

PRESS RELEASE

Superior Sensor Technology's Advanced System-in-a-Sensor Improves Accuracy of 3D Printers

Accurate Pressure-Controlled 3D Printers Ensure Structural Soundness of Objects, Enabling Additive Manufacturing to become Mainstream

Los Gatos, CA, March 15, 2022 - [Superior Sensor Technology](#) today announced their System-in-a-Sensor architecture, [NimbleSense™](#), offers manufacturers a precise, low-pressure measurement solution to improve the accuracy and performance of 3D printing by enabling the development of pressure-controlled 3D printers.

Pressure sensors can improve 3D printing in several ways, including verifying the nozzle continues to flow material at an exact rate, confirming the correct pressure is being applied by the arm during construction and ensuring structural soundness of the object.

“The 3D printer market is growing at over 20% CAGR, providing speed and flexibility in the manufacturing of both-industrial and consumer products,” said Mark Vena, CEO and Principal Analyst at SmartTech Research. “By offering manufacturers the ability to develop pressure-controlled 3D printers with advanced pressure sensor technology, innovative solutions like Superior Sensor will enable a new generation of devices that are more accurate and less wasteful.”

Incorporated into the company's [ND Series](#) product family for 3D printers and other industrial applications, the NimbleSense architecture enables the sensors to operate at unprecedented low noise levels, which maximizes the accuracy of 3D printers. The pressure sensors also include the company's patented [Multi-Range™](#) technology, closed loop control and advanced digital filter features, which can further improve the precise operating capabilities of 3D printers.

“3D printing or additive manufacturing has significant cost advantages. However, improved performance and accuracy are imperative for 3D printers to become mainstream industrial manufacturing instruments,” said Anthony Gioeli, Vice President of Marketing, Superior Sensor Technology. “Our NimbleSense technology is making it easier and more cost effective to develop pressure-controlled 3D printers that build objects with accurate disposition and structural integrity.”

For example, consistent material flow through the 3D printer nozzle will ensure accurate material placement when building an object. The pressure required by the nozzle varies depending on the object being constructed and type of material flowing through the nozzle. Multi-Range allows a single sensor to support multiple pressure ranges, which allows the sensor to change the pressure of the nozzle “on-the-fly” to meet the requirements for that particular object.

The integrated closed loop control feature improves the responsiveness of the printer’s pressure sensing mechanism, by controlling motors, valves and actuators that drive the nozzle, arms and other parts of the 3D printer. By integrating the advanced digital filtering feature into the sensor, exterior noise is eliminated before it can lead to inaccurate pressure readings.

The ND210 is an ideal pressure sensor for 3D printers, as it supports differential pressures as low as 62.5 pascal to as high as 2500 pascal - ensuring high accuracy for a wide array of materials and structures. In addition, its position insensitivity will not impact accuracy by any movements in the arm or nozzle.

[Superior Sensor Technology](#) is revolutionizing the high performance, cost driven pressure sensor market by developing integrative, highly intelligent solutions for industrial, HVAC and medical applications. The company’s technology is based on a breakthrough system-in-a-sensor, proprietary architecture, called [NimbleSense™](#), which significantly improves overall sensor performance while adding exclusive application specific system features. Superior Sensor Technology was founded in 2016 and is based in Los Gatos, CA.

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