

Media release

Kistler presents world firsts at Sensor + Test 2017

Measuring equipment for sophisticated T&M applications

Winterthur, 11 April 2017 – Kistler presents innovative world firsts in testing and measurement technology at this year's Sensor + Test in Nuremberg. In addition to the first quasi-static measuring charge amplifier with integrated data acquisition LabAmp 5167A, Kistler is also showing a 6-component force/torque sensor for direct measurements. For general T&M applications, Kistler experts will demonstrate the user-friendliness of the new pressure sensor range 601C – based on PiezoStar® Crystals – the 603C range, the torque sensor KiTorq 4550A as well as the waterproof acceleration sensor family.

Kistler is the global leader and biggest supplier of piezoelectric measurement technology used every day in measurement, testing, research and development laboratories all over the world. As an innovation driver Kistler is constantly looking for options that make products even more powerful, versatile and application-oriented. "Sensor + Test has been one of the most important trade fairs for Kistler in the area of sensors and signal conditioning for years. For instance we presented our charge amplifier LabAmp 5165A for the first time there in 2014. This year we are expanding the LabAmp range with the LabAmp 5167A, being the first quasi-static multi-channel charge amplifier with integrated data acquisition", says Manuel Blattner, head of the strategic business field Test & Measurement at Kistler.

New, quasi-static measuring charge amplifier with data acquisition solution

Kistler is presenting the LabAmp 5167A for generic measurement applications with piezoelectric sensors in laboratory environments for the first time in 2017. This signal conditioner is the first of its kind to offer data acquisition capability together with impressive application versatility for single axis and multi axis force measurements. Its powerful digital signal processing enables perfectly coordinated filters and convenient aggregation of individual signals. The integrated data acquisition provides flexibility and simplifies the measuring chain. With synchronization using PTP (Precision Time Protocol) Kistler has created a new and attractive option for recording signals from multiple devices synchronized in the network. No additional devices or special cables are required for synchronization - only the existing Ethernet cables. "With the 5167A we have developed both an outstanding charge amplifier and a solution focused on the customer. In addition to relevant technical improvements such as larger charge ranges, lower noise levels and more flexible filters, the integrated data acquisition simplifies the measuring chain and also enables direct integration into the customer's software environment – whether with LabVIEW™ or another programming language such as C#", explains Martin Stierli, product manager for signal processing at Kistler. The LabAmp 5167A has a user-friendly interface. No additional software installations are required as a result of using a standard web browser, and the device is available for precise measurements on an ad-hoc basis.

New piezoelectric 6-component force/moment sensor

Kistler is presenting at the Sensor + Test the first piezoelectric 6-component force/ moment sensor for highly dynamic signals over a large measurement range. It is capable of

measuring three forces and three moments precisely, directly and without calculations. It allows also the capability of setting the moment range independently of the force range. Very small moments and forces can be reliably measured with high static preload thanks to the piezoelectric measurement principle. "We developed the 6-component force/ moment sensor based on a technological innovation from our research and development team. It can be used for instance to check components such as springs, for transfer path analyses in the automotive industry, in robotics or for wind tunnel applications in aerospace", says Christof Sonderegger, product manager at Kistler. The connector technology also enables very easy cable installations. The 6-component force sensor is more compact compared to a piezoelectric dynamometer and is perfect for use with the Lab-Amp 5167A charge amplifier.

The new 601C and 603C piezoelectric pressure sensor series

As a result of its high level of sensitivity the generic miniature pressure sensor series 601C is suitable for a number of applications where the focus is on the smallest pressure pulsations. The sensor containing home-grown PiezoStar® Crystals also permits a maximum usage temperature of up to 350°C. The strengths of the quartz-based 603C series on the other hand relate to the high natural frequency of 500kHz and its ability to measure high dynamic pressure of up to 1000 bar. Both pressure sensor ranges have both a charge and voltage output (IEPE).

Waterproof acceleration sensors up to 16 bar

Kistler is launching the first portfolio of waterproof acceleration sensors onto the market which meets the specific extreme pressure and depth metre requirements for underwater applications. The product range for instance permits sensors to be used for the first time in underwater tests of up to 100m in depth with protection class IP68, and at the same time guarantees precise measurements without impacting the behaviour of the structure to be tested. The smaller and lighter acceleration sensors for universal use are waterproof to 16 bar and are used primarily in the areas of marine, energy production and construction engineering.

KiTorq 4550A: Sensor Technology for Maximum Precision

Another milestone is the KiTorq 4550A with angle sensing to enable determination of torque, speed or rotation angle with exceptionally high resolution (up to 8192 pulses per revolution). The number of pulses can be freely adjusted to the requirements. The torque measuring flange system consists of a measuring element, the KiTorq rotor and a torque evaluation unit (the KiTorq stator). With a suitable selection of components for test benches, the system offers flexibility for manufacturers of electrical motors and combustion engines, transmissions, pumps and compressors: the ringless stator enables the use of different measuring elements without having to rebuild the test setup.

Kistler innovation up close

Visit us at Sensor + Test in Nuremberg between 30 May and 1 June 2017 at Booth 411 in Hall 1 and learn more first hand from Kistler experts about the testing and measurement technology of the future.

Kistler Gruppe

Eulachstrasse 22
8408 Winterthur
Schweiz

Tel. +41 52 224 11 11
Fax +41 52 224 14 14
info@kistler.com

ZKB Winterthur BC 732
Swift: ZKBKCHZZ80A
Konto: 1132-0374.628

IBAN: CH67 0070 0113 2003 7462 8
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Image caption 1:
The Kistler LabAmp 5167A provides impressive flexibility for quasi-static measurements with piezoelectric sensors



Image caption 2:
Kistler 6-component force/torque sensor Type 9306A

Contacts for users

Manuel Blattner
Head of Strategic Business Field
Test & Measurement
Tel.: +41 52 2241 273
E-Mail: manuel.blattner@kistler.com

Media contact

Silvy McGuinness
Divisional Marketing Manager
Tel.: +41 52 2241 258
E-Mail: silvy.mcguinness@kistler.com

About the Kistler Group

Kistler is the market leader in dynamic pressure, force, torque, and acceleration measurement. Cutting-edge technologies provide the basis for Kistler's modular systems and services.

Customers in industry, research, and development benefit from Kistler's experience as a partner, enabling them to optimize their products and processes so as to secure sustainable competitive edge. Kistler plays a key role in the evolution of automobile production and industrial automation. Drawing on its vast application expertise – and always with an absolute commitment to quality – Kistler drives innovations ahead in areas such as light-weight construction, vehicle safety, reduction of gas emission, and Industry 4.0.

The Kistler Group is an independent, owner-managed Swiss corporation. More than 1 600 employees at 58 facilities worldwide are dedicated to the development of new measurement solutions, backed by individual application-specific support at the local level. Ever since Kistler was founded in 1959, the company has grown hand-in-hand with its customers. In 2016, it posted revenue of USD 364 million, about 10% of which is reinvested in innovation and research – with the aim of delivering better results for every customer.

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Eulachstrasse 22
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Tel. +41 52 224 11 11
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