

Press release

High performance and connectivity for strain gauges

Kistler introduces industrial strain gauge amplifier with analog output and IO-Link interface

Winterthur, May 2025

Unlock the full potential of strain gauge sensors with the new 4709A from Kistler – a high-performance strain gauge amplifier designed for industrial environments. For the application of load cells and torque or pressure sensors, this compact and robust measuring amplifier delivers highly accurate and low-noise signal processing, ensuring reliable results in even the most demanding environments.

Strain gauge sensors are widely used in a variety of industrial applications, such as quality control in manufacturing, robotic force measurement, material testing, and torque and pressure monitoring. To provide customers with a state-of-the-art device for the integration of strain gauge sensors, the Kistler Group has launched the new 4709A strain gauge amplifier with an integrated IO-Link interface. It offers plenty of new features and additional benefits tailored to smart factories and digital manufacturing.

High-accuracy, low-noise strain gauge amplifier

The 4709A strain gauge amplifier from Kistler features a 24-bit ADC resolution and an 8 kSps sampling rate, enabling it to capture measurements with great precision. Its high resolution reduces signal distortion and ensures reliable data collection, even when measuring extremely small signal variations from strain gauges. Thanks to the amplifier's low-noise design, users get clean, stable signals, which minimizes errors and improves overall measurement quality.

Flexible analog output and digital IO-Link output

Designed for versatility, the strain gauge amplifier offers both analog output and a fully integrated IO-Link interface. The analog output ensures compatibility with conventional monitoring systems, while IO-Link connectivity enables direct integration into modern industrial networks, enhancing real-time data transmission and automation. Its dual-output capability makes the measuring amplifier an ideal bridge between legacy and Industry 4.0 systems.

Smart signal conditioning and processing features

The strain gauge amplifier is equipped with multiple signal processing features to optimize performance. These include selectable low-pass filters to reduce high-frequency noise, a peak value memory to record high measured values such as force spikes and mechanical stress, and a sample-and-hold functionality that allows the amplifier to store a measured signal at a specific moment – for example to prevent fluctuations and ensure consistency in fast-changing applications.

Strain gauge amplifier with remote operation and customization via IO-Link

Thanks to its IO-Link compatibility, the strain gauge amplifier can be fully parameterized remotely, allowing users to adjust settings without physical access to the device. Users can configure parameters such as process input units (N, kg, etc.) and alarm state configurations (alert triggers, thresholds, etc.). Two digital switching points are available on the device to control external systems based on sensor signals.

High durability, advanced diagnostics and safety functions

Protected by an IP65-rated aluminum housing, the strain gauge amplifier is designed to withstand harsh industrial environments. Its rugged construction makes it resistant to dust, moisture and extreme temperatures (–40°C to 85°C). The 4709A comes with built-in error detection and self-diagnostics, and it alerts the user via IO-Link in the event of anomalies. Additionally, the new measuring amplifier features short-circuit protection and reverse polarity protection.

Thanks to its advanced feature set, the strain gauge amplifier from Kistler ensures precise and reliable operation even in challenging conditions such as heavy machinery, production lines and outdoor applications.

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



The new 4709A industrial strain gauge amplifier from Kistler comes with analog output, a digital IO-Link interface and a wide variety of signal conditioning and processing features.



Real-time production monitoring: the 4709A strain gauge amplifier from Kistler with IO-Link ensures precision and efficiency in industrial processes.



Smart manufacturing: a strain gauge amplifier with IO-Link enables precise force measurement and monitoring in industrial robotics.

Media contact

Dominik Perrucci
Marketing Campaign Manager
Phone: +41 52 2241 341
Email: dominik.perrucci@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 2024, it posted sales of mCHF 448. About 9 percent of this figure is reinvested in research and technology – with the aim of delivering innovative solutions for every customer.