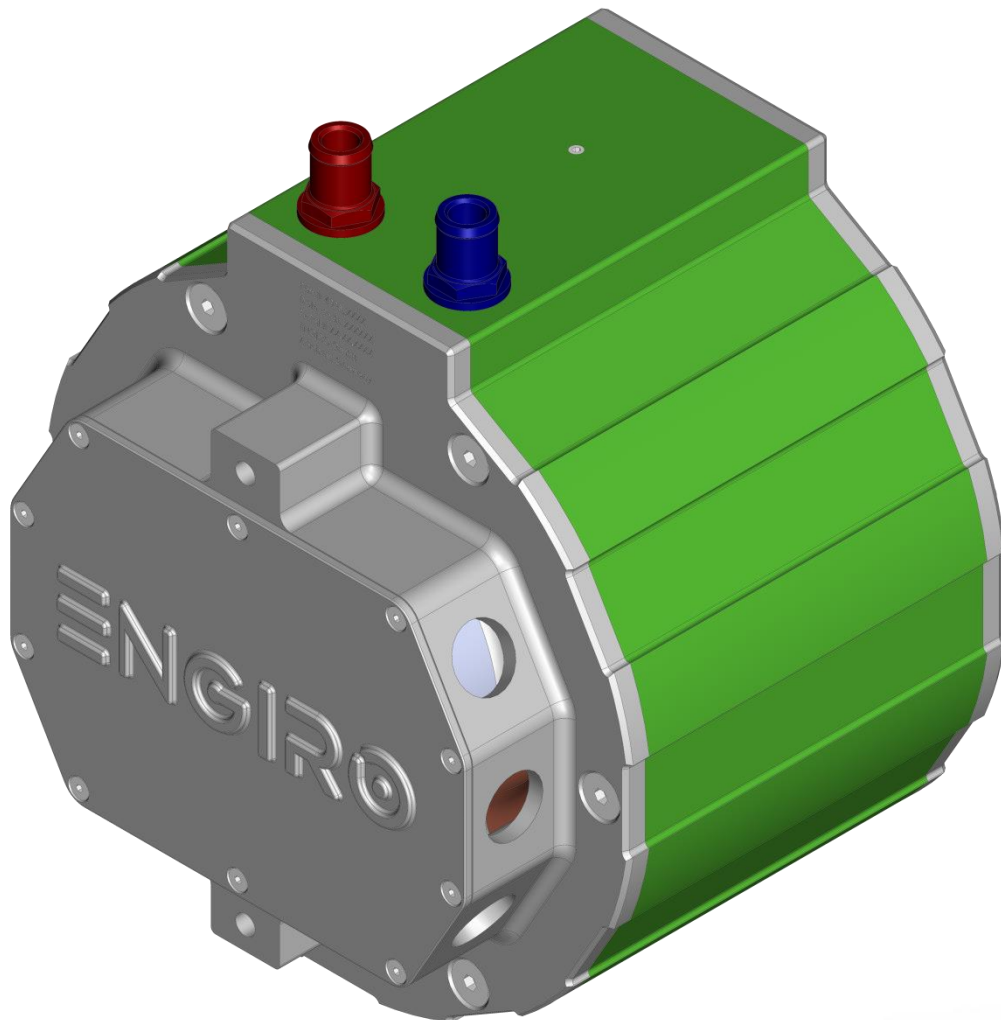


205W-04099-ABC

water-cooled motor / generator with up to 14 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

Section	Page
Technical Data Machine	3
Technical Drawings Machine	4
Characteristics Machine	5

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Nominal Operation (S1, cooling as specified below)			
Torque	T_{nom}	38	Nm
Power	P_{nom}	14	kW
Speed	n_{nom}	3580	rpm
Phase rms-current	I_{nom}	48 ^{1,2)}	A
Battery voltage (DC)	U_{nom}	400	V
Electric frequency	$f_{el,nom}$	239	Hz
Power factor	$\cos(\varphi)$	0.75	
Maximal Values (S2, 10s, cooling as specified below)			
Torque	T_{max}	86	Nm
Power	P_{max}	21	kW
Phase rms-current	I_{max}	127 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 ($I < I_{nom}$)		0.85	Nm/A _{rms}
U/n constant (AC) at a temperature of 30°C	rms:	60.4	peak: 102.7 V/(1000rpm)
K_e constant (AC) at a temperature of 30°C	rms:	0.144	peak: 0.245 V/(rad*s ⁻¹)
Additional Data			
Weight (w/o cables)		see page 4	kg
Rotor moment of inertia		0.0064	kg*m ²
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, 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 3/4" / 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.

