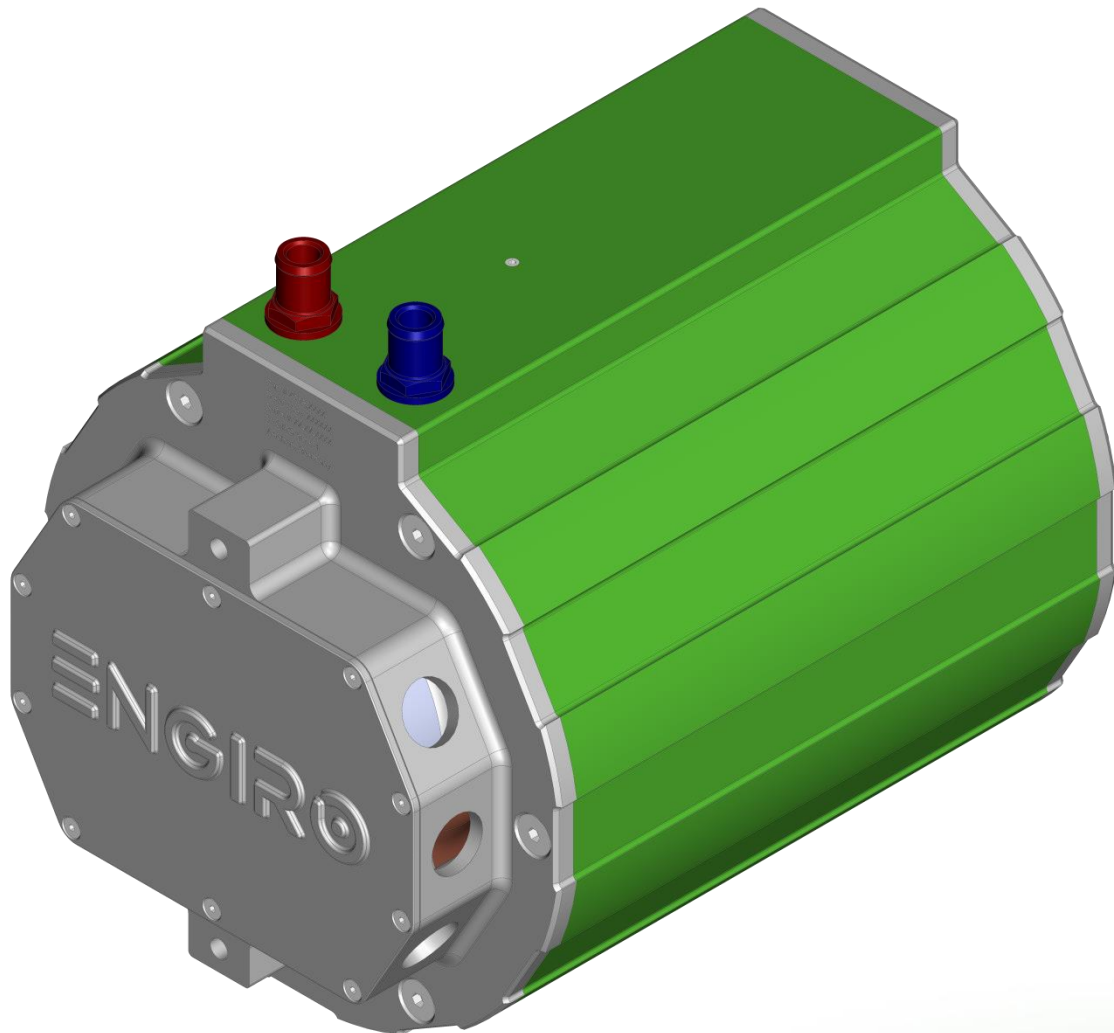


205W-12013-ABC

water-cooled motor / generator with up to 27 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 48V to 200V
- delivery with controller possible
- various mechanical interfaces available

Section	Page
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Characteristics Machine – 96 V	6

