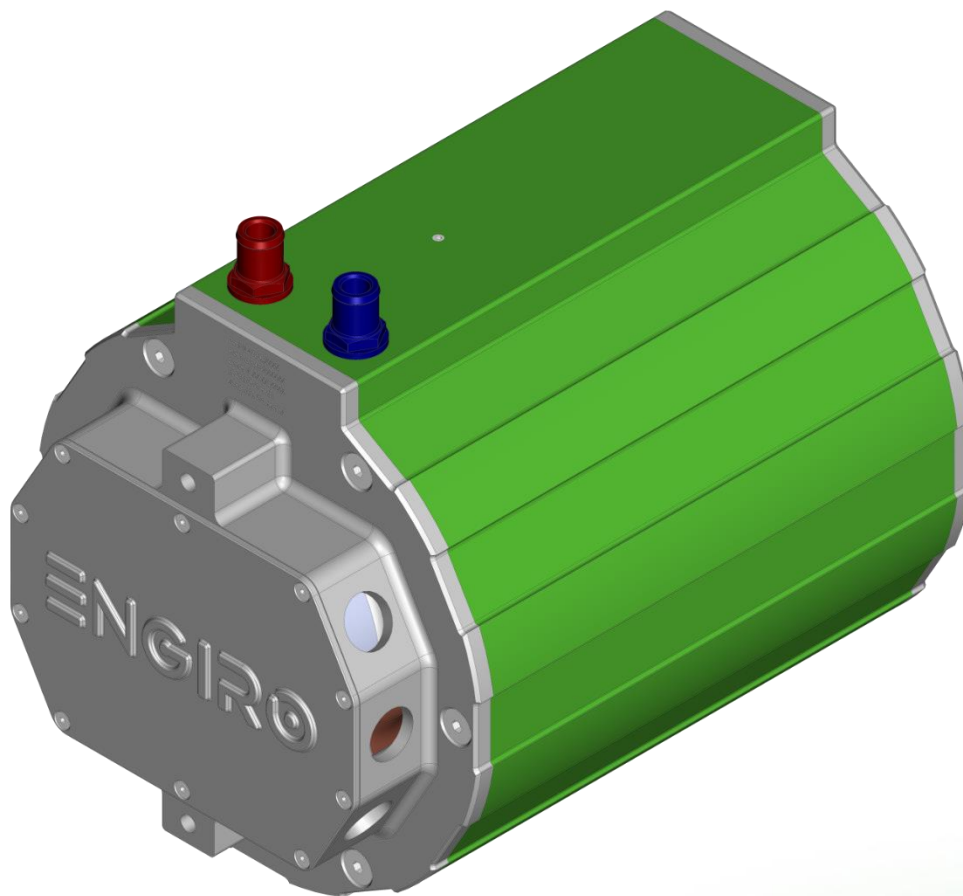


# Data Sheet

## 205W-16013-ABC

water-cooled motor / generator with up to 103kW 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	$T_{nom}$	142	Nm
Power	$P_{nom}$	103	kW
Speed	$n_{nom}$	6840	rpm
Phase rms-current	$I_{nom}$	301 <sup>1,2)</sup>	A
Battery voltage (DC)	$U_{nom}$	400	V
Electric frequency	$f_{el,nom}$	456	Hz
Power factor	$\cos(\varphi)$	0.69	

Maximal Values (S2, 10s, cooling as specified below)			
Torque	$T_{max}$	398	Nm
Power	$P_{max}$	224	kW
Phase rms-current	$I_{max}$	962 <sup>2)</sup>	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 ( $I < I_{nom}$ )		0.47	Nm/A <sub>rms</sub>
$U/n$ constant (AC) at a temperature of 30°C	rms:	31.7	peak: 53.9 V/(1000rpm)
$K_e$ constant (AC) at a temperature of 30°C	rms:	0.076	peak: 0.129 V/(rad*s <sup>-1</sup> )

Additional Data			
Weight (w/o cables)		see page 4	kg
Rotor moment of inertia		0.0267	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, 12 l/min, ≤ 45°C, ≤ 0.5 bar	
Temperature monitoring		1 x KTY84-130	
Type approval		CE, EN 60034	
Customs tariff number		8501 5381	

Connectors			
Power terminals		3 x M25 cable gland	
Signal connectors		M16, 10 Pin Hummel Connector	
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.

