

## Press release

### Minimal space, maximum applicability

World's smallest piezoresistive, media-isolated pressure sensor – launched by Kistler

Winterthur, April 2022

**Kistler's new 4017A piezoresistive absolute pressure sensor combines excellent measuring features with universal applicability. Thanks to its compactness, innovative design and outstanding media compatibility it is optimal for use in engine development as well as hydraulic and pneumatic applications, in both hot and cold environments.**

Piezoresistive (PR) pressure sensors consist of a silicon-based Wheatstone bridge which changes its electric resistance when exposed to pressure. This PR effect means that the sensing element is free of drift to a great extent – and is ideal for capturing static pressures. The PR pressure sensors can also be used for dynamic pressure measurements due to their ability to capture rapidly changing pressures even in low-pressure ranges. That is why such sensors became a standard choice in automotive applications, where precise measurements in the engine air and fuel path are required – but also for subsystem development such as brakes and cooling applications, that require high precision sensing.

### Very precise measurements including temperature compensation

With the new 4017A, Kistler is taking pressure measurement technology to the next level: the miniature absolute PR pressure sensor has a mounting size of only M5x0.5 and was specifically designed for maximum robustness and accuracy. Its oil-filled measuring cell is media-isolated by a stainless-steel diaphragm and delivers a very high level of media compatibility for both gaseous and liquid media.

With a compensated temperature range from  $-20^{\circ}\text{C}$  to  $+140^{\circ}\text{C}$ , the new sensor can also be used for low-temperature tests. The digital temperature compensation allows a high level of accuracy ( $\leq 1\%$  FSO), even in harsh environments. Sensor health monitoring (operating temperature:  $-40$  to  $+180^{\circ}\text{C}$ ) is possible during measurements, due to the integrated temperature measuring element.

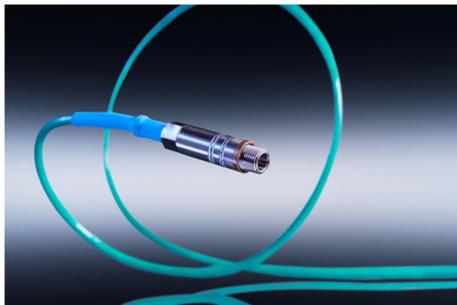
### Applicable with water cooling and in hazardous environments

Its sophisticated design allows for a very high resistance against contamination, along with easy cleaning and maintenance. When applied in high-temperature environments, such as exhaust manifolds, the 4017A can be installed with a water-cooling adapter (deliverable as an accessory

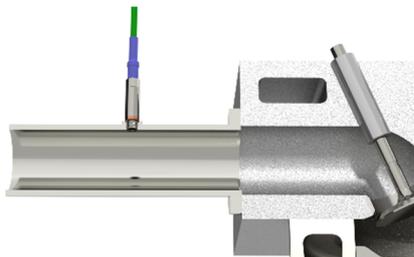
from Kistler). The new media-isolated sensor is available with different measuring ranges for pressures up to 5, 10, 20 or 50 bar. Optionally, it can be delivered with an ATEX certificate (Zone 2) suitable for applications in potentially hazardous areas.

The new 4017A miniature pressure sensor is 100% compatible with its predecessors of series 4005 and 4007. The PiezoSmart technology from Kistler offers automatic sensor identification and eliminates any risk of errors due to manual setup and handling during daily use. The measuring chain can be completed with Kistler's piezoresistive amplifiers of types 4665B (module for SCP, KiBox1), 4667A (module for KiBox2) or 4624A (stand-alone one-channel unit).

### Image material (please name the Kistler Group as picture source)



Kistler's new 4017A piezoresistive absolute pressure sensor is the world's smallest media-isolated pressure sensor and delivers outstanding accuracy even under harsh conditions.



Due to its digitally compensated temperature range down to  $-20^{\circ}\text{C}$  (operating temperature down to  $-40^{\circ}\text{C}$ ) the new 4017A miniature pressure sensor can be used for low-temperature tests with almost any medium.

### Media contact

Suzanne Graeser Bieri  
Head of Marketing  
Tel.: +41 52 2241 469  
Email: [suzanne.graeserbieri@kistler.com](mailto:suzanne.graeserbieri@kistler.com)

### About the Kistler Group

Kistler is the global market leader for dynamic pressure, force, torque and acceleration measurement technology. Cutting-edge technologies provide the basis for Kistler's modular solutions. Customers in industry and scientific research benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes to secure a sustainable competitive edge. Unique sensor technology from this owner-managed Swiss corporation helps to shape future innovations not only in automotive development and industrial automation but also in many newly emerging sectors. Drawing on our extensive application expertise, and always with an absolute commitment to quality, Kistler plays a key part in the ongoing development of the latest megatrends. The focus is on issues such as electrified drive technology, autonomous driving, emission reduction and Industry 4.0. Some 2,000 employees at more than 60 facilities across the globe are dedicated to the development of new solutions, and they offer application-specific services at the local level. Ever since it was founded in 1959, the Kistler Group has grown hand-in-hand with its customers and in 2021, it posted sales of mCHF 411. About 7% of this figure is reinvested in research and technology – to deliver better results for every customer.