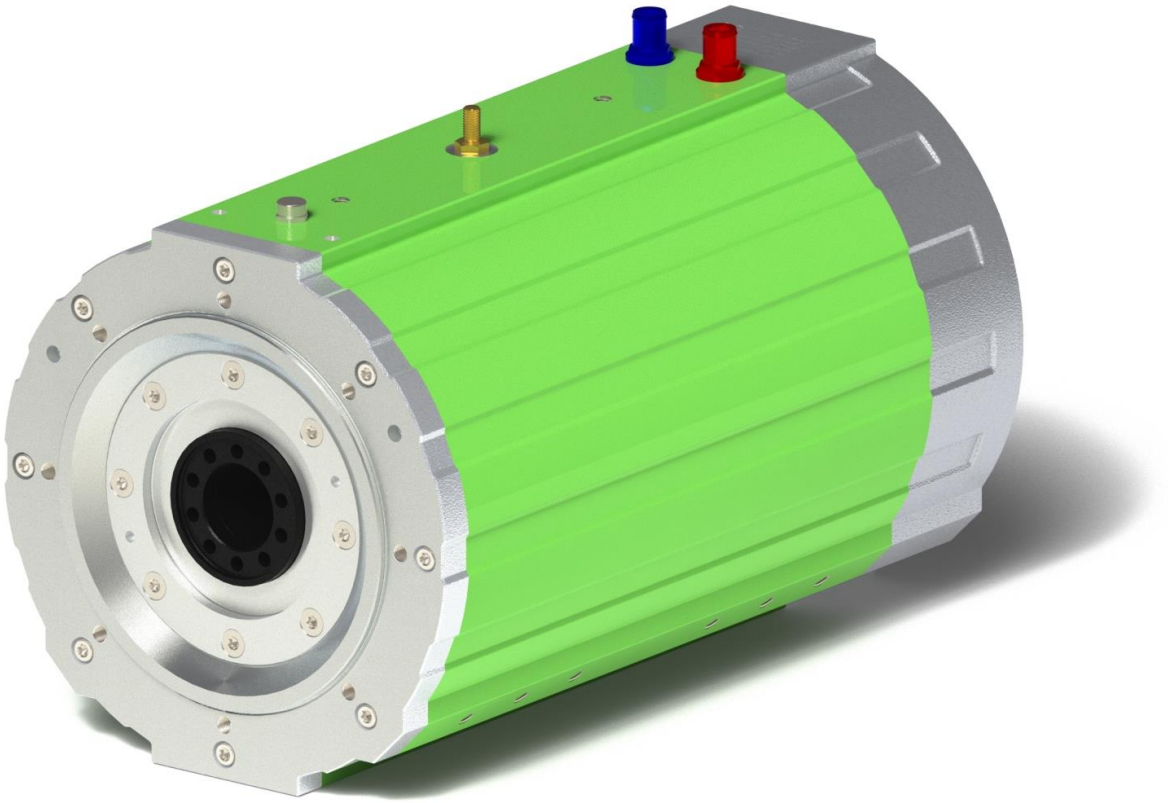
260W-28008-ABC-P

water-cooled motor / generator with 215 kW continuous power



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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Version: 14

Table of Content

Note:

On September 1st , 2024, **we transferred our ERP systems to SAP**. Due to this change, **we are altering our current part numbers**.

From now on, configurations regarding the rear interface of the motor (e.g., accessible rear shaft end, closed, …) will be specified in a separate part of the motor naming. Therefore, all 260W **D1-flanges will be renamed to S1-flanges** with the according B-side specification.

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**	**B-side interface**
4842924	260W_28008_SFR_P	S1	F1	R	…S11

