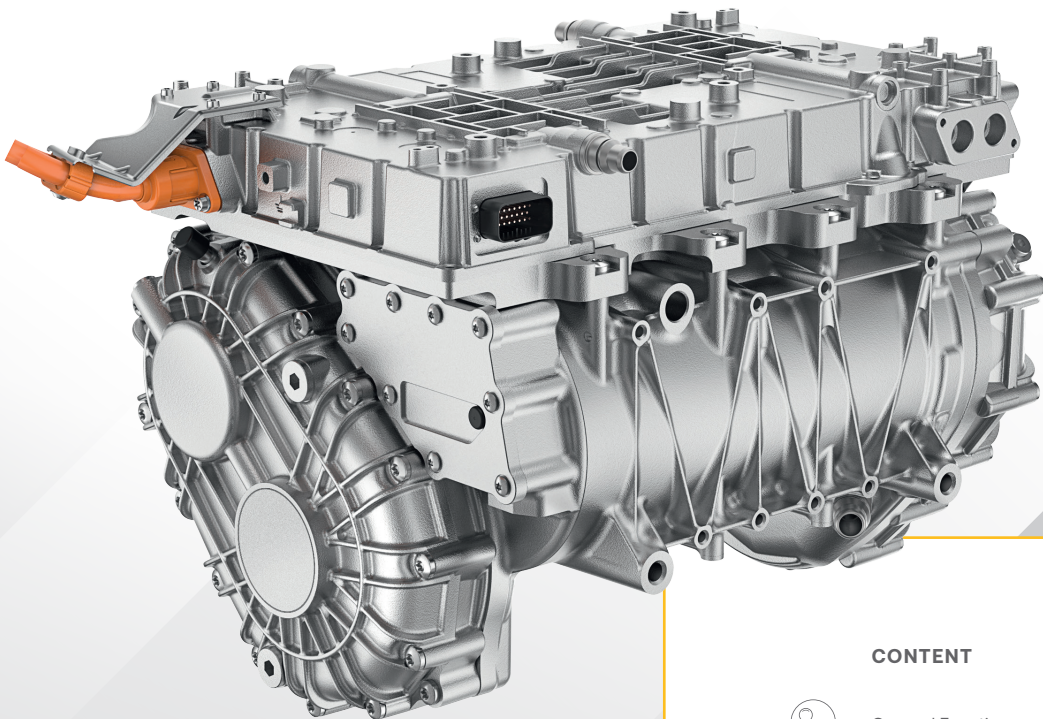


>>>> FACT SHEET

HIGH COMPACT TORQUE VECTORING EDU



CONTENT



General Function



Technology



Benefits



Performance

ACTIVE TORQUE VECTORING CAPABILITY

BUILT UP WITH TWO SIMILAR SINGLE ELECTRIC DRIVE UNITS (EDU)

Due to the fact that each of the single EDUs is controlled like a standalone EDU, active torque vectoring is possible. This means that each wheel of the vehicle can accelerate individually and independently of the driving situation or adapt its speed according to the driving situation. The smart combination

of a planetary and a spur gear set allows a very compact EDU design with a high power density. Thanks to its compact and adjustable design, the EDU can be easily integrated into various vehicle platforms. This EDU version is primarily used in high-powered vehicles or all-wheel drive systems.

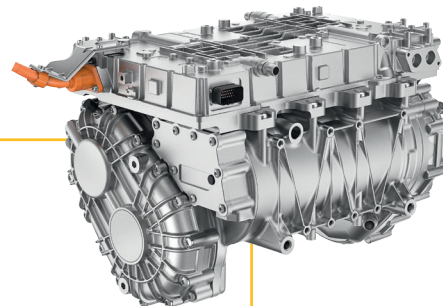
TECHNOLOGY

The cutting-edge Electric Drive Unit is powered by two highly efficient Permanent Magnet Synchronous Motors (PMSMs). These motors provide exceptional torque density and ensure optimal performance under a variety of driving conditions.

One of the remarkable advances in this EDU is in its innovative cooling system. By integrating the cooling of the electric motors with a water jacket enveloping the transmission, an ingenious thermal management solution is achieved. This design eliminates the need for additional cooling modules and oil pumps, which reduces the overall weight of the EDU. This weight reduction results in improved vehicle dynamics, enhancing both acceleration and handling characteristics.

