

High Torque Frameless Motors MI – F series

The high torque frameless motors consist of two parts. The armature assembly with windings and the rotor assembly carrying the magnets. These basic elements that produce torque can be completely integrated into a specific application. A great advantage is the freedom in design and choice of bearings, shaft, housing and sensors that are required for the application.

The motors are outer runner permanent magnet synchronous motors (PMSM). Outer runner refers to the fact that the rotor revolves around the stator. This has the advantage that the generated force acts on a maximum radius within the available motor volume. The hereby obtained torque often eliminates the necessity for a transmission.

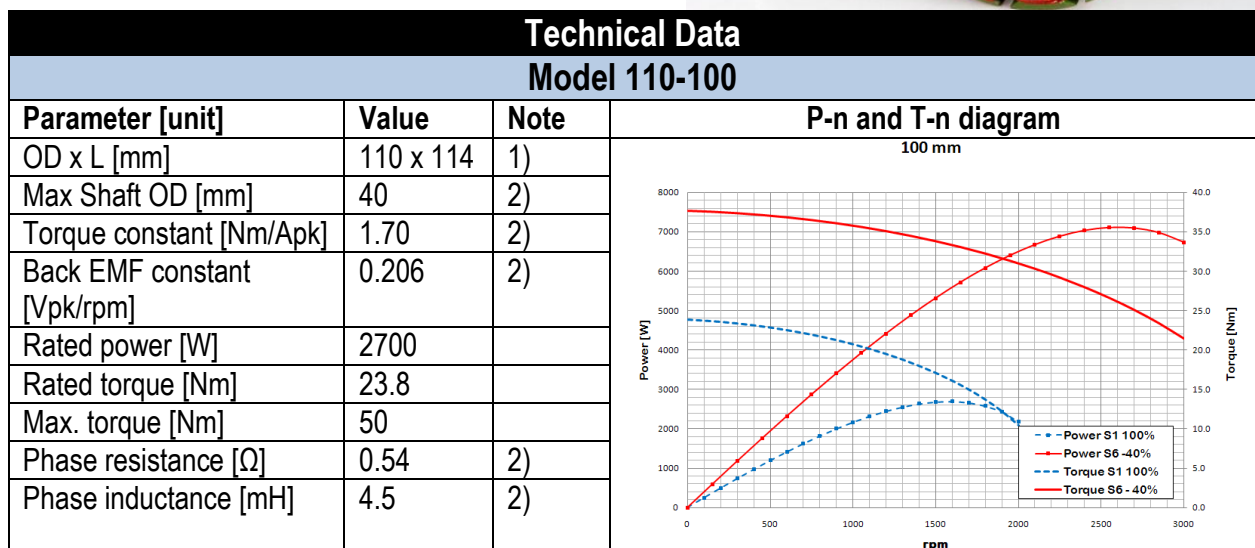
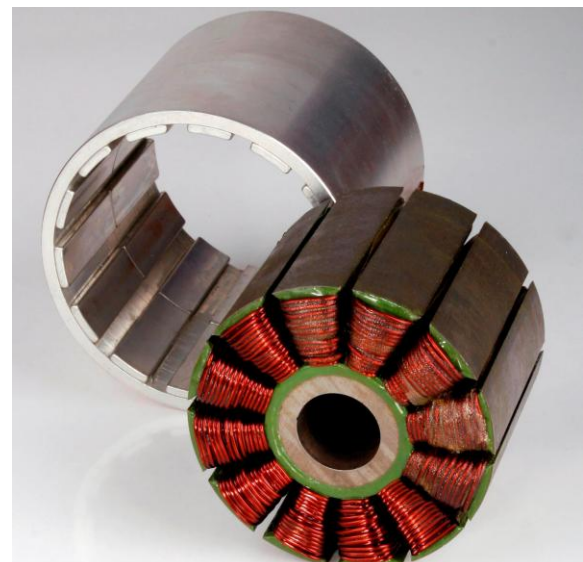
High torque motors are suitable in a variety of applications where high torque and a high efficiency is required. This is often required for direct drive applications such as vehicle propulsion or (wind) power generation. The motors are intended to be used in combination with a 3-phase sinusoidal current amplifier which guarantees smooth rotation with minimal torque ripple. The low cogging design makes the motors also suitable for servo control applications.

