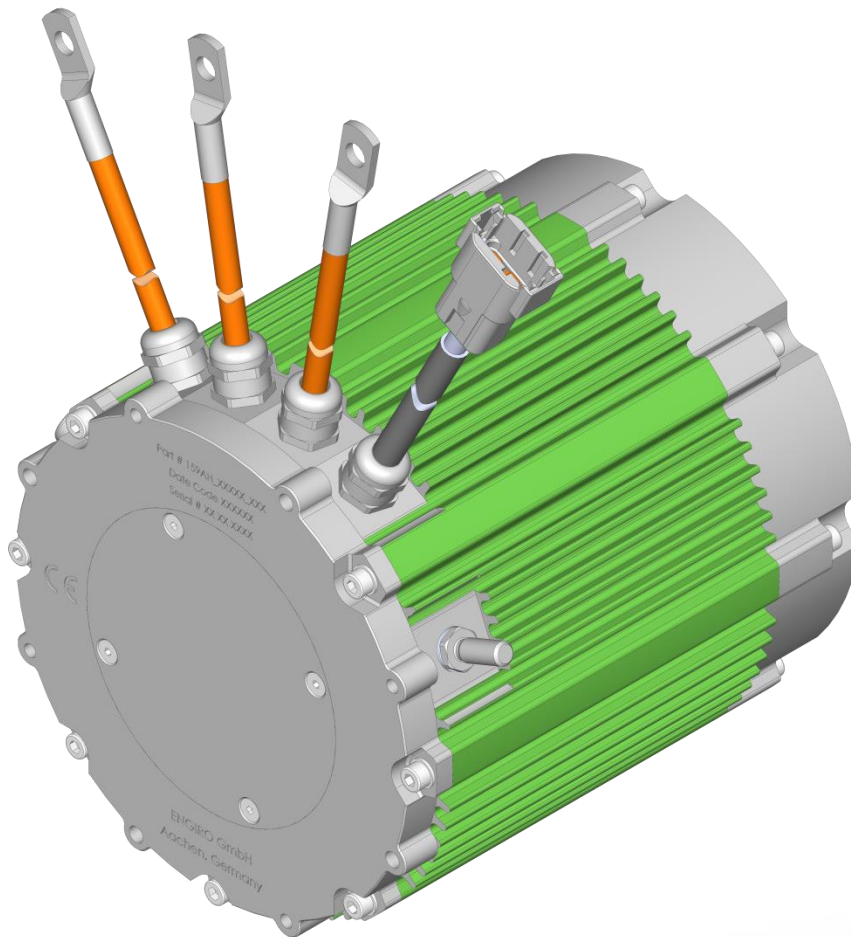


# 159AH-06020-ABC

air-cooled motor / generator with 9.6 kW continuous power



## 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

Data, including specifications, contained within this document are summary in nature and subject to change at any time without notice and are intended for general information only. Call for latest revision. All brand names and product names referenced are trademarks, registered trademarks, or trade names of their respective holders.

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 <sup>1,2)</sup>	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 <sup>2)</sup>	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 <sub>rms</sub>
$U/n$ constant (AC)		rms: 11.3	peak: 17.5	V/(1000rpm)
$K_{\phi}$ constant (AC)		rms: 0.022	peak: 0.033	V/(rad*s <sup>-1</sup> )
Additional Data				
Weight (w/o cables)			see page 4	
Protection category			IP6K9K <sup>3)</sup>	
Maximal motor temperature			140	°C
Allowed ambient temperature			-20 ... 45 <sup>4)</sup>	°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 <sup>2</sup> ) cables with M8 cable lugs	
Length power cables			50	cm
Signal connectors			Deutsch DTM04-08PA 8 pins	

<sup>1)</sup> Nominal current strongly dependent on cooling as specified below.

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

<sup>3)</sup> 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.

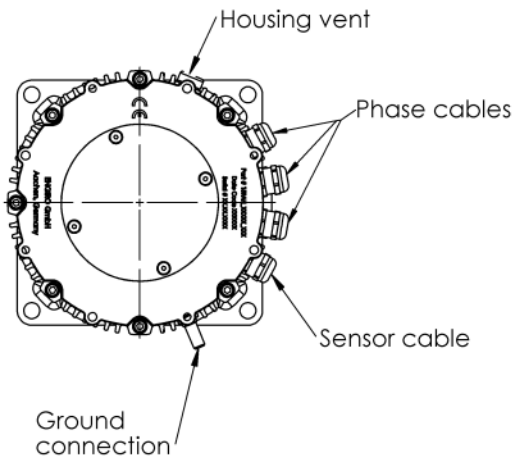
<sup>4)</sup> other range on request

Data, including specifications, contained within this document are summary in nature and subject to change at any time without notice and are intended for general information only. Call for latest revision. All brand names and product names referenced are trademarks, registered trademarks, or trade names of their respective holders.

