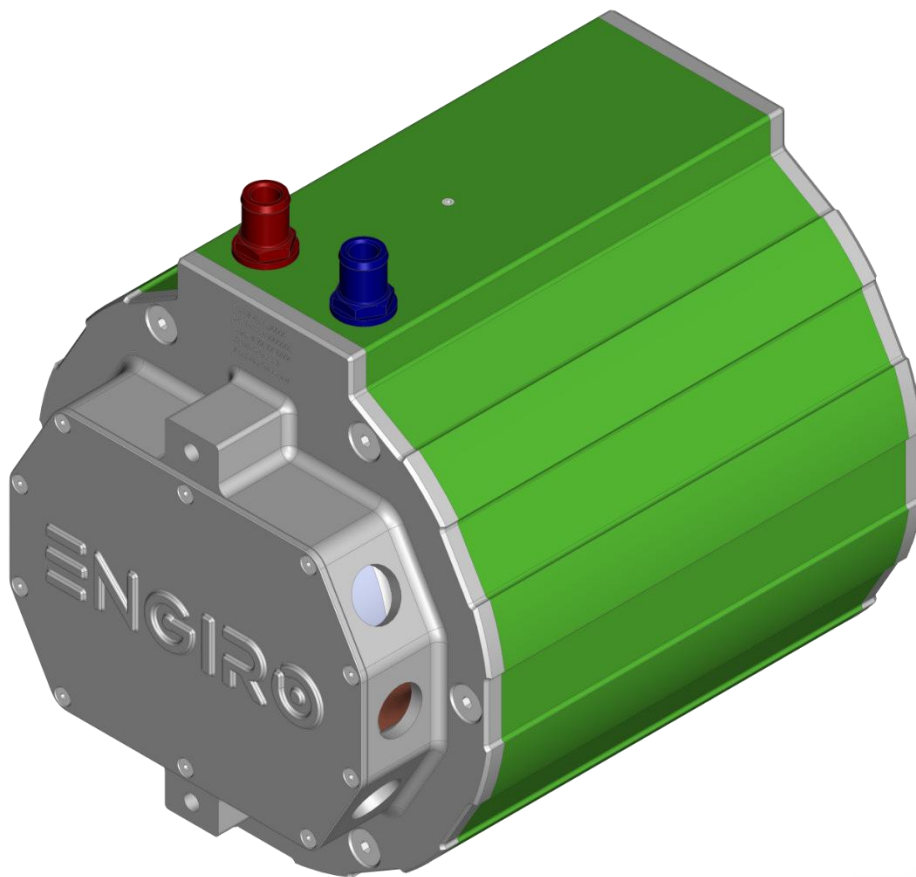


205W-12043-P-ABC

water-cooled motor / generator with 82 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

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Additional Data	4
Available Type Variants	5
Technical Drawings	6
Performance Plots	7

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:

Article Number Conversion					
Part. No.	Old Part. No.	Flange	Shaft	Position Sensor	HV-Interlock
4872387	205W_12043_CDF_P	C1	D1	F	-
4872391	205W_12043_CGF_P	C1	G1	F	-
4957543	-	C1	G1	F	x
4872393	205W_12043_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.

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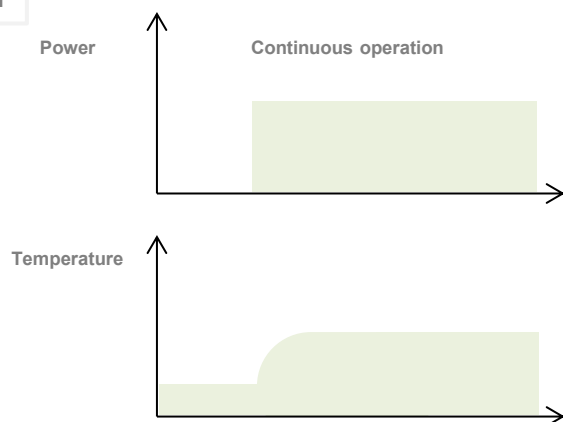
Characteristic Operating Points¹⁾

		S1	S2	S2	
Feasible operation time	t_{on}	continuous	30 min	30 sec	
Torque ²⁾	T	117	117	285	Nm
Power ²⁾	P	82	82	156	kW
Speed	n	6750	6750	5250	rpm
Phase RMS-current (AC) ³⁾	I_{rms}	99	99	290	A
Battery current (DC) ³⁾	I_{DC}	108	108	219	A
Battery voltage (DC)	U_{DC}	800	800	800	V
Electric frequency	f_{el}	450	450	350	Hz
Efficiency	η_{tot}	97	97	92	%
Power factor	$\cos(\varphi)$	0.85	0.85	0.66	
Cooling	specified in chapter „Additional Data“				