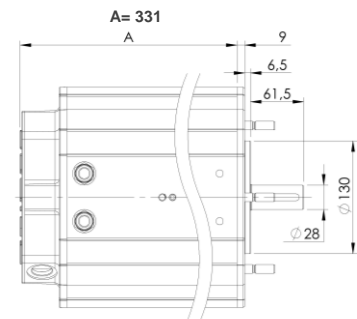
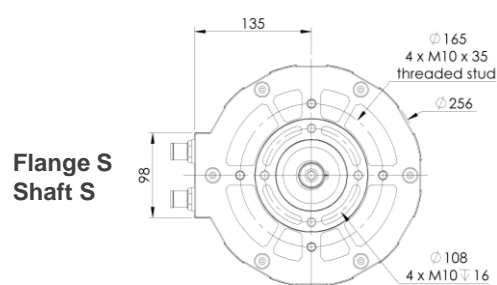
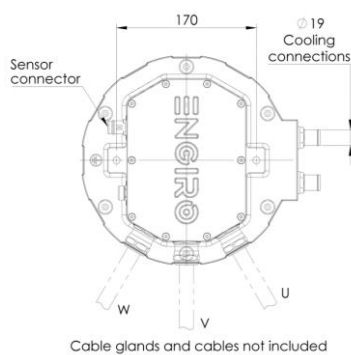
<sup>4)</sup> other range on request

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<b>Shaft and Flange Combinations for 205W-16013-ABC</b>		<b>Flange (A)</b>
		<b>S</b> (Standard)
<b>Shaft (B)</b>	<b>S</b> (Cylindrical shaft with keyway $\varnothing$ 28mm)	 (~ 56 kg)
<b>Position Sensor (C)</b>		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.

