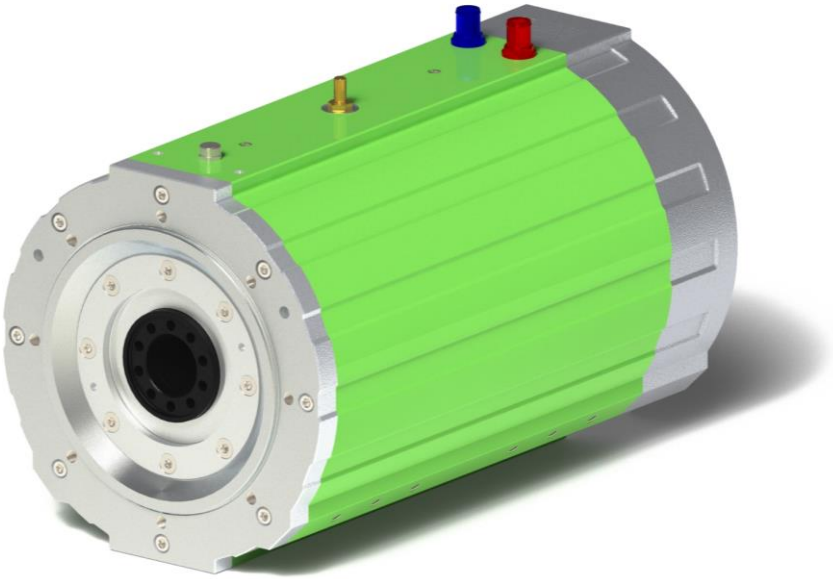
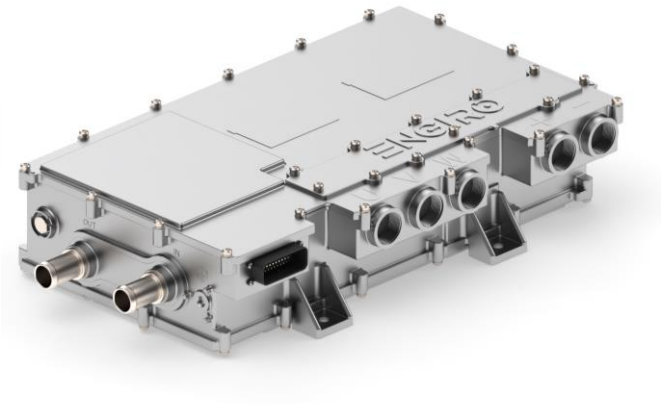
260W-20014-ABC-P

water-cooled motor / generator with 218 kW continuous power





Article-No.: 2151
Article-Name: ENGIRO Traction Inverter 800V / 900A

KEY FEATURES

- permanent magnet synchronous machine
- water-cooled
- high peak power for motor applications
- convincing cost-benefit ratio
- recommended voltage range from 500V to 850V
- delivery with controller possible

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Operating Range

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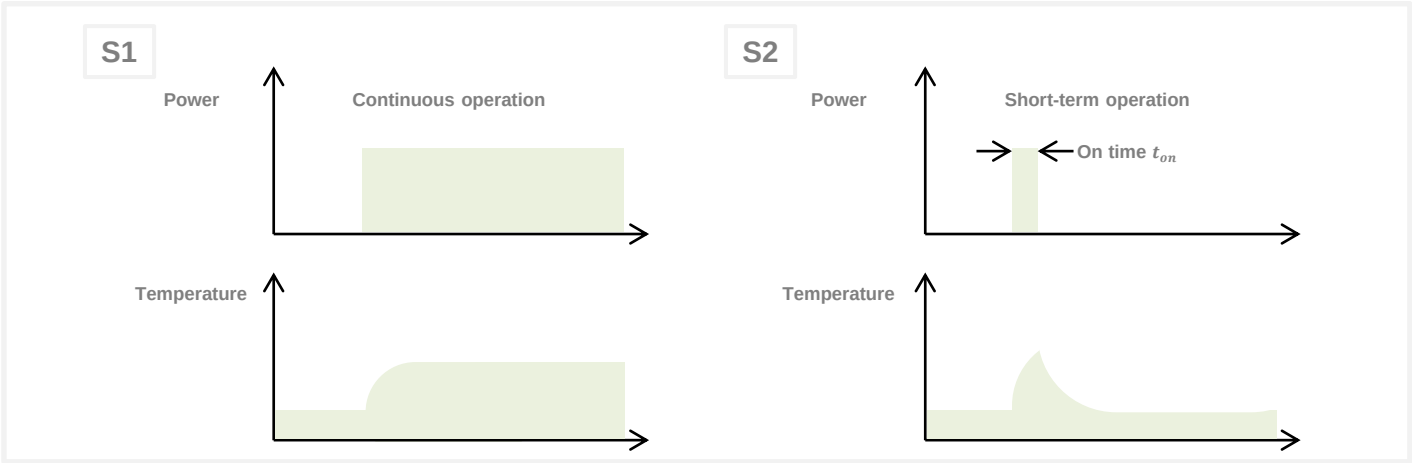
Characteristic Operating Points[1]					
		S1	S2	S2	
Feasible operation time	t_{on}	continuous	30 min	30 sec	
Torque	T	538	538	1107	Nm
Power	P	218	218	377	kW
Speed	n	3750	3750	3250	rpm
Phase rms-current (AC)	I_{rms}	293	293	702	A
Battery current (DC)	I_{nom}	302	302	567	A
Battery voltage (DC)	U_{nom}	750	750	750	V
Electric frequency	f_{el}	312	312	270	Hz
Efficiency	η_{tot}	96	96	91	%
Power factor	$cos(\varphi)$	0.86	0.86	0.61	
Cooling	specified on page 5				

