

RoaDyn S660 nsp

Type 9248A2

6-component measuring hub for heavy passenger cars, SUVs, transporters and light trucks

Measuring hub for measuring three forces and three moments on a non-spinning wheel for operation on tire test stands.

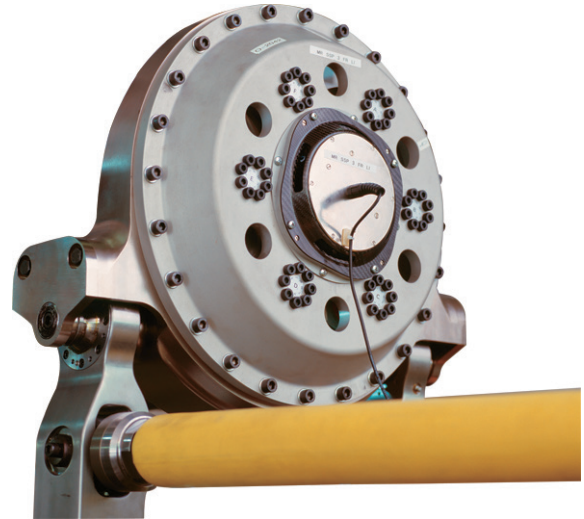
- Modular design with interchangeable strain gage load cells and system components
- Reduction of local stress concentrations by means of CAD/FEM
- Robust design, suitable for durability tests
- High-precision measurement ensured by calibration of individual load cells and overall system
- Outstanding signal quality due to digitalization in hub electronics
- Online diagnostics, crosstalk and lever arm compensation

Description

The RoaDyn S660 nsp measuring hub Type 9248A2 is a modular wheel force measuring system consisting of six 3-component heavy duty strain gage load cells, the inner part for connecting sensors to the hub and the outer part for connection to the test stand. The strain gage signals are amplified in the load cell and passed on to hub electronics via short cables. Data are transmitted via cable to the control room electronics, which provides the calculated wheel forces and moments to analog and digital interfaces.

Application

The RoaDyn S660 nsp is used as a multiaxial force measuring unit in road simulators for physical simulation of loads in durability tests. They are used for iteration (determination of the transfer function) and for monitoring of axle test benches.



Technical data

Standard measuring range ¹⁾

F _x	kN	±60
F _y	kN	±36
F _z	kN	±60
M _x	kN·m	±7,5
M _y	kN·m	±8,5
M _z	kN·m	±7,5

Maximum loads

Max. shock acceleration: x,y,z	g	50
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Accuracy

Linearity	% FS	≤0,5
Typical ²⁾	% FS	≤0,15
Hysteresis	% FS	≤0,5
Typical ²⁾	% FS	≤0,10
Crosstalk forces ³⁾	%	≤0,5
Typical ²⁾	%	≤0,10

¹⁾ It is assumed that the maximum forces and torques do not act simultaneously. The torques are specified relative to the center of the wheel (Offset = 0)

²⁾ The typical accuracy corresponds to the median of the test results of end-of-line calibrations and recalibrations

