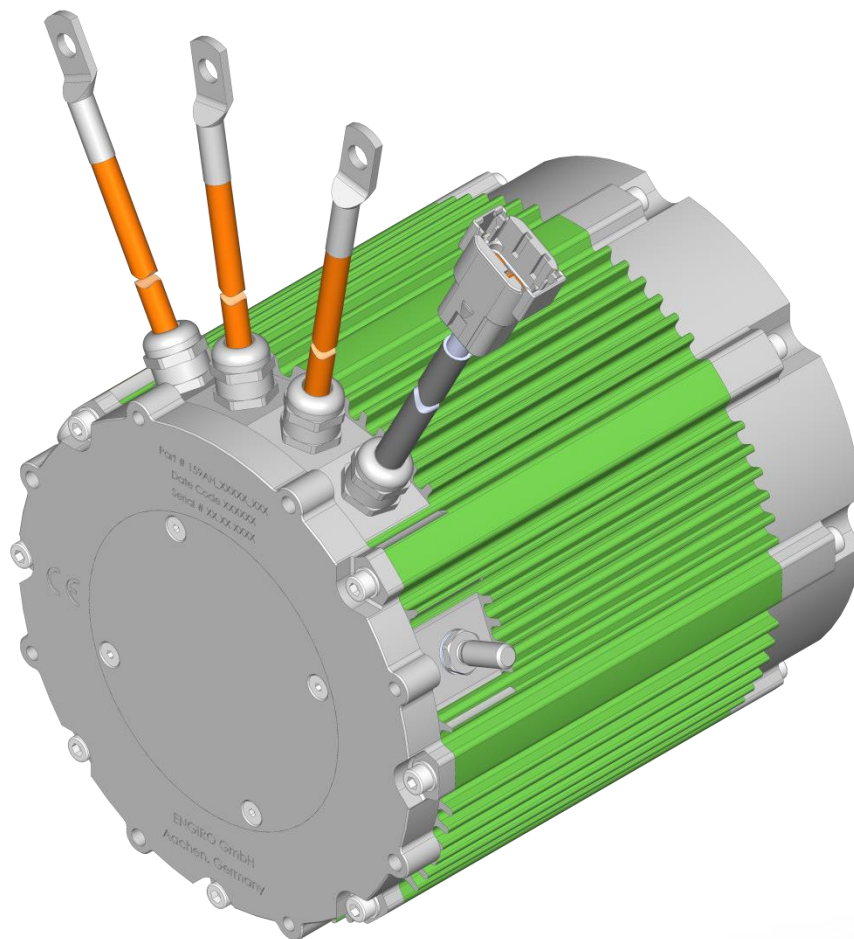


159AH-06020-ABC

air-cooled motor / generator with 9.6 kW continuous power

This datasheet applies to part numbers: see page 2



KEY FEATURES

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

Section	Page
Operating Range	3
Available Type Variants	4
Technical Drawings	5
Performance Plots	6

Note:

On September 1st, 2024, we transferred our ERP systems to SAP. Due to this change, we are altering our **current part numbers**. To see how our article numbers and motor naming scheme has changed, please consider the conversion table below:

Part number conversion				
Part.no.	Old part.no.	Flange	Shaft	Position sensor
4752405	159AH_06020_BCR	B1	C1	R
4832767	159AH_06020_BER	B1	E1	R
4844589	159AH_06020_EDE	E1	D1	E

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Nominal Operation (S1, cooling as specified below)				
Torque	T_{nom}		20	Nm
Power	P_{nom}		9.6	kW
Speed	n_{nom}		4600	rpm
Phase rms-current	I_{nom}		113 ^{1,2)}	A
Battery voltage (DC)	U_{nom}		96	V
Electric frequency	$f_{el,nom}$		384	Hz
Power factor	$\cos(\varphi)$		0.76	
Maximal Values (S2, 10s, cooling as specified below)				
Torque	T_{max}		74	Nm
Power	P_{max}		26	kW
Phase rms-current	I_{max}		500 ²⁾	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 ($I < I_{nom}$)			0.20	Nm/A _{rms}
U/n constant (AC)		rms: 11.3	peak: 17.5	V/(1000rpm)
K_e constant (AC)		rms: 0.022	peak: 0.033	V/(rad*s ⁻¹)
Additional Data				
Rotor moment of inertia			EDE: 0.0062; BER,BCR: 0.0052	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)			air, >12 m/s, ≤ 25°C	
Temperature monitoring			1 x KTY84-130	
Type approval			CE, EN 60034	
Customs tariff number			8501 5230	
Connectors				
Power terminals			3 x AWG 4 (21 mm ²) cables with M8 cable lugs	
Length power cables			50	cm
Signal connectors			Deutsch DTM04-08PA 8 pins	

¹⁾ Nominal current strongly dependent on cooling as specified below.

