Innovative motor technology for hybrid and electric vehicles

Future mobility will be electric: With resources becoming increasingly scarcer and environmental regulations more stringent, in the next decades, there is no option other than to electrify vehicles. However, there is a considerable challenge to overcome: The components used in a passenger vehicle need to be small and compact with high power density at the same time. In response to this challenge, Siemens is supplying innovative motor technology, which is already opening new perspectives for electromobility today.

Reliable partner for the automotive future

Siemens has a long tradition of being committed to electromobility – and is consequently driving progress in this area forward. The investments we make in research and development are ensuring that our products, systems and solutions are always setting new standards – and comply with the requirements of the automotive industry in all respects. Our high-efficiency SIVETEC motors with innovative rotor cooling system are just one example of this. Here, just like our complete portfolio, we consequently apply a zero-defects philosophy. As a result, we are playing an important role in ensuring that automobile manufacturers can cost-effectively turn their electromobility concepts into reality. Concerning our motors, we are focusing on motors that can be connected to a power supply as well as on hybrid drives. The power spectrum ranges from 30 kW up to 200 kW.

Our first-class SIVETEC components for the drive trains of hybrid and electric vehicles are paving the way for sustainable mobility. When developing these motors, the requirements of our customers are of the topmost priority.

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In response to high costs for rare earth metals, we offer induction motors that do without these elements – and at the same time still provide optimum performance values. We incorporate all of our skill sets from the widest range of disciplines and applications in their development. By employing new technologies and innovative cooling systems, an efficiency near to that of synchronous motor technology is reached. Additional advantages of our cooling concepts: the compact design and high power density of our motors.

**Max. power:** 30 – 200 kW  
**Max. torque:** up to 350 Nm  
**Max. speed:** up to 20,000 rpm  
**Max. efficiency:** up to 95%  
**Length and diameter can be scaled**

Today, almost all hybrid and electric vehicles are equipped with synchronous motors. Our synchronous motor concept represents an ideal approach, and offers a very high power density (~ 2.6 kW/kg). Motor length and diameter can be perfectly scaled – with a power rating ranging from 30 kW up to a maximum of 200 kW.

**Max. power:** 30 – 200 kW  
**Max. torque:** up to 350 Nm  
**Max. speed:** up to 15,000 rpm  
**Max. efficiency:** up to 96,5%  
**Length and diameter can be scaled**

Driving e-mobility ahead

With eCar Powertrain Systems, Siemens is applying its extensive drive technology expertise toward advancing electromobility. Siemens supplies high-quality systems and components for hybrid as well as fully electric vehicles. Customer demands thereby always have uppermost priority, as is reflected in our first-rate portfolio of smart and reliable products for the automotive industry. These comprise motors, inverters, voltage converters as well as charging technology.

As one of the largest suppliers of motors and inverters for wide-ranging industrial applications, we can draw on extensive knowledge and experience. Leveraging these synergies allows us to develop innovations that are helping to shape modern sustainable mobility.

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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