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Nominal Operation (S1, cooling as specified below)				
Torque	T_{nom}	129	120	Nm
Power	P_{nom}	14	27	kW
Speed	n_{nom}	1080	2180	rpm
Phase rms-current	I_{nom}	359 ^{1,2)}	339 ^{1,2)}	A
Battery voltage (DC)	U_{nom}	48	96	V
Electric frequency	$f_{el,nom}$	72	145	Hz
Power factor	$\cos(\varphi)$	0.72	0.69	
Maximal Values (S2, 10s, cooling as specified below)				
Torque	T_{max}	298	284	Nm
Power	P_{max}	24	52	kW
Phase rms-current	I_{max}	959 ²⁾	959 ²⁾	A
Battery voltage (DC)	U_{max}		200	V
Speed	n_{max}		5700	rpm
Electric frequency	$f_{el,max}$		380	Hz
Electrical Data				
Number of phases			3	
Number of pole pairs			4	
Maximal efficiency			96	%
T/I constant ($I < I_{nom}$)			0.35	Nm/A _{rms}
U/n constant (AC) at a temperature of 30°C	rms:	23.8	peak:	40.5 V/(1000rpm)
K_e constant (AC) at a temperature of 30°C	rms:	0.057	peak:	0.097 V/(rad*s ⁻¹)
Additional Data				
Weight (w/o cables)			see page 4	
Rotor moment of inertia			0.0183	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 5230	
Connectors				
Power terminals			3 x M25 cable gland	
Signal connectors			M16, 10 Pin	
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.

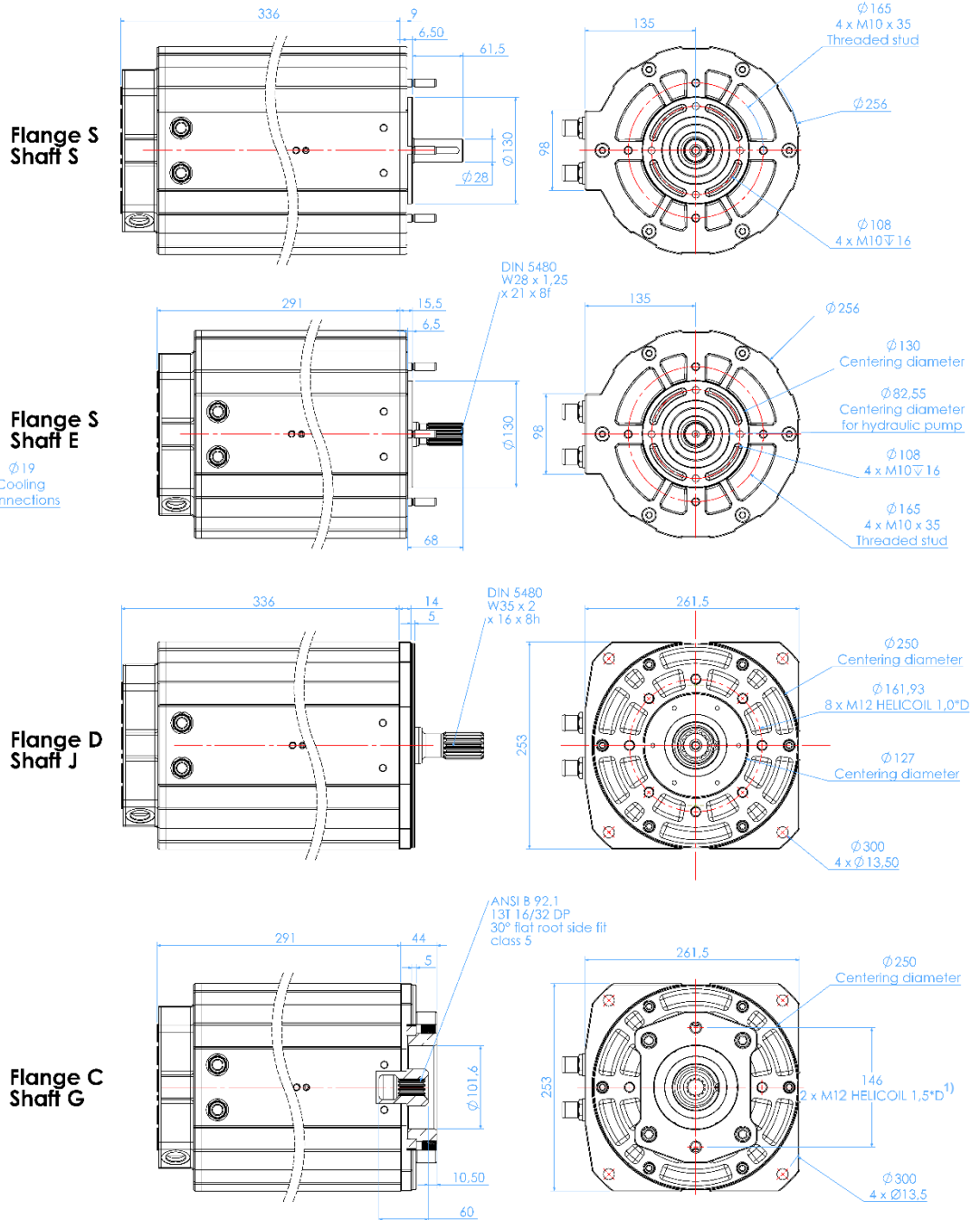
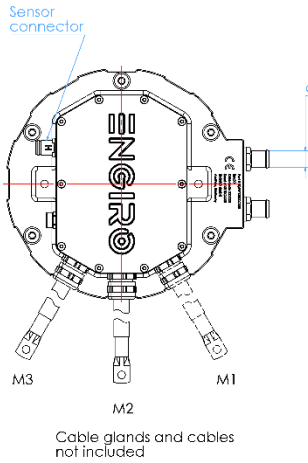
⁴⁾ other range on request

