

Press release

Slim, sensitive and flexible

New SlimLine force sensor from Kistler monitors semiconductor production

Winterthur, ~~September~~October 2021

Kistler has launched the new SlimLine force sensor 9132CD, a force transducer that is nine times more sensitive than comparable SlimLine sensors. It comes with a new, highly flexible and durable connecting cable. This makes it ideal for the high-precision measuring of low forces where constructional space is limited, as in semiconductor and 3C applications.

In increasingly complex production environments, the demands on process control are also rising. Precise process control is the key and, over the past years, piezoelectric dynamic force measurement has proven to be a highly efficient method for monitoring, controlling and optimizing production processes, especially where applied process forces are a critical factor.

When rigidity meets flexibility

Two unique features of the new 9132CD SlimLine sensor meet the requirements for force measurement in complex manufacturing processes, namely the piezoelectric material and the flexible connection cable. The piezoelectric material at the heart of the 9132CD is a special crystal developed and grown from Kistler at its headquarters in Winterthur, Switzerland. Like the traditional quartz material, its rigidity makes it highly responsive to rapid force changes. But its sensitivity of 35 pC/N makes it nine times more sensitive than current SlimLine sensors. As a result, it can measure even the smallest, highly dynamic force changes with very high accuracy.

Yet a sensor is only as good as its connecting cable. In demanding production environments, the connecting cable may be under a lot of stress and become a vital factor in production speed. This happens when the sensor is placed, for example, in a rapidly moving pick and place station with very short cycle times. Should a cable break, production would be stopped and there would be downtime for the duration of the cable replacement. The 9132CD answers this challenge with an integrated highly flexible connecting cable that can withstand at least 10 million cycles in the drag chain under a bending radius of 30mm.

A small giant

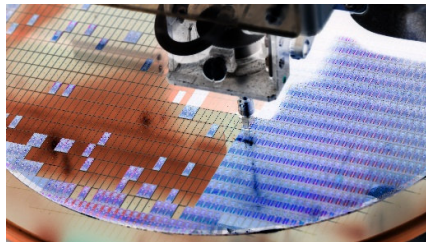
Due to these features and its small, lightweight design, the 9132CD SlimLine force sensor is suitable for many demanding fields of application. Besides measuring forces on automatic assembly plants

and pick and place stations, the sensors can be used in chip bonding machines in the semiconductor industry, intricate joining processes in the medical sector or for contact measurements of keys, switches and relays. “We identified a requirement in the market where lowest forces need to be measured in highly dynamical processes in very small places. Combining existing concepts, such as the design of our SlimLine C series, with the new crystal first employed in the high sensitivity sensor 9323AAA, we were able to solve the problem. This is a typical example how we drive innovation at Kistler,” says Stefan Schaefer, product manager at Kistler Group.

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



Measuring just 12 millimetres in diameter, the new SlimLine sensor 9132CD from Kistler is nine times more sensitive than current SlimLine sensors.



Semiconductor production processes including die sorting or flip chip bonding will benefit from the new SlimLine sensor 9132CD from Kistler.



Kistler has developed and grown its own crystal to replace traditional quartz for the most challenging piezo dynamic force measurement applications.

Media contact

Kristina Palffy
Marketing Campaign Manager
Tel.: +42 12322 72655

Email: kristina.palffy@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 2,000 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.