

Press release

Kistler at automatica 2022: comprehensive range of needs-oriented solutions for Smart Factories

Joining, measuring and process monitoring systems for industrial manufacturers

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From components, comprehensive software solutions and service concepts to automated complete solutions: the Kistler Group will showcase its wide-ranging portfolio of joining, measuring and process monitoring systems at this year's automatica exhibition in Munich from 21 to 24 June. At booth 205 in hall B5, the company will be unveiling a number of new products: two electromechanical joining modules – the NCFC and NCFE 2/5 – along with the 9132CD piezoelectric force transducer. Visitors to the booth can also discover the many facets of Kistler's software offering. The focus will be on one theme above all others: the journey to the Smart Factory, driven by digitalized processes.

Automated production has to meet ever-higher requirements if it is to overcome tomorrow's challenges – but at the same time, needs differ greatly from one company to the next. Some manufacturers have largely digitalized their processes already; others are seeking solutions that can be integrated as a perfect fit for their production lines so they can continue their journey towards the Smart Factory. Kistler offers an extensive portfolio of products to accommodate all these different requirements. The range includes complete solutions from one single source, comprising sensor technology, hardware and software: everything needed to generate process data and capture it in the cloud, followed by analysis, visualization and documentation. Kistler also offers modular components that open the way to targeted improvements of individual steps along the value chain.

Electromechanical joining systems: the key to transparency and resource efficiency

Visitors to Kistler's booth at automatica can witness a live demonstration of the benefits of electromechanical NC joining modules. High-precision measurement data available at any time gives users the benefits of enhanced transparency and control. Also, because of their high efficiency, electromechanical systems consume far less energy than conventional hydraulic and pneumatic systems. With this technology, manufacturers in the automotive and medtech industries as well as many other sectors can make their production processes cost-efficient and reduce their carbon footprint.

The same can be said of the new NCFC joining module that will be on show in Munich: developed specifically for the clinching process, this servoelectric joining system connects parts with high precision and optimal energy efficiency, eliminating the need for additional components such as bolts or rivets. The new joining module features a compact, lightweight design that makes it ideal for use with robots and stationary or mobile portals.

Kistler will also showcase the new advanced version of its NCFE 2/5 joining module, which can even measure small nominal forces of 2 kN and 5 kN. This extension of the lower measuring range enables plant engineers to implement simple but cost-sensitive processes with maximum efficiency. As with all joining modules in the NC series, the NCFE 2/5 includes an interface for the maXYmos NC monitoring system – allowing straightforward integration of this compact and resource-efficient module into the process environment.

maXYmos: real-time monitoring of joining and assembly processes

The maXYmos process monitoring system correlates force signals with displacement information. This real-time information opens the way for users to monitor and assess the quality of each individual production step. Kistler is also consistently driving the development of its maXYmos system ahead with the focus on Industry 4.0, so that digitized measurement data and results can be forwarded directly to higher-level systems via OPC UA. Version 1.8 – available as from summer 2022 – will give users a host of new functions: maXYmos NC will then be able to configure two sensors – the servo, and an external displacement sensor for channel X – and visualize them in one view (second curve). As an added benefit, the extended audit trail functionality provides transparent, manipulation-proof documentation of all changes to the maXYmos settings and stores them on the device.

New 9132CD piezoelectric force transducer: able to measure even the smallest forces

Designed mainly for high-precision measurements of small forces where installation space is severely limited: the new 9132CD piezoelectric force transducer reacts rapidly to changes in forces, thanks to the highly sensitive piezoelectric crystal developed and grown by Kistler itself. What's more: the 9132CD sensor is nine times more sensitive than conventional slimline sensors. And with the help of its integrated, highly flexible connecting cable, it can be used under challenging conditions – in semiconductor production and 3C applications, for instance. Cyclical and quasistatic measurements over periods of several minutes are possible in these situations – even for extremely small tensile and compression forces of 0.5 N.

Charge amplifiers offer digital process control

Kistler is making yet another contribution to the Smart Factory with its industrial measuring amplifiers. Kistler is the only manufacturer in the world to offer the possibility of converting measurement signals

from piezoelectric sensors directly into digital data – thanks to diCA (industrial Ethernet technology) and miCA (IO-Link technology). IO-Link technology supplies real-time data for condition monitoring of systems and measuring chains, thus building the bridge between analog and digital communication technologies. Users enjoy multiple benefits: highly rigid and dynamic piezoelectric measurement technology, digital data that is immune to interference, and end-to-end communication through to sensor level.

Another highlight at automatica: torque sensors in the KiTorq series. As flange sensors, these models are mainly used for electric motor tests in the automotive industry. The sensors have integrated fieldbus interfaces such as PROFINET and EtherCAT and connect to the OPC UA-compatible maXYmos TL process monitoring system. Due to these features, users can easily connect sensors with machine controls, thus enabling networking with higher-level management systems.

Modular Smart Single Stations perform precise process steps and test quality

Visitors to Kistler's booth can experience the company's Smart Single Stations (SSTs) at first hand. These stations are individually adaptable, turnkey assembly and testing systems: a complete modular solution that combines components and systems with advice from Kistler's experts. As well as performing high-precision process steps and testing products, the SST helps customers to cut their production costs, boost the quality of products and processes, and use resources economically.

Software solutions open up more scope for data analysis and central data management

Kistler is also continuing to broaden its offering of software solutions. A dedicated team of software and integration experts are working to develop complete solutions, including sensors and data acquisition units as well as information solutions that support decision-making. These solutions can be adapted to customers' requirements and are suitable for use both as standalone applications and in a wider IT context. Users can take advantage of the software in many ways: to obtain detailed insights into production data, for example, or to monitor overall trends in entire production batches. In this field, the cornerstones of Kistler's range are its jBEAM analytical software and the MaDaM solution for measurement data management – products that have been established for many years in the R&D sector – together with the newly developed AkvisIO production data solution.

Joining Competence Center offers all-round advice – and a test workstation

With support from Kistler's Joining Competence Center – featured at automatica – customers can take advantage of a test workstation to perform and test various joining processes with electromechanical joining systems, even before their system is planned and commissioned. This gives them the opportunity to validate and optimize their assembly and testing processes. In addition, Kistler's experts offer comprehensive advisory support and a range of services such as turnkey

installation of joining and process monitoring systems, as well as assistance with preventive maintenance issues. Regular inspections, maintenance and calibrations can minimize downtime and error rates ahead of time.

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



The new NCFC from Kistler is an exceptionally compact, lightweight servoelectric joining system that is optimized for clenching and riveting applications.



The newly expanded NCFE 2/5 joining module is especially suitable for simple joining processes, and it can also measure forces in the **2 kN** and **5 kN** ranges.



Nine times more sensitive than conventional slimline sensors: the 9132CD piezoelectric force transducer.



Analog, digital – and digital with IO-Link technology and the option of analog operation: charge amplifiers from Kistler are designed to meet the most diverse requirements.

Smart Single Stations are turnkey modular assembly and testing systems based on components and systems from Kistler. They help to cut production costs, boost quality and conserve resources.



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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 so as to secure 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 – with the aim of delivering better results for every customer.