³⁾ With crosstalk compensation

Assembly and components of RoaDyn S660 nsp

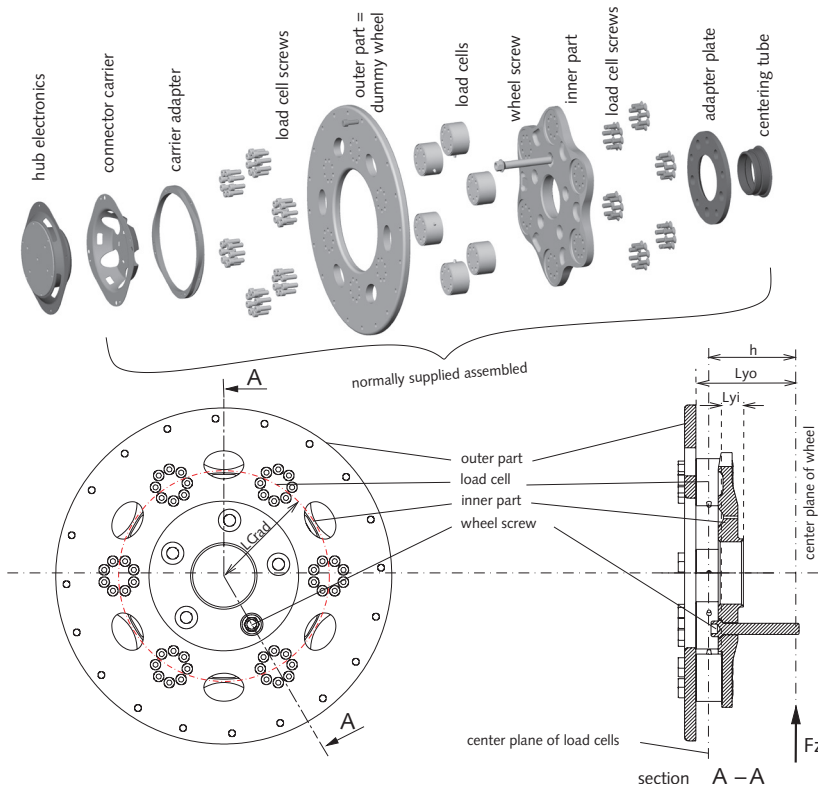
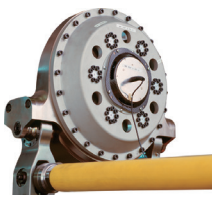
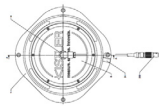




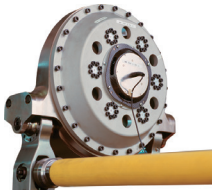
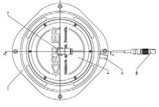






Fig 1: Assembly and components of RoaDyn S660 nsp

Measuring chains

Analog communication with test rig controller				
Measuring hub Type 9248A2	Wheel electronics 5243A1800... (5-pin)	Connecting cable 1700A88xx00 (5-pin)	Adapter cable 55151640 (5-pin)	Control room electronics Type 9817A12, 9817A13, 9817A22, 9817A23, 9817A42, 9817A43
				 
Digital communication with test rig controller (EtherCAT with distributed clocks)				
Measuring hub Type 9248A2	Wheel electronics 5243A1801... (6-pin)	Connecting cable 1700A88xx10 (6-pin)	Adapter cable 55151641 (6-pin)	Control room electronics Type 9817A12, ... (see above)
				 

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Tel. +41 52 224 11 11, Fax +41 52 224 14 14, info@kistler.com, www.kistler.com
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Mounting

Kistler supplies weight and strength optimized customized adapters for mounting the sensor to the test rig.

Typical configuration of the

RoaDyn S660 nsp wheel force hub

	Type /Art. No.
• Precision load cells (strain gage), fully encapsulated, 6 pieces per wheel sensor	9190A876
• Outer part for RoaDyn S660 1 piece per wheel sensor	9707A...
• Inner part for RoaDyn S660 adapts to one particular bolt pattern, 1 piece per wheel sensor	9729A6
• Electronics connector carrier for wheel electronics, 1 piece per wheel sensor	Z39904
• Hub electronics, 1 piece per wheel sensor	5243A18
• Connection cable for tire test machine digital or analog, 1 piece per wheel sensor	1700A88...
• KiRoad Performance control room electronics	
- for 1 wheel	9817A11, 9817A13
- for 1 axle	9817A21, 9817A23
- for 2 axles	9817A41, 9817A43

Optional accessories

	Type/Art. No.
• External hub electronics	5277A2124
• Adapter ring for offset compensation 1 piece per wheel sensor	9713A...

Ordering code

- **RoaDyn S660 nsp** **Type 9248A2**
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