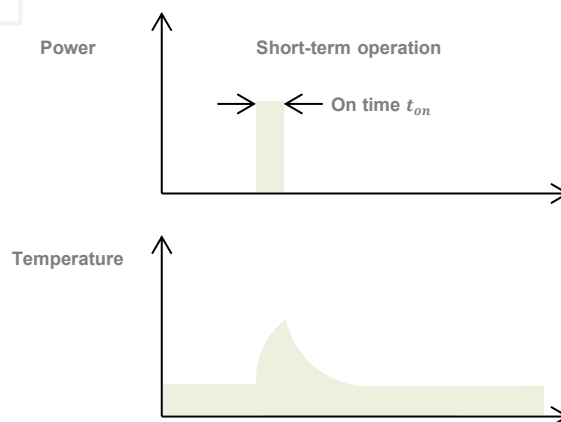
Maximum Operating Range

Torque ^{2) 4)}	T_{max}	285 @ 5250 rpm	Nm
Power ^{2) 4)}	P_{max}	156 @ 5250 rpm	kW
Speed ⁵⁾	n_{max}	9000	rpm
Phase RMS-current (AC) ^{3) 4)}	$I_{rms,max}$	290	A
Battery current (DC) ^{3) 4)}	$I_{DC,max}$	219	A
Battery voltage (DC) ⁶⁾	U_{max}	850	V
Electric frequency	f_{el}	600	Hz

S1



S2



- 1) Defined Range only valid for a power factor of 1 at DC input
- 2) Torque / Power rating is dependent on rotor temperature
- 3) The cables must not exceed a temperature of 140 °C at any time. Temperature and service life depend on the installation condition.
- 4) Peak rating for max. 30 sec on time
- 5) Higher speeds available upon request. A detailed discussion of the functional safety concept of the vehicle is required.

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Electrical Data						
Number of phases					3	
Number of pole pairs					4	
Maximum stationary short circuit current ¹⁾		139 A (RMS) @ 20 °C, ≥ 700 rpm				
Maximal efficiency					97	%
T/I constant (I<I _{nom})					1.179	Nm/A _{rms}
U/n constant (AC) at temperature 20 °C		rms:	78.05	peak:	127.22	V/(1000rpm)
Ke constant (AC) at temperature 20 °C		rms:	0.75	peak:	1.21	V/(rad*s ⁻¹)
Additional Data						
Rotor moment of inertia		0.0208 (S1S1), 0.0212 (C1D1), 0.0211 (C1G1)			kg*m ²	
Allowed range of ambient temperature ²⁾		-20 ... +85			°C	
Maximal motor temperature		140			°C	
Temperature monitoring		KTY-84-130				
Cooling	Advised medium (OAT Coolants)	water/glycol - 50/50 - TL 774-D/F - VIN 878389 - MAN 324 SNF - MTL 5048				
	Flow rate				6	l/min
	Inlet temperature				45	°C
	Pressure drop				0.138	bar
	Maximum pressure				2	bar
	Cooling channel volume				0.89	l
Connectors						
Power terminals		Prepared for M8 cable lugs; 3x M25 cable glands (not included)				
Signal connectors		1x Hummel 10 Pin Connector, M16				
Cooling connectors		inner Ø 12 mm, outer Ø 19 mm				
Certifications						
Type approval		CE, EN 60034				
Salt mist		ISO 9227				
Protection grade		IP6K9K ³⁾				
Vibrations		Prepared for ISO 16750-3				
Customs tariff number		8501 5381				

