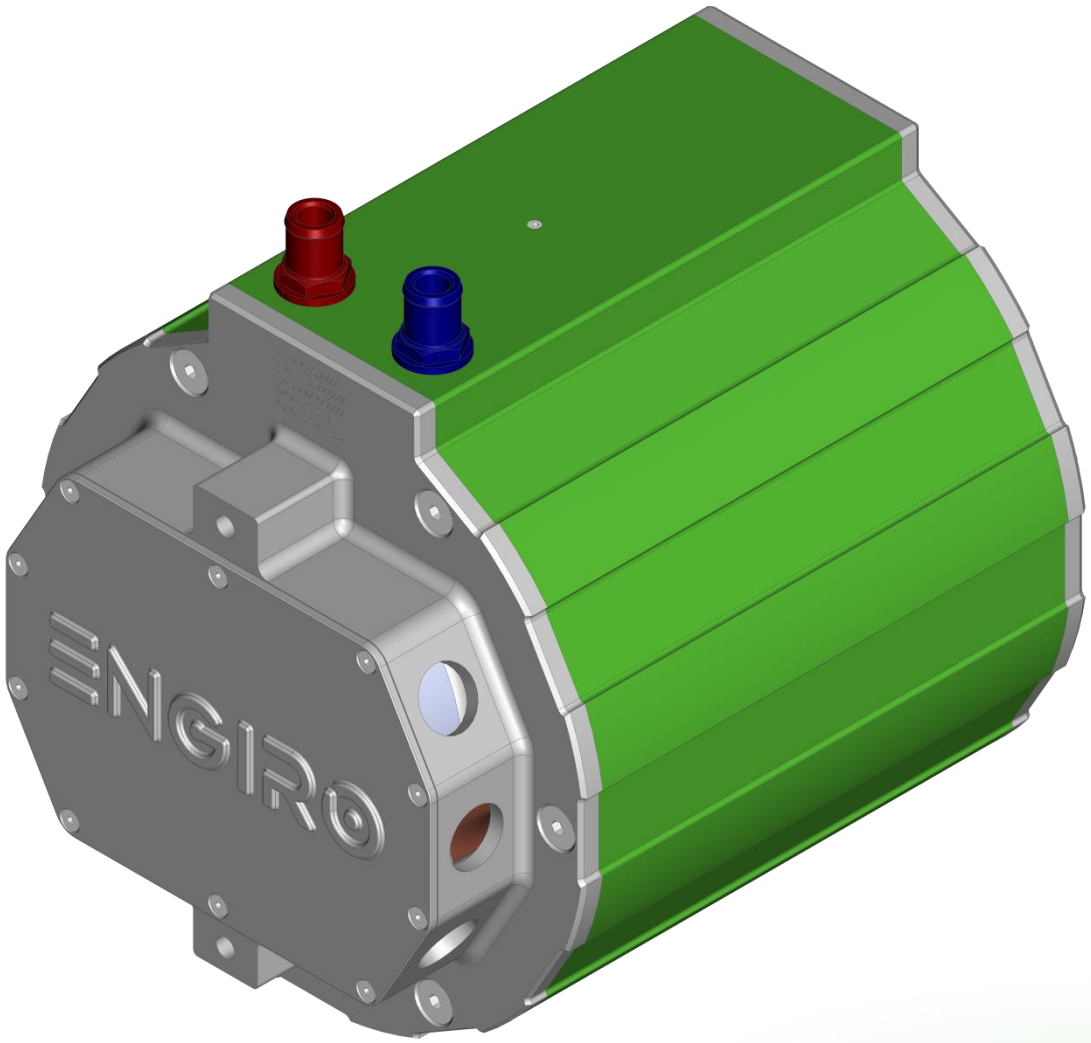
205W-08009-ABC

water-cooled motor / generator with up to 19 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 48 V to 200 V
- delivery with controller possible
- various mechanical interfaces available

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Version: 002

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Technical Data Machine

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Advanced · Drive · Solutions

Nominal Operation (S1, cooling as specified below)					
Torque	T_{nom}			76	Nm
Power	P_{nom}			19	kW
Speed	n_{nom}			2360	rpm
Phase rms-current	I_{nom}			472	A
Battery voltage (DC)	U_{nom}			48	V
Electric frequency	$f_{el,nom}$			157	Hz
Power factor	cos(φ)			0.70	
Maximal Values (S2, 10s, cooling as specified below)					
Torque	T_{max}			189	Nm
Power	P_{max}			39	kW
Phase rms-current	I_{max}			1385	A
Battery voltage (DC)	U_{max}			96	V
Speed	n_{max}			6180	rpm
Electric frequency	$f_{el,\ max}$			412	Hz
Electrical Data					
Number of phases				3	
Number of pole pairs				4	
Maximal efficiency				>96	%
T/I constant (I<I_{nom})				0.16	Nm/A_{rms}
U/n constant (AC)	rms:	11.0	peak:	15.5	V/(1000rpm)
K_e constant (AC)	rms:	0.026	peak:	0.037	$V/(rad*s^{-1})$
Additional Data					
Weight (w/o cables)				see page 4	
Rotor moment of inertia				0.0124	$kg*m^2$
Protection category				IP65 / IP69k	
Maximal motor temperature				140	°C
Allowed ambient temperature				-20 … 45[1)]	°C
Cooling (medium, flow rate, inlet temperature, pressure)				water/glycol 50/50, 6 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	

