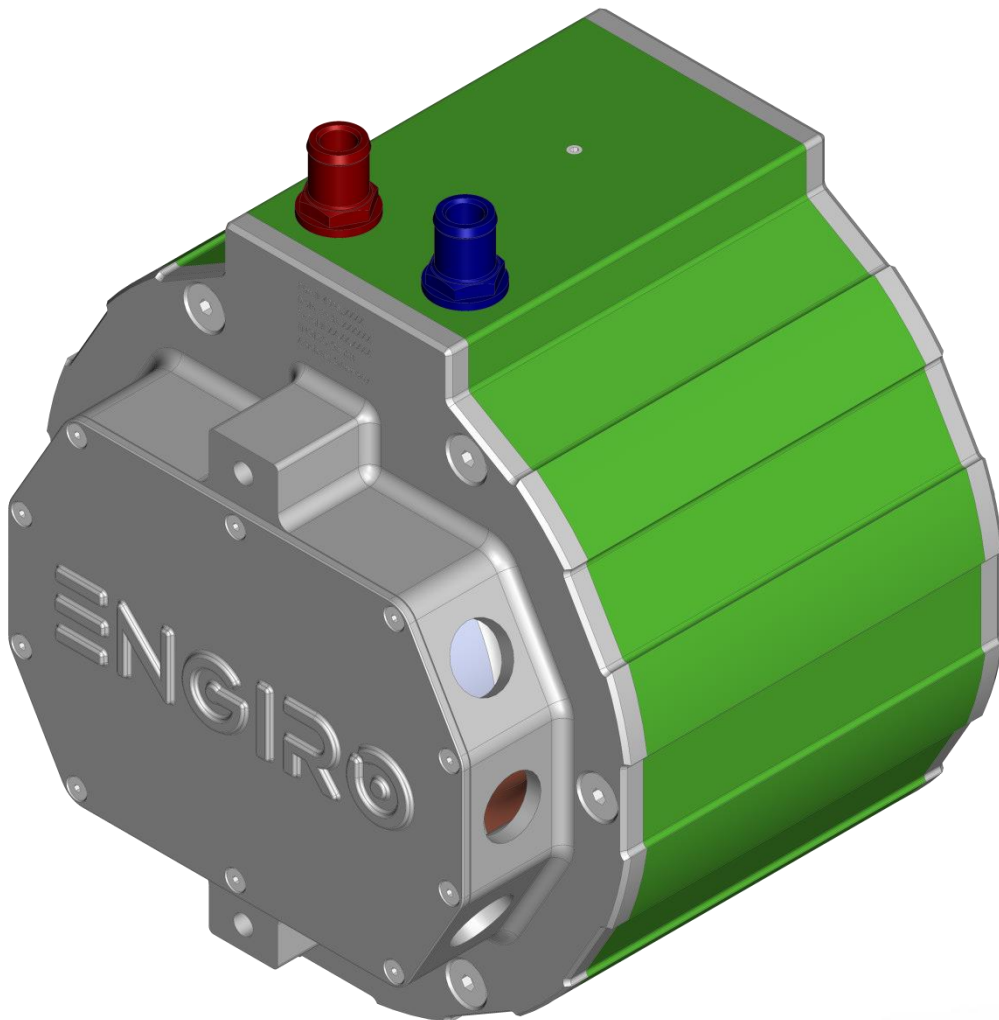


# 205W-04191-ABC

water-cooled motor / generator with up to 12 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 400V to 850V
- delivery with controller possible
- various mechanical interfaces available

