

Press release

KiXact from Kistler – the first technology to automatically calculate measurement uncertainty

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As global market leader in dynamic measurement technology, [the Kistler Group](#) is proud to announce the launch of KiXact. This is the first technology that enables measurement uncertainty to be reliably and automatically calculated and interpreted intuitively by the user. Up to now, for reasons of time or cost, many measurement engineers have completely dispensed with determining measurement uncertainty. This is because the calculations are complicated and time-consuming, and the results often difficult to evaluate. With KiXact, Kistler is now offering a solution that makes it much easier for users to deal with the uncertainty of measurement.

Kistler has been supplying engineers, researchers and measurement technicians with the appropriate technology for demanding measurement tasks for decades. Based on this wealth of experience, the company has succeeded in developing a simple, precise and fast solution for calculating measurement uncertainty. As part of the [KiDAQ](#) data acquisition system, the KiXact technology automatically calculates measurement uncertainty. The results can be analyzed using the KiStudio Lab software provided. External influencing factors such as ambient temperature and humidity for the respective measurement are stored in the program and included in the KiXact calculation. Because Kistler supplies the complete measurement chain, KiXact is already optimally adjusted to the relevant setup and associated sensors.

KiXact thus offers customers from different areas an uncomplicated solution and can deliver more than just a tolerance interval. The analysis recognizes early which factors in the measurement chain are influencing the measurement, giving operators the opportunity to adjust parameters accordingly. This results in more meaningful measurements of higher quality and with less uncertainty.

Uncertainties are relevant for every measurement

An uncertainty of measurement is not an exception – every measurement result in research and industry is associated with a certain degree of inaccuracy. Even small fluctuations in the ambient

temperature can lead to deviations that make the result unreliable and unusable. Whenever decisions are based on a measurement result, it is important to have an indication of the quality. Thus the knowledge of the respective measurement uncertainty is indispensable in achieving meaningful results.

The more components the measurement chain contains, the more complex the determination of uncertainty becomes, as every potential influencing factor needs to be taken into account. Up to now, it has been necessary to review the respective data sheet for each possible source of uncertainty, check individual specifications and – in addition to external influences – include them in the calculation. Both the calculation itself and the subsequent evaluation of the data require extended specialist knowledge and a great deal of experience. This procedure requires a considerable effort. To keep the measurement processes economical and manageable on the one hand, in many cases generous assumptions are made or the calculation of the uncertainty is even omitted completely. On the other hand, if an excessive allowance is made for the uncertainty, this has a negative influence on the cost-efficiency of the entire process. Where measurement uncertainty can be reliably determined, tolerance limits can be defined more narrowly and the process is more efficient as a consequence.

“Research results are only valid if they are based on precise and, above all, reliable measurement results. In this respect, KiXact can help ease the burden on the research budget”, explained Michael Laufer, Product Manager DAQ Systems at Kistler. “In production contexts, we see the principle advantage of KiXact in optimizing processes by incorporating measurement uncertainties faster and without complicated formulas. If you have the issue of measurement uncertainty under control, you will get better results.”

The KiDAQ data acquisition system

The KiDAQ data acquisition system is modular in terms of both hardware and software. Kistler offers a wide range of measurement modules as well as various analog and digital inputs. The modules are available in three different housing variants. As a result, they offer the user maximum flexibility for every measurement task. Multiple measuring devices can be combined and are precisely time-synchronized. Furthermore the measurement platform based on cloud-technologies enables extensions for future applications, even through partner companies.

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In combination with the KiStudio Lab software, KiXact makes the calculation and evaluation of measurement uncertainty simple and reliable.



High-quality measurements combined with maximum flexibility: KiXact is part of Kistler's data acquisition system KiDAQ.

KiXact stands for reliable measurements.



Media contact

David Stucki
Divisional Marketing Manager
Tel.: +41 52 2241 258
Email: david.stucki@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 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 2 200 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 2018, it posted sales of CHF 475 million. About 8% of this figure is reinvested in research and technology – with the aim of delivering better results for every customer.