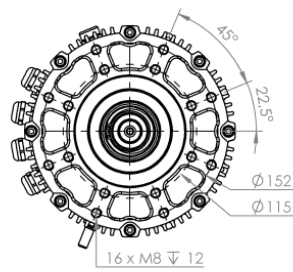
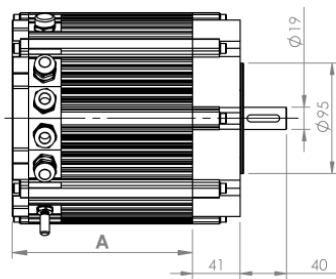
Shaft and Flange Combinations for 159AH-06020-ABC		Flange (A)	
		B (Gearbox Allweier PGR 1500)	E (IEC B14, Ø95 mm centering)
Shaft (B)	C (Shaft with external helical splines fitting PGR 1500 Gearbox)	● (≈ 14,7 kg)	
	D (Cylindrical shaft with keyway Ø19mm)		● (≈ 14,9 kg)
	E (Extended shaft with external helical splines fitting PGR 1500 Gearbox)	● (≈ 15 kg)	
Position Sensor (C)		E: Sin/cos encoder R: Resolver	

Other individual combinations are also possible on request.

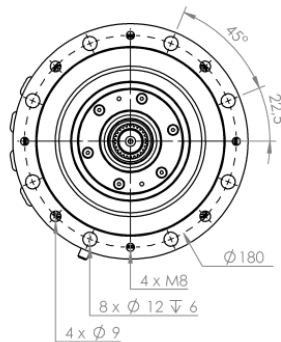
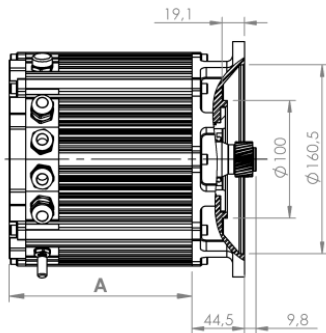
Data, including specifications, contained within this document are summary in nature and subject to change at any time without notice and are intended for general information only. Call for latest revision. All brand names and product names referenced are trademarks, registered trademarks, or trade names of their respective holders.



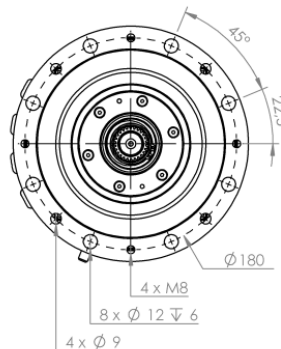
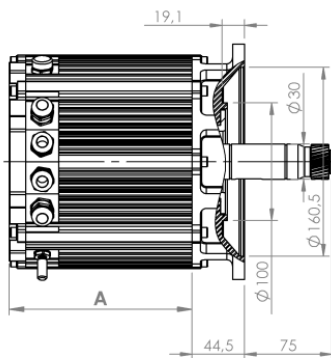
**Flange E  
Shaft D**