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Nominal Operation (S1, cooling as specified below)					
Torque	$T_{nom}$	40	39	Nm	
Power	$P_{nom}$	7	12	kW	
Speed	$n_{nom}$	1750	3010	rpm	
Phase rms-current	$I_{nom}$	25 <sup>1,2)</sup>	24 <sup>1,2)</sup>	A	
Battery voltage (DC)	$U_{nom}$	400	700	V	
Electric frequency	$f_{el,nom}$	117	201	Hz	
Power factor	$\cos(\varphi)$	0.71	0.70		
Maximal Values (S2, 10s, cooling as specified below)					
Torque	$T_{max}$	94	94	Nm	
Power	$P_{max}$	12	20	kW	
Phase rms-current	$I_{max}$	66 <sup>2)</sup>	66 <sup>2)</sup>	A	
Battery voltage (DC)	$U_{max}$		850	V	
Speed	$n_{max}$		6070	rpm	
Electric frequency	$f_{el,max}$		405	Hz	
Electrical Data					
Number of phases			3		
Number of pole pairs			4		
Maximal efficiency			96	%	
$T/I$ constant ( $I < I_{nom}$ )			1.68	Nm/A <sub>rms</sub>	
$U/n$ constant (AC) at a temperature of 30°C	rms:	116.5	peak:	198.1	V/(1000rpm)
$K_e$ constant (AC) at a temperature of 30°C	rms:	0.278	peak:	0.473	V/(rad*s <sup>-1</sup> )
Additional Data					
Weight (w/o cables)			see page 4	kg	
Rotor moment of inertia			0.0064	kg*m <sup>2</sup>	
Protection category			IP6K9K <sup>3)</sup>		
Maximal motor temperature			140	°C	
Allowed ambient temperature			-20 ... 45 <sup>4)</sup>	°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		

<sup>1)</sup> Nominal current strongly dependent on cooling as specified below.

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

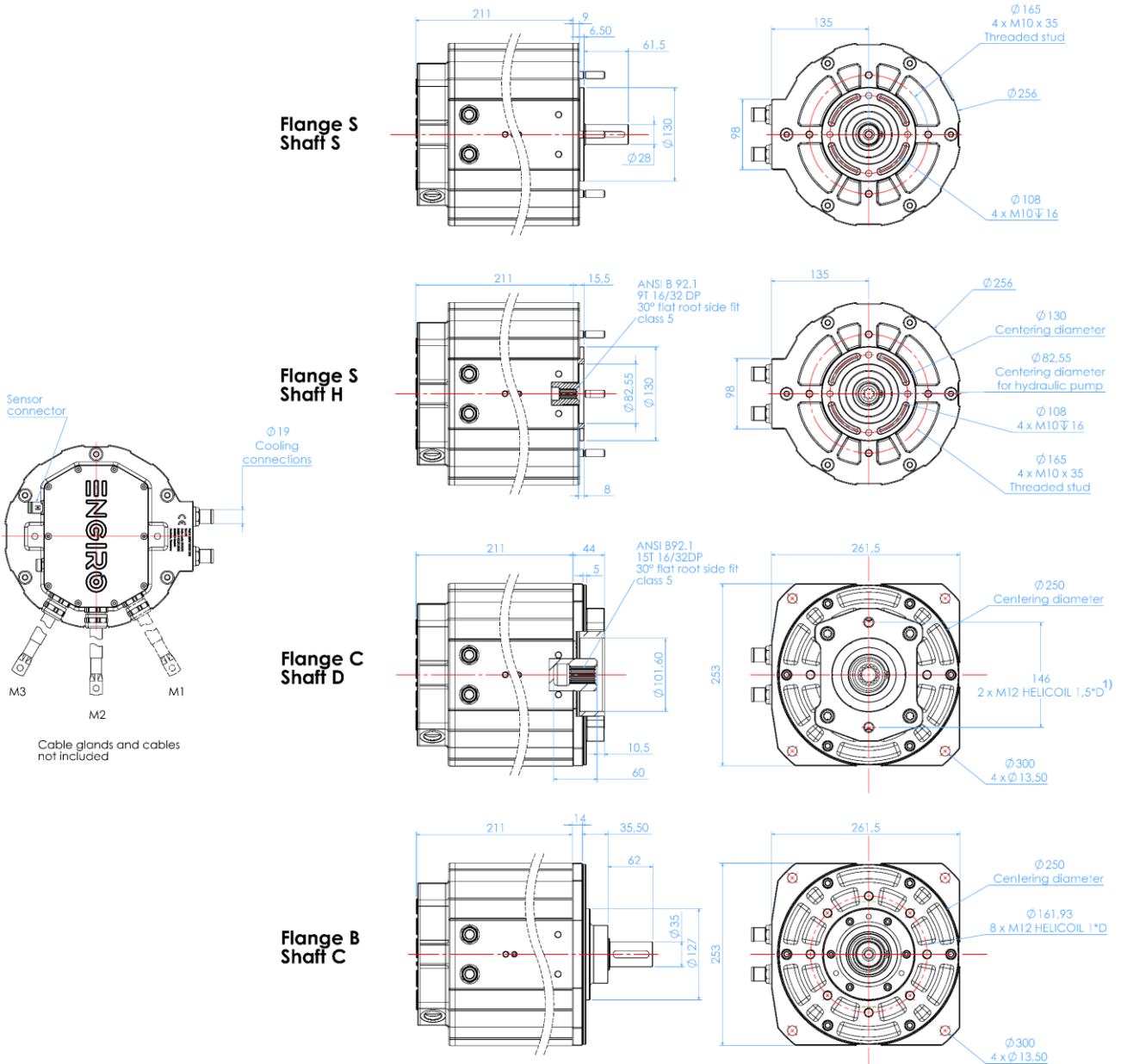
<sup>3)</sup> Please note that the IP6K9K rating is only valid if the machine is installed with suitable cable glands and an appropriate sealed interface at the drive side of the motor (flange and/or shaft). Please contact ENGIRO for further questions.