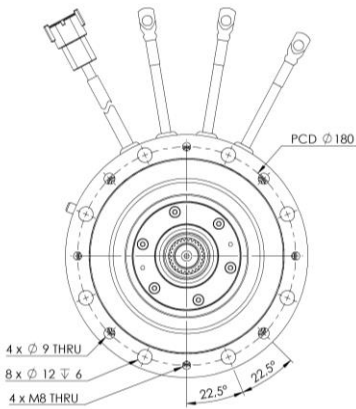
²⁾ The cables must not exceed a temperature of 140 °C at any time. Temperature and service life depend on the installation condition.

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.

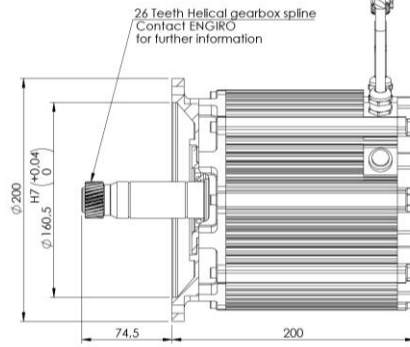
⁴⁾ other range on request

Shaft and Flange Combinations for 159AH-06020-ABC		Flange (A)	
		B1 (Gearbox Allweier PGR 1500)	E1 (IEC B14, Ø95 mm centering)
Shaft (B)	C1 (Shaft with external helical splines fitting PGR 1500 Gearbox)	● (≈ 14 kg)	
	D1 (Cylindrical shaft with keyway Ø19mm)		● (≈ 15 kg)
	E1 (Extended shaft with external helical splines fitting PGR 1500 Gearbox)	● (≈ 14 kg)	
Position Sensor (C)		E: Sin/cos encoder R: Resolver	

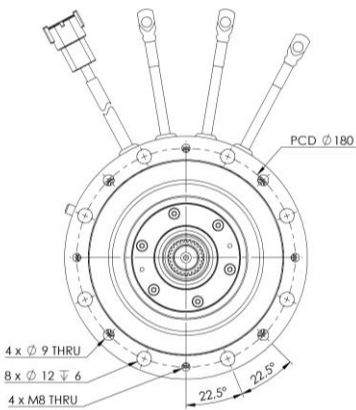
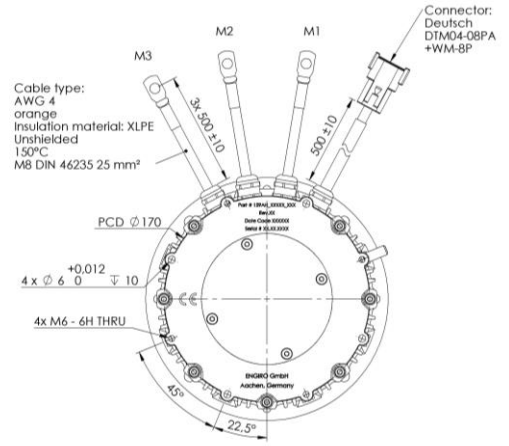
Other individual combinations are also possible on request.



