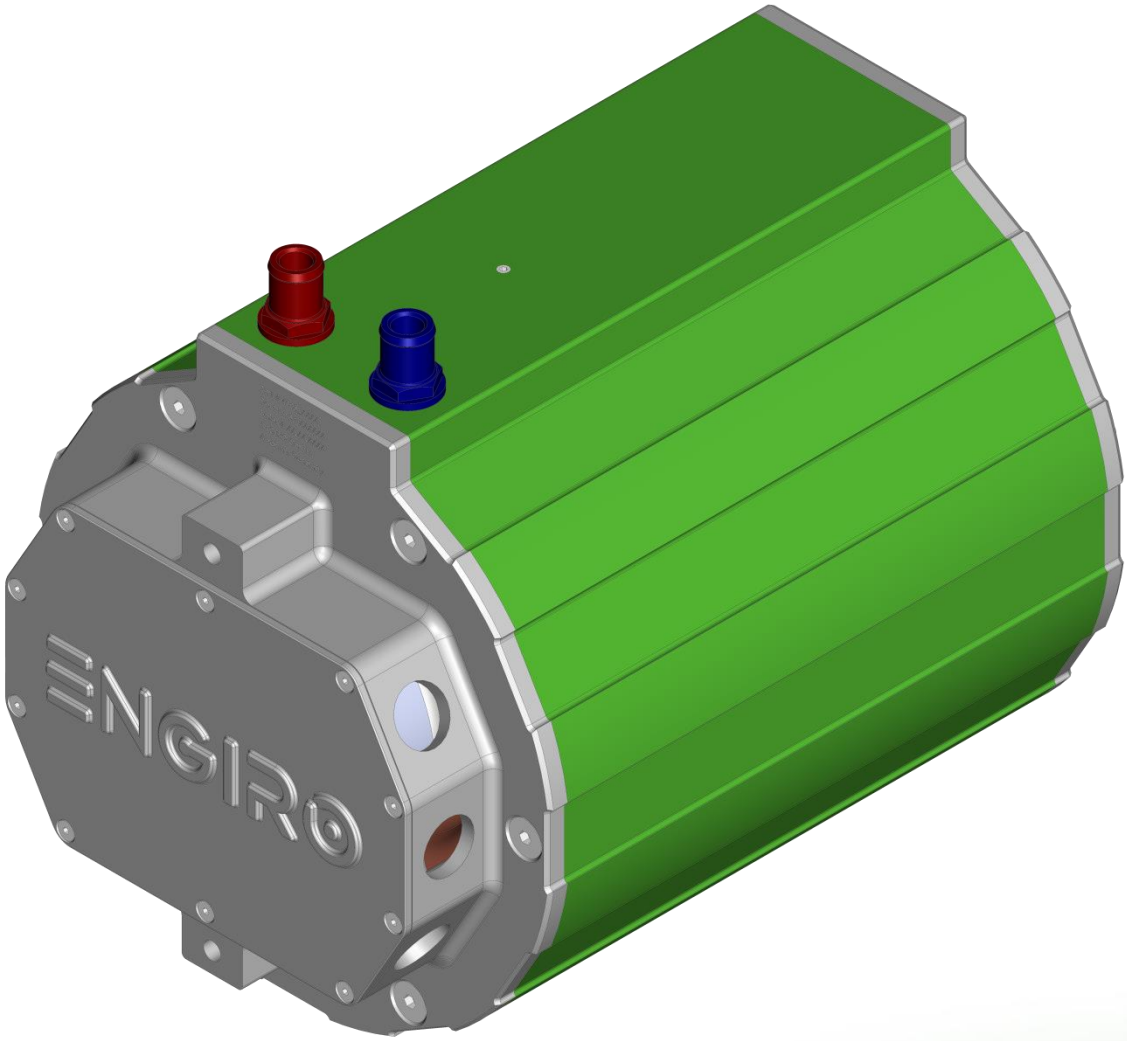
205W-16023-ABC

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

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Technical Data Machine

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Nominal Operation (S1, cooling as specified below)			
Torque	T_{nom}	183	Nm
Power	P_{nom}	72	kW
Speed	n_{nom}	3860	rpm
Phase rms-current	I_{nom}	219[1,2)]	A
Battery voltage (DC)	U_{nom}	400	V
Electric frequency	$f_{el,nom}$	257	Hz
Power factor	cos(φ)	0.74	