[1)] other range on request

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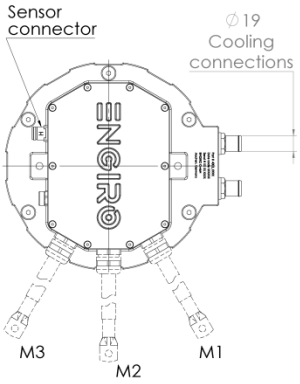
Technical Drawings

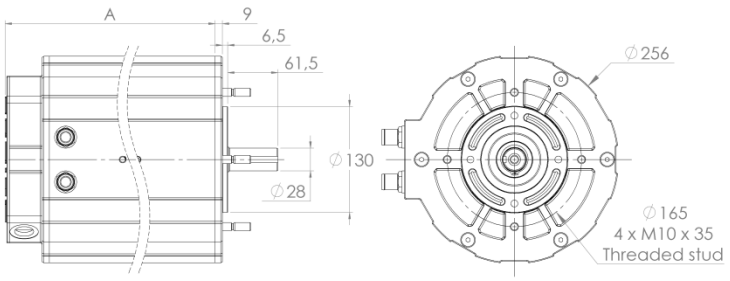
Available Type Variants			
type number	A: flange	B: shaft	C: position sensor
205W-08009-	S: standard	S: cylindrical shaft with keyway Ø28mm	R: resolver
	B: flange for fan motor	H: hollow shaft with internal splines ANSI B 92.1	E: sin/cos encoder
	C: flange for fan without insert	E: external splines, DIN 5480	N: none
		C: cylindrical shaft with keyway Ø35mm	
		D: hollow shaft with internal splines ANSI B 92.1	

Dimension „A“ = 297 mm

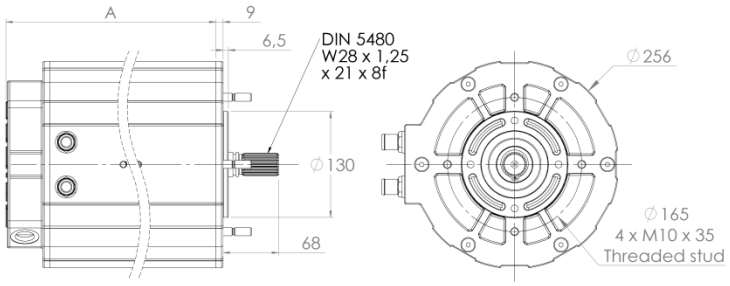
Approximate machine weight		
flange	shaft	kg
S	S	37
S	E	37
S	H	36
C	D	39
B	C	41