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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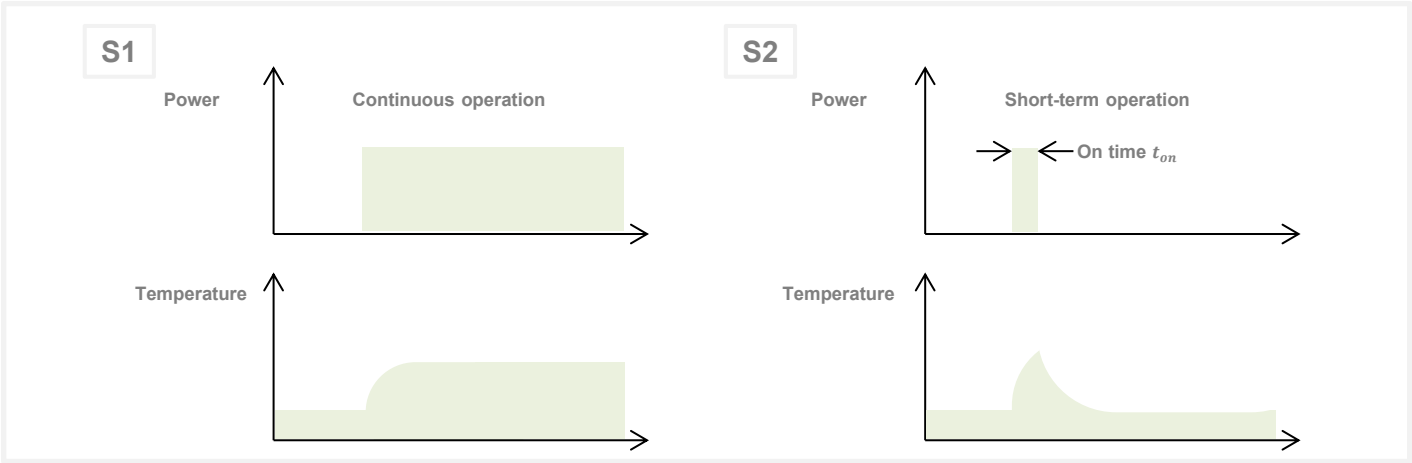
Operating Range

Characteristic Operating Points [1]				
		S1	S2	
Feasible operation time	t_{on}	continuous	60 sec	
Torque	T	458	1287	Nm
Power	P	215	540	kW
Speed	n	4500	4000	rpm
Phase rms-current (AC)	I_{rms}	300	900	A
Battery current (DC)	I_{nom}	316	803	A
Battery voltage (DC)	U_{nom}	700	700	V
Electric frequency	f_{el}	375	333	Hz
Efficiency	η_{tot}	96	96	%
Power factor	$cos(\varphi)$	0.91	0.72	
Cooling	specified on page 4			

Maximum Operating Range			
Torque	T_{max}	1287 @ 4000 rpm [2]	Nm
Power	P_{max}	585 @ 4750 rpm	kW
Speed	n_{max}	6000	rpm
Phase rms-current (AC)	$I_{rms,max}$	900[3,4]	A
Battery current (DC)	I_{max}	861[3,4]	A
Battery voltage (DC)	U_{max}	850	V
Electric frequency	f_{el}	500	Hz



1) Defined Range only valid for a power factor of 1 at DC input
2) Torque 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. 60 seconds on time

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Additional Data

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Electrical Data						
Number of phases					3	
Number of pole pairs					5	
Maximal efficiency					97	%
T/I constant (I<Inom)					1.51	Nm/A_{rms}
U/n constant (AC) at temperature 30°C	rms:	97.9	peak:	144.5		V/(1000rpm)
Ke constant (AC) at temperature 30°C	rms:	0.234	peak:	0.345		$V/(rad*s^{-1})$

Additional Data			
Rotor moment of inertia		0.1892	$kg*m^2$
Allowed range of ambient temperature		-20 … +85	°C
Maximal motor temperature		134	°C
Temperature monitoring		1 x KTY84-130	
Cooling	Advised medium (OAT Coolants)	water/glycol - 50/50 ▪ TL 774-D/F ▪ VIN 878389 ▪ MAN 324 SNF ▪ MTL 5048	
	Flow rate	20	l/min
	Inlet temperature	45	°C
	Pressure drop	< 1[1)]	bar
	Maximum inlet pressure	2	bar
	Cooling channel volume	2.32	l

Connectors	
Power terminals	3 x M32 cable gland
Signal connectors	M16, Hummel 10 Pin connector
Cooling connectors	2 x ¾" / 19 mm

Certifications	
Type approval	CE, EN 60034
Environmental	Prepared for ISO 9227
Protection grade	IP6K9K[2)]
Vibrations	Prepared for ISO 16750-3
Customs tariff number	8501 5381

1) Theoretical assumption
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. / Only applies to variants with closed B-side /

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Available Type Variants

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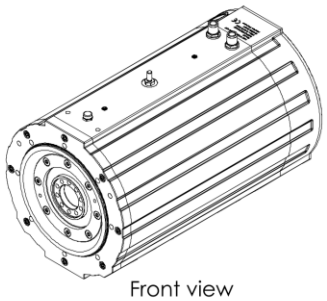
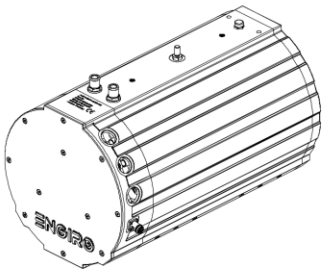
Available Type Variants				
Flange	Shaft	Pos. sensor	B-side interface	Weight (kg)
S1 Flange with mounting threads (Ø230 mm centering, Ø250 PCD 8 x M10)	**F1** Hollow shaft with screw flange (Ø90 and Ø50 mm centering, Ø66 mm PCD 10 x M10)	**R** Resolver	**S11** Closed B-side	≈ 149 kg

Other individual combinations are also possible on request.

