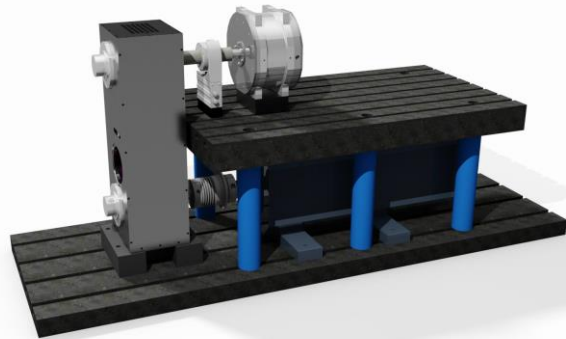


# Test Bench for Variable Speed Range

## Technical data

- Load machine Siemens 1PH6206-1NE4
- Simodrive 611 Power supply unit
- Variable belt ratio
- $n_{\max} = 5000$  rpm

Nominal power	63 kW
Peak power	110 kW
Nominal speed	1250 rpm
Maximum speed	5000 rpm
Nominal torque	480 Nm
Maximum torque	840 Nm
End torque	100 Nm
Ratio	1:1 or 1:3



## Equipment

- Water cooling for device under test
- Rapid Control Prototyping system dSPACE DS1103 PPC Controller Board
- Converter: SemiKube B6Ci Configuration 2H
  - $I_{\max} = 820$  A (eff), 250 A (eff) @  $f_{\text{sw}} = 20$  kHz, inkl. Vacon AFE 560-800 V, 385 kW
- Control and pulse pattern specification with dSPACE

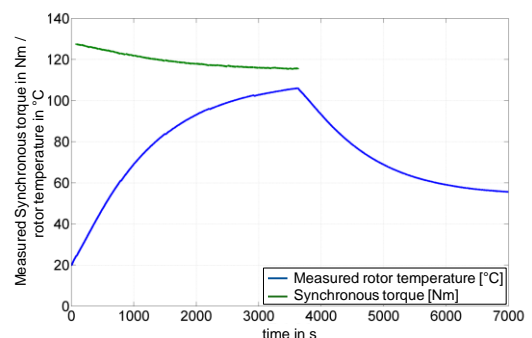


### Measurement capabilities

Torque	HBM T12 – 500 Nm (accuracy class 0.03)
Speed	HBM T12 – 360 rpm
Voltages, Currents	Yokogawa WT1800
Power maps	Yokogawa WT1800
Temperatures	NI PXIe-4353
Rotor temperatures	Manner Telemetriesystem 7 x Pt100, 7 x TE Type J

## Current application/ Opportunities

- Overload resistant and modular traction machines for electric vehicle propulsion
- Increase of the overload capacity, taking into account the most frequent electrical machine failures
- Thermal measurement with temperature sensors in stator and rotor via telemetry system



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