<sup>4)</sup> other range on request

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Available Type Variants

type number	A: flange	B: shaft	C: position sensor
205W-04191-	S: standard	S: cylindrical shaft with keyway Ø28mm	R: resolver (gain 0.5)
	B: flange for fan motor	H: hollow shaft with internal splines ANSI B 92.1	F: resolver (gain 0.29)
	C: flange for fan without insert	C: cylindrical shaft with keyway Ø35mm	N: none
		D: hollow shaft with internal splines ANSI B 92.1	

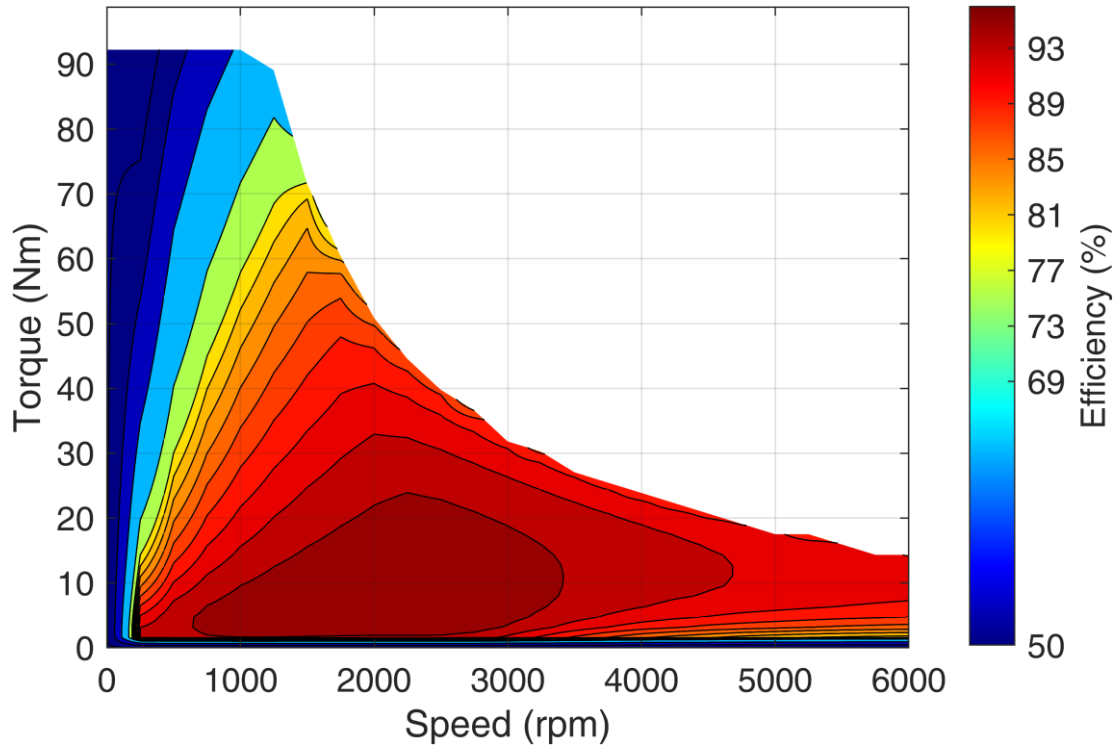


<sup>1)</sup> Machines with C-Flange and a revision number smaller than Rev15 have an M14 Helicoil 1,5"D. Revision number is printed on each machine on the rear flange below the water-cooling hose barbs.

