The RoaDyn P1HT wheel torque transducer is a universal sensor for measuring the traction torque $M_y$ of utility vehicles up to a maximum vertical wheel load of 120 kN. The maximum traction moment is ±50 kN·m.

### Technical Data

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range torque</td>
<td>±50 kN·m</td>
</tr>
<tr>
<td>$M_y$ (upper range)</td>
<td>±50</td>
</tr>
<tr>
<td>$M_y$ (lower range)</td>
<td>±5</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>–25 ... 80 °C</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>200 km/h</td>
</tr>
<tr>
<td>Shock resistance</td>
<td>50 g</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP67</td>
</tr>
</tbody>
</table>

1) basis: rim sizes 22.5", load cell diameter 494 mm, 6 load cells (further rim sizes available upon request)
2) cable mounted

### Application Focus

- Driving resistance measurements for reduction of CO₂ emissions
- Development of ABS and dynamic control systems
- Vehicle performance measurements
- Determination of powertrain efficiency
- Recording load data for transmission development (simulation, validation)
- Analysis of fading effects on brakes

Additional applications include the development of transmissions and chassis control systems, as well as preparation of government safety tests such as the American FMVSS 135.

The measuring system consists of three main components: the wheel torque transducer, data transmission module and on-board electronics (control unit). Aiding data transmission from the rotating wheel to the on-board electronics, there are two available options: an analog slip ring system with connecting cable or a wireless digital system.

The traction torque $M_y$ is measured with piezoelectric quartz sensors. These interchangeable switchable measuring ranges make it possible to measure small and very large torques with exceptional accuracy. The signals are amplified and processed in the electronics system integrally with the wheel.

Mounting of the wheel torque transducer on the vehicle is comparable with changing a standard wheel; available in single, super-single and twin wheel.
### Measuring Chains

<table>
<thead>
<tr>
<th>Measuring Chain</th>
<th>RoaDyn P1HT Type 9299A</th>
<th>Telemetry Type 9811A</th>
<th>On-board Electronics Type 9813A</th>
<th>Available Measuring Signals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring chain RoaDyn P1HT with telemetry transmission</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>Measuring chain RoaDyn P1HT with slip ring transmission PremiumLine</td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
</tbody>
</table>

### Available Measuring Signals
- **Torque** $M_t$
- 1 x temperature in hub electronics
- 1 x battery voltage (accumulator)
- 1 x temperature in hub electronics
- 3 x resolver signals
- 3 x customized signals

### For further Information:

**Austria**
Tel. +43 1 867 48 67 0  
sales.at@kistler.com

**Australia**
Tel. +61 3 9560 5055  
sales.au@kistler.com

**Brazil**
Tel. +55 11 50520308  
sales.br@kistler.com

**China, People’s Republic of**
Tel. +852 25 915 930  
sales.cn@kistler.com

**Czech Republic/Slovakia**
Tel. +420 296 374 878  
sales.cz@kistler.com

**Denmark**
Tel. +45 70 20 85 66  
info.dk@kistler.com

**Finland**
Tel. +358 9 612 15 66  
info.fi@kistler.com

**France**
Tel. +33 1 69 18 81 81  
info.fr@kistler.com

**Germany**
Tel. +49 711 34 07 0  
info.de@kistler.com

**India**
Tel. +91 129 4113 555  
sales.in@kistler.com

**Italy**
Tel. +39 02 481 27 51  
sales.it@kistler.com

**Japan**
Tel. +81 3 3769 9501  
sales.jp@kistler.com

**Korea, Republic of**
Tel. +82 31 465 6013  
sales.kr@kistler.com

**Mexico**
Tel. +52 81 4170 8075  
sales.mx@kistler.com

**Netherlands**
Tel. +31 182 304 444  
sales.nl@kistler.com

**Singapore**
Tel. +65 6570 5377  
sales.sg@kistler.com

**Spain**
Tel. +34 93 860 33 24  
info.es@kistler.com

**Sweden/Norway**
Tel. +46 31 871 566  
info.se@kistler.com

**Switzerland/Liechtenstein**
Tel. +41 52 224 12 32  
sales.ch@kistler.com

**Taiwan**
Tel. +886 2 7721 2121  
sales.tw@kistler.com

**Thailand**
Tel. +66 2678 6779-80  
sales.thai@kistler.com

**USA/Canada/Mexico**
Tel. +1 248 668 6900  
sales.us@kistler.com

**Other Countries**
Tel. +41 52 224 11 11  
sales.export@kistler.com

**Switzerland (Headquarters)**
Tel. +41 52 224 11 11  
info@kistler.com

www.kistler.com