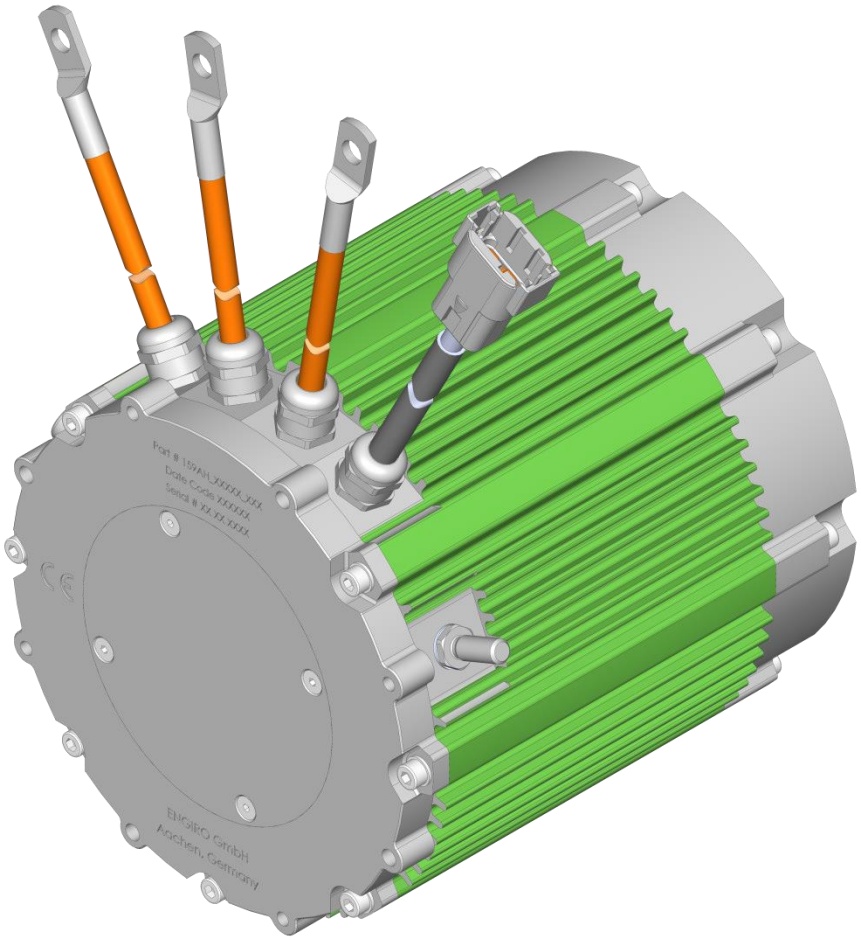
159AH-06030-ABC

air-cooled motor / generator with 6.4 kW continuous power



KEY FEATURES

- permanent magnet synchronous machine
- air-cooled
- convincing cost-benefit ratio
- delivery with controller possible

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Technical Data Machine

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Nominal Operation (S1, cooling as specified below)					
Torque	T_{nom}			20	Nm
Power	P_{nom}			6.4	kW
Speed	n_{nom}			3070	rpm
Phase rms-current	I_{nom}			67	A
Battery voltage (DC)	U_{nom}			96	V
Electric frequency	$f_{el,nom}$			255	Hz
Power factor	cos(φ)			0.78	
Maximal Values (S2, 10s, cooling as specified below)					
Torque	T_{max}			73	Nm
Power	P_{max}			20	kW
Phase rms-current	I_{max}			334	A
Battery voltage (DC)	U_{max}			200	V
Speed	n_{max}			8000	rpm
Electric frequency	$f_{el,\ max}$			667	Hz
Electrical Data					
Number of phases				3	
Number of pole pairs				5	
Maximal efficiency				95	%
T/I constant (I<I_{nom})				0.30	Nm/A_{rms}
U/n constant (AC)	rms:	17.0	peak:	24.0	V/(1000rpm)
K_e constant (AC)	rms:	0.033	peak:	0.046	$V/(rad*s^{-1})$
Additional Data					
Weight (w/o cables)				see page 4	
Rotor moment of inertia				0.0063	$kg*m^2$
Protection category				IP65 / IP69k	
Maximal motor temperature				140	°C
Allowed ambient temperature				-20 … 45[1)]	°C
Cooling (medium, flow rate, inlet temperature, pressure)				air, > 6 m/s, ≤ 45°C	
Temperature monitoring				1 x KTY84-130	
Type approval				CE, EN 60034	
Customs tariff number				8501 5220	
Connectors					
Power terminals				3 x 16 mm^2 cables with M8 cable lugs	
Signal connectors				Deutsch DTM04-08PA	