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Simulated Efficiency of Motor Application

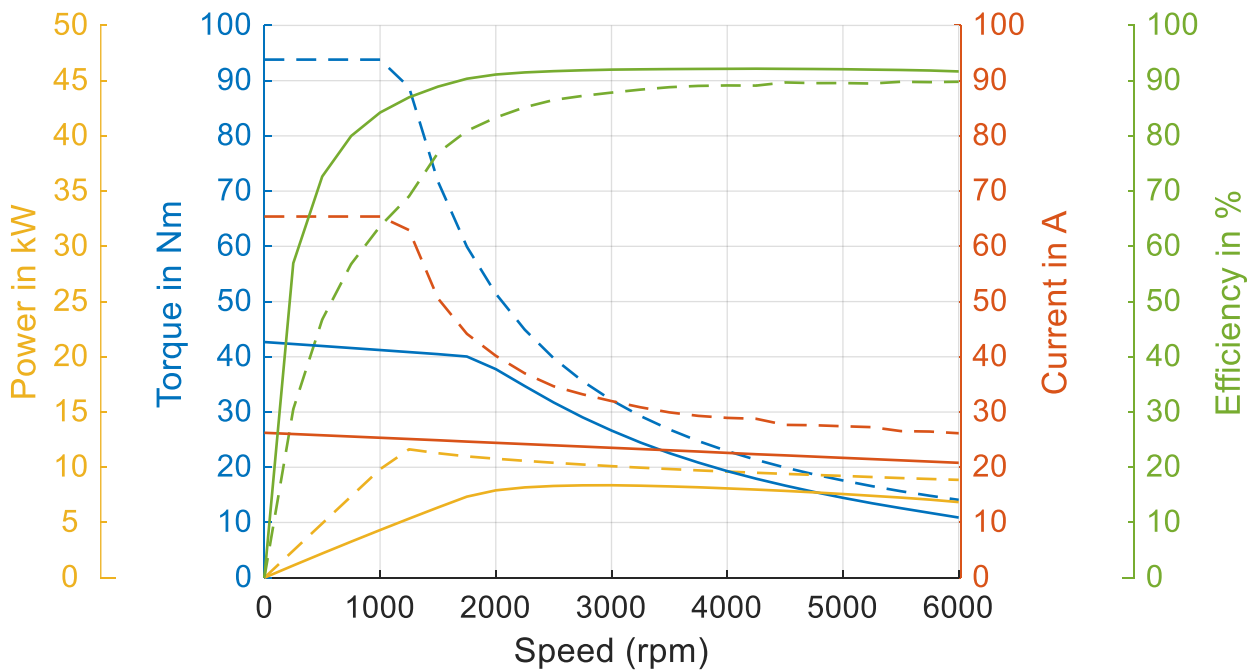
(electric machine only;  $U_{nom} = 400\text{ V}$ ; machine at  $140\text{ °C}$ ;)



Simulated Characteristic Motor Parameters

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

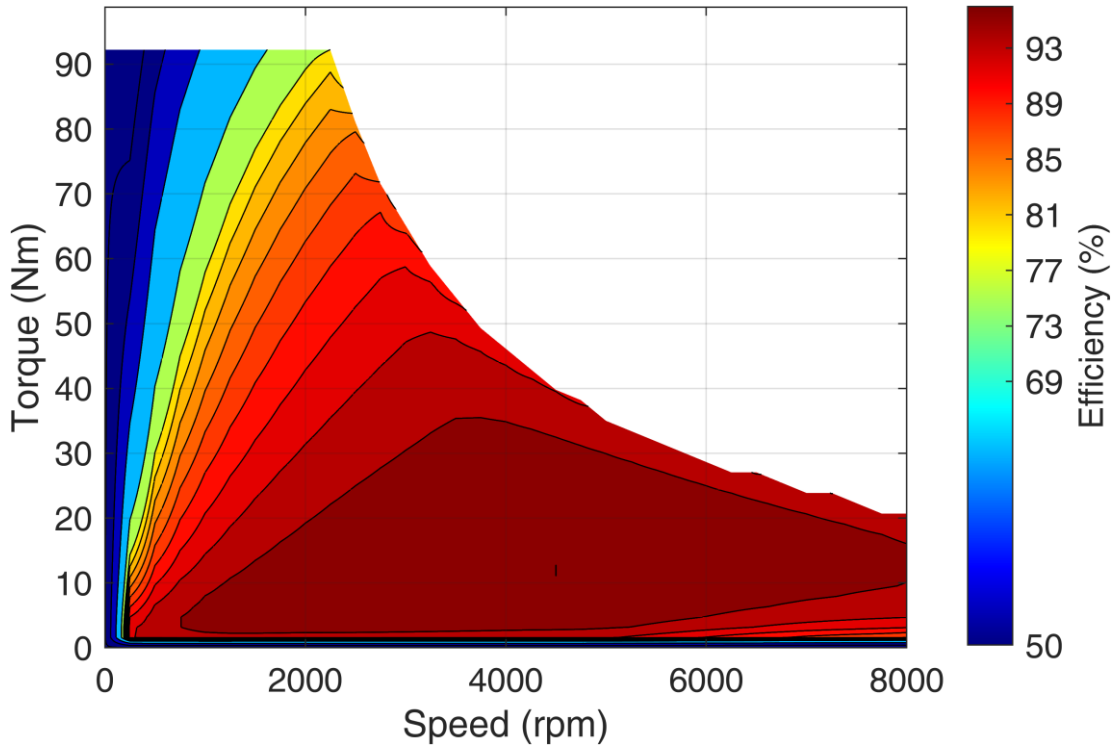
solid lines: continuous; dashed lines: maximum;