Maximal Values (S2, 10s, cooling as specified below)			
Torque	T_{max}	398	Nm
Power	P_{max}	127	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})				0.82	Nm/A_{rms}
U/*n* constant (AC) at a temperature of 30°C	rms:	56.1	peak:	95.4	V/(1000rpm)
K_e constant (AC) at a temperature of 30°C	rms:	0.134	peak:	0.228	V/(rad*s^{-1})

Additional Data		
Weight (w/o cables)	see page 4	kg
Rotor moment of inertia	0.0240	kg*m²
Protection category	IP65 / IP69k	
Maximal motor temperature	140	°C
Allowed ambient temperature	-20 … 45[3)]	°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 5290	

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)] other range on request

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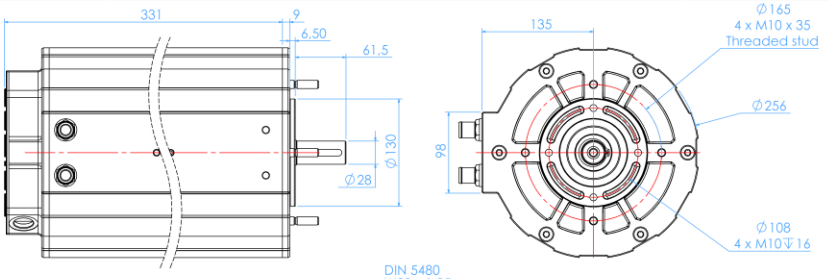
Technical Drawings

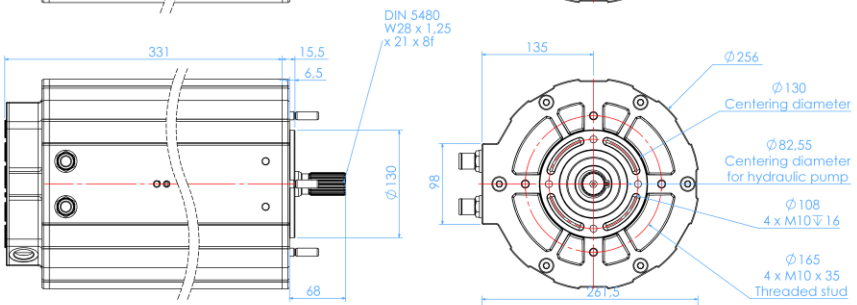
Available Type Variants			
type number	A: flange	B: shaft	C: position sensor
205W-16023-	S: standard	S: cylindrical shaft with keyway Ø28mm	R: resolver
	C: flange for fan with hydraulic pump adapter	E: external splines, DIN 5480 W28	E: sin/cos encoder
	D: flange for fan without insert	J: external splines, DIN 5480 W35	N: none
		D: hollow shaft with internal splines ANSI B 92.1	
		L: cylindrical shaft with keyway Ø35 mm	

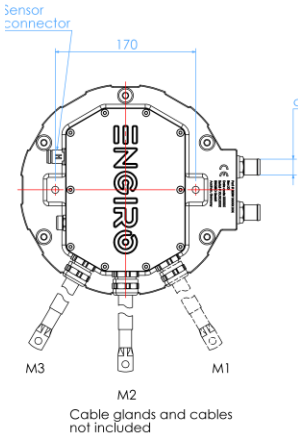
Approximate machine weight		
flange	shaft	kg
S	S	55
S	E	55
D	L	57
D	J	57
C	D	58

