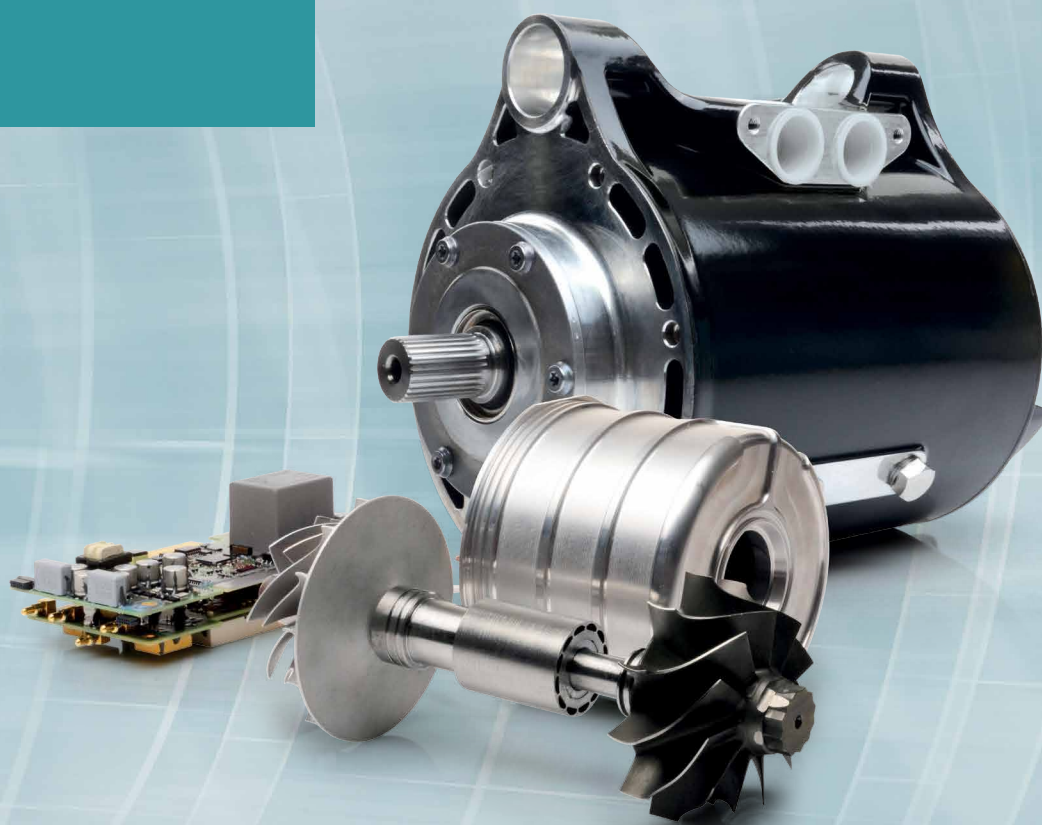




WITTENSTEIN

Electric Traction & Turbo Solutions

Highest Power Density
Great Design Flexibility
For BEV & HEV

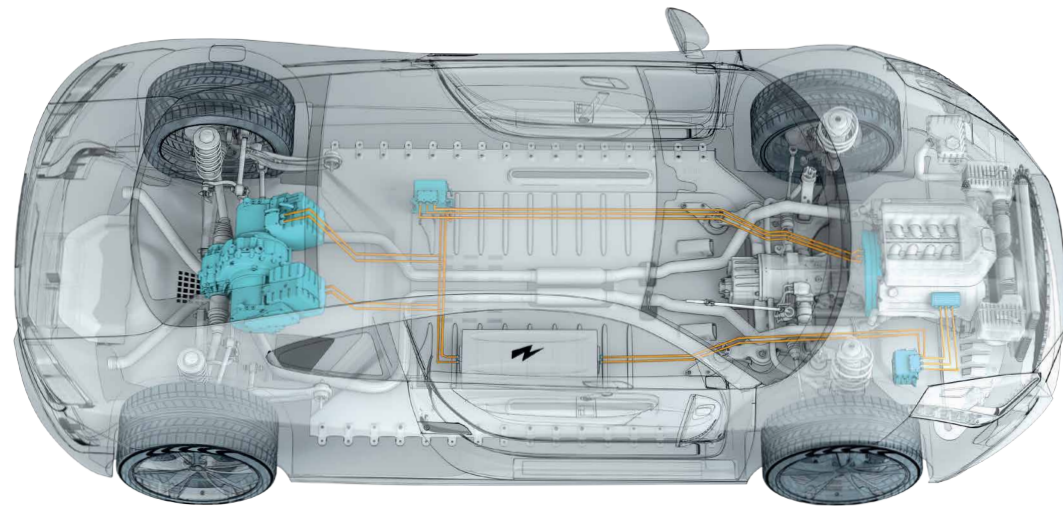


Custom-made Solutions for BEV & HEV Applications

Since 2006, WITTENSTEIN has set benchmarks in power-to-weight ratio, efficiency and intelligence for powertrains of electric and hybrid vehicles. Our unique engineering solutions and serial products are a

perfect fit for space-restricted applications with small serial quantities. WITTENSTEIN is your global partner for highly customized solutions from a few hundred to 10,000 vehicles per year.

On-Highway Performance Cars



P3/P4 HEV & BEV
High-speed electric motors with up to 250 kW

P1/P2
Integration of up to 150 kW without stretching the wheelbase

High Voltage
Electric Turbochargers & Belt-Starter-Generators

Electric Motorcycles



VCU integration in inverter hardware

Off-Highway Hybrids

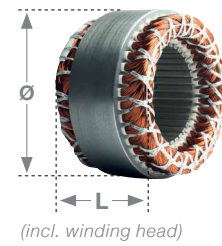


SAE J1939 CAN communication



Innovative Electric Powertrain Technology

ELECTRIC MOTORS



Radial & axial flux design available

	Radial flux			Axial flux
Stator/rotor size	Ø: 150 mm L: 140 mm Weight: 8 kg	Ø: 180 mm L: 200 mm Weight: 18 kg	Ø: 220 mm L: 280 mm Weight: 41 kg	Ø: 210 mm L: 50 mm Weight: 14 kg