1) Simulated

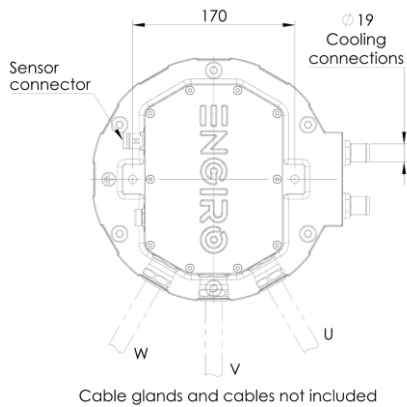
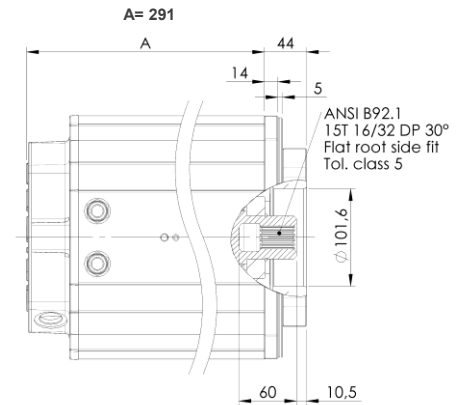
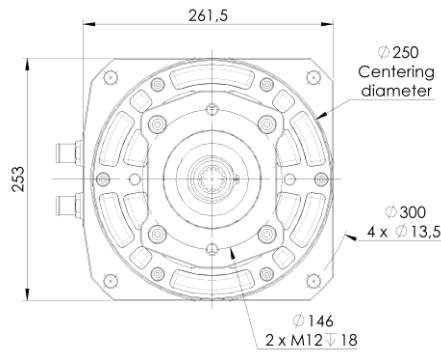
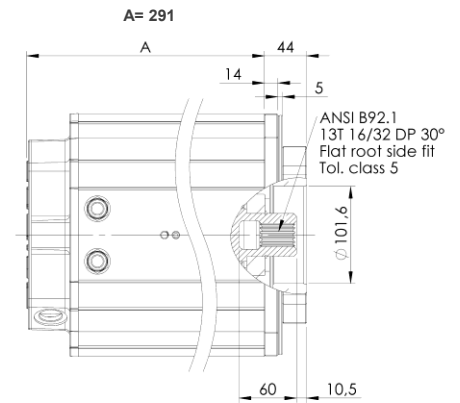
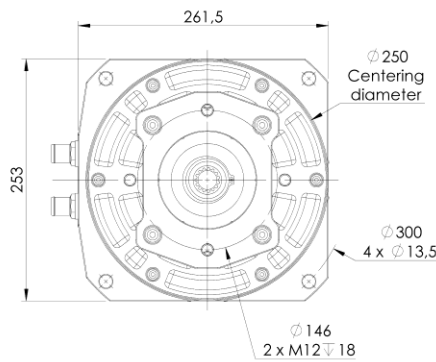
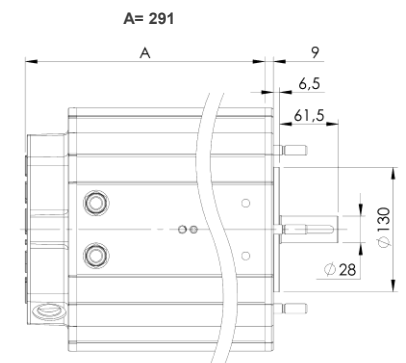
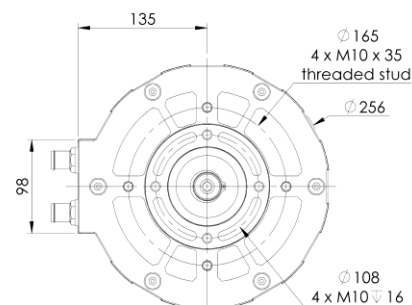
2) Linear derating from 70 °C to 0 A at 85 °C

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

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Available Type Variants				
Flange	Shaft	Pos. sensor	HV-Interlock	Weight (kg)
C1 Hydraulic Pump ANSI 101-2 / SAE B - Ø101,6 mm centering hole	D1 hollow shaft with internal splines ANSI B 92.1 15T 16/32DP30°	F Resolver	-	≈ 48 kg
C1 Hydraulic Pump ANSI 101-2 / SAE B - Ø101,6 mm centering hole	G1 Hollow shaft with internal splines ANSI B 92.1 / 13T	F Resolver	-	≈ 49 kg
			HVIL	
S1 Standard with 4xM10x35 threaded stud	S1 Cylindrical shaft with keyway Ø 28mm	F Resolver	-	≈ 46 kg

