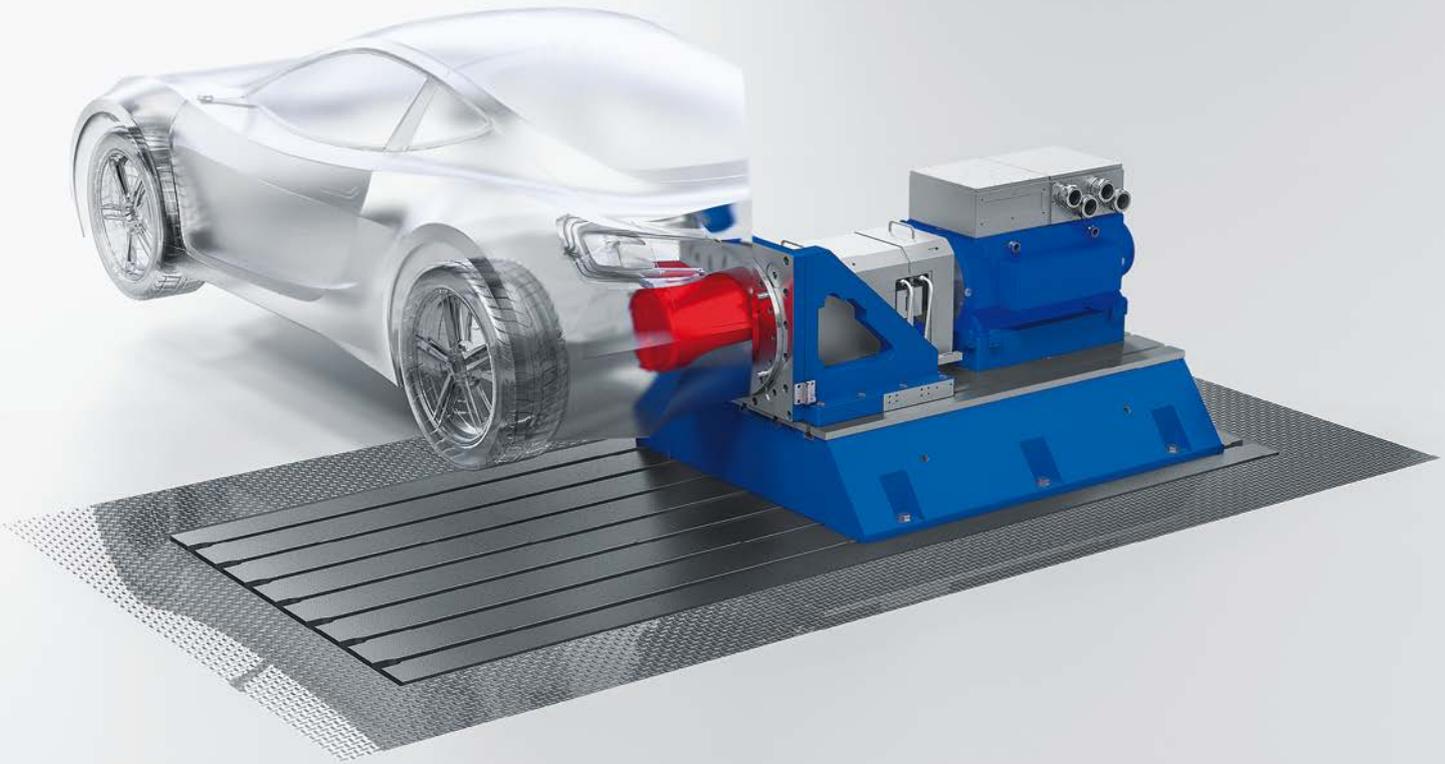


AVL



AVL DynoULTRA™ PMM FOR E-DRIVE TESTING

Load system with foot-mounted permanent magnet dynamometers

THE AVL SOLUTION

The AVL DynoULTRA™ for E-Drive Testing is a synchronous permanent magnet dynamometer, driven by a 4Q-frequency high-performance converter. In combination with mechanical elements, this solution was designed to satisfy both the strong demand for high performance and speed, while keeping the focus on reliability and robustness. The modular approach permits the utilization of different dynamometer performance classes by keeping the mechanical elements largely identical. This reduces the number of testbed versions and increases adaptability.

DynoULTRA™ for E-Drive Testing dynamometers as included in an AVL Electric Motor Testbed serves as the basis for a complete development, testing, verification

and validation environment for electric drives. The field of application has increased over the past years from analysis to determination of electrical, mechanical, thermal and acoustic characteristics. Integrated high-precision torque and speed measuring instruments in the DynoULTRA™ Load System permit thorough E-Drive development in the critical operating areas of the performance curve such as low speed and high torque ripple. For stall tests, the optionally available stall braking solutions can be utilized to block 10 or more positions. The excellent electrical and mechanical properties of the dynamometer as well as the fast control capabilities of the converter enable the coverage of realistic testing tasks and load alternations of current units under test and generations to come.



THE ADDED VALUE

The DynoULTRA™ dynamometer series for E-Drive Testing is the fitting platform for challenging testing applications in the high-performance area. The system provides peak performance values while ensuring the robustness the industrial environment demands,

- Maximum robustness thanks to a bearing design that permits endurance tests at maximum speed.
- Compact load systems with low inertia for high performance in restrictive test space
- Wide application area ranging from analysis to determination of electrical, mechanical, thermal and acoustic characteristics
- Robust and modular testbed design for operation at maximum performance and lowest vibrations
- The fast industrial EtherCAT® interface ensures reliable data exchange and serves as the basis for high dynamic torque and speed control
- Best synchronous motor efficiency with lowest mains distortion thanks to the latest state-of-the-art IGBT technology
- Fully integrated torque meter ensures measurements are at the highest level
- Highly-precise speed sensor system provides a reliable rotor position and speed for best possible dynamometer control.
- The included and fully integrated water cooling unit ConsysCool Dyno 30 has a broad operating range for efficient and reliable machine cooling. The compact design allows a higher utilization of valuable testbed space

TECHNICAL DATA

DynoULTRA™ PMM for E-Drive Testing	Nom. Power (absorbing)	Nom. Torque (absorbing)	Max. Speed continuous	Max. Speed Short-Time	Rotor Inertia
Type	kW	Nm	rpm	rpm	kgm ²
PMM 300/2.9-20	90	300	20,000	–	0.053
PMM 440/3.5-16	160	440	16,000	–	0.060
PMM 600/3.2-16	200	600	16,000	–	0.061
PMM 500/4.8-20	250	500	20,000	–	0.110
PMM 500/4.8-20	250	500	20,000	22,000 (60 s in 600 s)	0.110
PMM 545/7.0-20	400	545	20,000	–	0.130
PMM 545/7.0-20	400	545	20,000	22,000 (60 s in 600 s)	0.130

FOR FURTHER INFORMATION PLEASE CONTACT:

AVL List GmbH, Hans-List-Platz 1, 8020 Graz, Austria
 Phone: +43 316 787-0, fax: +43 316 787-400, email: info@avl.com, www.avl.com