

Superior Sensor Technology's New Ventilator Pressure Sensor Solution Greatly Improves Patient-Ventilator Synchrony

Proprietary Sensor Technology Enables Faster System Response Time While Offering Extreme Resolution

LOS GATOS, CALIFORNIA, UNITED STATES, March 21, 2023 /EINPresswire.com/ -- [Superior Sensor Technology](#) today announced a proprietary pressure sensor technology that improves the response time and eliminates the impact of system noise in ventilators and high-flow oxygen equipment, enabling the reduction of patient-ventilator [dyssynchrony](#).



Advanced Sensors Save Lives by Reducing Patient-Ventilator Dyssynchrony

Based on numerous medical studies, it is estimated that at least one-third of patients suffer from frequent dyssynchrony during mechanical ventilation. Dyssynchrony occurs when the mechanical ventilator is not in sync with the patient's breathing demands. Common in both invasive and noninvasive mechanical ventilation, poor synchrony is a serious issue that can

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result in increased patient discomfort, expanded respiratory muscle work, long term lung damage, prolonged mechanical ventilation and confusion during the weaning process. To improve synchrony, mechanical ventilators need to eliminate the impact of system noise and respond more quickly to patient breathing demands.

Pressure sensors are critical components in ventilators as they monitor and control the flow and pressure of air and oxygen to the patient. Internal blowers, along with external

impacts such as vibrations, create system level noise that can be mixed into the signal, negatively impacting patient-ventilator synchrony. Traditional system implementations oversample sensor

data, which slows down system response time by up to 10x. Superior Sensor's advanced ventilator pressure sensor technology incorporates a proprietary oversampling technique with digital filtering to effectively reject all noise outside the band of interest without impacting sensor response time. This solution allows the system to directly use sensor outputs at full speed, eliminating the need for cumbersome oversampling.

"Better pressure sensor performance has a direct impact on ventilator performance," said Anthony Gioeli, Vice President of Marketing, Superior Sensor Technology. "Our proprietary ventilator technology provides an innovative advancement for ventilators that we believe will dramatically improve patient synchrony, resulting in better patient outcomes."

As part of its upcoming VN Series of pressure sensors for the ventilator market, the company is introducing two new sensors with extreme resolution that expand the dynamic range of the sensors making them suitable for use from neonates to adults. The VN026CM and VN131CM further improve the industry's lowest noise floor by an additional 20db, providing greater than 18-bit effective resolution. This helps ensure even the smallest amount of noise does not impact patient-ventilator synchrony.

Designed to measure flow, as well as inspiratory and expiratory pressures, the VN026CM and the VN131CM include Superior Sensor's Multi-Range™ technology and selectable bandwidth filters. Multi-Range allows the VN026CM and VN031CM to support up to seven or eight factory calibrated pressure ranges, respectively, enabling manufacturers to optimize the pressure range without the need for custom calibrated solutions. Selectable bandwidth filters allow system optimization based on specific mechanical implementations. These advanced, flexible features speed up product development time and reduce ventilator manufacturing complexity.

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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