**Flange B  
Shaft C**



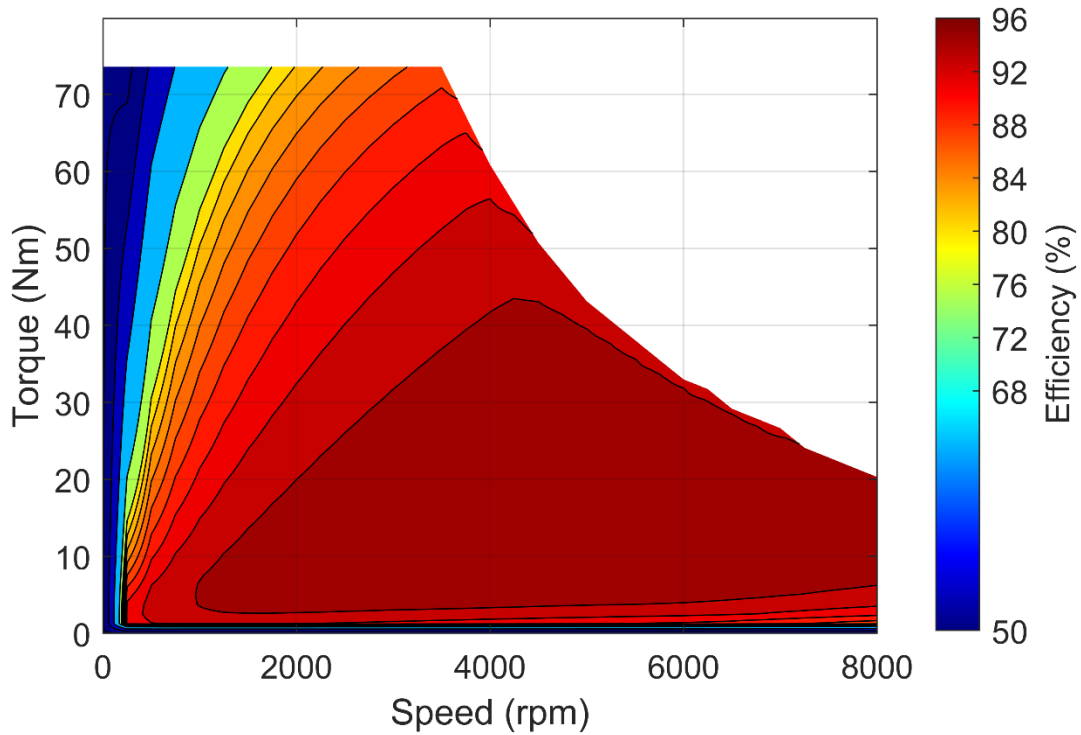
**Flange B  
Shaft E**



Data, including specifications, contained within this document are summary in nature and subject to change at any time without notice and are intended for general information only. Call for latest revision. All brand names and product names referenced are trademarks, registered trademarks, or trade names of their respective holders.

Simulated Efficiency of Motor Application

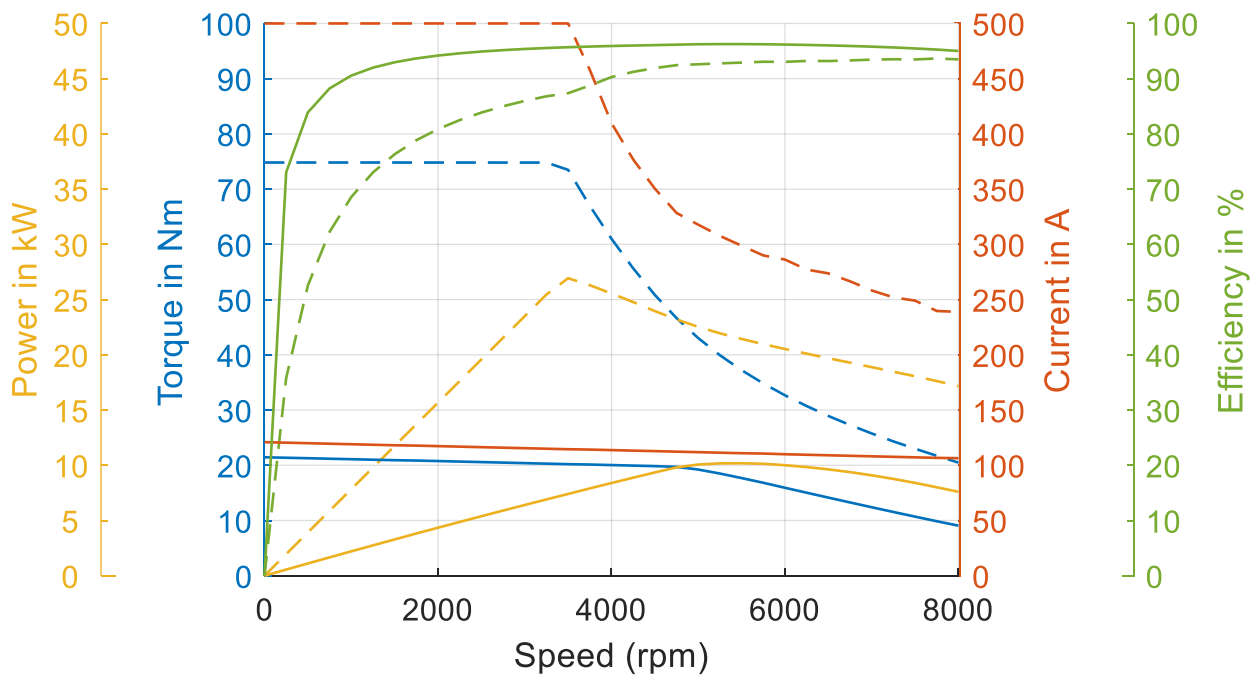
(electric machine only;  $U_{nom} = 96\text{ V}$ )



Simulated Characteristic Motor Parameters

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

solid lines: continuous; dashed lines: maximum;



Data, including specifications, contained within this document are summary in nature and subject to change at any time without notice and are intended for general information only. Call for latest revision. All brand names and product names referenced are trademarks, registered trademarks, or trade names of their respective holders.