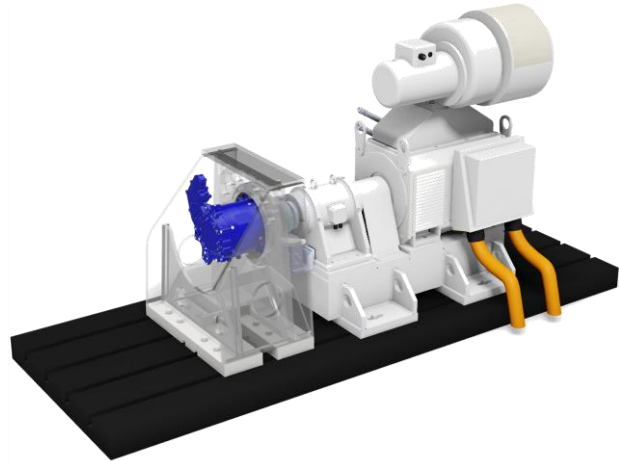


Test Bench for High-Speed Drives

Technical data

- Regenerative induction machine with air cooling system and water cooling system
- Double bearing block module to decouple the rotating masses
- Protection concept with temperature and surface velocity monitoring
- Air levitated and controlled machine bed

Rated power	140 kW
Peak power	175 kW
Rated speed	6081 rpm
Maximum speed	18,020 rpm
Rated torque	220 Nm
Maximum torque	275 Nm
Torque (max. speed)	46 Nm



Equipment

- Water conditioning system: Huber Unichiller 080T-H4, SINGLE Temperature Control
- Rapid Control Prototyping System: dSPACE DS1103 PPC Controller Board
- Inverter: Semikron SKAI 45 A2 GD12: WDI
- Control of pulse patterns with dSPACE

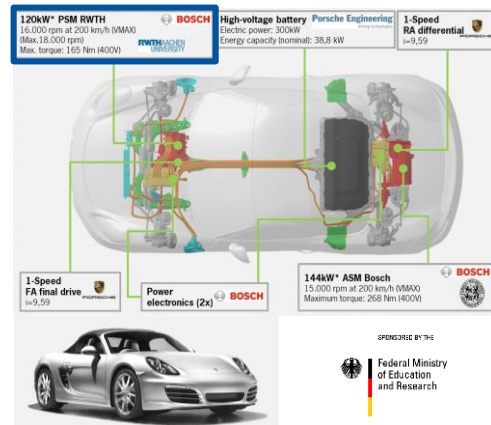


Measurement capabilities

Torque	HBM T12 – 500 Nm (accuracy class 0.03)
Speed	HBM T12 – 360 per revolution
Voltage, Current	Yokogawa WT1800
Efficiency maps	Yokogawa WT1800
Temperature	NI-PXIe-1073; NI PXIe-4353
Rotor temperature	Telemetry sensor Datatel dt3009T-TR

Current application/ Opportunities

- Funded research project e-generation (reference number 13N11867)
 - Analysis of components and vehicle functions for electric vehicles of the future
- Main goals of sub-project 2 – Drivetrain / Control
 - Increase of vehicle range of 38 %
 - Significant drivetrain cost reduction
- Front-axle traction drive Porsche Boxster



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