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Available Type Variants

type number	A: flange	B: shaft	C: position sensor
205W-12013-	S: standard	S: cylindrical shaft with keyway Ø28mm	E: sin/cos encoder
	C: flange for fan with hydraulic pump adapter	E: external splines, DIN 5480	
	D: flange for fan without insert	J: external splines, DIN 5480	
		G: hollow shaft with internal splines ANSI B 92.1	

Approximate machine weight		
flange	shaft	kg
S	S	47
S	E	47
D	J	47
C	G	47

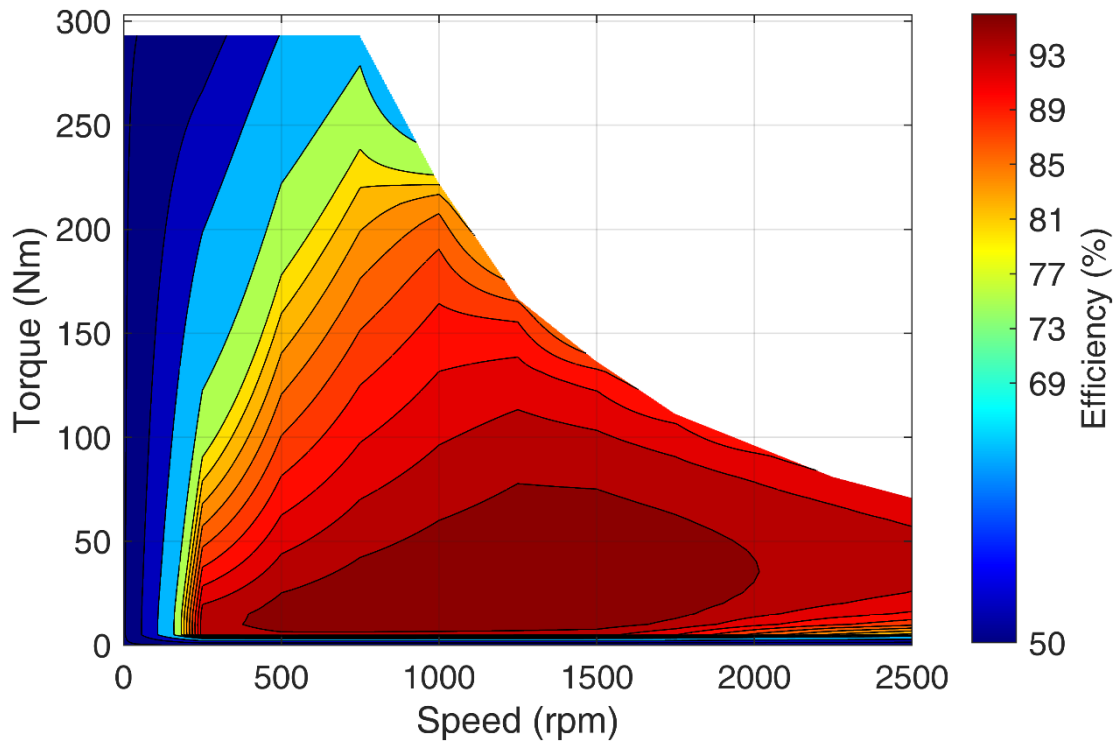


¹⁾ Machines with C-Flange and a revision number smaller than Rev15 have an M14 Helicoil 1,5"D. Revision number is printed on each machine on the rear flange below the water-cooling hose bars.

