

Press release

From time to condition-based train brake maintenance with Kistler

Winterthur, August 2018

The Kistler Group is introducing a compact mobile measurement solution for enhanced rolling stock maintenance in international railway operations in the shape of its railway brake force measuring system Type 2899A. The innovative all-in-one system is to be unveiled at the upcoming InnoTrans in Berlin from 18 to 21 September in Hall 6.2, Booth 110.

The safety and availability of rolling stock is of key importance in railway operations. Reliable brakes are one of the main reasons why trains are still considered to be one of the safest means of transport. Regular inspection of brake pad force ensures the safety and availability of the rolling stock and helps save resources.

Predictive, cost-effective operation

A very efficient way of optimizing vehicle maintenance is offered by switching from time-based preventive to condition-based predictive maintenance. The benefits of this method are twofold: measures to increase operational reliability can be adopted at an early stage, while cost savings of 15% to 20% can be achieved.

Precise measurement data as the basis for the switch

Kistler supports implementation of this future-focused maintenance concept with the appropriate measuring system that can be deployed by maintenance contractors, rail vehicle manufacturers and train operators. Switching from preventive to predictive maintenance calls for new methods of establishing changes in condition, like the performance of systematic brake pad force measurements.

Brake system wear and tear can be checked with a brake pad force measuring system. Conditions and changes are recorded by a suitable data management system across several test cycles. Reliable conclusions can be drawn from their analysis about existing and anticipated wear and tear and the consequential (future) reduction in braking action.

The same series of measurements helps to optimize maintenance planning and, along with other operational data, forms the basis for implementing the predictive maintenance concept.

Compact, mobile and flexible solution

The Swiss sensor specialist presents its all-in-one solution in a practical case comprising braking force measuring system Type 2899A and all the necessary components, including brake force measuring elements, signal conditioning, data acquisition and application-specific software. The case comes on rollers and is battery-operated for mobile use. It can be used both for maintenance (factory floor) and permanent in-line condition monitoring.

The Kistler brake force measuring system is designed for the diagnosis of shoe and disc brakes. Instead of brake shoes or pads, the measuring elements are mounted to permit direct, precision measurement of the respective parameters. The brake force measuring elements are compatible with various wheel diameters and cover a wide range of forces up to 60 kN. The system and related process comply with the proof of safety in line with CSM-RA (EU) 402/2013 and (EU) 352/2009 (Common Safety Methods – Risk Assessment).

Long-serving, rugged sensors

The brake force measuring system can be equipped with up to eight force sensors and optional pressure and trigger sensors. The piezoelectric force sensors are based on Kistler's decades of experience in this field: they are particularly rugged in terms of mechanical design, UIC-compliant and factory calibrated. Thanks to the high-resistance amplifier inputs, the linear and absolute charge signals generated are insensitive to electromagnetic interference. A special focus was placed on the consistent separation of railway and workshop mass to avoid adverse equalizing currents.

The new brake force measuring system is available and will be presented at the InnoTrans 2018 (18 to 21 September in Berlin).

<https://www.kistler.com/en/applications/sensor-technology/rail-technology/brake-force-measurement/>

Visuals (Reproduction is free of charge provided that the Kistler Group is credited as the source of the image)



Stored in a compact, portable case, the brake force measuring system Type 2899A includes all the necessary components: from brake force measuring elements for shoe and disc brakes to the application-specific software.

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About the Kistler Group

Kistler is the global leader in dynamic measurement technology for measuring pressure, force, torque and acceleration. Cutting-edge technologies provide the basis for Kistler's modular solutions.

Customers in industry and science benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes so as to secure a sustainable competitive edge. The owner-managed Swiss company's unique sensor technology plays a key role in the evolution of automobile development and industrial automation, as well as in numerous emerging sectors. With a broad knowledge of applications and its absolute commitment to quality, Kistler is making an important contribution to the further development of current megatrends. This includes topics such as electrified drive technology, autonomous driving, emission reduction and Industry 4.0.

Some 1 900 employees at 61 locations worldwide are dedicated to developing new solutions and offer customized service for individual applications. Since its founding in 1959, the Kistler Group has grown along with its customers, generating sales of CHF 422 million in 2017. Approximately 8% of this went back into research and technology — and thus into achieving better results for all customers.