[1)] other range on request

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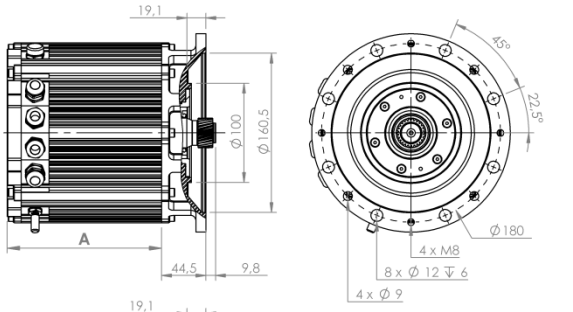
Technical Drawings

Available Type Variants			
type number	A: flange	B: shaft	C: position sensor
159AH-06030-	B: gearbox Allweier PGR 1500	C: shaft with external splines	R: resolver
	C: standard squared 80mm centering	D: cylindrical shaft with keyway Ø19mm	E: sin/cos encoder
	D: IEC B14 90 squared 95mm centering	E: prolonged shaft with external splines	H: UVW hall sensor
	E: IEC B14 90 round 95mm centering		N: none

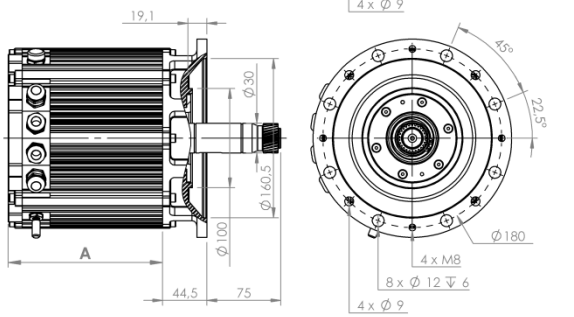
Dimension „A“ = 155.5 mm

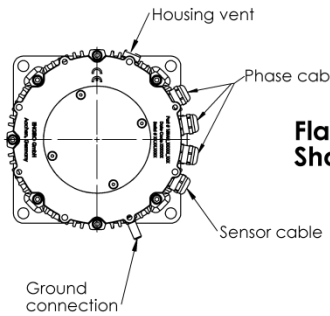
Approximate machine weight		
flange	shaft	Kg
B	C	14,7
B	E	15
C	D	14,9
D	D	14,9
E	D	14,9