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Simulated Efficiency of Motor Application

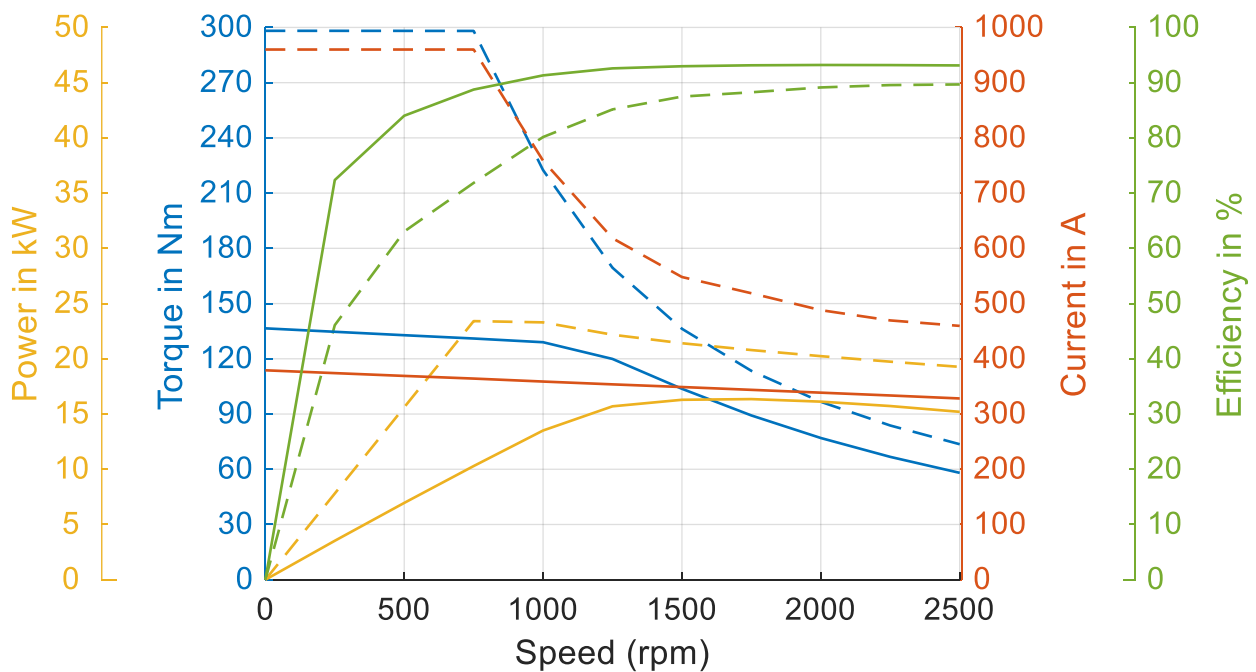
(electric machine only; $U_{nom} = 48\text{ V}$; machine at $140\text{ }^\circ\text{C}$;)



Simulated Characteristic Motor Parameters

$U_{nom} = 48\text{ V}$

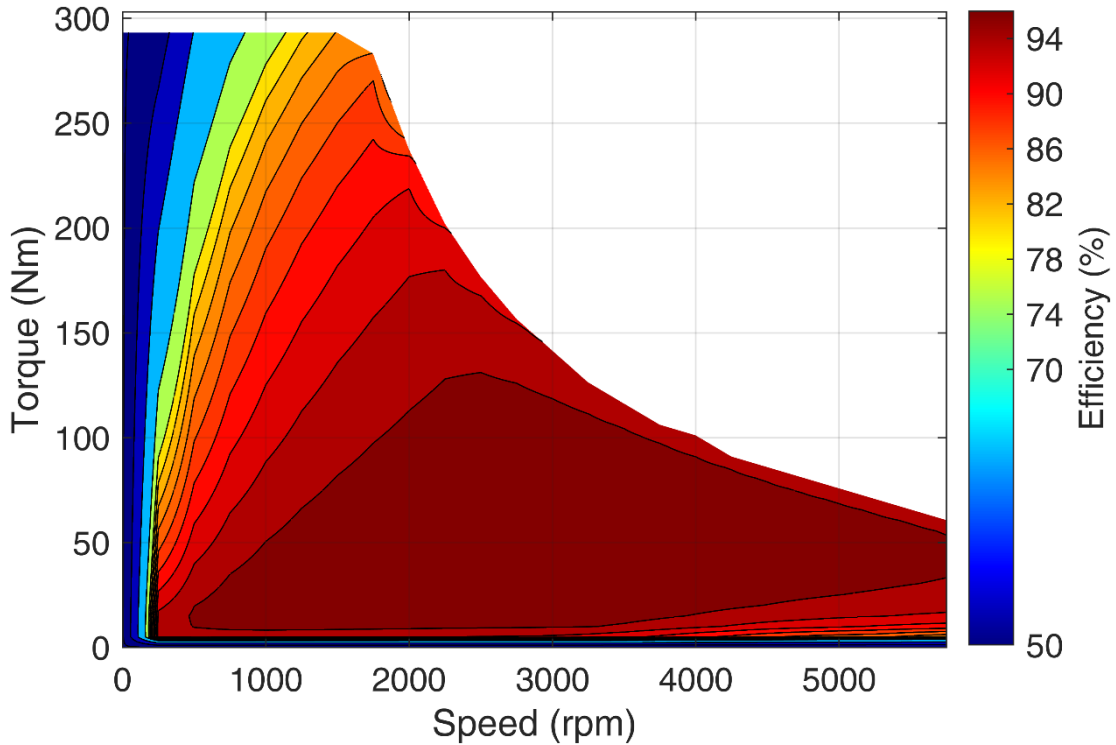
solid lines: continuous; dashed lines: maximum;



