PRESS RELEASE

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Record-breaking ultra-wide range SmartPirani™ vacuum transducer unveiled

Hellebaek, Denmark, February 5th 2019 - The vacuum industry has always chased and desired to extend the dynamic range of vacuum sensors to minimize vacuum system complexity and reduce the overall cost of vacuum systems. The new SmartPirani™ from Sens4 A/S establishes a new record for obtaining the lowest measuring point for thermal conductivity gauges by extending the measuring range down to 7.5E-7 Torr (1.0E-6 mbar). This is 1-3 decades lower than legacy convection-, wire- and MEMS Pirani sensors and transducers.

"I have worked with product and business development of MEMS Pirani gauges for more than 25 years and the SmartPirani™ is an amazing product, with breakthrough patent pending technology, that we are bringing to the market. It opens new applications for the Pirani gauge and in some applications eliminates the need for cold or hot cathode ionization gauges" said Ole Wenzel, CEO of Sens4 A/S. Ole continues: "We are very excited about our new invention, because the SmartPirani™ not only extends the measuring range, it furthermore establishes unmatched price performance ratio that will make it attractive for many vacuum equipment manufacturers."

In vacuum-based analytical equipment, like electron microscopes and mass spectrometers, vacuum gauges are used to determine the safe pressure for energizing ion sources. It requires a repeatable measurement and vacuum pressure setpoint in the range from 5E-6 to 5E-4 Torr (6.7E-6 to 6.7E-4 mbar) that can be obtained with the SmartPirani™ transducer and thereby eliminating the cost of ionization gauges, hot filaments and magnetic stray fields.

Industrial physical vapor deposition coating applications use vacuum gauges to verify base pressure, control gas compositions and sputtering process pressure. These applications often create particulate contamination that reduces the lifetime and performance of traditional vacuum gauges. The SmartPirani™ is offered with a user-serviceable baffle insert that prevents particulate contamination from reaching the sensor element and thereby extends the gauge lifetime and time between equipment service intervals.

"We have reinvented the Pirani gauge by combining a novel MEMS sensor design with innovative advanced digital signal processing and complex data processing algorithms. As a result, we have achieved a greatly improved measurement resolution and accuracy, together with a revolutionary approach to active compensation of sensor zero-drift caused by ambient temperature variations." said Dr. Caspar Christiansen CTO of Sens4 A/S.

Furthermore, the standard SmartPirani™ transducer has a compact MEMS-based high-resolution precision diaphragm sensor, that eliminates the well-known gas dependency challenges of Pirani gauges in the rough vacuum regime. The additional diaphragm sensor provides gas independent and high-accuracy measurements in the range from 10 mbar to above atmospheric pressure of 900 Torr (1200 mbar).

The SmartPirani™ is based on a cost-optimized, robust build-to-last, stainless-steel product design that will be a real high-performance and ultra-wide range alternative to traditional Pirani, convection and MEMS Pirani vacuum sensors, gauges and transducers.

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Go to the Sens4 website for more information and high-resolution pictures

About Sens4 A/S

Sens4 develops, manufactures, markets and distributes vacuum, pressure and temperature measuring equipment for industrial and scientific applications worldwide. Our products are designed, engineered and manufactured in Denmark to the highest quality standards. Our mission is to continuously endeavor to provide customer centric state-of-the-art measurement solutions.

Our passion | Your value™