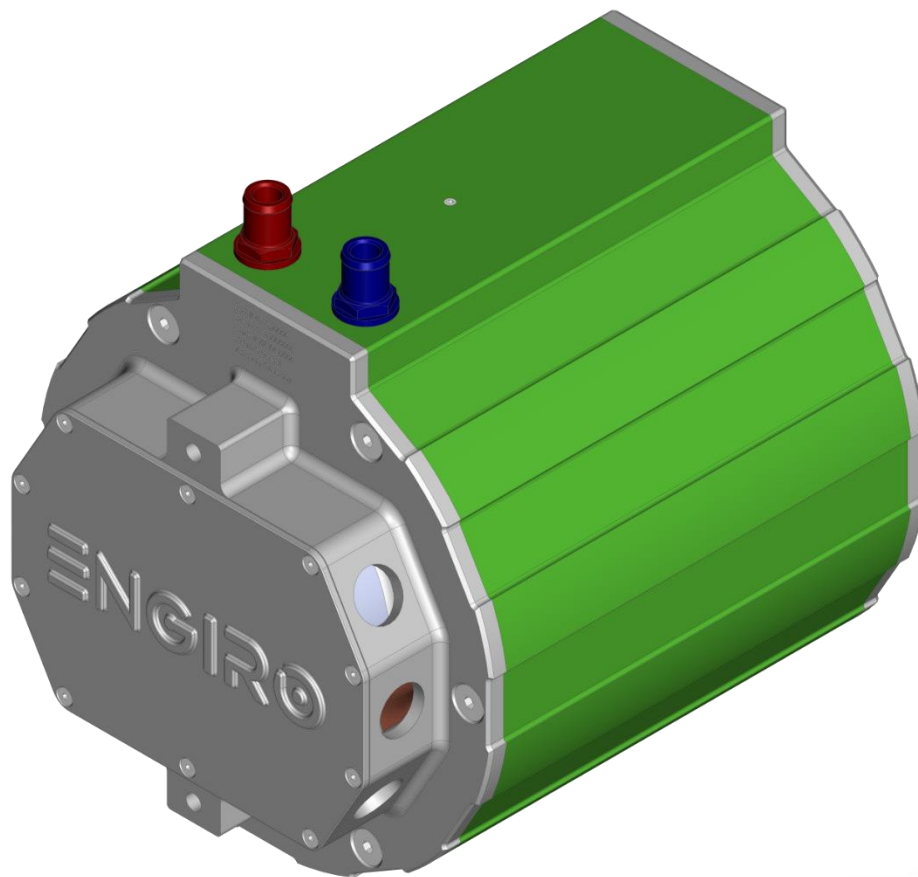


Data Sheet

205W-12023-ABC

water-cooled motor / generator with 72 kW continuous power



KEY FEATURES

- permanent magnet synchronous machine
- water-cooled
- high peak power for motor applications
- convincing cost-benefit ratio
- recommended voltage range from 300V to 850V
- delivery with controller possible
- various mechanical interfaces available

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Nominal Operation (S1, cooling as specified below)			
Torque	T_{nom}	124	Nm
Power	P_{nom}	72	kW
Speed	n_{nom}	5500	rpm
Phase rms-current	I_{nom}	197 ^{1,2)}	A
Battery voltage (DC)	U_{nom}	400	V
Electric frequency	$f_{el,nom}$	367	Hz
Power factor	$\cos(\varphi)$	0.75	

Maximal Values (S2, 10s, cooling as specified below)			
Torque	T_{max}	298	Nm
Power	P_{max}	125	kW
Phase rms-current	I_{max}	544 ²⁾	A
Battery voltage (DC)	U_{max}	850	V
Speed	n_{max}	8000	rpm
Electric frequency	$f_{el,max}$	533	Hz

Electrical Data			
Number of phases		3	
Number of pole pairs		4	
Maximal efficiency		96	%
T/I constant ($I < I_{nom}$)		0.62	Nm/A _{rms}
U/n constant (AC) at a temperature of 30°C	rms:	42.1	peak: 71.6 V/(1000rpm)
K_e constant (AC) at a temperature of 30°C	rms:	0.100	peak: 0.171 V/(rad*s ⁻¹)

