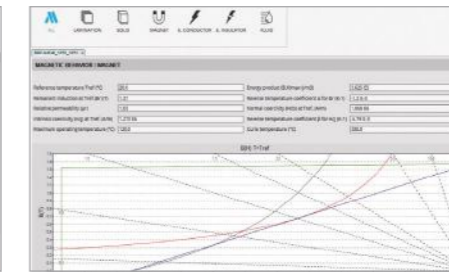
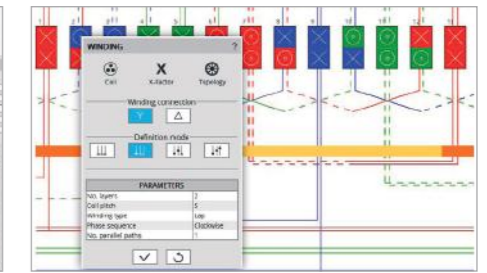


Part library



Material database



Winding tool

Altair® FluxMotor is a flexible open software tool dedicated to the pre-design of electric rotating machines. It enables the user to build a machine from standard or customized parts, add windings and materials to run a selection of tests and compare results. Based on modern technology, the standalone platform offers fast and accurate computations. When necessary, connection with Altair® Flux™ finite element software enables more advanced studies, taking into account more complex phenomenon.

Product Highlights:

- Dedicated to electric rotating motor design
- Rapidity of design
- A user-oriented winding tool
- Automated tests and reports allowing quick evaluation of machine efficiency
- Fast without compromising accuracy
- Open material database
- Effective machine parts management (slots, magnet shapes, etc.) with possible customizations
- An innovative way to manage projects with catalogs

Benefits

High productivity gain

- Efficient working environment
- Creating a model of an electric motor and evaluating it within a few minutes
- The technical-economic potential of an electric motor pre-design can be quickly understood, offering a high gain of productivity when modeling electric rotating machines
- Allowing better visualization of machine performances ensuring accurate choices

A broad range of users

- Technicians, Engineers or researchers
- From designers and manufacturers to integrators, maintenance and training staff

Fulfill all the design tasks

- Whatever the level of use: beginner, intermediate or expert
- Whatever the task: from selection or pre-design of motors to evaluation of performance

No compromise on accuracy

- Based on optimization technology, Altair® FluxMotor helps reduce computing time to the minimum
- The computations are based on 35 years Altair® Flux experience, insuring accurate results
- Settings adapted to the task – levels of accuracy vs. rapidity

Connection for advanced studies

- Easy Altair® Flux project export to perform advanced studies like eccentricity, vibro-acoustic, etc.
- At any time, the full parameterized Altair® Flux project, with all the physical properties embedded, is ready to be solved in Altair® Flux environment

Capabilities

Designing electric motors

- The Altair® FluxMotor dedicated design environment helps motor specialists to define machines within minutes
- Never start from a blank page! Altair® FluxMotor will always propose an existing motor configuration
- Then, step by step, from the shaft, rotor magnet to the slot, winding and housing of the stator, a dedicated interface will help users to finalize machine design

tor magnet to the slot, winding and housing of the stator, a dedicated interface will help users to finalize machine design

User-oriented winding tool

- Offering 4 different winding modes (automatic, easy, advanced and expert levels), the winding area is designed to help users find the right winding architecture
- Settings are well adapted to the task
- An automatic diagnostic is issued to evaluate the quality criteria of the winding. This helps users find the right winding parameters

A comprehensive and scalable material database

- A large selection of typical materials is provided: lamination, magnet, electric conductor, electric insulator, etc.
- Users can manage their own materials
- Easy way to define B(H) curve or iron losses parameters

Effective machines parts management

- In the PartManager area, libraries are provided with standard parts
- A large number of slots or magnets are available
- All the topologies are parameterized

Customization of parts (slots, magnets)

- Offered standard parts, slots or magnets, can be edited and customized for unlimited configuration
- Parts can be designed from a sketcher

Powerful project management

- Motor catalog environment allows easy management of motors and projects.
- Enhance project management
- Access past studies quickly
- Manage full range of products
- Quick performance comparison

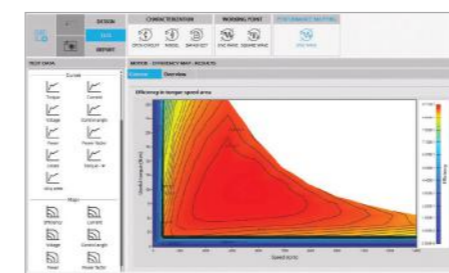
An embedded comparator is available. The general data and performance of several machines can be compared and help simplify the machine choice.

Testing and evaluating electric motors

- Altair® FluxMotor dedicated test environment enables users to assess motor performance
- Standard and relevant test portfolio available
- Predefined tests ready to be performed
- Relevant input parameters allow users to control the test conditions
- Processes based on optimization technology
- Results are automatically illustrated

List of automated tests ready to be performed

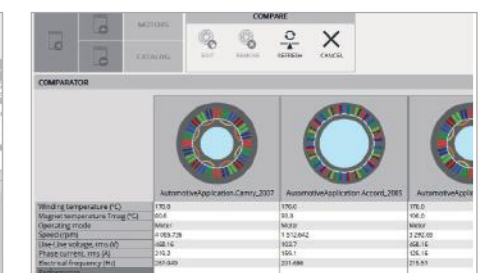
- Open circuit tests with cogging torque and back-emf
- Maps vs (Id, Iq): Altair® Flux, inductance, torque, iron losses, etc.
- Data sheet present comprehensive synthesis of machine performance
- Working point computations with sine wave or square wave drive
- Performance mapping with efficiency maps



Efficiency map



Back-emf results



Motor catalog with comparator