KISTLER
measure. analyze. innovate.

Press release

Breaking new ground with fiber optics

Kistler launches 2071A FSI fiber optic sensor for high-speed strain measurement

Winterthur, September 2026

The new 2071A FSI optical strain sensor array from Kistler – FSI stands for Fiber Segment Interferometry – is a robust, non-invasive and easy-to-install fiber optic sensing solution for demanding applications and harsh test environments. It requires minimal space, is extremely lightweight and immune to electromechanical interference, and it can be customized to a high extent.

Measurements become especially challenging when strain changes are both very small and highly dynamic. In vibration analysis, impact testing and acoustic emission monitoring, the measurement system must capture fast events without adding mass or stiffness that could influence the test structure. This combination of measurement speed, precision and minimal sensor influence is essential in applications ranging from shock tube and passive safety testing to battery development and structural health monitoring.

Fiber optic sensing system for highly dynamic measurements

For such purposes, Kistler has recently launched a new fiber optic sensing solution, the 2071A FSI strain sensor array. It is based on Fiber Segment Interferometry (FSI), a measurement technology that works by detecting phase shifts in reflected light in each of the sensor segments. The new optical strain sensor can be customized with up to 22 segments per sensor and segment lengths between 8 and 200 mm.

"With the 2071A, we provide our customers with a compact and flexible fiber optic sensing solution that delivers both high precision and outstanding dynamic performance," says Teresa Mueller, Business Development Manager at Kistler. “Thanks to a resolution down to 20 nε, a dynamic range of up to 10,000 με and sampling rates up to 410 kHz, the system combines detailed spatial strain data with high measurement speed.”

Non-invasive optical strain sensor, immune to electromagnetic interference

With a sensing section diameter of only 155 µm, the 2071A requires minimal installation space and can be bonded directly to the test structure without influencing its behavior. The fiber optic sensing system is dielectric, extremely lightweight and intrinsically immune to electromagnetic interference,

Kistler Group
Eulachstrasse 22
8408 Winterthur
Switzerland

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

making it ideally suited for applications where conventional sensors are difficult to use or where space and weight are critical factors.

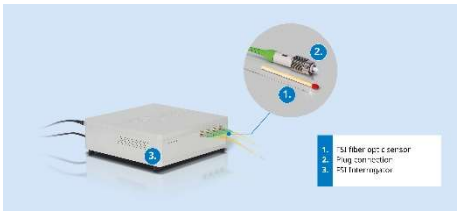
The optical strain sensor is designed for use across a wide temperature range from –55°C to 300°C, enabling deployment in harsh environmental conditions. The measuring chain is completed with the 2549A FSI Interrogator, the data acquisition system including the Kistler Cockpit software. Overall, this fiber optic sensing solution supports sampling rates of up to 410 kHz, allowing even very fast transient strain events to be captured with high fidelity.

Various FSI measurement solutions available from Kistler

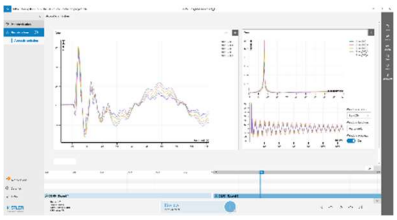
Fiber optic sensing is breaking new ground in measurement technology, enabling applications that were previously ineffective or even impossible. Together with the 2069A temperature sensor and the 2073A shape sensor, the new 2071A strain sensor is part of Kistler's innovative FSI portfolio. All sensors are supported by a single data acquisition system: the 2549A FSI Interrogator.

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

The fiber optic sensing element (below the firestick, above is the connector) of the new 2071A from Kistler is extremely lightweight (<1 g/m) and has a diameter of only 155 µm (0.155 mm).



The measuring chain of the new fiber optic sensing solution from Kistler is completed with the 2549A FSI Interrogator, which serves as light source, photo detector and data acquisition system (DAQ).



Dynamic strain analysis with Kistler Cockpit: Signals from multiple sensing segments of the 2071A are visualized and compared in the time and frequency domains, providing a detailed view of transient events and structural response.

Kistler Group
Eulachstrasse 22
8408 Winterthur
Switzerland

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

KISTLER
measure. analyze. innovate.

Media contact

Kristina Palffy
Senior Marketing Campaign Manager
Tel.: +4212 322 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 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 2025, it posted sales of 424 million Swiss francs. About 9 percent of this figure is reinvested in research and technology – with the aim of delivering innovative solutions for every customer.