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Simulated Efficiency of Motor Application

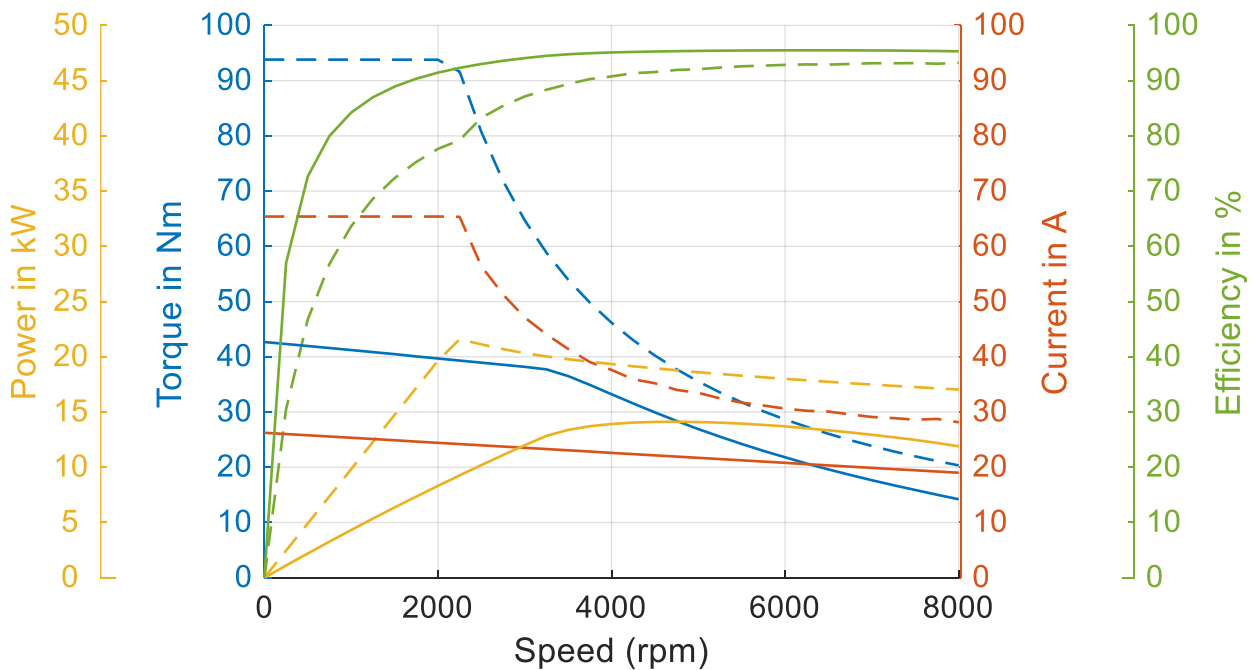
(electric machine only;  $U_{nom} = 700\text{ V}$ ; machine at  $140\text{ °C}$ ;)



Simulated Characteristic Motor Parameters

$U_{nom} = 700\text{ V}$

solid lines: continuous; dashed lines: maximum;



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