

# 159AH-06012-ABC

air-cooled motor / generator with 10 kW continuous power



## KEY FEATURES

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

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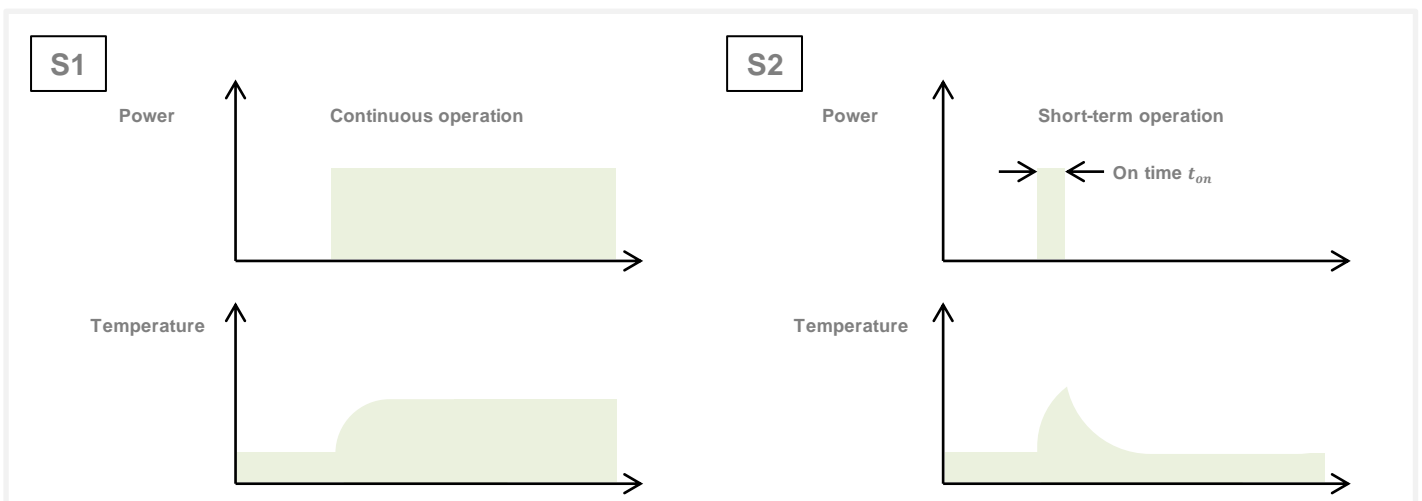
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**Characteristic Operating Points (cooling as specified on next page)**

		S1 <sup>1)</sup>	S2	
Feasible operating time	$t_{\text{peak}}$	continuous	60 sec	
Torque	$T$	27	75	Nm
Power	$P$	10	21	kW
Phase rms-current (AC)	$I_{\text{rms}}$	250 <sup>2,3)</sup>	830 <sup>3)</sup>	A
Battery voltage (DC)	$U_{\text{DC}}$	48	48	V
Speed	$n$	3750	2750	rpm
Electric frequency	$f_{\text{el}}$	313	229	Hz
Efficiency	$\eta_{\text{tot}}$	95	85	%
Power factor	$\cos(\varphi)$	0.93	0.62	

**Maximum Operating Range**

		Max.	
Torque	$T_{\text{max}}$	75 @ 2750 rpm	Nm
Power	$P_{\text{max}}$	21 @ 2750 rpm	kW
Phase rms-current (AC)	$I_{\text{rms,max}}$	830 <sup>4)</sup>	A
Speed	$n_{\text{max}}$	8000	rpm
Battery voltage (DC)	$U_{\text{max}}$	200	V
Electric frequency	$f_{\text{el,max}}$	666	Hz



- 1) Only valid for an ambient temperature  $\leq 20$  °C and air flow rate  $\geq 6$  m/s
- 2) Nominal current strongly dependent on cooling as specified below.
- 3) The cables must not exceed a temperature of 140 °C at any time. Temperature and service life depend on the installation condition.
- 4) Peaking for max. 60 seconds on time

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Electrical Data				
Number of phases				3
Number of pole pairs				5
Maximal efficiency				96 %
T/I constant ( $I < I_{nom}$ )				0.11 Nm/A <sub>rms</sub>
U/n constant (AC) @20 °C motor temp.	rms:	6.9	peak:	10.1 V/(1000rpm)
Ke constant (AC) @20 °C motor temp.	rms:	0.013	peak:	0.019 V/(rad*s <sup>-1</sup> )