Performance (Peak)	70 kW 100 Nm 10,000 rpm	120 kW 200 Nm 14,000 rpm	190 kW 300 Nm 12,000 rpm	110 kW 200 Nm 7,800 rpm
Special options	Delivery scope with/without housing, High speed design up to 25,000 rpm (traction) and 200,000 rpm (E-Turbo) available, Cobalt Iron laminated core			

Customized design available
We customize up to 100% of the electric motor design for the best possible integration into existing package requirements.

INVERTERS



2-processor design
Open for customer software integration

	POWER-IQ 150	POWER-IQ 250	Customized
Power	150 kVA	250 kVA	5-300 kVA
Voltage	100-400 V _{DC}	400-800 V _{DC}	48-1200 V _{DC}
Current	Up to 500 A	Up to 300 A	Up to 1,000 A
Switching frequency	16 kHz	16 kHz	Up to 48 kHz
Special options	HF & back-EMF sensorless control, EMC filter integration, Maximum torque at standstill, SiC power module technology		

GEARS

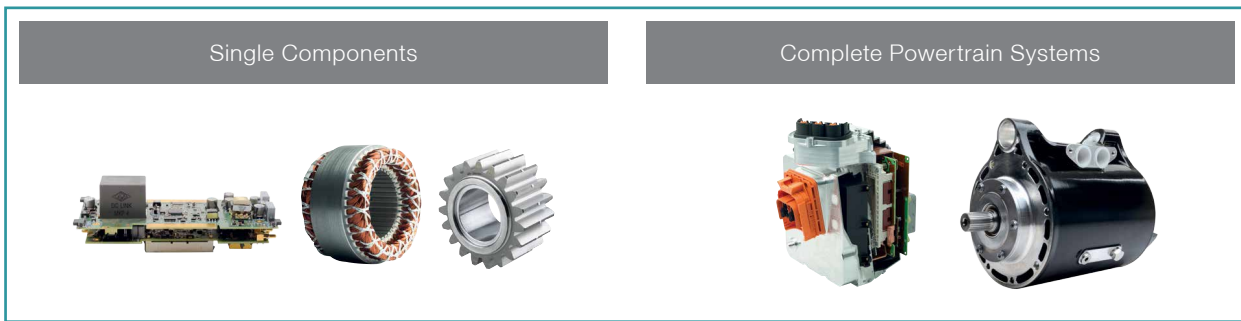


Single-speed gearbox designs	Tooth geometries	Gear quality
Spur gearbox Bevel gearbox Planetary gearbox	Spur/helical/beveloid/ gleason (spiral) Module 0.6 to 9 mm	Up to DIN 5 (automotive) Up to DIN 1 (industrial)
High speed, low noise & best in class efficiency. For gears running up to 120,000 rpm.		