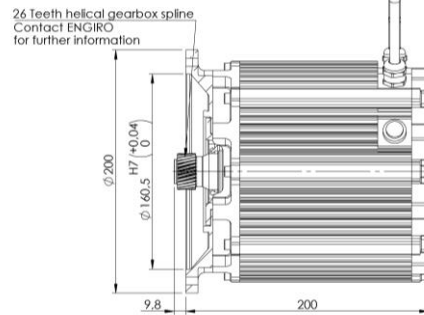
Flange B1



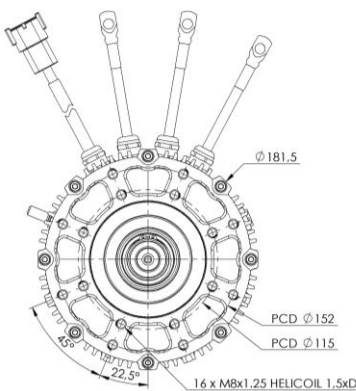
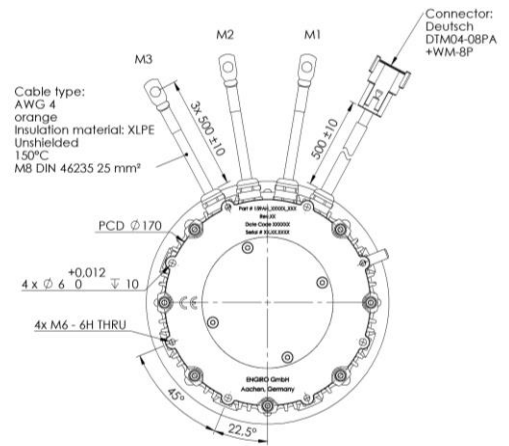
Shaft E1



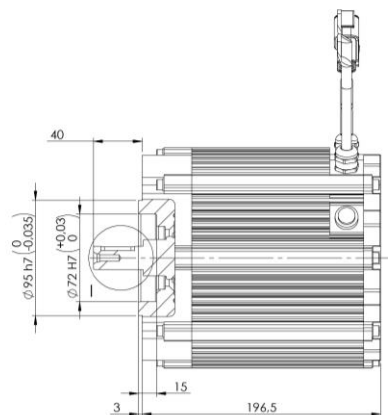
Flange B1



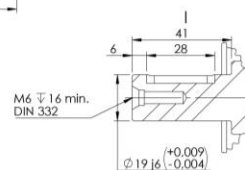
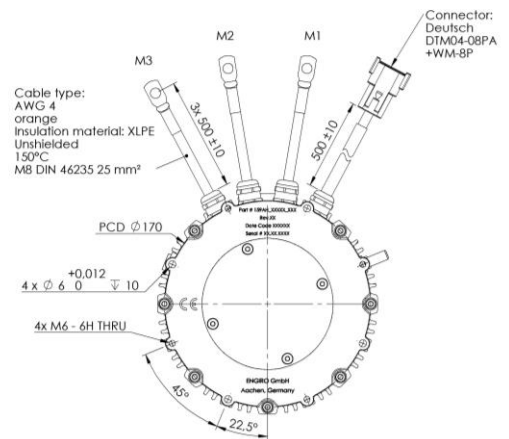
Shaft C1