Additional Data				
Weight (w/o cables)				16 kg
Rotor moment of inertia				0.0063 kg*m <sup>2</sup>
Allowed range of ambient temperature				-20 ... +85 <sup>1)</sup> °C
Maximal motor temperature				140 °C
Cooling	Cooling medium			air
	Air flow rate			6 m/s
	Cooling air temperature			20 °C
Temperature monitoring				1 x KTY84-130

Ports				
Power terminals	3 x 50 mm <sup>2</sup> cables with M8 cable lugs			
Length power cables				50 cm
Signal connectors	Deutsch DTM04-08PA			

1) Derating >25 °C

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Certifications		
Type approval	CE, EN 60034	
Environmental	Prepared for ISO 9227	
Protection grade	ISO 20653 IP6K9K <sup>2)</sup>	
Vibrations	Prepared for ISO 16750-3	
Customs tariff number	8501 5230	

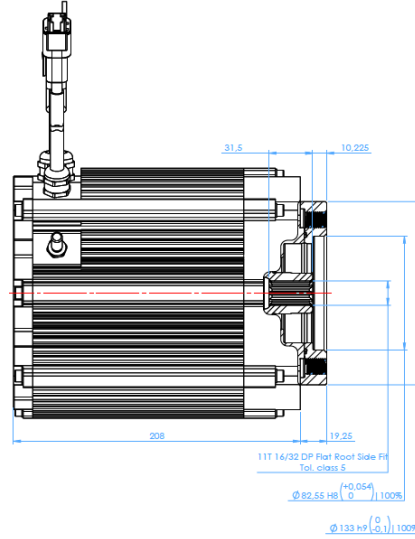
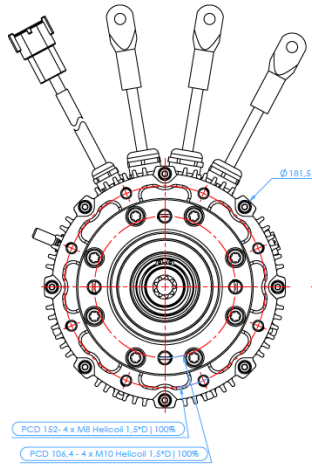
- 1) Available upon request.
- 2) Please note that the IP6K9K rating is only valid if the machine is installed with suitable cable glands and an appropriate sealed interface at the drive side of the motor (flange and/or shaft). Please contact ENGIRO for further questions.

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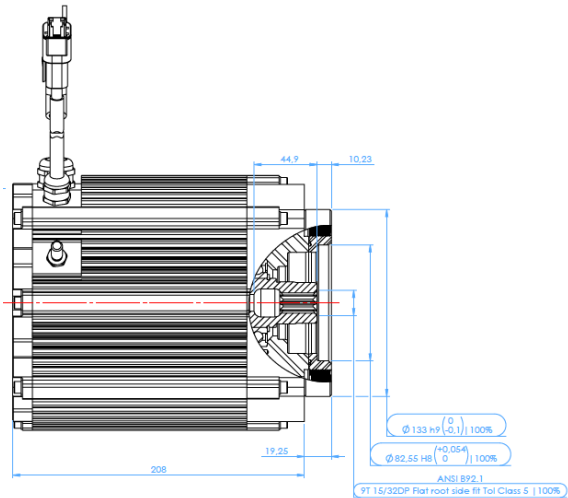
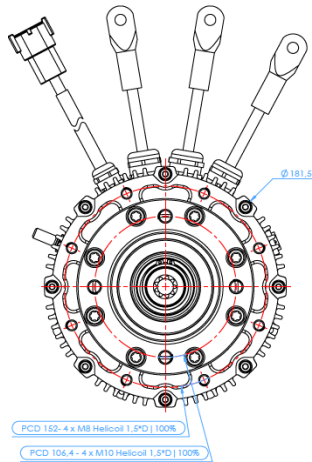
Shaft and Flange Combinations for 159AH-06012-ABC		Flange (A)	
		S (SAE J744 82-2 (A), Ø82,55 mm hydraulic pump)	E (IEC B14, Ø95 mm centering)
Shaft (B)	H (ANSI B92.1 9T 16/32 DP 30° flat root side fit, Tol. Class 5)	● (≈ 16 kg)	
	P (ANSI B92.1 11T 16/32 DP 30° flat root side fit, Tol. Class 5)	● (≈ 16 kg)	
	D (cylindrical shaft with keyway Ø19 mm)		● (≈ 16 kg)
Position Sensor (C)		E: sin/cos encoder	

Other individual combinations are also possible on request.