Flange S Shaft S

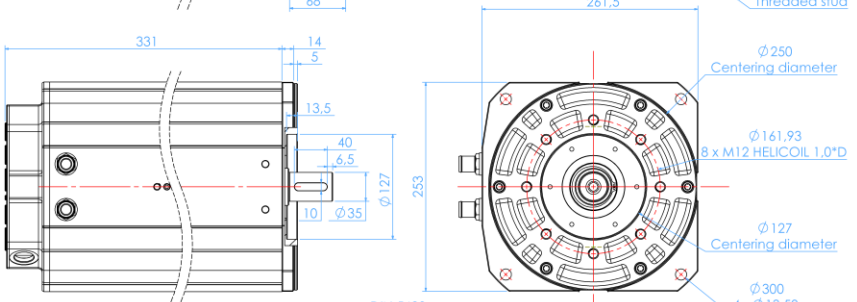


Flange S Shaft E

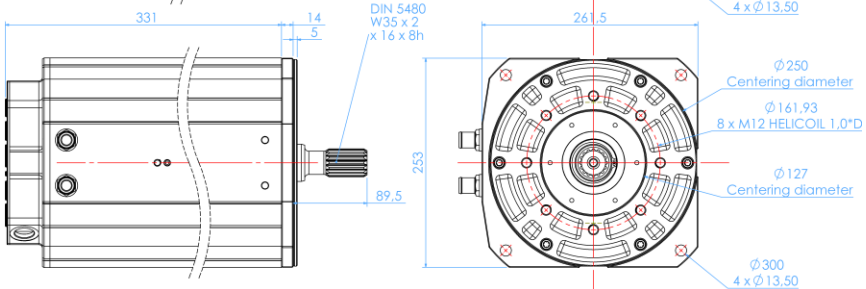




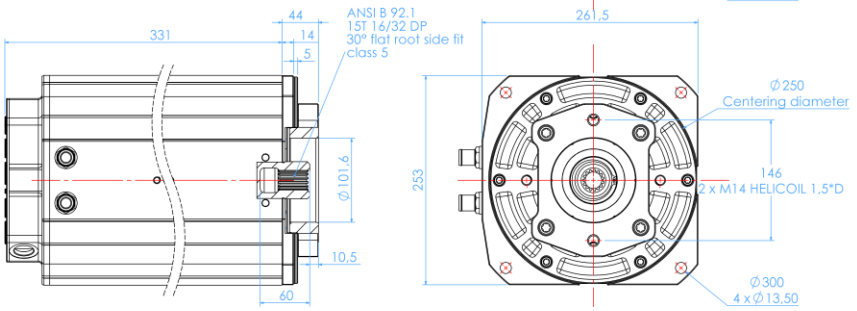
Flange D Shaft L



Flange D Shaft J



Flange C Shaft D



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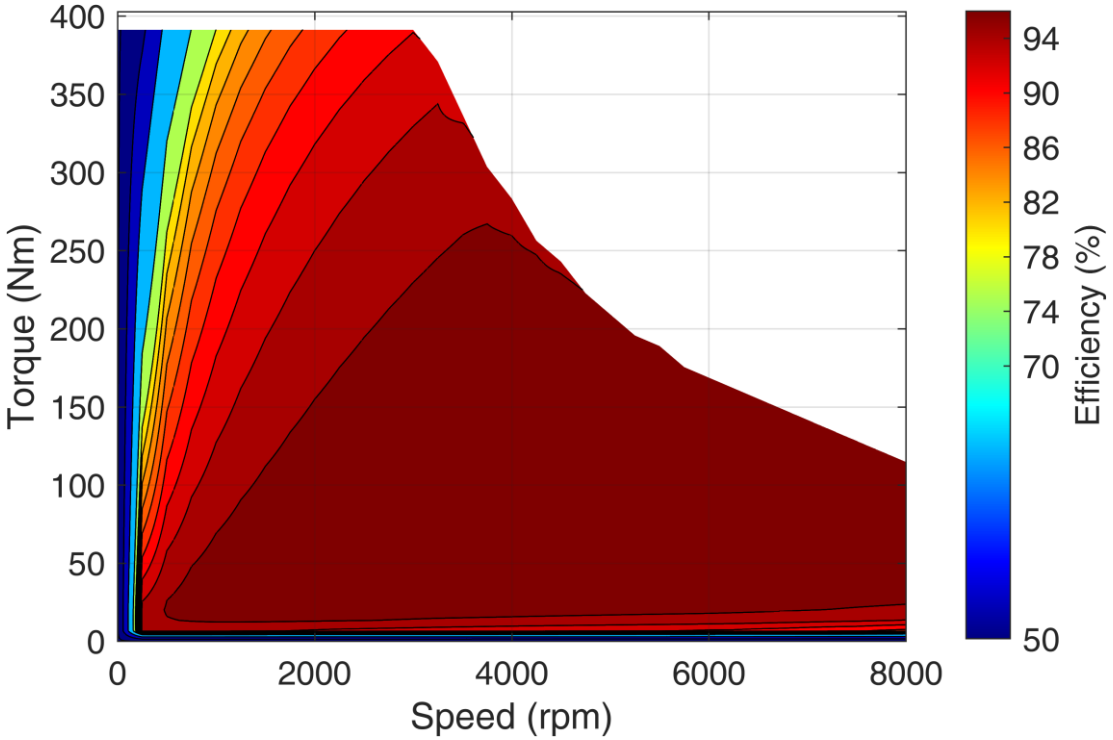
Characteristics Machine