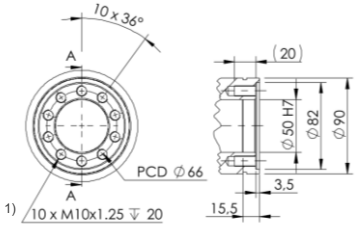
Technical Drawings



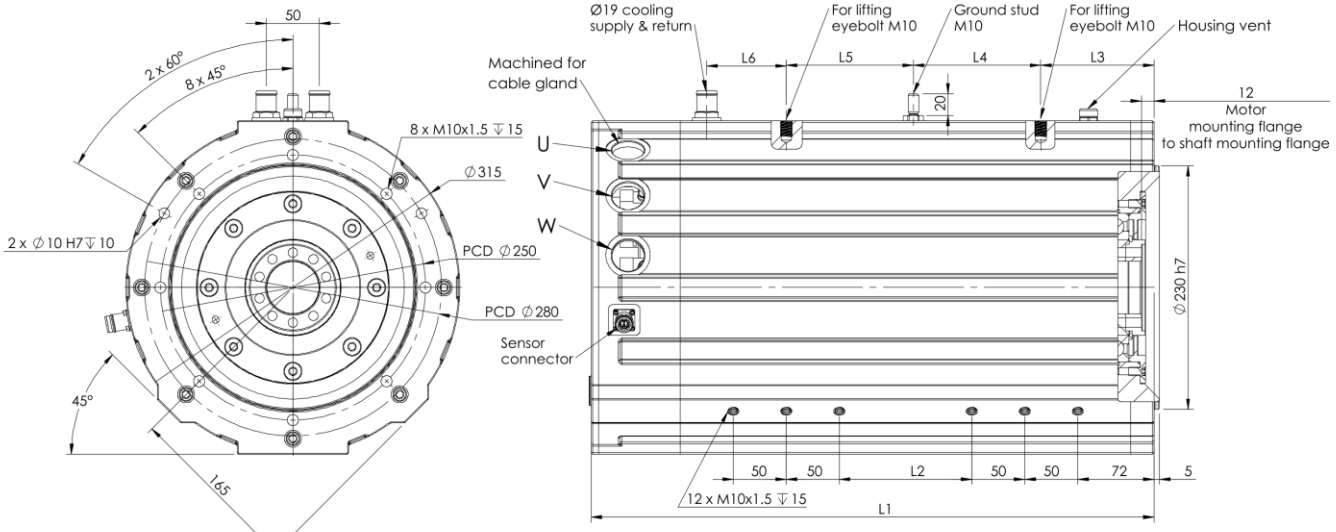
Front view



Rear view



Shaft end



Model	L1	L2	L3	L4	L5	L6	Moment of Inertia [kg.m²]	Cooling channel volume [L]
260W_200xx	453	45	87	115	65	155	0,1327	1,91
260W_250xx	503	95	97	115	115	65	0,1677	2,17
260W_280xx	531	125	107	120	120	75	0,1892	2,32

1) Depending on the operating points and load conditions, measures may be required to increase the coefficient of friction in the flange connection. Please contact ENGIRO for further questions.

