

PRODUCT NOTE

Optimized e-mobility motors for heavy working machine applications



ABB's e-mobility motors for heavy working machines are optimized for each machine's work cycle and specific customer preferences. These motors are making headway fast in applications such as mining, construction, material handling, agriculture, airport vehicles, etc.

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01 Each motor is optimized based on end-customer criteria, using advanced calculation tools and on well proven building blocks.

Optimized for the actual work cycle

Motors have long been a cornerstone in industry, keeping fans, pumps and compressors running 24/7 to sustain fundamental processes.

In heavy working machinery, demands on the motor are completely different, since these machines are subject to variable external dynamics.

These motors must be extremely robust, be safe to operate, optimized to the specific machine application and possible to manufacture in high volumes

Traction experience put into use

ABB has extensive experience perfecting traction motors. For a century, we have provided the railway industry with optimized traction motors for applications ranging from small trams to large diesel-electric locomotives.

These skills are put into use and combined with the experience from the portfolio of industrial motors to produce e-mobility motors for heavy working machinery. Partnering with OEMs, we analyze the machine's work cycle and design the motor accordingly.

Key features and benefits

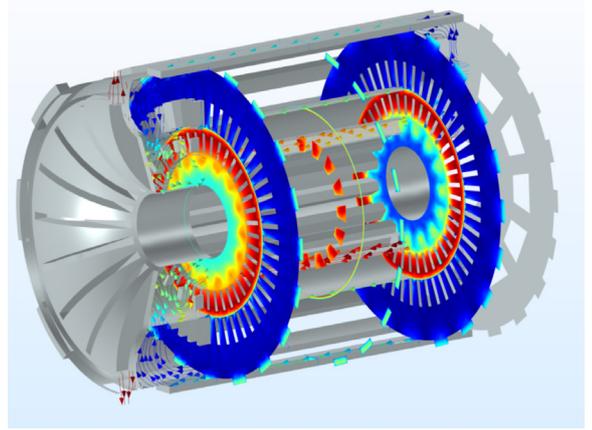
- Optimized motors to the actual work cycle and to end customer demands
- Compact and robust design for harsh environments
- Power levels from 90 kW up to 750 kW
- Liquid cooling with up to 65°C coolant temperature
- Customer collaboration and advanced calculations for optimal design
- Extensive manufacturing and service footprints ensure production capacity as well as local support.

Collaborative design process

Collaboration is a key value for ABB. We invite OEMs to join us to develop customized motors to fulfill the needs of their customers.

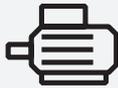
Should the motor be optimized for efficiency, performance or low weight? Or, for lowest environmental impact, free of permanent magnets from rare-earth minerals? Using advanced calculation tools, we customize each motor based on your needs while ensuring robustness from well proven building blocks.

With such criteria in mind, we can determine the optimal motor design. With the advanced simulation models used and our extensive experience, the results are quickly available, and the performance is known before the testing starts which shortens lead time and lower cost.



01 Each motor is customized based on end-customer criteria, using advanced calculation tools and based on well proven building blocks.

02 A wide range allows us to tailor motors to customer specifications.



Motor technologies

- Induction
- SynRM
- Permanent magnet



Frame diameter

285–585 mm



Power range

90–750 kW



Torque range

Up to 3500 Nm

03 The ABB e-drivetrain, including e-mobility motors and HES880 drives, in use by Epiroc, for the global mining group's second-generation battery powered vehicles.