Additional Data			
Weight (w/o cables)		see page 4	
Rotor moment of inertia		0.0208	kg*m ²
Protection category		IP6K9K ³⁾	
Maximal motor temperature		140	°C
Allowed ambient temperature		-20 ... 45 ⁴⁾	°C
Cooling (medium, flow rate, inlet temperature, pressure)		water/glycol 50/50, 8 l/min, ≤ 45°C, ≤ 0.5 bar	
Temperature monitoring		1 x KTY84-130	
Type approval		CE, EN 60034	
Customs tariff number		8501 5290	

Connectors			
Power terminals		3 x M25 cable gland	
Signal connectors		M16, 10 Pin Hummel Connector	
Cooling connectors		2 x ¾" / 19 mm	


¹⁾ Nominal current strongly dependent on cooling as specified below.

²⁾ The cables must not exceed a temperature of 140 °C at any time. Temperature and service life depend on the installation condition.

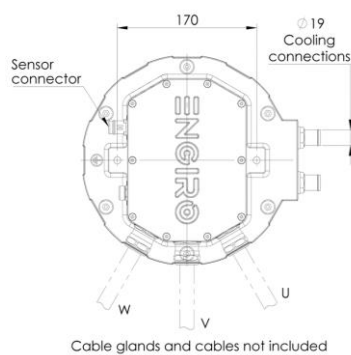
³⁾ Please note that the IP6K9K rating is only valid if the machine is installed with suitable cable glands and an appropriate sealed interface at the drive side of the motor (flange and/or shaft). Please contact ENGIRO for further questions.

⁴⁾ other range on request

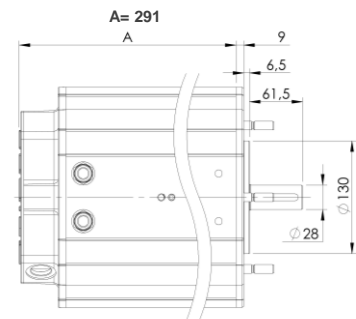
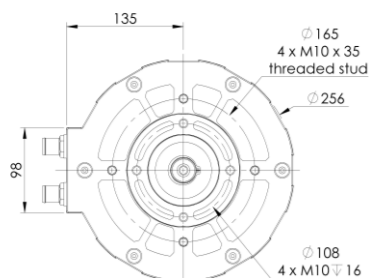
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Shaft and Flange Combinations for 205W-12023-ABC		Flange (A)	
		S (Standard)	
Shaft (B)	S (Cylindrical shaft with keyway \varnothing 28mm)	 (~46 kg)	
Position Sensor (C)		E: sin/cos encoder F: resolver gain 0.29 R: resolver gain 0.5 (Please note: The R resolver is a phase-out version with a 0.5 gain, which is replaced by the F resolver with a 0.29 gain)	
Other individual combinations are also possible on request.			