Your Partner from Concept to SOP and Beyond

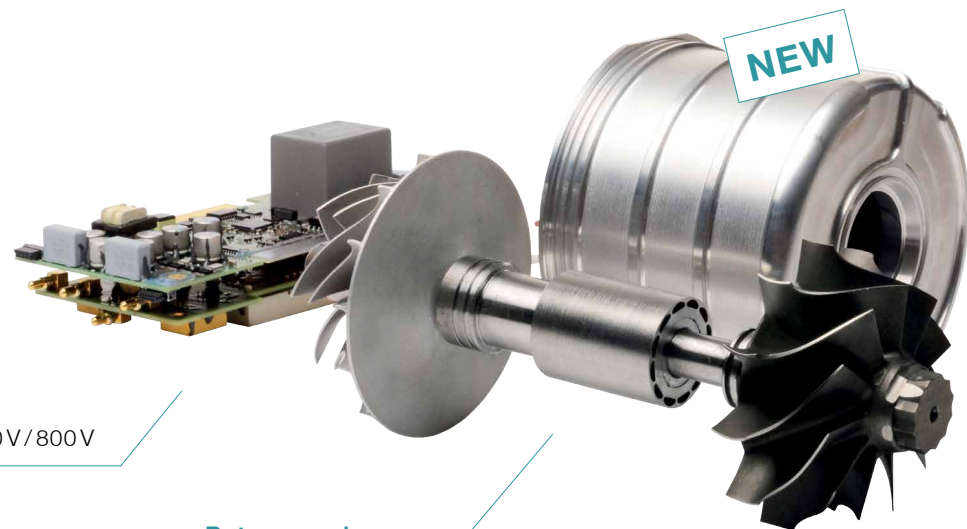
Put us to the test – we provide an electric powertrain solution that is 100% tailor-made to your requirements. Small serial quantities **from a few hundred up to 10,000 vehicles**

are a perfect fit for WITTENSTEIN. Our innovation consistently sets new industry benchmarks, which ensures our customers' success today and for the future.



Next Level in Hybridization: Electric Turbochargers

- » Eliminate ICE turbo lag
- » Increase fuel efficiency through energy recovery



Inverters
for 48V/400V/800V

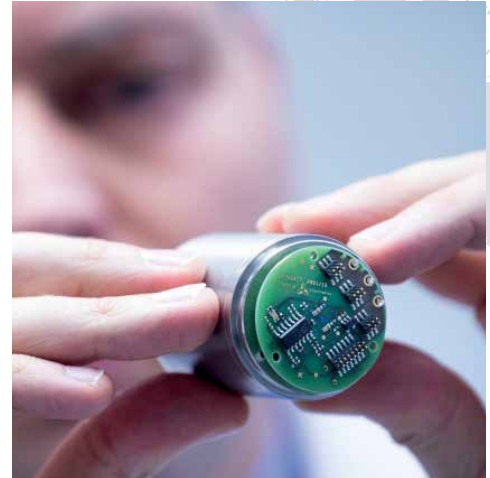
Rotor speeds
up to 200,000 rpm



WITTENSTEIN – Global E-Mobility Excellence

WITTENSTEIN is committed to being a world-class global partner for the customers of its intelligent mechatronic drive technology, servo systems and components.

Since 1949, we have set industry benchmarks in mechatronic excellence and innovation. This long history of success comes from deep expertise combined with a pioneering spirit and passion for problem solving. As a family-owned company, WITTENSTEIN is committed to strong principles of excellence, reflected in the quality of our technology, products, service and leadership.





WITTENSTEIN

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WITTENSTEIN – one with the future

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