

Technology Advantages

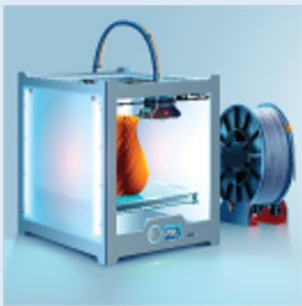
Unique Features for Industrial Applications

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 a combination of the highest accuracy and reliability with exclusive integrated features.

The NimbleSense architecture was developed with the overarching goal to knock 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 having 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 prior to reaching the sensor sub-system. By neutralizing these sources of noise before they can be mixed with the signal, the architecture is able to 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 errors in pressure measurements can have a significant impact on 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

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

Technology Advantages

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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 the fan output. This filter will simplify product design and reduce the number of components needed. This integrated solution also reduces system overhead and loop delay, greatly improving 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. With the filter integrated in the pressure sensor, it blocks out the interference caused by these frequencies before reaching the user application. This feature removes the need for an external notch filter, so the overall system is more efficient, more 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. This integration eliminates the need to design and implement a complex control loop system.

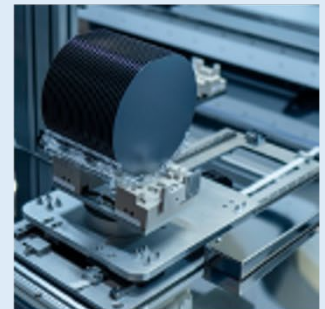
Sample Applications



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 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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