

## Press release

### **Kistler at K 2022: sensor technology – data analysis – quality assurance**

Swiss solution provider showcases innovations for smart and sustainable plastics processing

Winterthur, September 2022

**At K 2022, the world's largest trade fair for the plastics industry from 19 to 26 October in Düsseldorf, [Kistler](#) (hall 10, booth F51) will showcase its extensive portfolio of measurement, analysis and testing solutions – ranging from sensors and data analysis to 100-percent quality assurance. The Swiss solution provider lives up to its claim – "measure. analyze. innovate." – by acting as a strong partner for the plastics processing industry throughout the value chain.**

More energy-efficient production, less scrap and greater use of recycled material in the manufacturing process: these are the critical adjustments that will enable the plastics industry to satisfy customers' ever-louder demands for sustainability. Thanks to solutions from Kistler for cavity pressure and temperature measurement in the mold, manufacturers can keep track of the entire injection molding process: the key to optimizing production – with the smart factory as the ultimate goal.

#### **Comprehensive portfolio of sensors for cavity pressure measurement**

After pressure, the temperature in the mold is the most important process parameter. In-mold sensor technology guarantees more reliable detection of anomalies in mold temperature conditioning, flow fluctuations and blocked cooling channels. At K 2022, Kistler is unveiling its new Type 2205B temperature amplifier. It can be used flexibly to amplify signals from a varied range of thermocouples and relay them to the ComoNeo process monitoring system. The new temperature amplifier is suitable for operation in combination with thermocouples of types J, K and N from Kistler. It offers a wide variety of extended functions and greater flexibility in use than its predecessor model. Also available: a version with eight input channels that can be used individually. The new temperature amplifier has the same dimensions as its predecessor, so it can be installed wherever the older model was already in use.

Alongside conventional mold temperature sensors, thermocouples 6196A, 6197A and 6198A feature an exceptionally wide measuring range from 0 to 400°C. Thanks to their short response times, they guarantee highly reliable detection of deviations in the process such as flow fluctuations or blocked cooling channels.

Another innovation to be showcased by Kistler is the new 4004A pressure sensor for hot runner applications and additive manufacturing. With an operational and measurement range of up to +350°C, this piezoresistive sensor can be deployed directly on the hot runner injection nozzles, opening the way to precise characterization of these injection molding processes in the future. This ultra-compact sensor has a frontal diameter of only 3 mm and is available with three measuring ranges (500, 1,000 and 2,500 bar). In addition, it includes TEDS and can be connected via an adapter to as many as three additional sensors to create one measuring unit.

The 9239B cavity pressure sensor also comes with some new features: this exceptionally small and highly sensitive sensor is especially suitable for use in optical component production, and also in decorative applications where no markings are permitted on the surface of the parts. Thanks to its high sensitivity, the 9239B can detect even the smallest pressures through the closed mold wall.

### **Support with installation and commissioning**

Kistler offers [service solutions](#) for the installation and commissioning of its sensors. An extensive risk analysis based on simulations (FMEA: Failure Mode and Effects Analysis, or DQ: Design Qualification) prior to mold construction provides maximum certainty regarding sensor positioning and development of a quality assurance concept.

After the mold is produced, Kistler experts offer Mold Validations I and II as part of their mold verification service covering the installation of sensors, cables and connections; a functional guarantee is provided on completion of the service. As an option, the company's experts can also provide support for commissioning of the processes – assisting, for example, with defining optimal monitoring parameters and forming a reference curve.

### **Quality and sustainability thanks to intelligent process monitoring**

Given the increasing use of recycled materials in the manufacturing process, the role of process control systems is becoming more important as time goes on. This is because the bandwidth of rheological properties is greater for recycled materials than for new products – so plastics processors must be able to react more flexibly to changes in materials, no matter how small. Kistler's [ComoNeo](#) process monitoring system for integrated injection molding production offers support here: it evaluates the process data collected by means of cavity pressure and temperature sensors to enable accurate monitoring of the injection molding process.

The latest version (4.1) offers users even more functions than before: monitoring of the pressure curve in all cavities is now much more precise thanks to an envelope curve adapted to the process. What's more, the new version of ComoNeo has WLAN capability for the first time and comes with additional interfaces. Just in time for this year's K, another update for the system is now available: version 5.0 offers numerous

new features to optimize the injection molding process. In addition to export and communication interfaces, the system now offers upgraded hot runner balancing (thanks to ComoNeoMULTIFLOW) and EUROMAP 82.2, the latest communication standard.

ComoNeoPREDICT, the online quality prediction system, also enables manufacturers to optimize the injection molding process with the help of artificial intelligence. On the basis of the current cavity pressure profile, the system allows reliable statements about every manufactured part, thus making it possible to optimize the machine settings – the key to maximizing quality and process stability.

The company will also showcase the new ComoScout at K 2022: as opposed to the familiar ComoNeo, this system does not measure cavity pressure but instead monitors voltage signals from the injection molding machine and from sensors with voltage signals of up to 10 V. Monitoring of machine parameters such as these opens up a new range of applications to manufacturers who were previously hesitant about investing in process monitoring, helping them to stabilize their production processes and reduce scrap.

### **Software solutions open up new possibilities for production**

Alongside these innovations in sensor technology and data acquisition, Kistler is also continuing to broaden its software range. Solutions from Kistler are capable of recording process and machine data in real time. Linking all process data acquired in this way allows faster detection of deviations in the parameter curve for the injection molding process, so their causes can be eliminated promptly. On this basis, for example, the AkvisIO software can be used to manage, analyze and ultimately archive the acquired data.

### **100-percent optical quality testing for the production of injection-molded plastic parts**

Together with process monitoring, quality inspection at the end of the injection molding process is a major step in assuring 100% quality. Kistler offers complete, customized optical systems including serialization, sorting and batching: a range of high-end solutions for comprehensive, end-to-end testing of the dimensions and attributes of injection-molded parts.

The combination of cavity pressure monitoring and optical inspection solutions gives rise to a complete portfolio of process and quality assurance solutions for the production of complex injection-molded parts.

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

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	<p>The exceptionally small and highly sensitive 9239B cavity pressure sensor is especially suitable for use in optical component production, and also in decorative applications.</p>
	<p>The new Type 2205B temperature amplifier offers a wide variety of extended functions and greater flexibility in use than its predecessor model.</p>
	<p>The ComoNeo process monitoring system features numerous modular functionalities for all-round optimization of the injection molding process. And just in time for K 2022, an update with a varied range of new features is available for the system.</p>
	<p>As opposed to the familiar ComoNeo, the new ComoScout system does not measure cavity pressure but instead, monitors voltage signals from the injection molding machine and from sensors with voltage signals of up to 10 V.</p>
	<p>With its variable camera systems, test modules and complete solutions that include sorting and batching, Kistler offers diverse options for comprehensive end-to-end inspection of injection-molded parts. The KVC 821 automatic rotary plate testing system, for instance, is suitable for attributive surface inspection as well as precise testing of individual parts.</p>

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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.