

RoaDyn S6XT nsp

Type 9262A2

Wheel force transducer for the physical simulation with utility vehicles

Measuring hub for measuring three forces and three moments on axle test rigs and road simulators.

- 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 fatigue strength 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

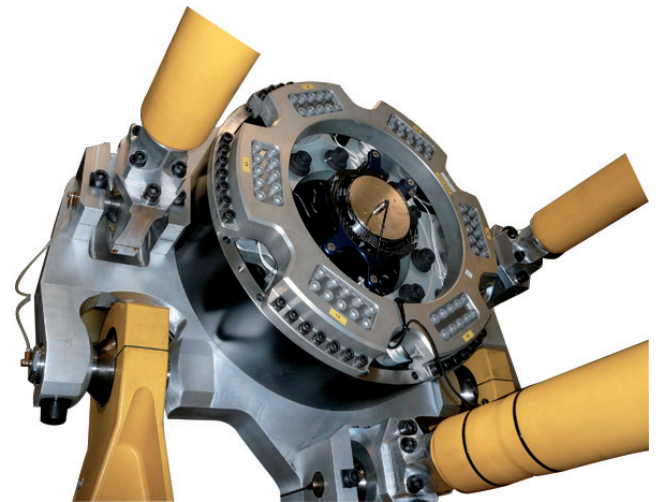
Description

RoaDyn S6XT nsp Type 9262A2 is a modular wheel force measuring system consisting of six 3-component heavy duty strain gage load cells, inner part for connecting sensors to the hub and outer part which connects to the test stand.

Strain gage signals are amplified in the load cell and passed on via short cables to hub electronics. Via a cable data are transmitted to control room electronics, which provides the calculated wheel forces and moments to analog and digital interfaces.

Application

RoaDyn S6XT 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	±250
F_y	kN	±150
F_z	kN	±250
M_x	kN·m	±50
M_y	kN·m	±80
M_z	kN·m	±50

Maximum loads

Max. shock acceleration		
x	g	50
y	g	50
z	g	50

Accuracy

Linearity	% FS	≤1
Hysteresis	% FS	≤1
Crosstalk forces	%	≤1

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).

Assembly and components of RoaDyn S6XT nsp

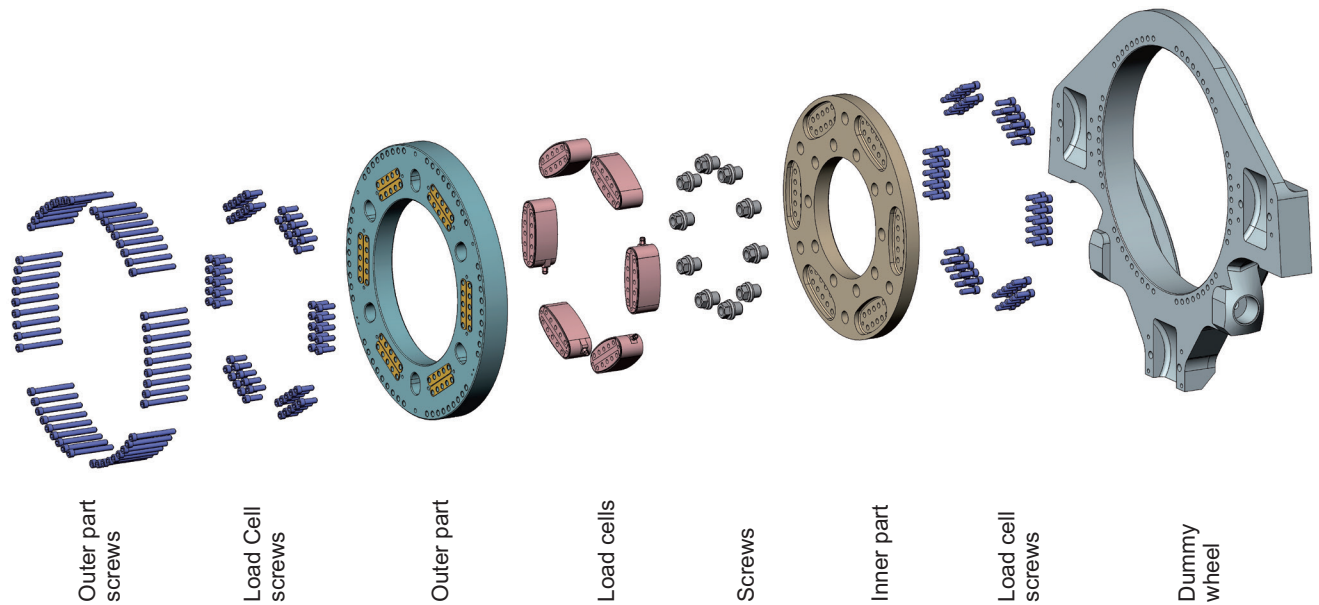
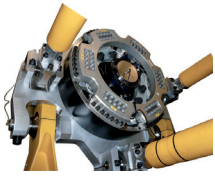
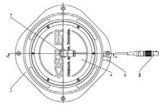




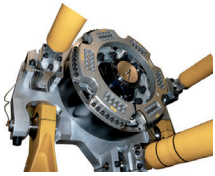
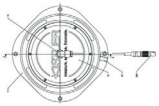






Fig 1: Assembly and components of RoaDyn S6XT nsp

Measuring chains

Analog communication with test rig controller				
Measuring hub Type 9262A2	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 9262A2	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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Mounting

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

Typical configuration of the

RoaDyn S6XT nsp wheel force hub

	Type /Art. No.
• Precision load cells (strain gage), fully encapsulated, 6 pieces per wheel sensor	9190A1074...
• Outer part for RoaDyn S6HT/S6XT 1 piece per wheel sensor	9737A6Q
• Inner part for RoaDyn S6HT/S6XT adapts to one particular bolt pattern, 1 piece per wheel sensor	9745A6Q
• 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...
• Control room electronics	9817A...

Accessories (optional)

- External hub electronics
- Adapter ring for offset compensation,
1 piece per wheel sensor

Type /Art. No.

5277A2120
Z39918A

Ordering code

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