VACUUM TECHNOLOGY
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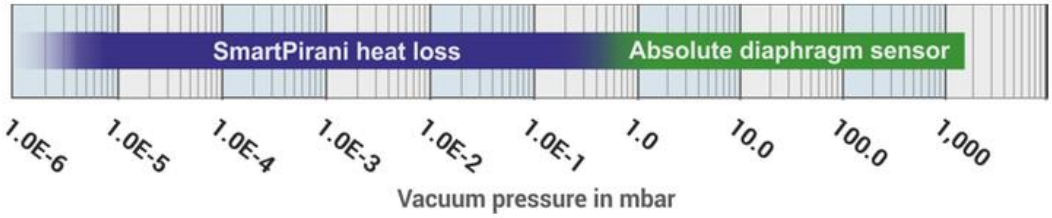
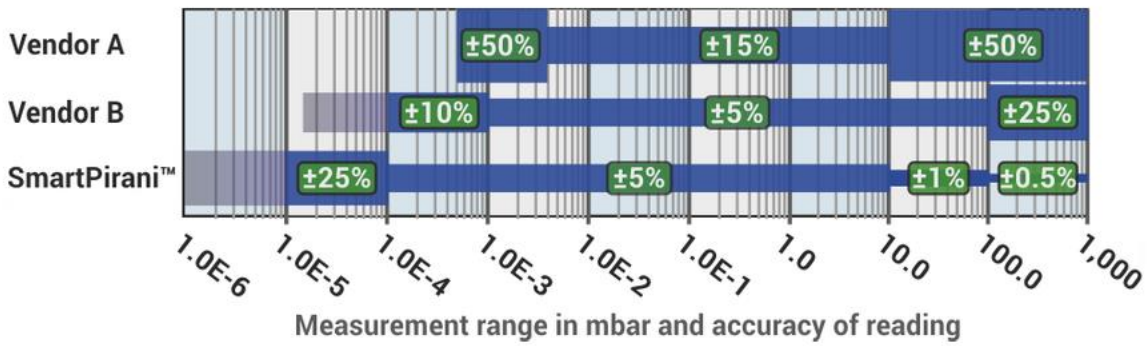
The HVPM-5 SmartPirani™ vacuum transducer based on patent pending technology offers best-in-class performance and has established new performance standards by extending the usable vacuum measuring range for thermal conductivity vacuum gauges by 1-3 decades.

The SmartPirani™ vacuum measurement transducer starts with cutting edge MEMS (Microelectromechanical Systems) sensor technology, combined with a novel precision digital signal processing architecture and advanced innovative measurement algorithm now available at Hositrad. Combined with precision automated manufacturing and calibration processes, this unique product provides uncompromised measurement performance.



SmartPirani measurement range in mbar
The well-known gas dependency in the rough vacuum range of thermal conductivity gauges has been eliminated by integrating a MEMS diaphragm sensor that offers precision performance comparable to more expensive capacitance manometers. This feature ensures more accurate control of vacuum system venting processes and can prevent over-pressurization of the vacuum system**.**

Unmatched range and accuracy
Compared to legacy wire-pirani and MEMS Pirani transducers from other vendors, the basic accuracy and dynamic range of the SmartPirani™ is superior. In certain applications, the ultra-wide measurement range eliminates the need for additional expensive high vacuum ionization gauges**.**



