Motor Design Tool -Express Online for Rotating Machines

The latest web version of JMAG-Express, which can compute basic motor characteristics in 1 sec!

JMAG-Express Online is a parameter-based motor design support tool.

JMAG-Express Online now has the ability to evaluate all the motor characteristics like Torque- Speed characteristics, Loss characteristics, Inductance characteristics, etc.

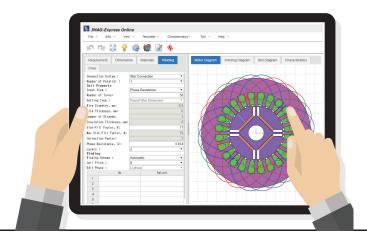
Because JMAG-Express Online can be used with tablets and smartphones, you can design motors anytime, anywhere, on the go or at home.

Update Information

- A report of Evaluation results can be output to PDF files. The analyses for claw pole type generators is available.
- The power factor and phase can be displayed from IPM and SPM efficiency maps.
- The power factor can be displayed from IM efficiency maps.

Start using JMAG-Express Online

www.jmag-international.com/express/



JMAG-Express Online can be used for free after creating an account.



Main functions of JMAG-Express Online are on the reverse side.

Recommended browser











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With over 240 analysis use cases, JMAG's homepage is full of information. Please come visit!

www.jmag-international.com





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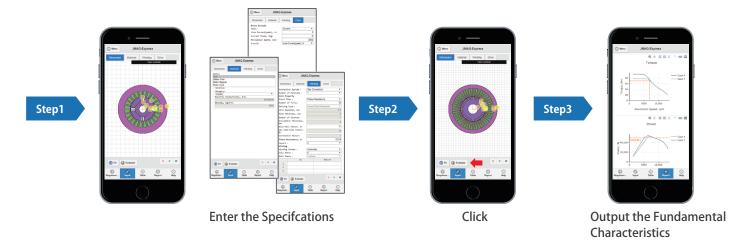


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Main functions of JMAG-Express Online

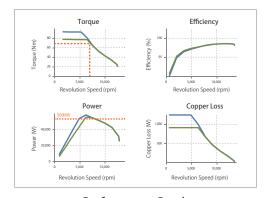
Extract motor characteristics in an instant

Displays motor characteristics form design specifications with one click. Requires no analysis experience.



■ Evaluate torque, efficiency, loss, and inductance characteristics with graphs and numerical values

Rotation speed vs torque characteristics, iron loss / copper loss characteristics, etc. are displayed in graphs in an instant. Motor characteristics can be confirmed from tables of machine constants.



Machine Constant			Dimension		
Revolution Speed	N, rpm	7000		Outer Diameter, mm	201.3
Inductance	Ld, H	1.744e-04		Gap Length, mm	0.85
	Lq, H	3.016e-04		Stack Height, mm	201.3
	Self Inductance, H	1.586e-04	stator:so_000	Number of Slots	48
	Mutual Inductance, H	-7.932e-05		Outside Diameter, mm	201.3
Torque Constant	Kt, Nm/A	0.2337		Inside Diameter, mm	102.7
Voltage Constant	Ke, V s/rad	0.2699		Tooth Width, mm	4.026
Magnetic Circuit	Average Teeth Flux Density, T	0.6113		Slot Opening Width, mm	2.5
	Average Back Yoke Flux Density,	0.3369		Core Back Width, mm	15.09
	T			Tooth Tang Depth, mm	2.012
	Average Gap Flux Density, T	0.3751	ipm_rotor: rip_000	Number of Magnet Poles	8
	Magnet Flux Linkage, Wb	0.04965		Outside Diameter, mm	101
Electric Part	Phase Current(RMS), A	56.83		Shaft Diameter, mm	40.3
	Wire Current Density, A/m ²	2.193e+06		Position of Magnet, mm	40.6
Power	Torque, Nm	18.31		Magnet Thickness, mm	3.52
	Efficiency, %	95.06		Magnet Width, mm	23.2
	Power, W	1.34e+04		Clearance between Slits, mm	3.52
	Power Factor	0.8114		Slit Width, mm	3.52
Loss	Copper Loss, W	48.38		Slit Depth, mm	1.51
	Iron Loss, W	647.4			
Electric Circuit	Phase Voltage(RMS), V	102.1	1		
	Line Voltage(RMS), V	176.8			

Performance Graph

Design sheet

Define geometries with templates

Templates for PMSMs, induction machines and brush motors are available.



SPM













Induction motor (Single-Phase) (Three-Phase)

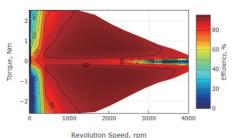
SRM

DC brush motors

Claw Pole Synchronous machines Alternator

■ Efficiency Maps

When creating maps, voltage and current limits can be applied. Multiple maps can be compared while using the parametric function.



■ Temperature Evaluation

The thermal model is evaluated using various heat generation sources like Copper Losses, Iron Losses, and Mechanical losses.

