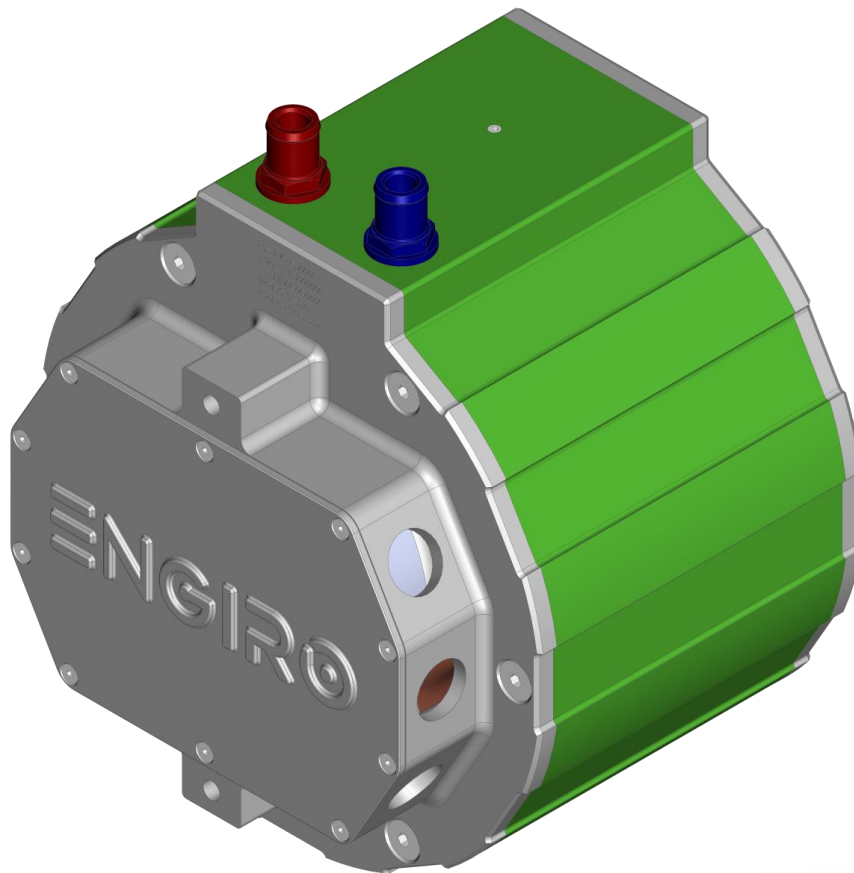


# 205W-04191-P-ABC

water-cooled motor / generator with up to 12 kW continuous power

This datasheet refers to art.no.: see page 2



## KEY FEATURES

- permanent magnet synchronous machine
- water-cooled
- high peak power for motor applications
- convincing cost-benefit ratio
- recommended voltage range from 350 V to 850 V
- delivery with controller possible
- various mechanical interfaces available

Section	Page
Technical Data Machine	3
Table Shaft and Flange Combinations	4
Technical Drawings Machine	5
Characteristics Machine 400V	6
Characteristics Machine 700V	7

**Note:**

On September 1<sup>st</sup>, 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:

Article Number Conversion				
Part. No.	Old Part. No.	Flange	Shaft	Position Sensor
4872215	205W_04191_SHF_P	S1	H1	F
4872204	205W_04191_BCF_P	B1	C1	F
4872207	205W_04191_CDF_P	C1	D1	F
4872211	205W_04191_CDN_P	C1	D1	N
4872240	205W_04191_SSF_P	S1	S1	F

**To be noted:**

The information in this technical data sheet is based on our current knowledge and experience. Due to the wide range of possible influences during application, they do not exempt the processor and user from carrying out their own tests and trials. Although the suitability for a specific application can be estimated from our information, a legally binding assurance is by no means possible. Depending on the individual case, we recommend consultation with us. Any industrial property rights and applicable laws must be observed by the recipient of our products on his own responsibility.