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Simulated Efficiency of Motor Application

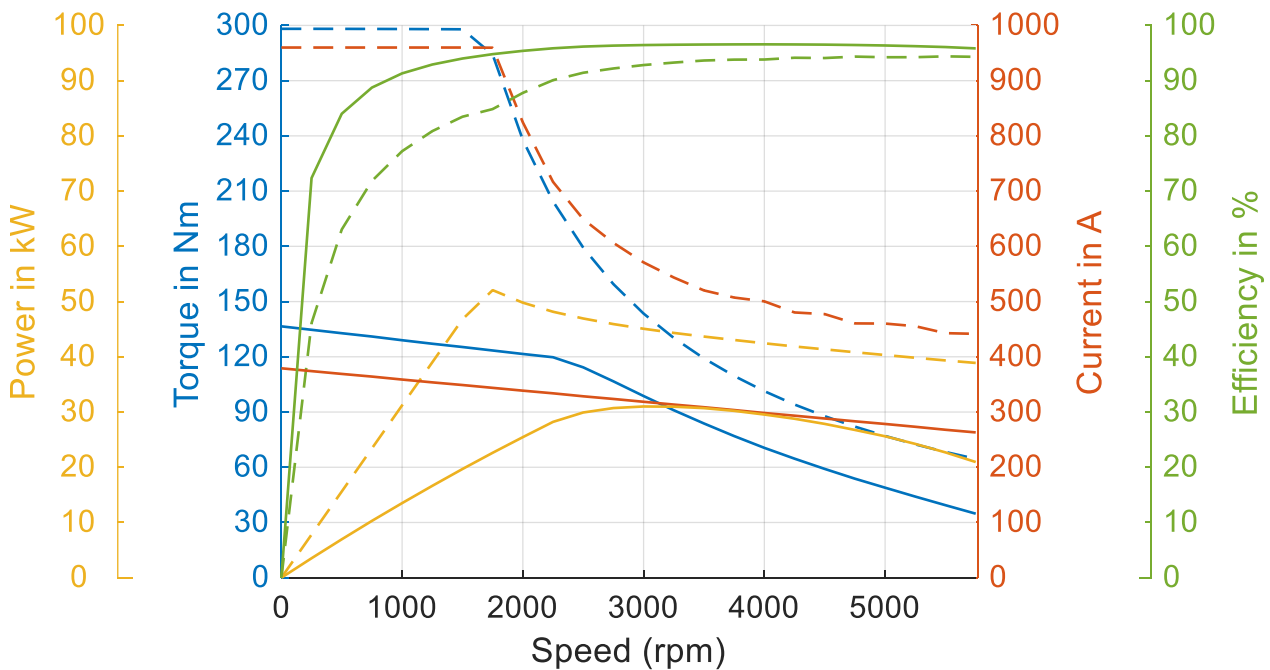
(electric machine only; $U_{nom} = 96\text{ V}$; machine at 140 °C ;)



Simulated Characteristic Motor Parameters

$U_{nom} = 96\text{ V}$

solid lines: continuous; dashed lines: maximum;



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