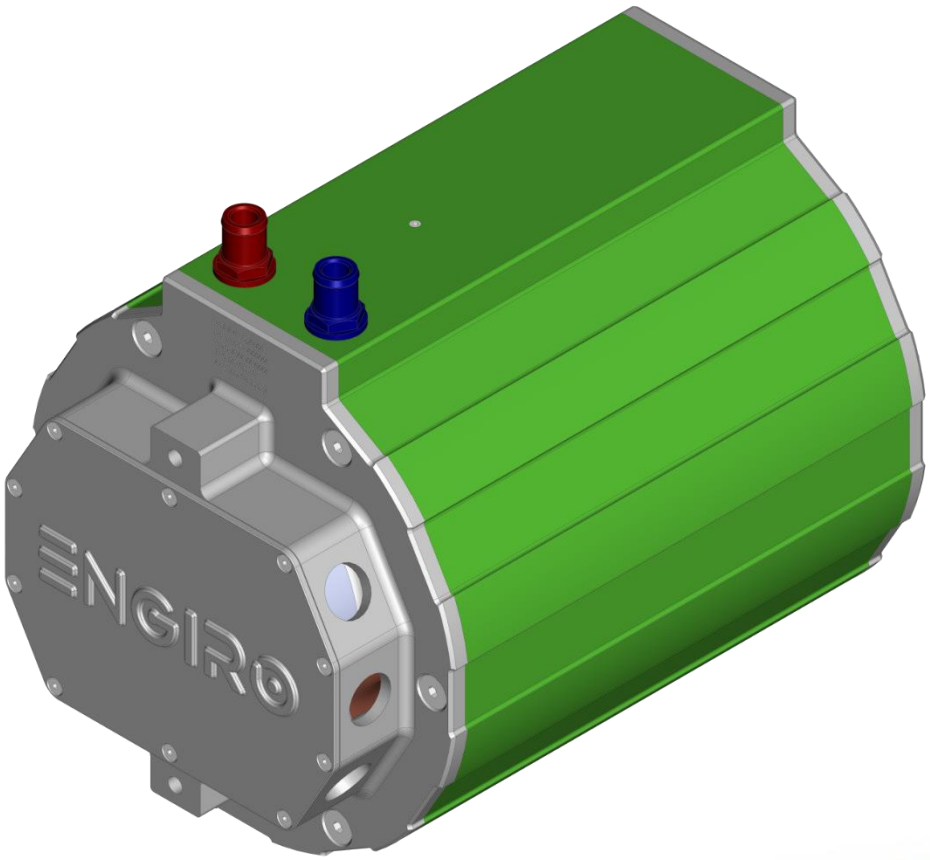
Data Sheet
205W-16018-ABC

water-cooled motor / generator with up to 93 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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Version: 010.01

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Technical Data
Machine

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Nominal Operation (S1, cooling as specified below)						
Torque	T_{nom}				177	Nm
Power	P_{nom}				93	kW
Speed	n_{nom}				4940	rpm
Phase rms-current	I_{nom}				270[1,2)]	A
Battery voltage (DC)	U_{nom}				400	V
Electric frequency	$f_{el,nom}$				329	Hz
Power factor	cos(φ)				0.75	
Maximal Values (S2, 10s, cooling as specified below)						
Torque	T_{max}				392	Nm
Power	P_{max}				164	kW
Phase rms-current	I_{max}				694[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})					0.64	Nm/A_{rms}
U/*n* constant (AC)		rms:	43.9	peak:	74.6	V/(1000rpm)
K_e constant (AC)		rms:	0.105	peak:	0.178	$V/(rad*s^{-1})$
Additional Data						
Weight (w/o cables)					see page 4	kg
Rotor moment of inertia					0.0267	$kg*m^2$
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, 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	

[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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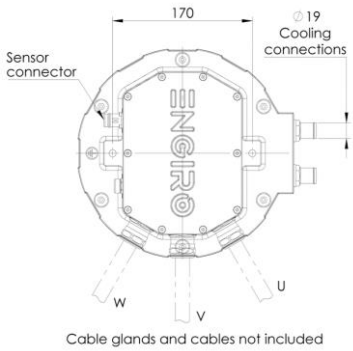
Table Shaft and Flange Combinations

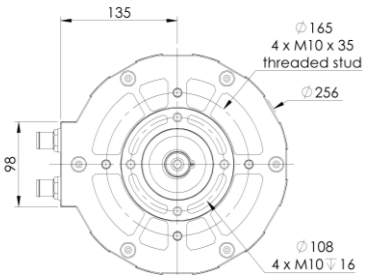
Shaft and Flange Combinations for 205W-16018-ABC		Flange (A)
		S (Standard)
Shaft (B)	**S** (Cylindrical shaft with keyway Ø 28mm)	● (~56 kg)
Position Sensor (C)		F: resolver gain 0.29 R: resolver gain 0.5 (Please note: The R resolver is a phase-out version with a 0.5 gain, which is replaced by the F resolver with a 0.29 gain)

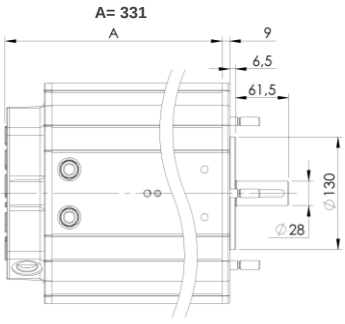
Other individual combinations are also possible on request.