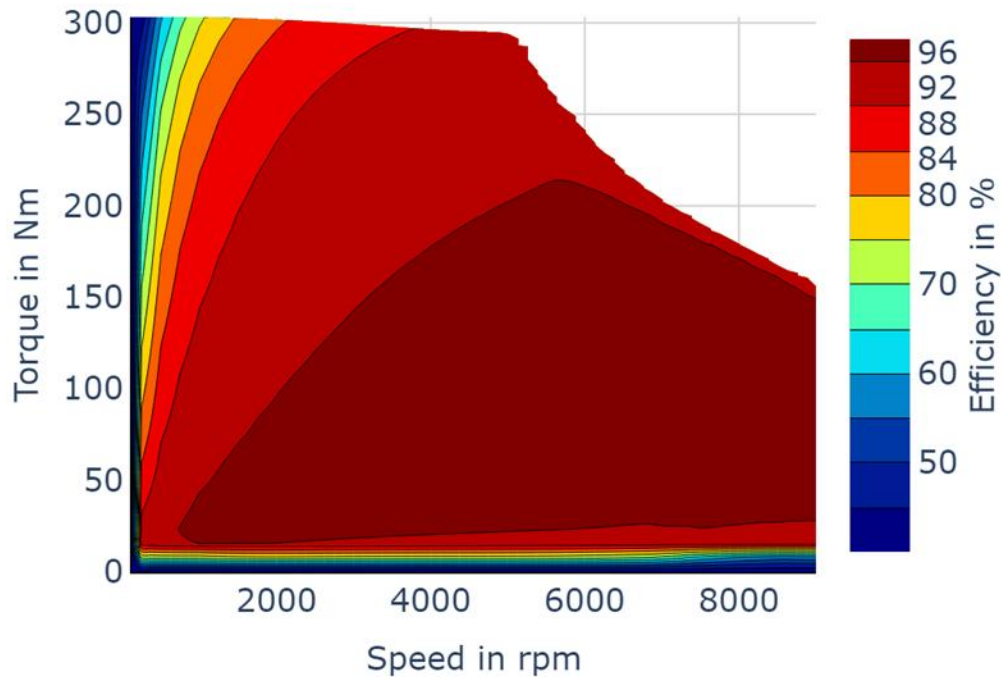
Other individual combinations are also possible on request.

**Flange C1
Shaft D1**

**Flange C1
Shaft G1**

**Flange S1
Shaft S1**


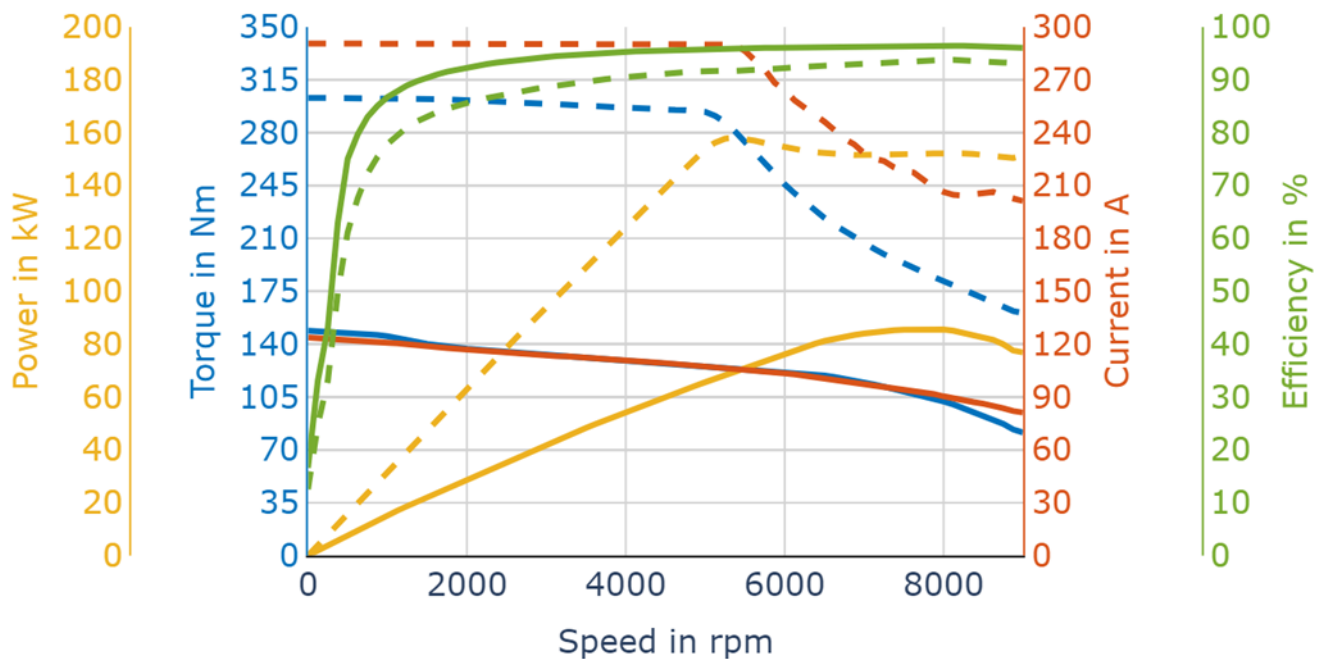
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800 V

Simulated Efficiency of Motor Application

(electric machine only; $U_{nom} = 800\text{ V}$)**800 V**

Simulated Characteristic Motor Parameters

 solid lines: S1 continuous; dashed lines: S2 (30 sec) maximum
 (cooling as specified in chapter "Additional Data")


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