Flange B Shaft C

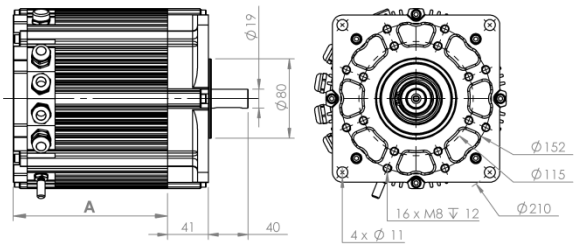


Flange B Shaft E

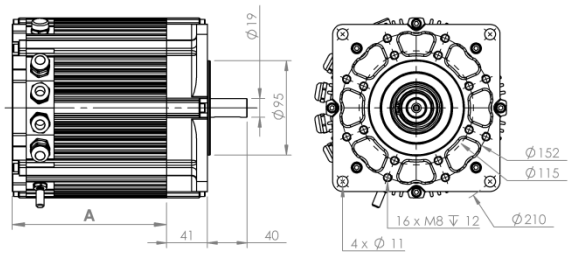




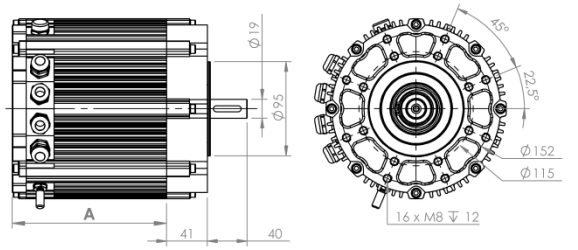
Flange C Shaft D



Flange D Shaft D



Flange E Shaft D



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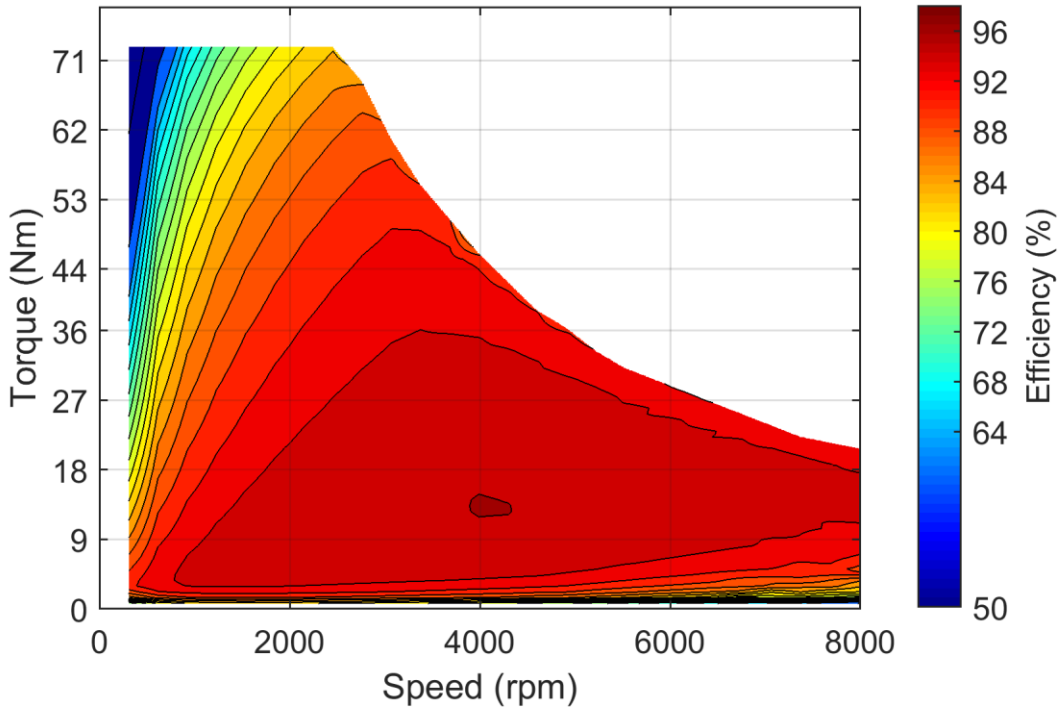
Simulated Efficiency of Motor Application

(electric machine only; U_{nom} = 96V; machine at 100 °C;)