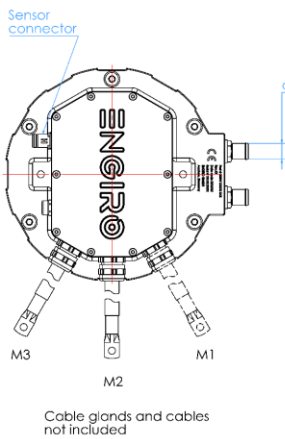
³⁾ other range on request

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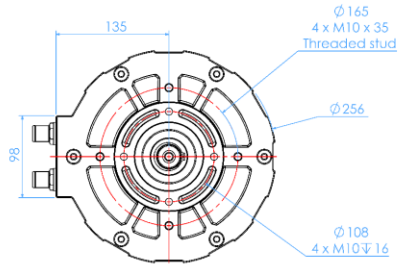
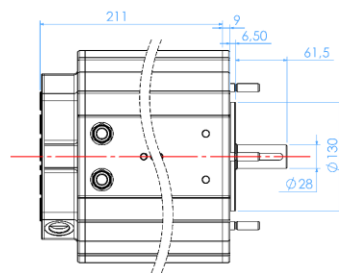
Available Type Variants

type number	A: flange	B: shaft	C: position sensor
205W-04099-	S: standard	S: cylindrical shaft with keyway $\varnothing 28\text{mm}$	R: resolver
	B: flange for fan motor	H: hollow shaft with internal splines ANSI B 92.1	E: sin/cos encoder
	C: flange for fan without insert	C: cylindrical shaft with keyway $\varnothing 35\text{mm}$	N: none
		D: hollow shaft with internal splines ANSI B 92.1	

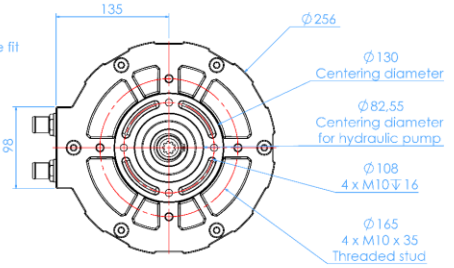
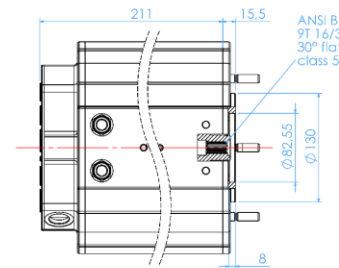
Approximate machine weight		
flange	shaft	kg
S	S	25
S	E	25
S	H	24
C	D	27
B	C	29



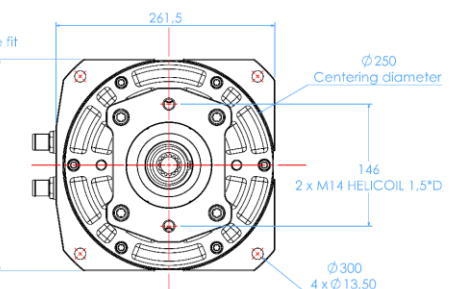
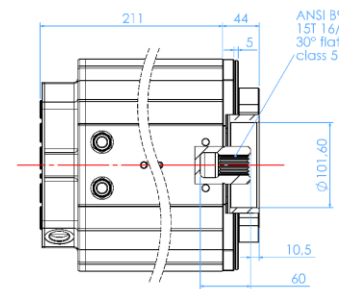
Flange S
Shaft S



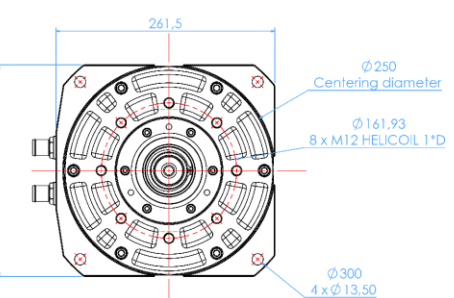
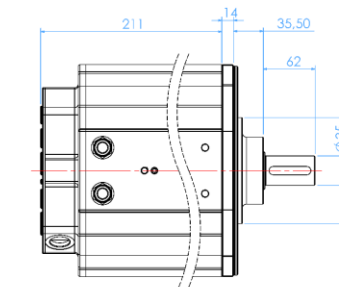
Flange S
Shaft H