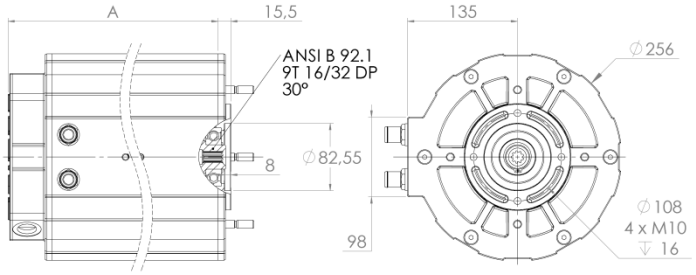
Flange S Shaft S



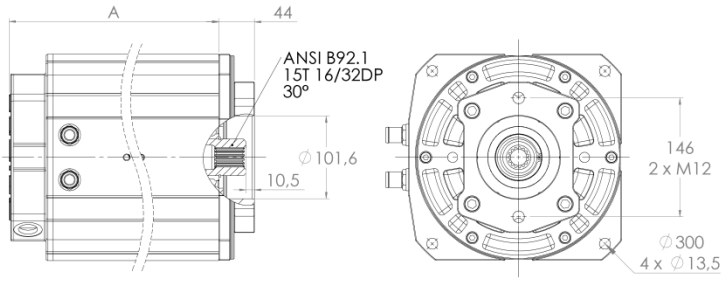
Flange S Shaft E



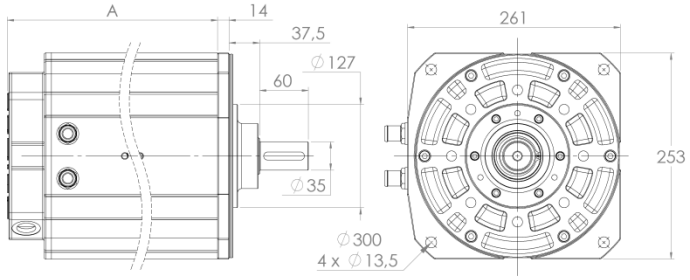
Flange S Shaft H



Flange C Shaft D



Flange B Shaft C



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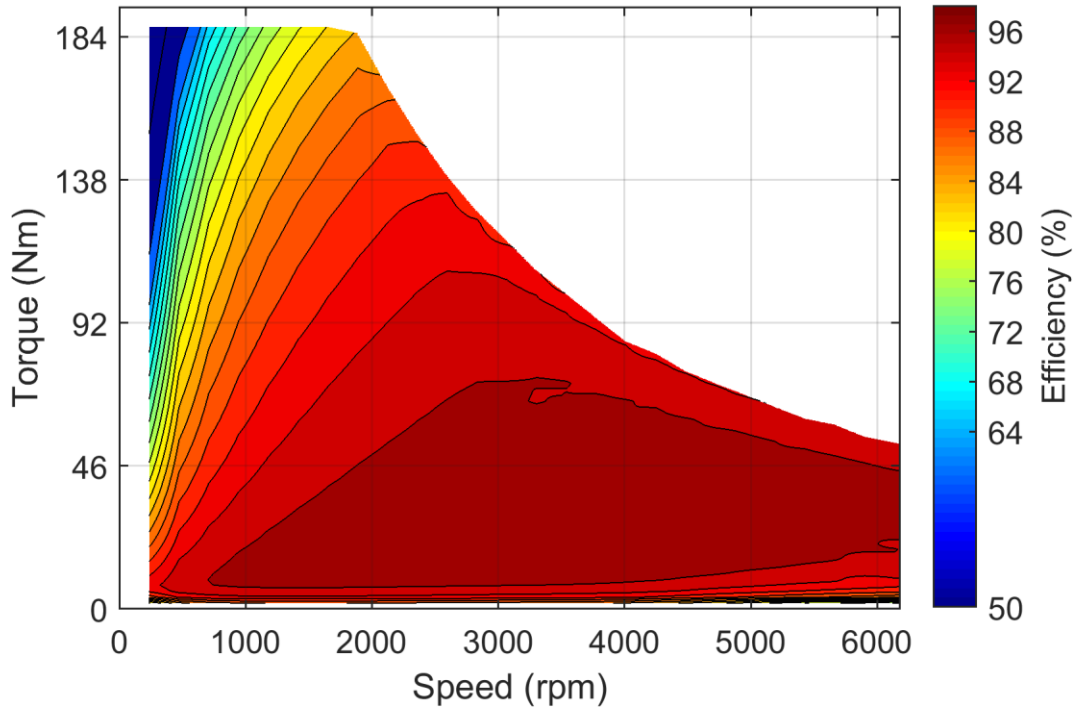
Simulated Efficiency of Motor Application

(electric machine only; U_{nom} = 48 V; machine at 100 °C;)