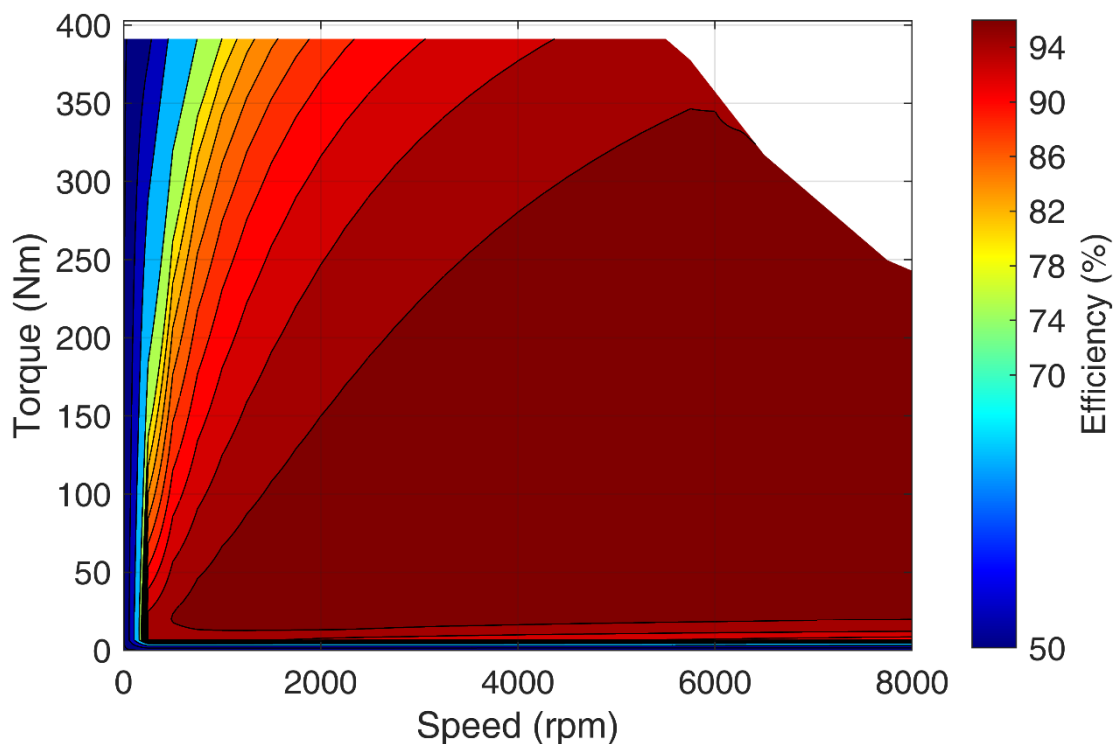
## Technical Drawings



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## Simulated Efficiency of Motor Application

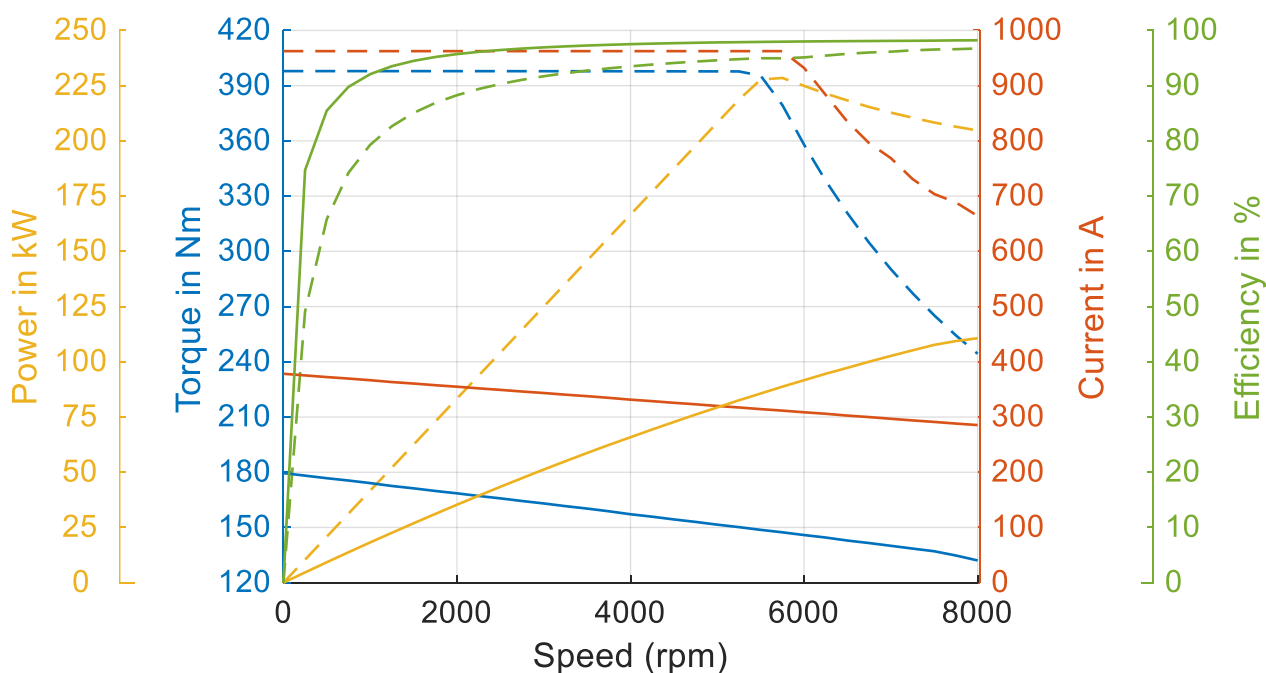
(electric machine only;  $U_{nom} = 400\text{ V}$ ; machine at  $140\text{ °C}$ ;) )



## Simulated Characteristic Motor Parameters

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

solid lines: continuous; dashed lines: maximum;



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