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	$T_{nom}$	40	39	Nm	
Power	$P_{nom}$	7	12	kW	
Speed	$n_{nom}$	1750	3010	rpm	
Phase rms-current	$I_{nom}$	25 <sup>1,2)</sup>	24 <sup>1,2)</sup>	A	
Battery voltage (DC)	$U_{nom}$	400	700	V	
Electric frequency	$f_{el,nom}$	117	201	Hz	
Power factor	$\cos(\varphi)$	0.71	0.70		

Maximal Values (S2, 10s, cooling as specified below)					
Torque	$T_{max}$	94	94	Nm	
Power	$P_{max}$	12	20	kW	
Phase rms-current	$I_{max}$	66 <sup>2)</sup>	66 <sup>2)</sup>	A	
Battery voltage (DC)	$U_{max}$		850	V	
Speed	$n_{max}$		6070	rpm	
Electric frequency	$f_{el,max}$		405	Hz	

Electrical Data					
Number of phases				3	
Number of pole pairs				4	
Maximal efficiency				96	%
$T/I$ constant ( $I < I_{nom}$ )				1.68	Nm/A <sub>rms</sub>
$U/n$ constant (AC) at a temperature of 30°C	rms:	116.5	peak:	198.1	V/(1000rpm)
$K_{\phi}$ constant (AC) at a temperature of 30°C	rms:	0.278	peak:	0.473	V/(rad*s <sup>-1</sup> )

Additional Data					
Weight (w/o cables)			see page 4	kg	
Rotor moment of inertia			0.0092	kg*m <sup>2</sup>	
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)			water/glycol 50/50, 8 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 Hummel Connector		
Cooling connectors			2 x ¾" / 19 mm		

<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

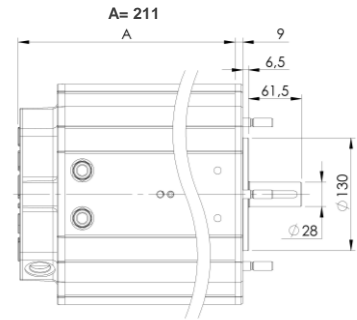
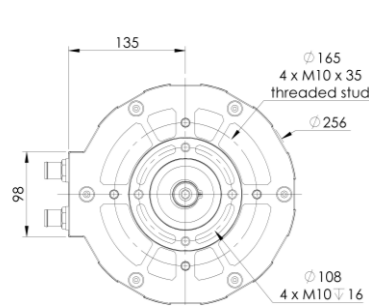
Data, including specifications, contained within this document are summary in nature and subject to change at any time without notice and are intended for general information only. Call for latest revision. All brand names and product names referenced are trademarks, registered trademarks, or trade names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

Shaft and Flange Combinations For 205W-04191-P-ABC		Flange (A)		
		S1 (Standard)	B1 (Flange for fan motor)	C1 (Flange for fan without insert)
Shaft (B)	S1 (Cylindrical shaft with keyway Ø 28mm)	● (~26kg)		
	H1 (Hollow shaft with internal splines ANSI B 92.1 9T)	● (~26kg)		
	D1 (hollow shaft with internal splines ANSI B 92.1)			● (~29kg)
	C1 (cylindrical shaft with keyway Ø35mm)		● (~30kg)	
Position Sensor (C)		N: None F: resolver gain 0.29 R: resolver gain 0.5 (Please note: The R resolver is a phase-out version with a 0.5 gain, which is replaced by the F resolver with a 0.29 gain)		

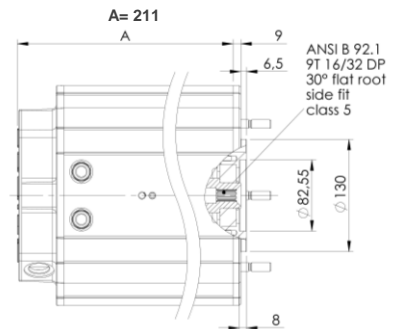
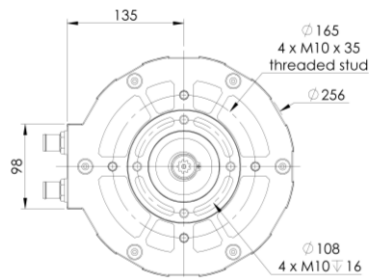
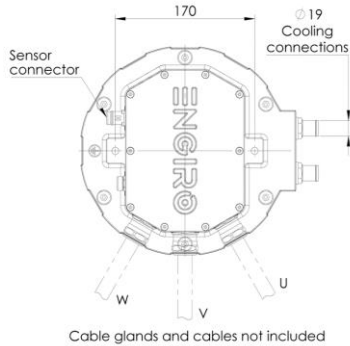
Other individual combinations are also possible on request.

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.