Technical Drawings



Flange S
Shaft S





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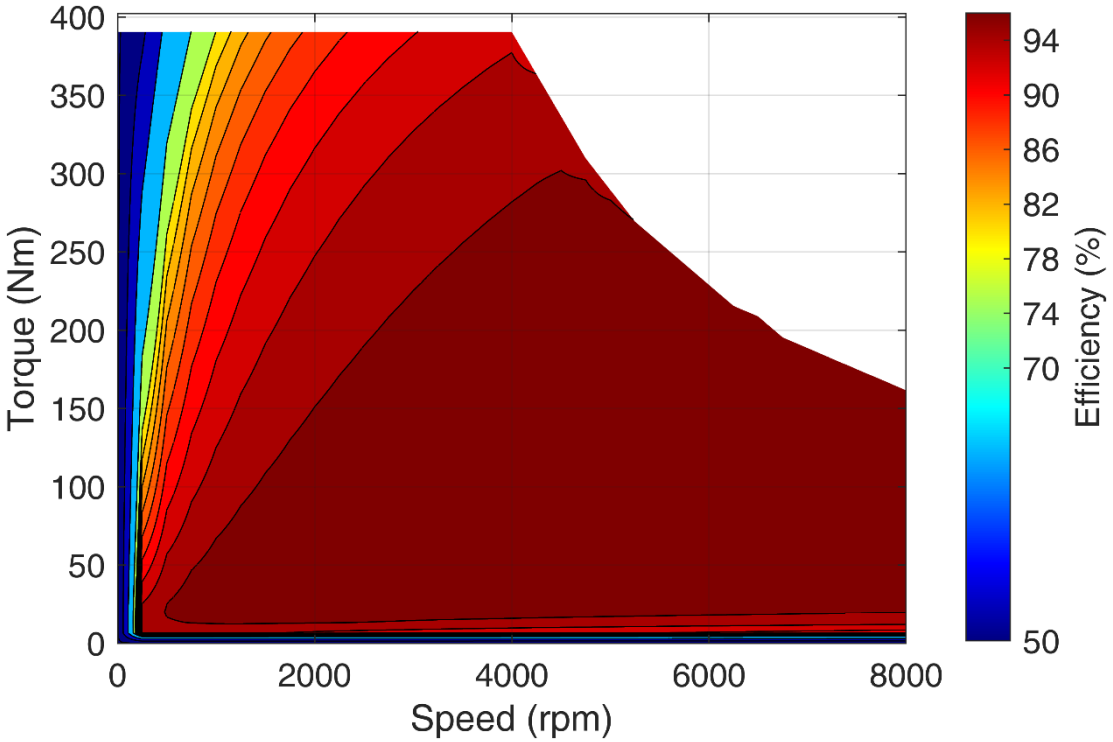
Simulated Efficiency of Motor Application

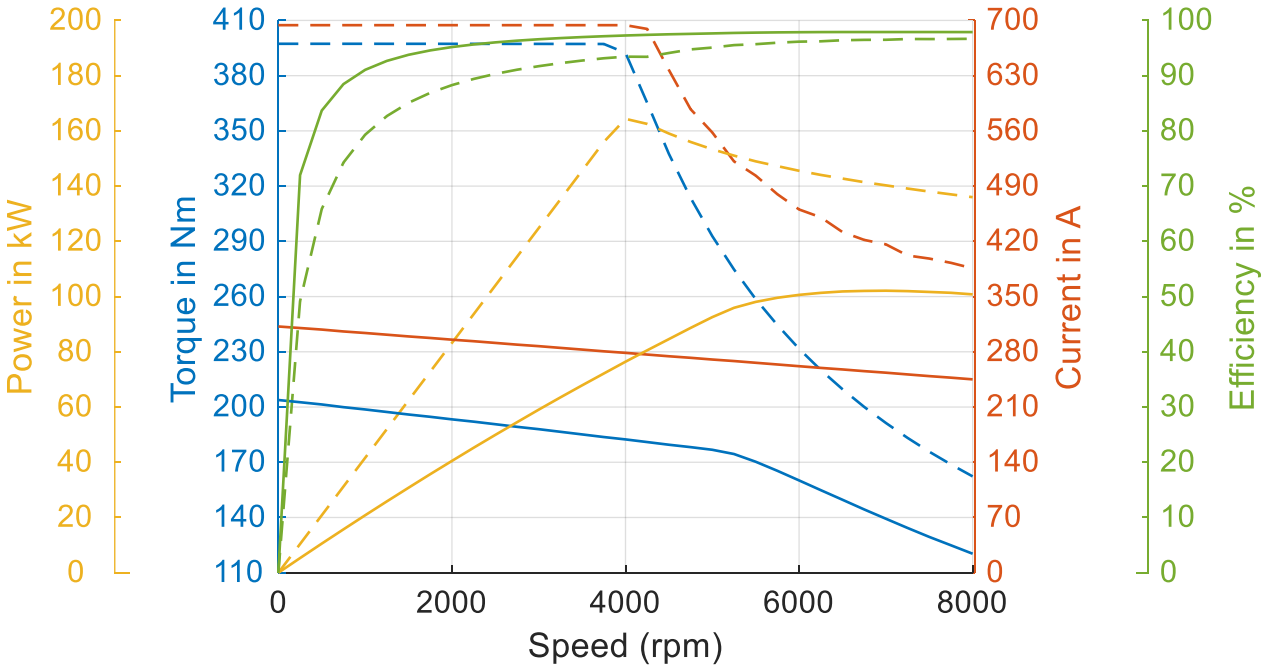
(electric machine only; U_{nom} = 400 V; machine at 140 °C;)



Simulated Characteristic Motor Parameters

U_{nom} = 400 V

solid lines: continuous; dashed lines: maximum;



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