Simulated Efficiency of Motor Application

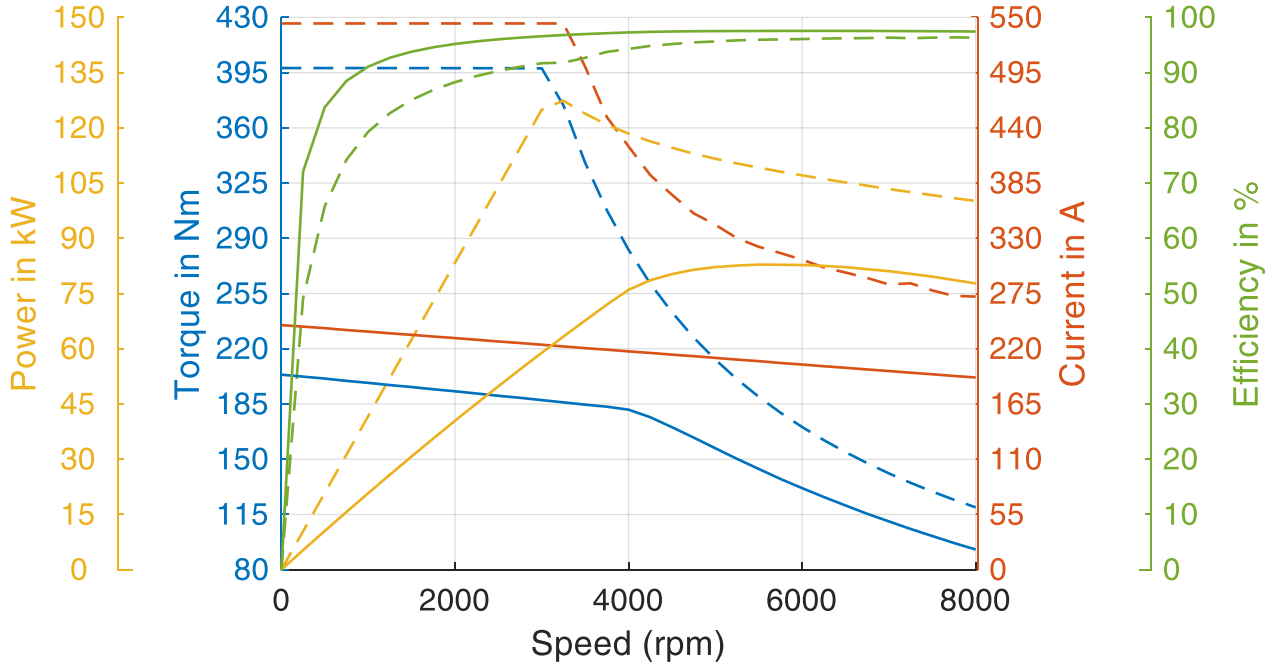
(electric machine only; U_{nom} = 400 V; machine at 140 °C;)



Simulated Characteristic Motor Parameters

U_{nom} = 400 V

solid lines: continuous; dashed lines: maximum;



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