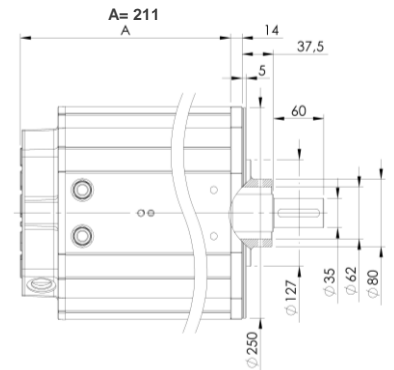
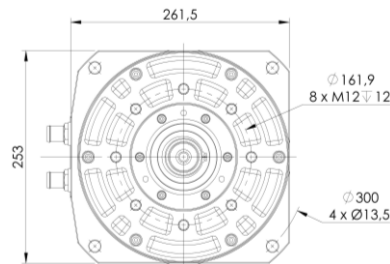
**Flange S1  
Shaft S1**



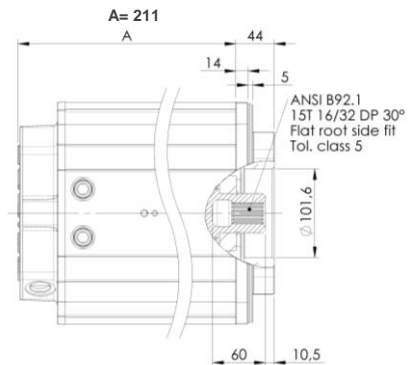
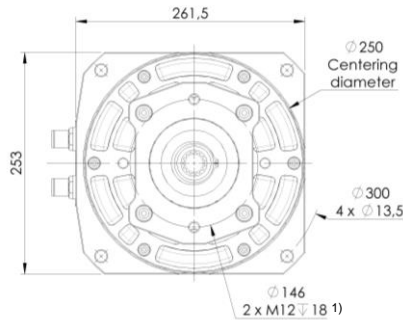
**Flange S1  
Shaft H1**