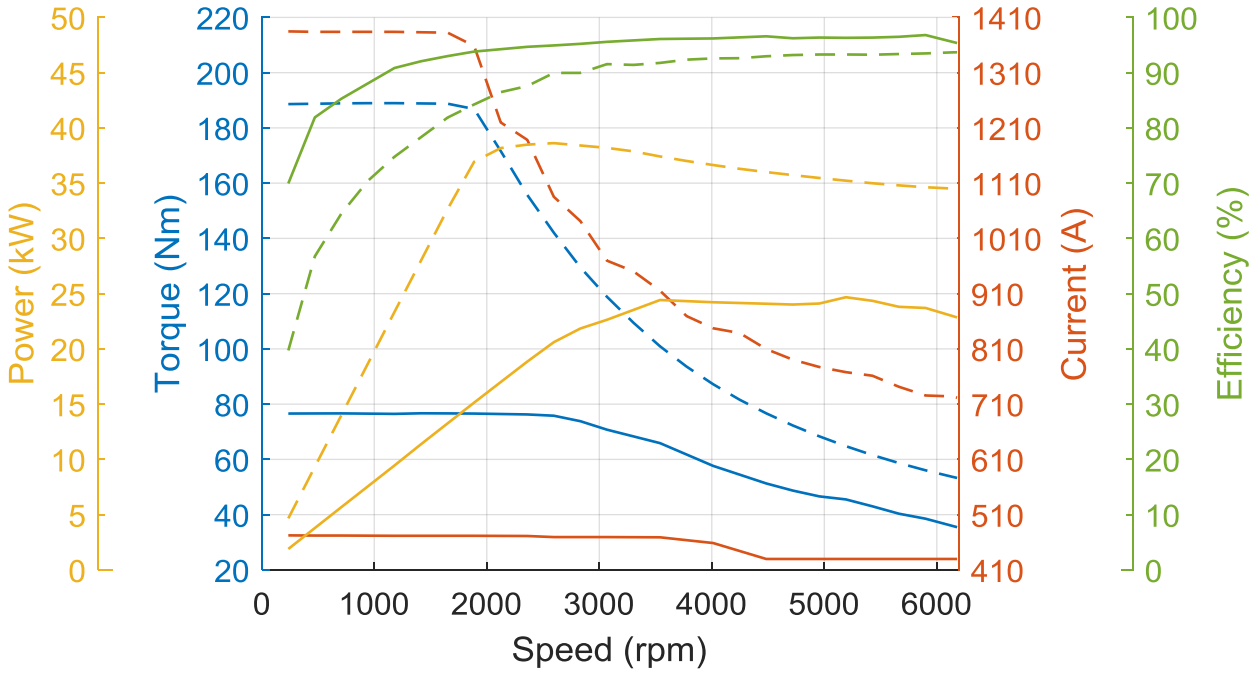


Simulated Characteristic Motor Parameters

U_{nom} = 48 V

solid lines: continuous; dashed lines: maximum;

(jitter is caused by numerical inaccuracies in the simulation software)



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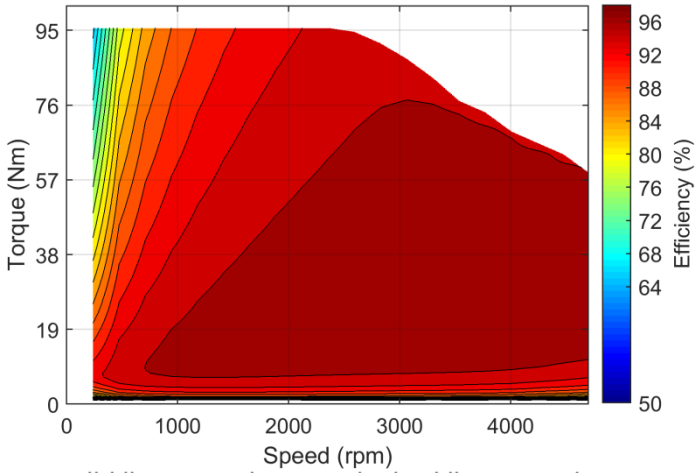
Technical Data Inverter Set

Nominal Operation Drive Set (S1)			
Torque	T_{nom}	72	Nm
Power	P_{nom}	18	kW
Speed	n_{nom}	2360	rpm
Phase rms-current	I_{nom}	450	A
Battery voltage (DC)	U_{nom}	48	V
Electric frequency	$f_{el,nom}$	157	Hz
Power factor	cos(φ)	0.70	
Maximal Values Drive Set (S2, 1-10s)			
Torque	T_{max}	96	Nm
Power	P_{max}	32	kW
Phase rms-current	I_{max}	596	A
Battery voltage (DC)	U_{max}	48	V
Speed	n_{max}	4700	rpm
Electric frequency	$f_{el,\ max}$	313	Hz

Simulated Efficiency and Motor Characteristic of Motor Application

(electric machine only; U_{nom} = 48 V; machine at 100 °C;)



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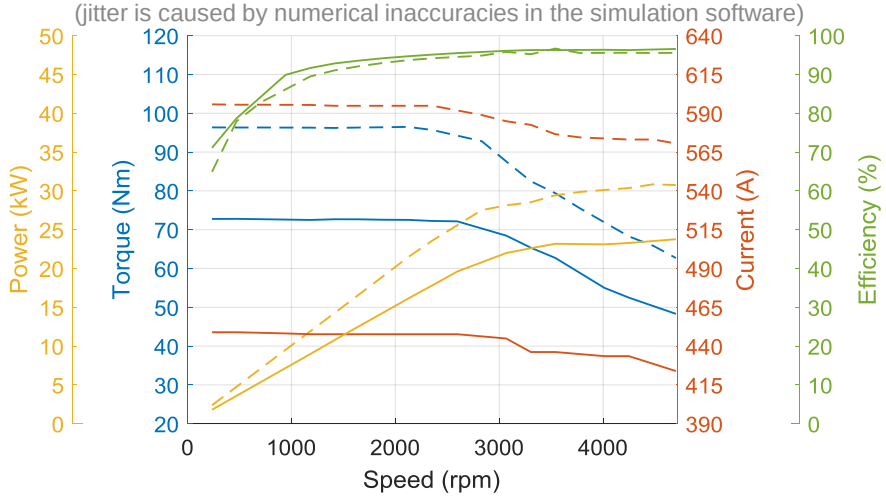

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05/2019