In addition, the integration of a water jacket cooling mechanism has substantial benefits in terms of system efficiency. This enhanced efficiency contributes to improved energy utilization by extending the range of electric vehicles and optimizing the overall system performance.

Moreover, the transmission architecture of this EDU offers remarkable versatility, allowing adaptation to different vehicle environments and customer requirements. This flexibility enables car manufacturers to optimize the driving experience and ensures seamless integration of the EDU into various vehicle platforms.



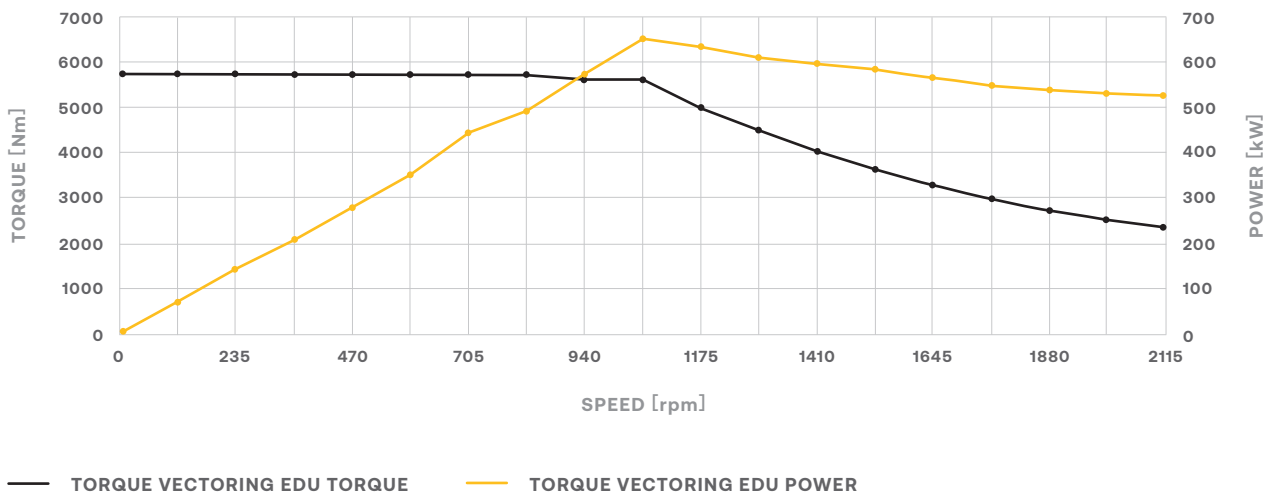
BENEFITS

- + Active Torque Vectoring
- + Very compact EDU-design with a high power density
- + High system performance and efficiency
- + Many years of competence in system integration at hofer powertrain

PERFORMANCE

EDU ARCHITECTURE		HCTV EDU	
NOMINAL VOLTAGE	U	650	[V]
VOLTAGE CLASS	U	800	[V]
EM TYPE		2 x PMSM	[-]
INVERTER TYPE		800V SiC Dual Inverter	[-]
PEAK AXLE POWER (30 S)	P_{max}	660	[kW]
CONT. AXLE POWER (30 MIN)	P_{cont}	280	[kW]
PEAK AXLE TORQUE (30 S)	M_{max}	5800	[Nm]
CONT. AXLE TORQUE (30 MIN)	M_{cont}	2800	[Nm]
MAX. AXLE SPEED	n_{opax}	2250	[rpm]
WEIGHT	m	< 115	[kg]

PEAK PERFORMANCE OF HIGH COMPACT TORQUE VECTORING EDU 30 S @650 V



BOUNDARY CONDITIONS

- + Motor Typ: PMSM
- + Stator outer diameter: 160 mm
- + Active part length: 180 mm
- + Voltage utilization: 0.95
- + Stator temperature: 120 °C
- + Rotor temperature: 90 °C
- + Current density: 36.7 ARMS/ mm²
- + Transmission eff.: 97 %
- + Peak time: 30 s

YOUR CONTACT

Mr. Alexander Heinzelmann

Phone +49 7123 724-88401

E-mail alexander.heinzelmann@elringklinger.com

hofer powertrain products GmbH | Daimlerstraße 6-8 | 72639 Neuffen | Germany
www.elringklinger.com

The information provided in this document is the result of technological analyses and may be subject to changes depending on the design of the system. We reserve the right to make technical changes and improvements. The information is not binding and does not represent warranted characteristics. We do not recognize any claims for compensation based on this information. We accept no liability for printing errors.



05/24