**Flange B1  
Shaft C1**



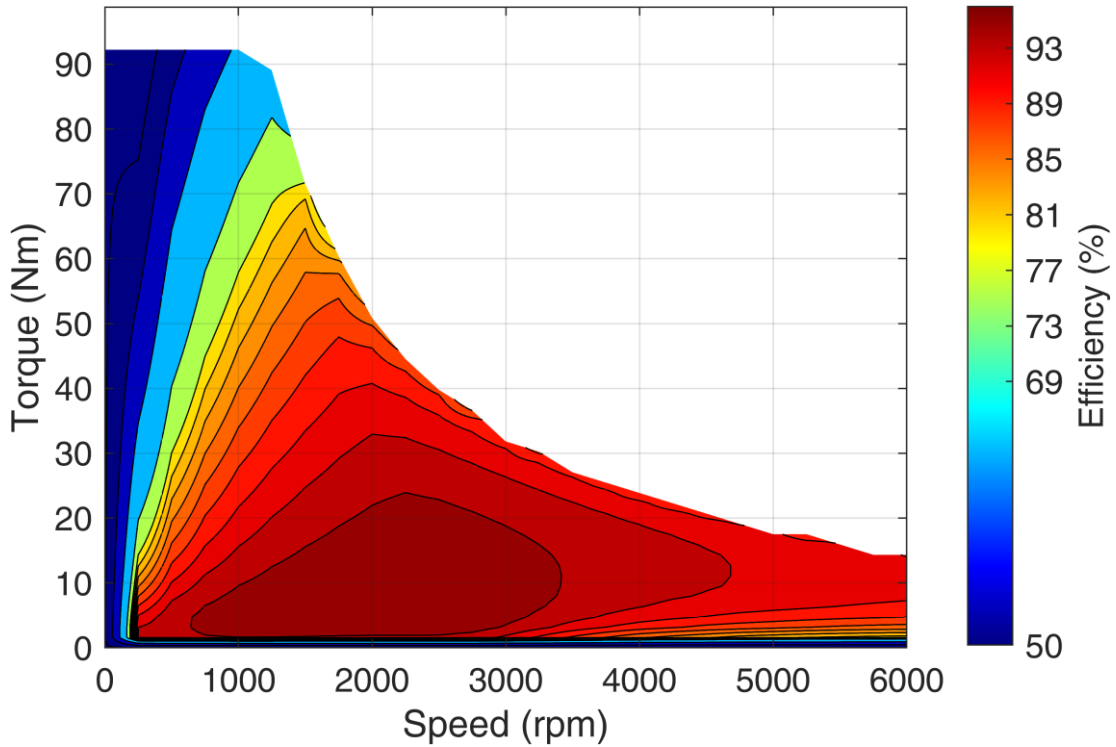
**Flange C1  
Shaft D1**



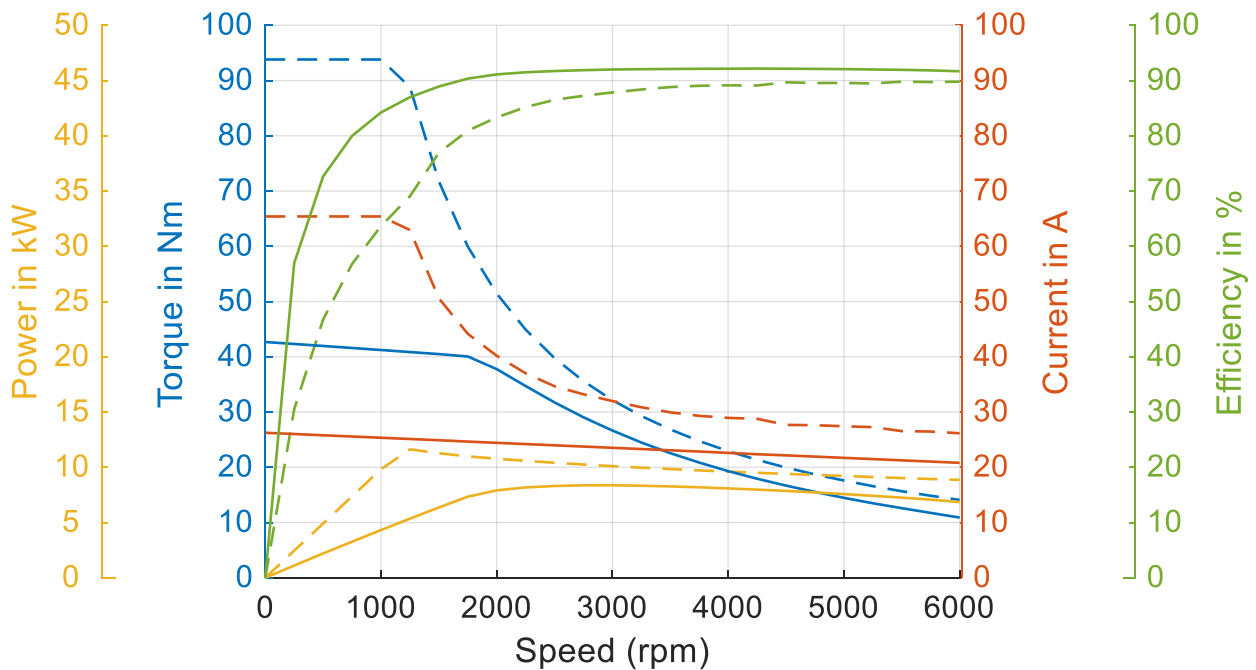
<sup>1)</sup> Machines with C-Flange and a revision number smaller than Rev16 have an M14 Helicoil 1,5\*D. Revision number is printed on each machine on the rear flange below the water-cooling hose barbs.

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;  $U_{nom} = 400\text{ V}$ ; machine at  $140\text{ °C}$ ;)