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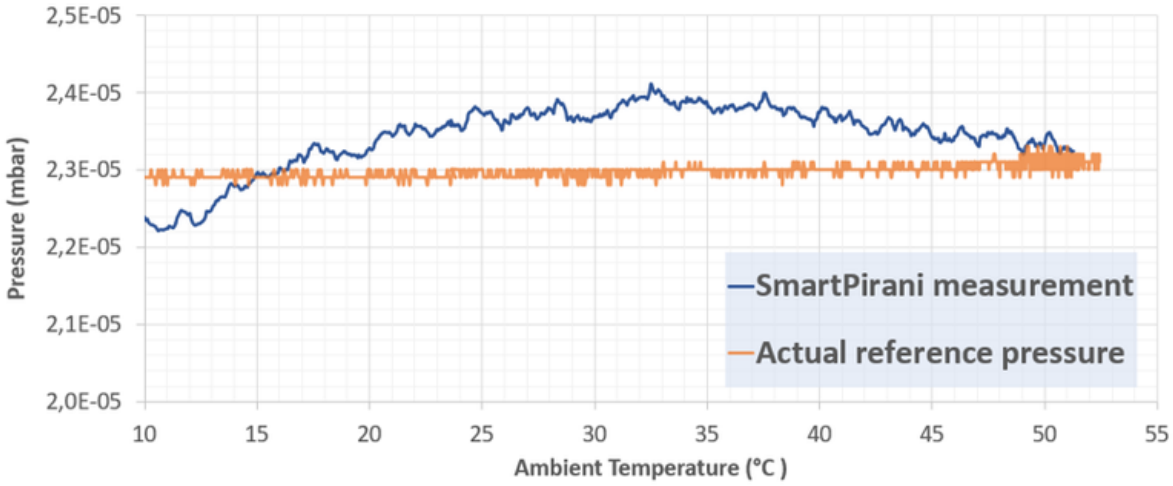
Programmable transducer settings and parameters

Transducer settings and parameters are user-programmable from a PC or smartphone via the innovative S4-Connect™ digital communication interface. Transducers with an RS-232 or RS-485 serial interface can either be configured via the serial interface or the S4-Connect™ interface. The digital interface enables diagnostics, predictive maintenance, service, calibration, setpoint configuration, analog output scaling and acquisition of real-time vacuum pressure measurements for on-screen visualization. The S4-Connect™ USB programmer in combination with the free, intuitive configuration software is a plug-and-play solution for transducer programming, real-time measurements and diagnostics.

StableZero™ drift compensation

The SmartPirani™ vacuum transducer uses an innovative proprietary approach to active temperature compensation and calibration that provides an ultra-stable zero-point. The StableZero™ technology not only enables a reliable, wide dynamic range – it also eliminates the need for frequent user re-zeroing due to zero-point drift commonly known from legacy Pirani and convection gauges. The active StableZero™ temperature compensation also compensates for measurement signal errors introduced by fluctuations in the ambient temperature.



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Controlling vacuum pressure with reliable and robust setpoint relay control
The SmartPirani™ vacuum transducer is available with three independent solid-state switch relays can be used for external control of pumps, valves, safety interlock circuits and other external equipment. The basic control uses on/off regulation with a programmable setpoint and hysteresis value. Each solid-state relay offers both normally closed and normally open contacts.

Compared to electromechanical relays, the solid-state relays offer superior reliability and faster switching time while providing arc-free contacts and generating no EMI (electromagnetic interference) when switching contacts**.**

The SmartPirani™ relays are designed to last and are UL listed, CSA recognized, and EN/IEC 60950-1 certified for maximum confidence when used to control critical vacuum processes and high-cycle applications.

For applications where atmospheric switching functionality is required, like load-lock vacuum systems, the HVPM-7 SmartPirani™ ATM offers the same performance, features and functions as the HVPM-5, but with an additional precision atmospheric switch capability.

Analog voltage output for external readout
Although the SmartPirani™ vacuum transducer holds advanced functionality and smart technology the transducer can be operated as a standalone analog device with supply of voltage and return of measurement signal. The analog voltage output can be configured via the S4-Connect™ or RS-232/RS-485 interface to any arbitrary scaling in the range 0-10 VDC. The analog output scaling feature enables amplified signal in a limited pressure range.

Furthermore, a wide selection of analog output scaling options to emulate vacuum gauges and transducers from other vendors is available.

Customized settings
The SmartPirani™ vacuum transducer can be delivered with a custom configuration to match specific application requirements. Examples of pre-configured options include measurement range, vacuum pressure unit, setpoint configuration and output signal scaling. Customized products will be assigned a unique part number for easy and simple future re-ordering.

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