
- Measure **differential/gage** pressures from ± 0.25 H₂O to ± 150 psi, and **absolute** pressure to 150 psia

For more information, please contact: info@SuperiorSensors.com

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