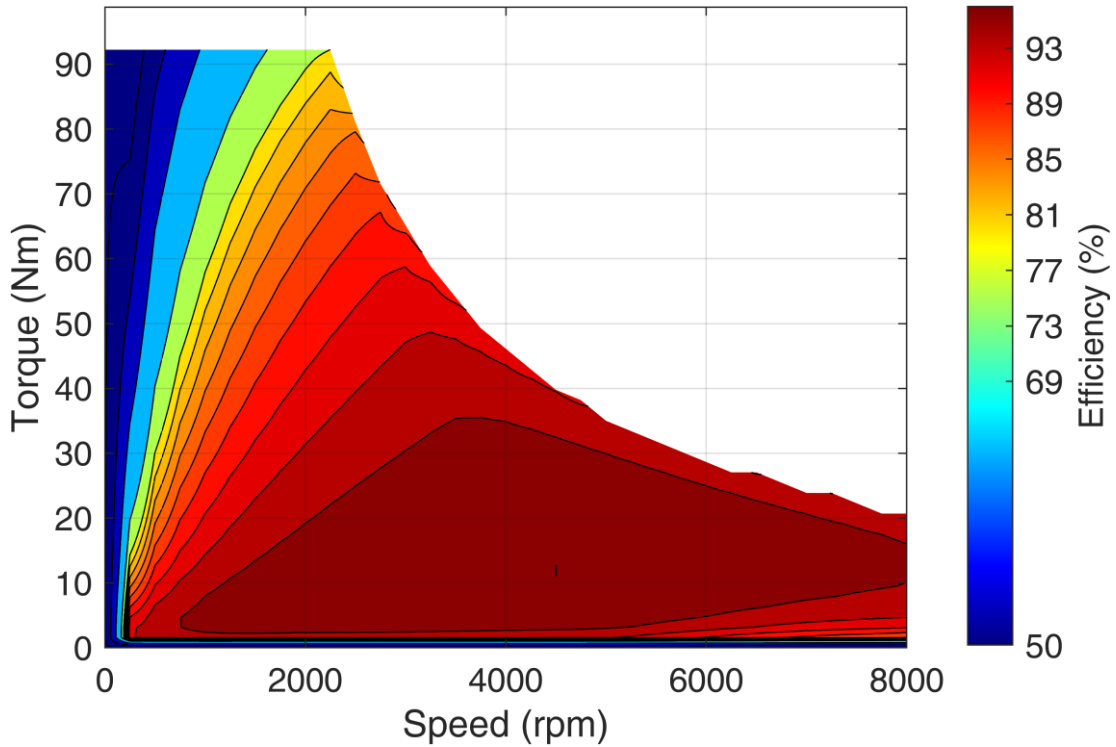


Simulated Characteristic Motor Parameters  
 $U_{nom} = 400\text{ V}$   
solid lines: continuous; dashed lines: maximum;

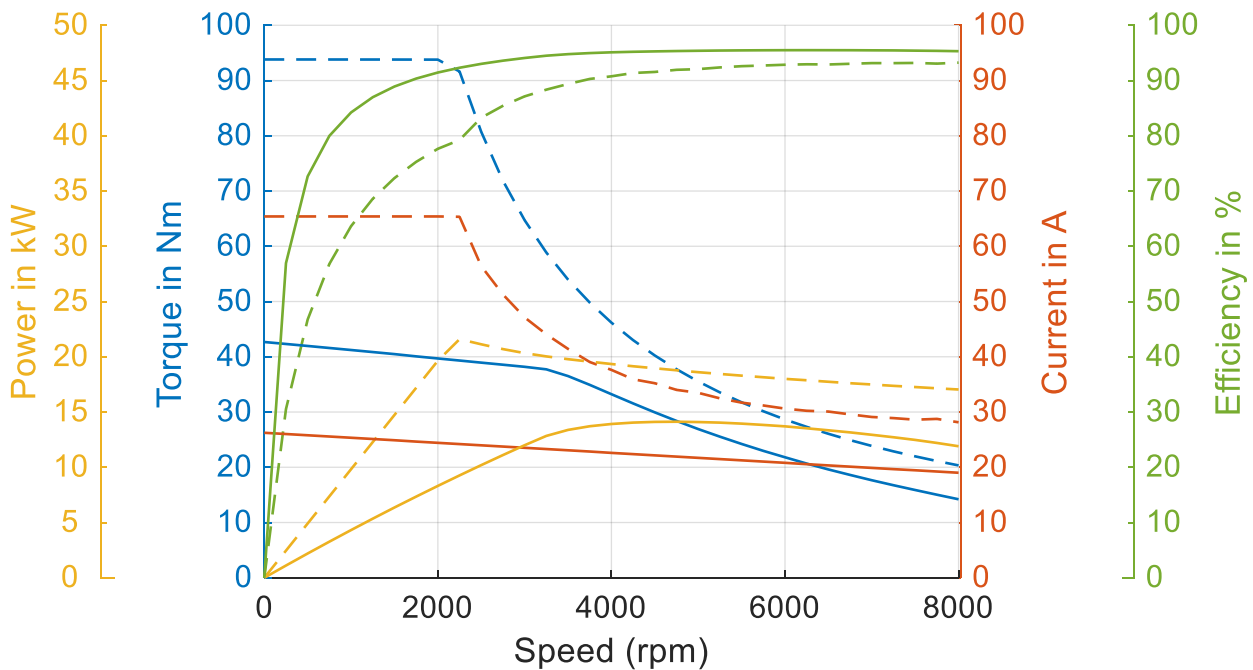


Data, including specifications, contained within this document are summary in nature and subject to change at any time without notice and are intended for general information only. Call for latest revision. All brand names and product names referenced are trademarks, registered trademarks, or trade names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

Simulated Efficiency of Motor Application  
(electric machine only;  $U_{nom} = 700\text{ V}$ ; machine at  $140\text{ °C}$ ;)



Simulated Characteristic Motor Parameters  
 $U_{nom} = 700\text{ V}$   
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.