Kistler wheel-force transducer targets fuel-efficient cars

Breanna Locke - July 06, 2010

In addition to engine and air resistance, the key factors in the development of vehicles with reduced fuel consumption are weight and rolling resistance. The RoaDyn S615 wheel-force transducer from Kistler offers characteristics that are optimized for testing these small and lightweight cars. In particular, the device can be used for recording load spectra for durability, vehicle dynamics, and power-train investigations.

The RoaDyn S615 is based on a three-load-cell concept. Eliminating one cell and its mounting screws shaves 400 g off the weight of the established RoaDyn S625 wheel-force transducer system. In addition, a potential saving of another 400 g is available in the design of the S615’s inner part, whose CFRP (carbon fiber reinforced plastic) construction offers a reduction of up to 20% compared to the RoaDyn S625. The optimized design of the RoaDyn S615 allows a maximum vertical load of approximately 15 kN.

The RoaDyn S615 is mounted on the vehicle as a complete wheel. It measures both force and torque in the x, y, and z axes on the rotating wheel. Measurement signals are converted into digital form in the actual wheel electronics and transmitted to the onboard telemetry system and output as analog or digital signals. The components needed for over-the-road measurement, such as the wheel and onboard electronics, telemetry, and adapters, are fully compatible with the RoaDyn family of products.