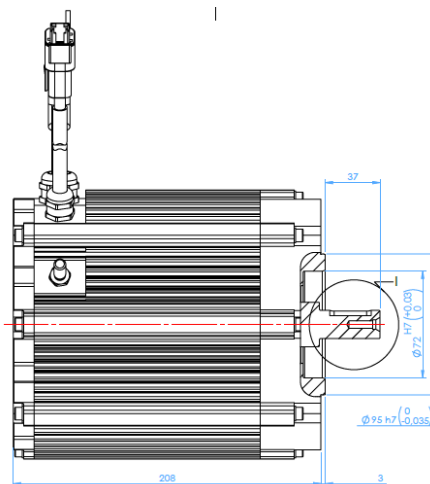
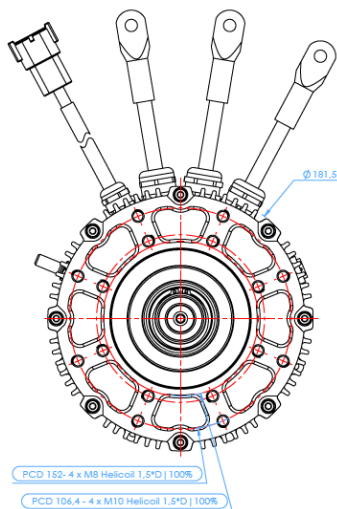
**Flange S  
Shaft P**



