

AF-230 Motor | Generator

EVO Electric offers permanent magnet machines based on proprietary axial flux technology that can be used in conjunction with custom built or standard industrial inverters. AF type electric machines combine high performance with low weight and size, ideal for electric and hybrid electric vehicles and a wide range of demanding industrial applications

The AF-230 range has the following key features:

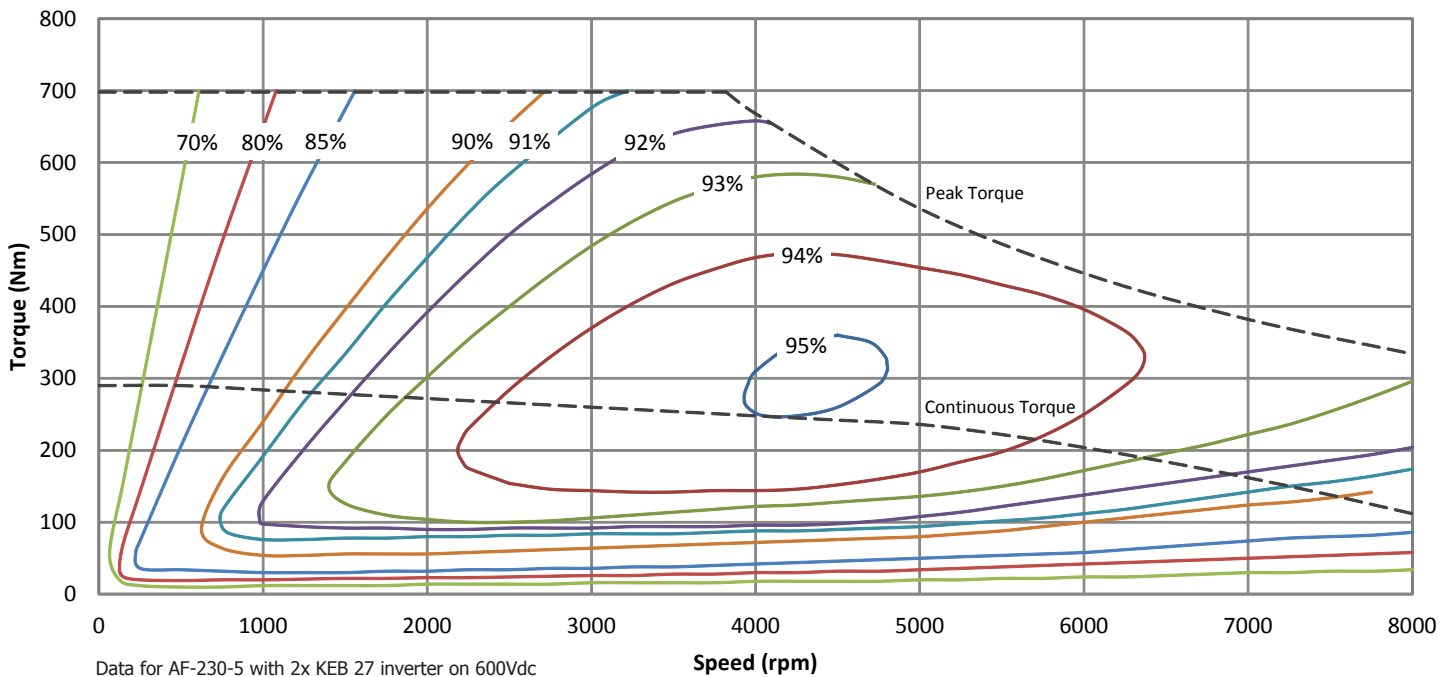
- Very high torque and power density
- Low cogging torque
- Compact design with flat front and back faces for mounting
- Integrated resolver(s) for rotor position feedback
- Double resolver option available for operation with 2 inverters
- Liquid cooling for enhanced performance
- Through shaft and customised versions available



AF-230 Specification

Type	PM Synchronous - Axial Flux
Maximum Speed	8000rpm
Nominal Torque	290Nm
Peak Torque (for up to 60s)	500Nm
Peak Torque (for up to 20s)	700Nm
Nominal Output Power	128kW
Peak Output Power (for up to 60s)	200kW
Peak Output Power (for up to 20s)	280kW
Torque Density	12.2Nm/kg
Power Density	4.9kW/kg
Peak Efficiency	95.1%
Coolant Medium	Water/Glycol (50/50)
Coolant Flow Rate	> 12l/min
Length	211.8mm (230.7mm)
Diameter	300mm
Weight	57.5kg

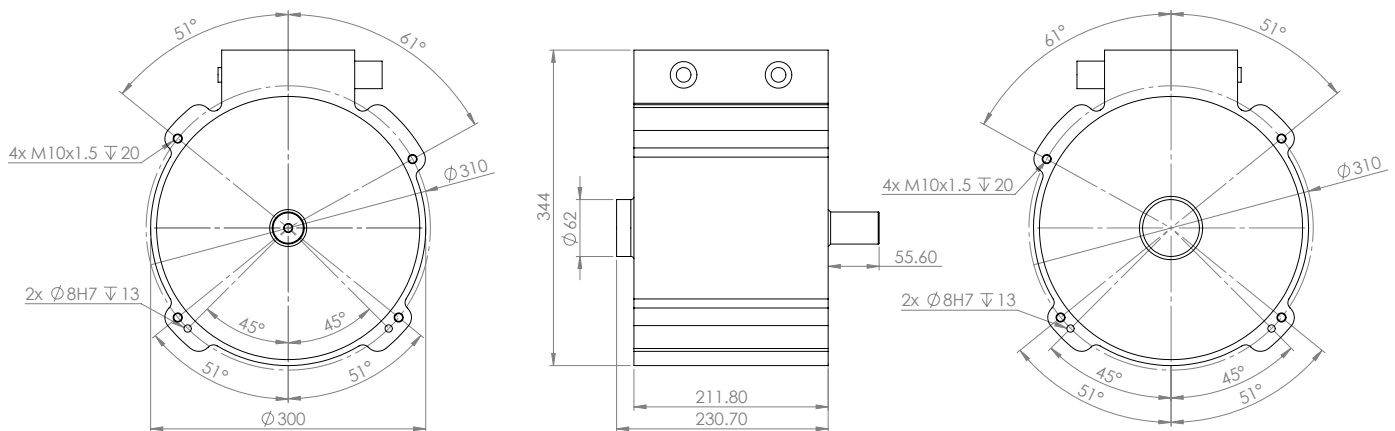
Performance and Efficiency (Motor Operation)



Winding Configurations

Machine Type	Machine Constants		Base Speed / Inverter Supply Voltage			
	K_T (Nm/A)	K_E (Vs/rad)	320Vdc	360Vdc	480Vdc	600Vdc
AF-230-3	0.8	0.65	3800rpm	4400rpm	6000rpm ¹	N/A
AF-230-4	1.07	0.86	2850rpm	3300rpm	4500rpm	5750rpm ¹
AF-230-5	1.34	1.08	2300rpm	2600rpm	3600rpm	4600rpm
AF-230-6	1.6	1.29	1900rpm	2200rpm	3000rpm	3800rpm

Actual values are temperature dependent. Data shown for 55deg C machine temperature. Base speed at no load. K_T in A_{rms} , K_E in V_{pk-L-L} ¹ Limited suitability



Machine shown is equipped with 2 resolvers. Single resolver version identical but flat back face

Standard spline to BS 3550:1963, 16/32 pitch, 21 teeth, fillet tooth side fit, class 1 fit. Effective length: 45mm