Technical Drawings



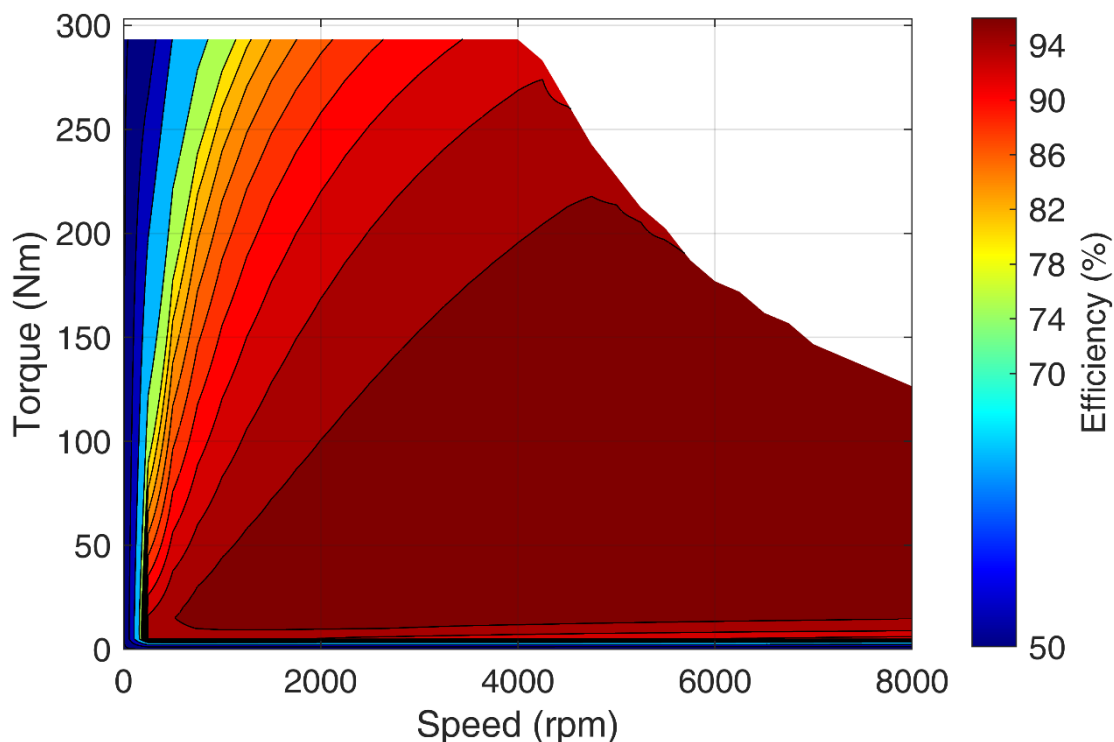
Flange S
Shaft S



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Simulated Efficiency of Motor Application

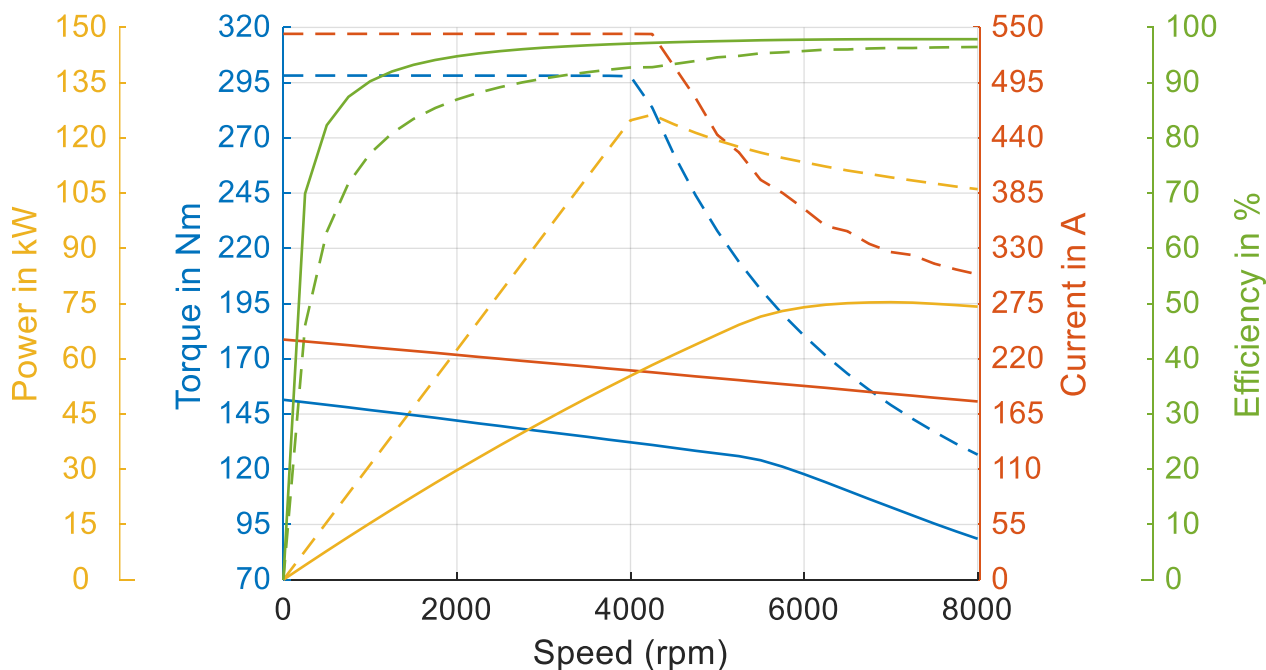
(electric machine only; $U_{nom} = 400\text{ V}$; machine at 140 °C ;)



Simulated Characteristic Motor Parameters

$U_{nom} = 400\text{ V}$

solid lines: continuous; dashed lines: maximum;



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