Application areas:

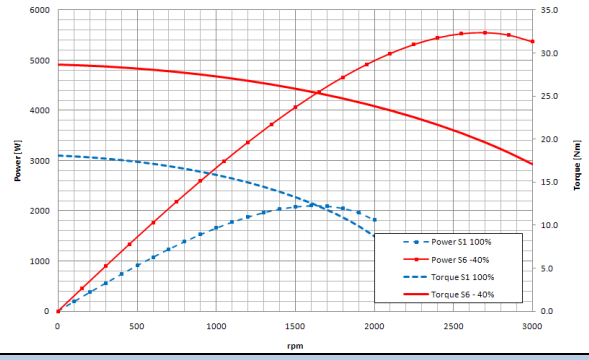
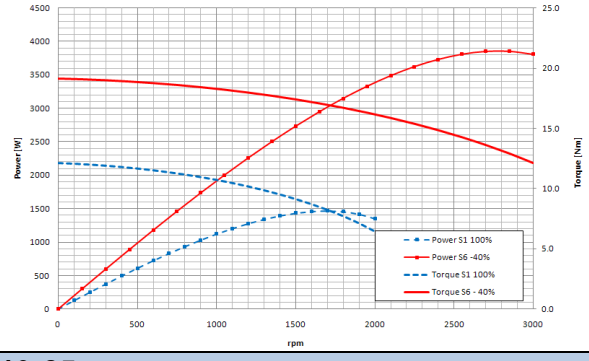
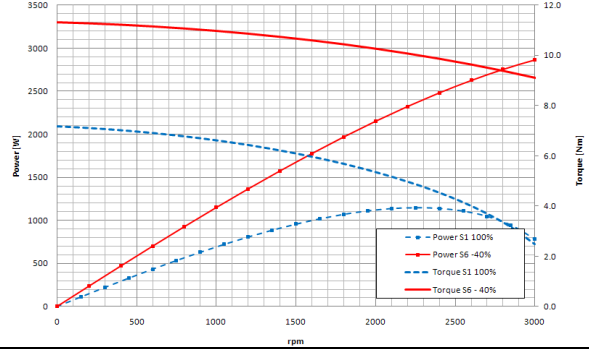
- Vehicle propulsion
- Power generation
- Servo motors

Key features:

- High torque density
- High efficiency
- Transmission not required
- High reliability and lifetime
- Maintenance free
- Quiet operation



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Technical Data			
Model 110-75			
Parameter [unit]	Value	Note	P-n and T-n diagram 75 mm 
OD x L [mm]	110 x 89	1)	
Max Shaft OD [mm]	40	2)	
Torque constant [Nm/Apk]	1.25	2)	
Back EMF constant [Vpk/rpm]	0.151	2)	
Rated power [W]	2100		
Rated torque [Nm]	18.1		
Max. torque [Nm]	37		
Phase resistance [Ω]	0.40	2)	
Phase inductance [mH]	3.2	2)	
Model 110-50			
Parameter [unit]	Value	Note	P-n and T-n diagram 50 mm 
OD x L [mm]	110 x 64	1)	
Max Shaft OD [mm]	40	2)	
Torque constant [Nm/Apk]	0.84	2)	
Back EMF constant [Vpk/rpm]	0.102	2)	
Rated power [W]	1470		
Rated torque [Nm]	12.1		
Max. torque [Nm]	24		
Phase resistance [Ω]	0.29	2)	
Phase inductance [mH]	2.3	2)	
Model 110-25			
Parameter [unit]	Value	Note	P-n and T-n diagram 25 mm 
OD x L [mm]	110 x 39	1)	
Max Shaft OD [mm]	40	2)	
Torque constant [Nm/Apk]	0.42	2)	
Back EMF constant [Vpk/rpm]	0.051	2)	
Rated power [W]	1150		
Rated torque [Nm]	7.2		
Max. torque [Nm]	12		
Phase resistance [Ω]	0.21	2)	
Phase inductance [mH]	1.7	2)	

Note

- 1) Standard range. Other dimensions available upon request.
- 2) Can be customized