Flange E1



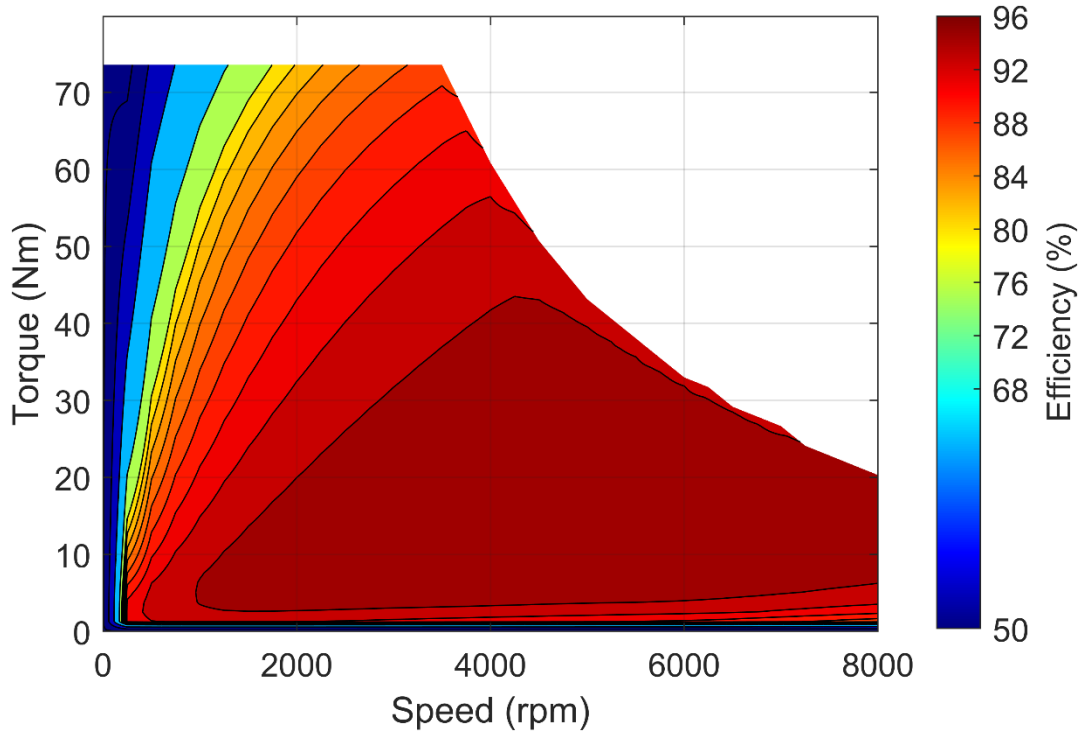
Shaft D1



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Simulated Efficiency of Motor Application

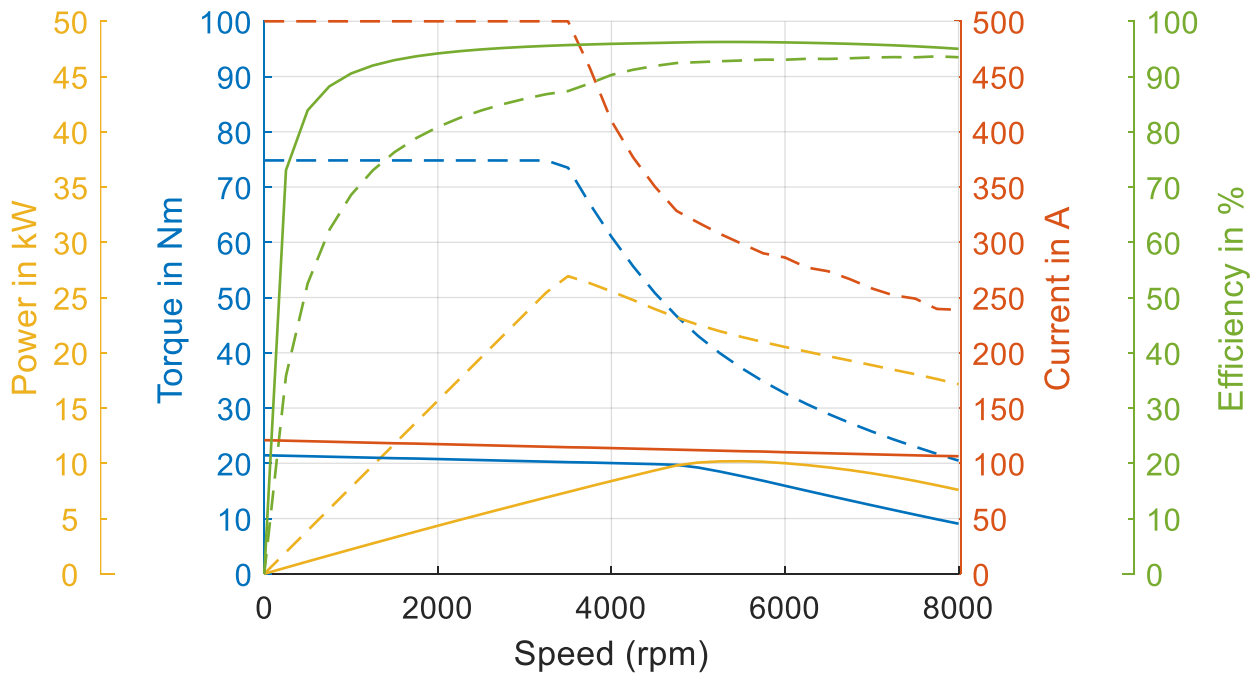
(electric machine only; $U_{nom} = 96\text{ V}$)



Simulated Characteristic Motor Parameters

$U_{nom} = 96\text{ V}$

solid lines: continuous; dashed lines: maximum;



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