KISTLER
measure. analyze. innovate.

Press release

New wheel torque transducer for cars, SUVs and vans

Wheel force transducer P109 with measuring range of up to 9,000 Nm to extend Kistler RoaDyn series

Winterthur, July 2024

Electrification, active vehicle dynamics control and rolling resistance measurements for CO_2 reduction increasingly and simultaneously require higher loads and more precision in vehicle development and testing. The Kistler group therefore launches a new wheel torque transducer for heavy cars, SUVs and vans – it combines all proven benefits of the RoaDyn series with an extended measuring range of up to 9,000 Nm (high range) or 900 Nm (low range) respectively.

Changes in vehicle development, driven by shorter model cycles and innovative propulsion concepts, push measurement technology to its limits: larger and heavier cars as well as electric powertrains and active vehicle dynamics (torque vectoring) require higher loads than before. On the contrary, increasing efficiency demands and rolling resistance measurements call for an even higher accuracy of parameter identification. With the new RoaDyn P109 wheel torque transducer, customers can measure tractions torques (My) of up to 9,000 Nm without leaving behind the known accuracy advantages of the RoaDyn brand from Kistler.

Simple and quick mounting plus two independent measuring ranges

The wheel force transducers were developed in close collaboration with the automotive industry. They replace the rim star of the wheel and transmit the traction torques – captured very precisely with piezoelectric quartz sensors – to the onboard electronics in the vehicle; the wireless signal transmission is carried out by the telemetry module. Mounting the wheel torque transducer is comparable to changing a standard wheel and can be completed within less than 15 minutes – for alignment with different vehicles, additional adapters are available.

Thanks to the two independent measuring ranges (high range up to 9,000 Nm, low range up to 900 Nm) it is possible to easily measure small traction torques very accurately even with high axle loads. The signals are electronically amplified directly in the wheel and can be transmitted digitally to a customer's data acquisition system. The RoaDyn P109 wheel force transducer is lightweight, comes with a low moment of inertia and offers four temperature channels to integrate additional K-type temperature sensors. The operating temperature ranges from –25 to 80°C.

Kistler Group
Eulachstrasse 22
8408 Winterthur
Switzerland

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

Universal wheel torque transducer for vehicle development

Apart from vehicle dynamics measurements in vehicle development, the RoaDyn P109 wheel torque transducer is also applicable for powertrain analysis of NEVs as well as evaluation and validation of control and ADAS systems. In addition to that, the new wheel torque transducer from Kistler shows its strengths in gear development, brake tests and mandatory safety tests.

The new wheel torque transducer for vehicle weights up to 3.5 metric tons is on sale from May 2024 on and will be available in rim sizes from 13 to 20 inches (more sizes on request).

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

With the P109 wheel torque transducer featuring a measuring range of up to 9,000 Nm, Kistler extends its successful RoaDyn portfolio for vehicle development to the area of heavy cars, SUVs and vans and electric powertrains.

The torque signals of the new RoaDyn P109 wheel torque transducer from Kistler are transmitted wirelessly per telemetry module to the onboard electronics in the vehicle.

The KiRoad Wireless onboard electronics from Kistler receives the signals from wheel torque transducers such as the new RoaDyn P109 and offers various interfaces such as CAN, DTI and Ethernet.

Media contact

Angelica Zeolla
Marketing Campaign Manager
Tel.: +41 52 2241 606

Email: angelica.zeolla@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 2023, it posted sales of CHF 465 million. About 9% of this figure is reinvested in research and technology – with the aim of delivering better results for every customer.

Kistler Group
Eulachstrasse 22
8408 Winterthur
Switzerland

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