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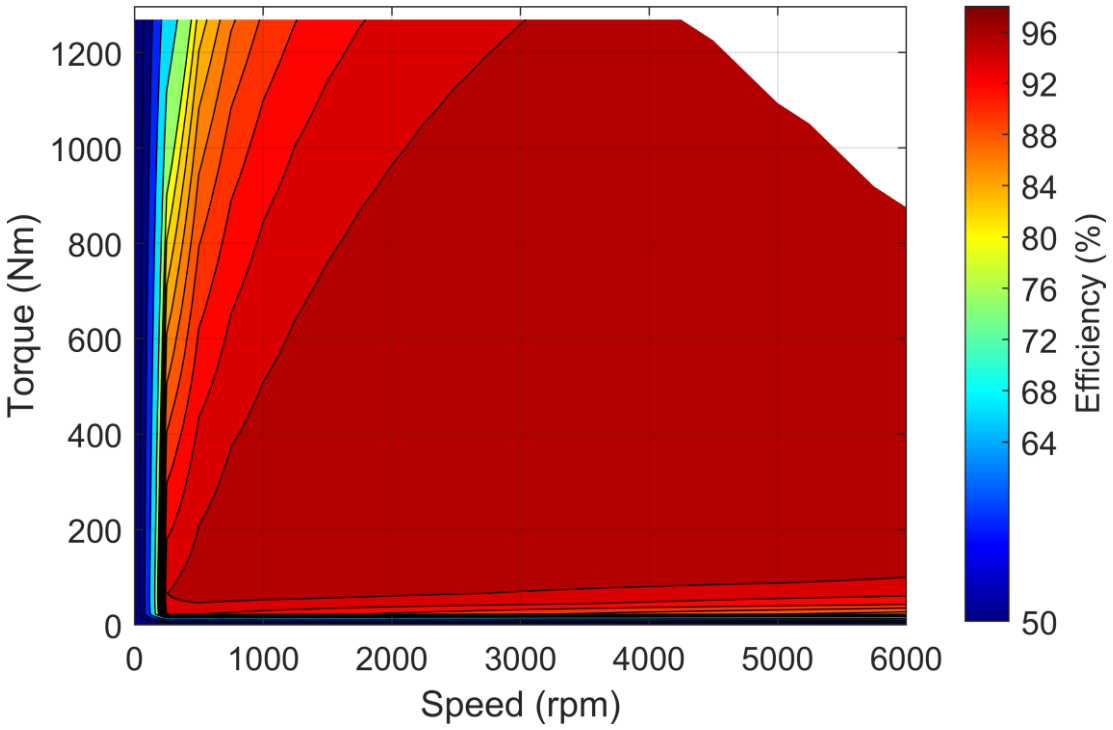
Simulated Efficiency of Motor Application

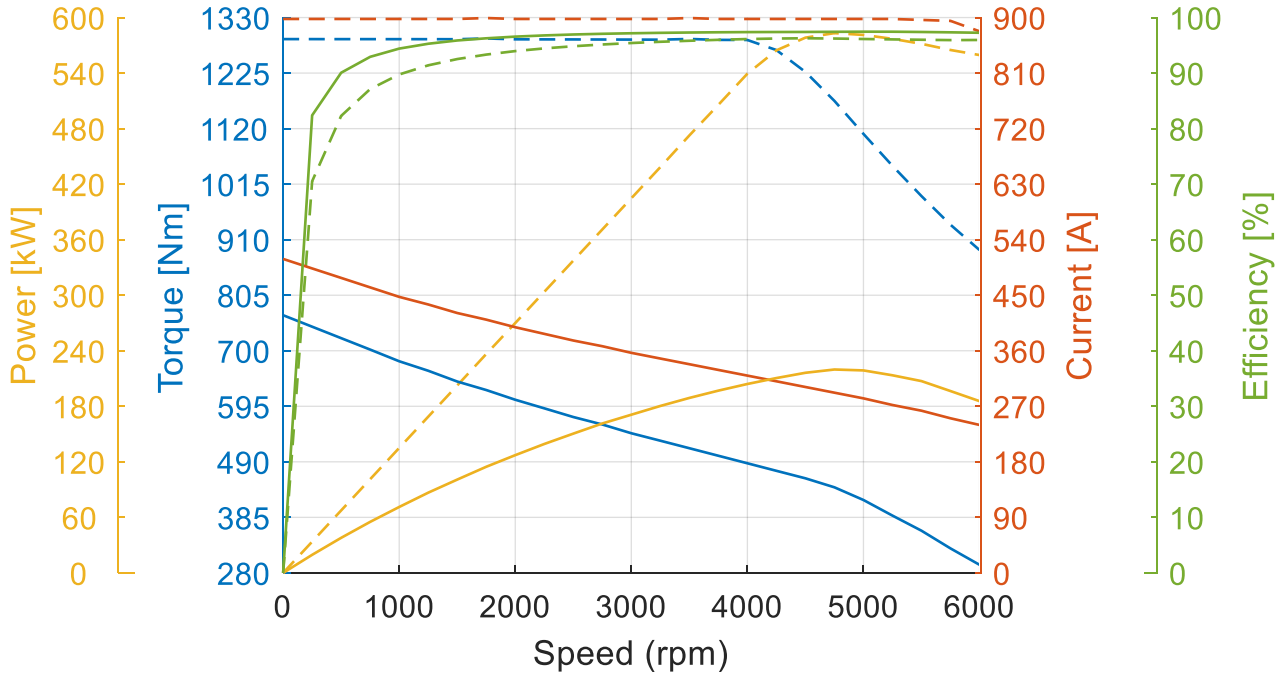
(electric machine only; U_{nom} = 700 V)



Simulated Characteristic Motor Parameters

U_{nom} = 700 V

solid lines: continuous; dashed lines: maximum;



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