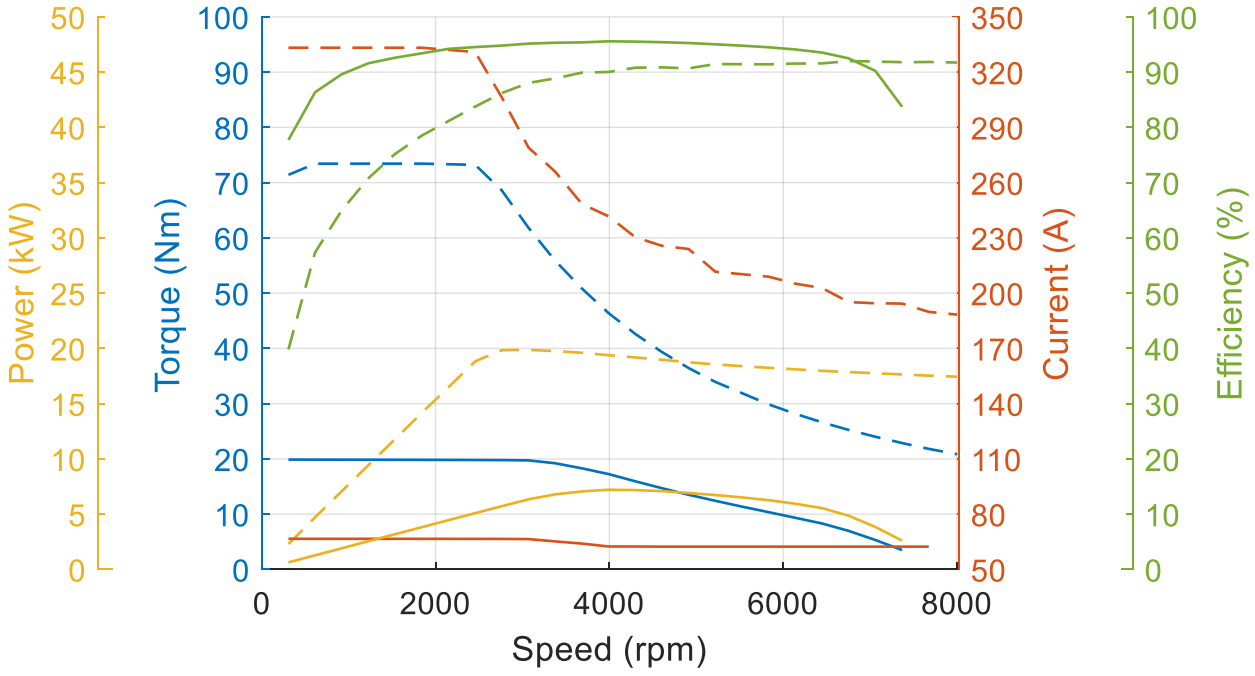


Simulated Characteristic Motor Parameters

U_{nom} = 96 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

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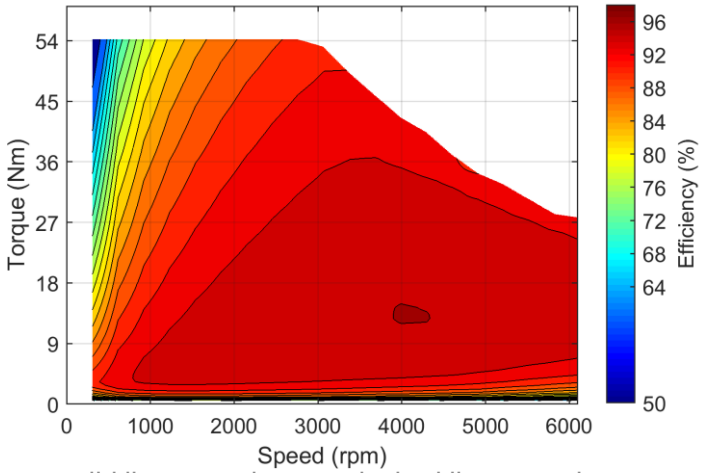
Nominal Operation Drive Set (S1)			
Torque	T_{nom}	20	Nm
Power	P_{nom}	6.4	kW
Speed	n_{nom}	3070	rpm
Phase rms-current	I_{nom}	67	A
Battery voltage (DC)	U_{nom}	96	V
Electric frequency	$f_{el,nom}$	255	Hz
Power factor	cos(φ)	0.78	
Maximal Values Drive Set (S2, 1-10s)			
Torque	T_{max}	55	Nm
Power	P_{max}	18	kW
Phase rms-current	I_{max}	215	A
Battery voltage (DC)	U_{max}	96	V
Speed	n_{max}	6000	rpm
Electric frequency	$f_{el,\ max}$	500	Hz

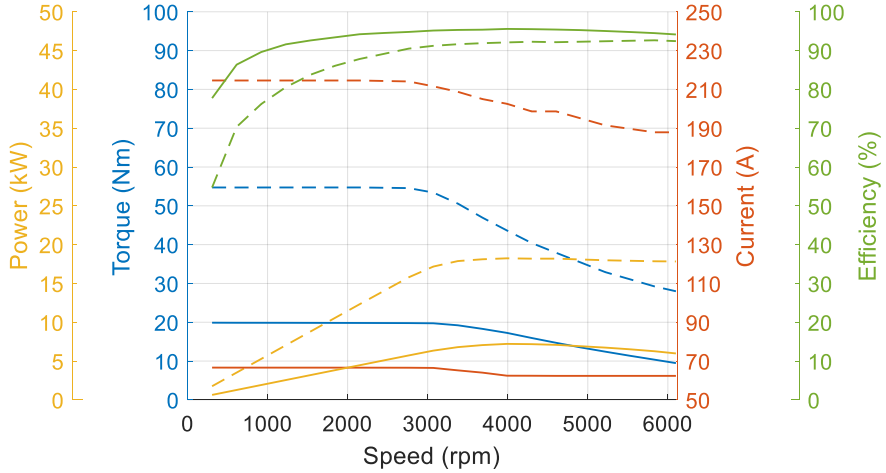
Simulated Efficiency and Motor Characteristic of Motor Application

(electric machine only; U_{nom} = 96 V; machine at 100 °C;)



solid lines: continuous; dashed lines: maximum;

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



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