Flange C
Shaft D



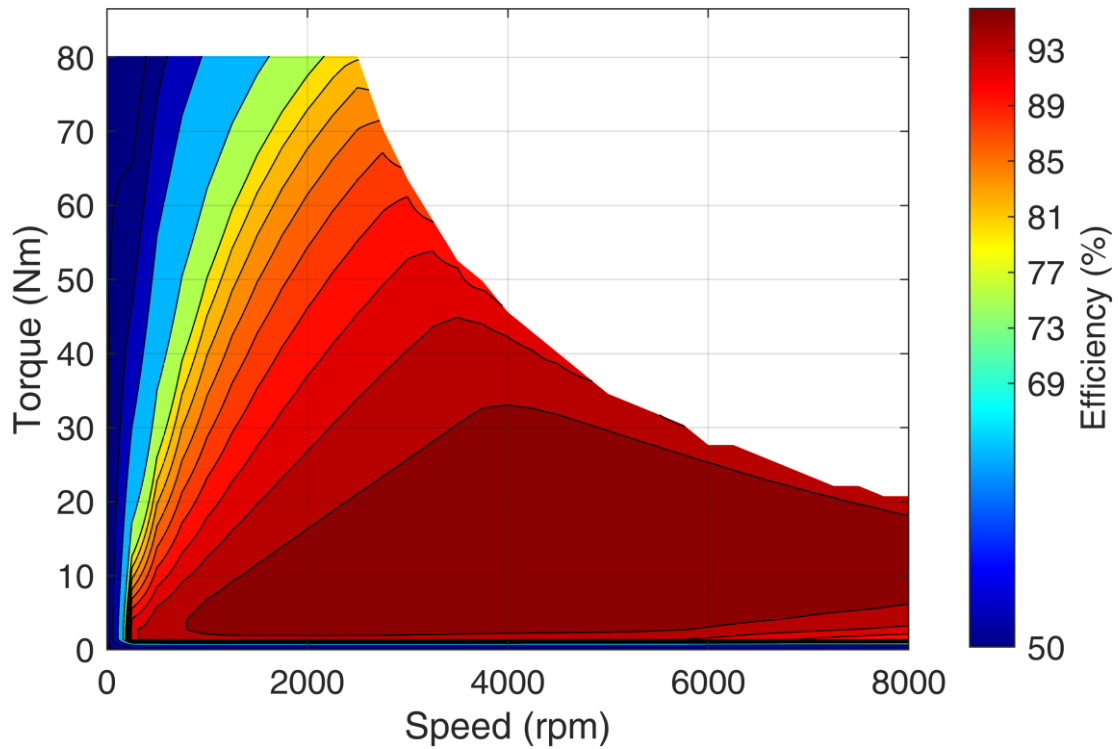
Flange B
Shaft C



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Simulated Efficiency of Motor Application

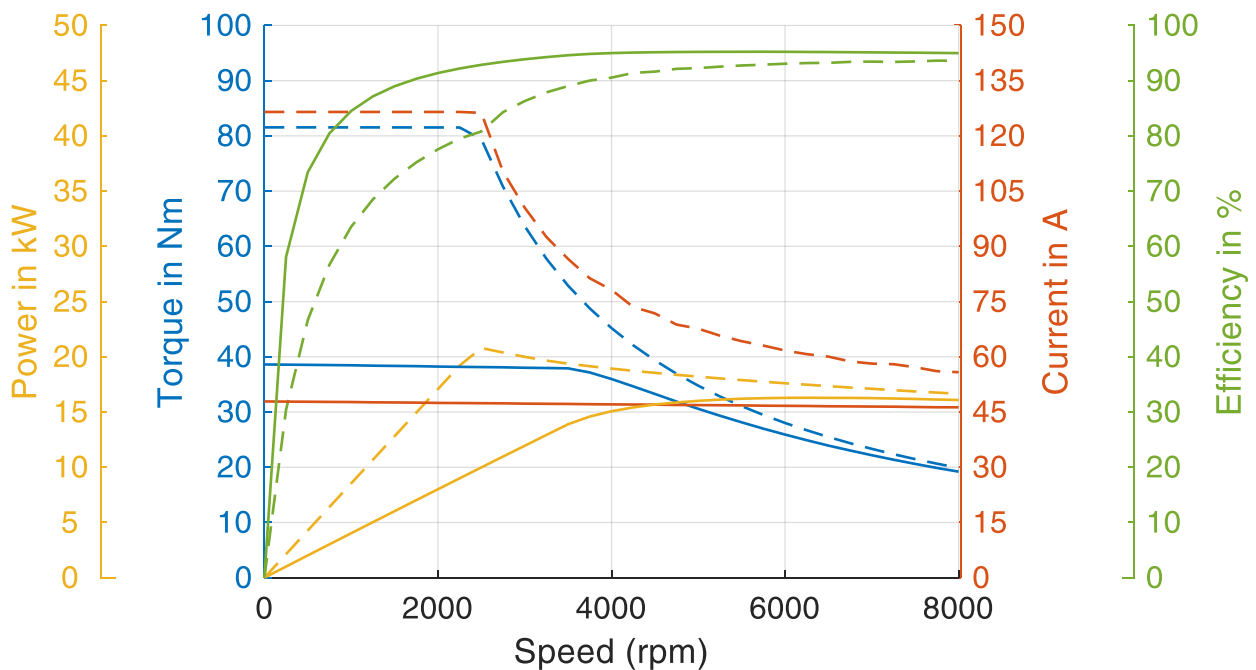
(electric machine only; $U_{nom} = 400\text{ V}$; machine at 140 °C ;)



Simulated Characteristic Motor Parameters

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

solid lines: continuous; dashed lines: maximum;



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