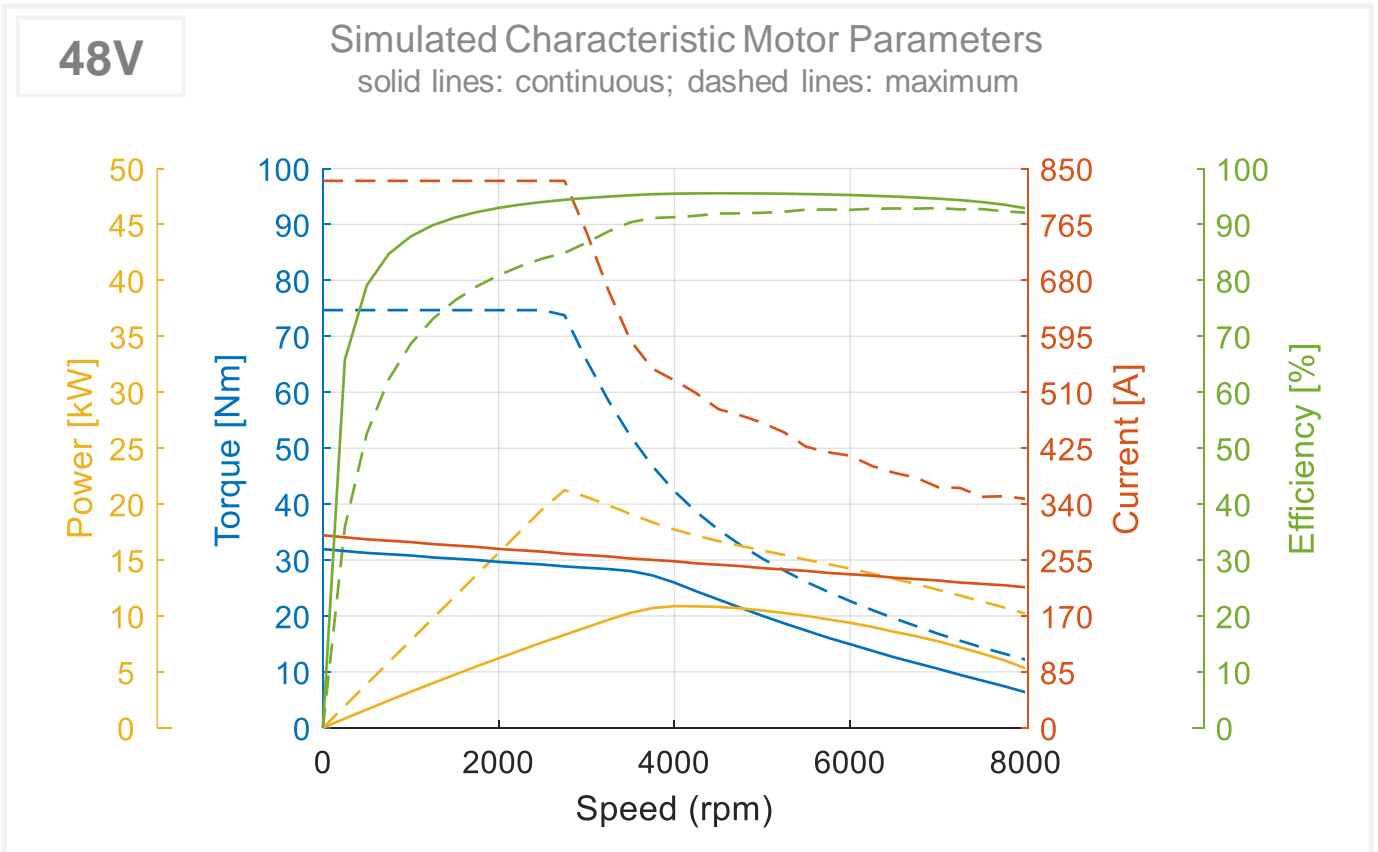
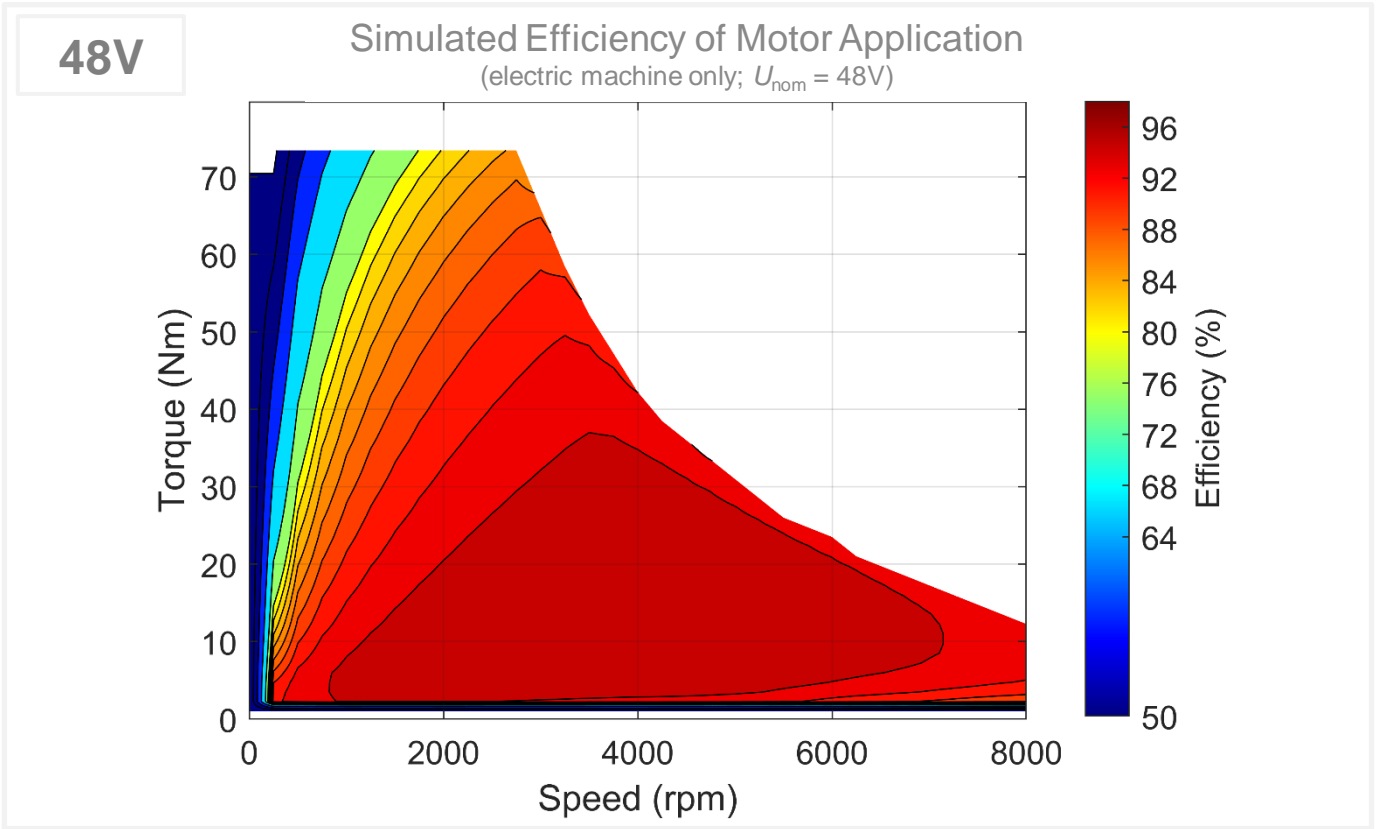
**Flange S  
Shaft H**



**Flange E  
Shaft D**



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