Maximum Operating Range			
Torque	T_{max}	1107 @ 3250 rpm [2]	Nm
Power	P_{max}	386 @ 3500 rpm	kW
Speed	n_{max}	6000	rpm
Phase rms-current (AC)	$I_{rms,max}$	702 [3] [4]	A
Battery current (DC)	I_{max}	616 [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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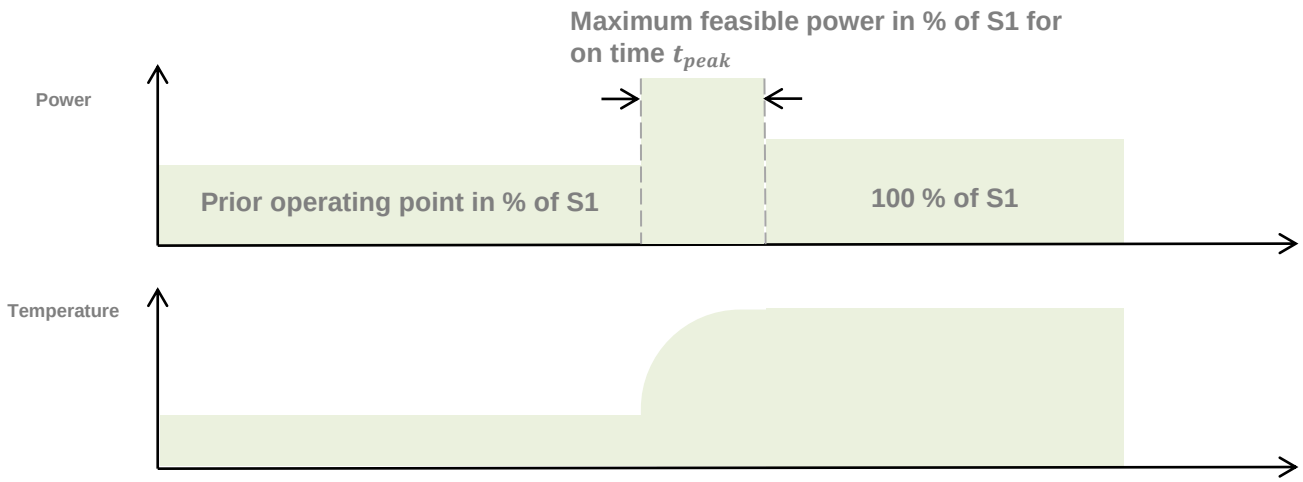
Operating Range

S9 Operating Points Maximum Feasible Power in % of S1						
U_{nom} = 750 V		Prior operating point in % of S1				
		0 %	25 %	50 %	75 %	100 %
On time t_{peak}	30 s	180%	170%	160%	140%	100%
	180 s	130%	120%	120%	110%	100%
	420 s	110%	100%	100%	100%	100%

S9 Overload capability for subsequent continuous operation depending on preceding operation



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Additional Data

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Electrical Data						
Number of phases					3	
Number of pole pairs					5	
Maximal efficiency					96	%
T/I constant (I<Inom)					1.83	Nm/A_{rms}
U/n constant (AC) at temperature 30°C	rms:	120	peak:	177.8		V/(1000rpm)
Ke constant (AC) at temperature 30°C	rms:	0.286	peak:	0.424		$V/(rad*s^{-1})$

Additional Data			
Rotor moment of inertia		0.1327	$kg*m^2$
Allowed range of ambient temperature		-20 … +85	°C
Maximal motor temperature		operating point dependent[1)]	
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	0.5	bar
	Maximum inlet pressure	2	bar
	Cooling channel volume	1.91	l

Connectors	
Power terminals	3 x M25 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) Please contact ENGIRO for the parametrization of third-party inverters
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 SFR Variant /

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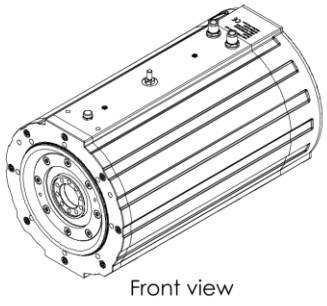
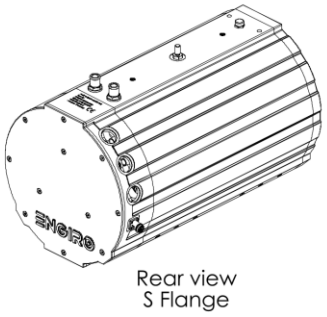
Available Type Variants

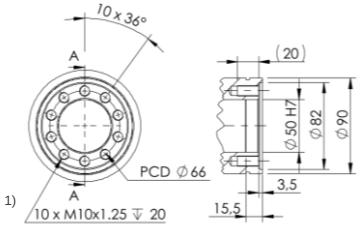
Shaft and Flange Combinations for 260W-20014-ABC-P		Flange (A)
		S (Standard)
Shaft (B)	**F** (Hollow shaft with screws)	● (≈ 119,4 kg)
Position Sensor (C)		R: Resolver

Other individual combinations are also possible on request.

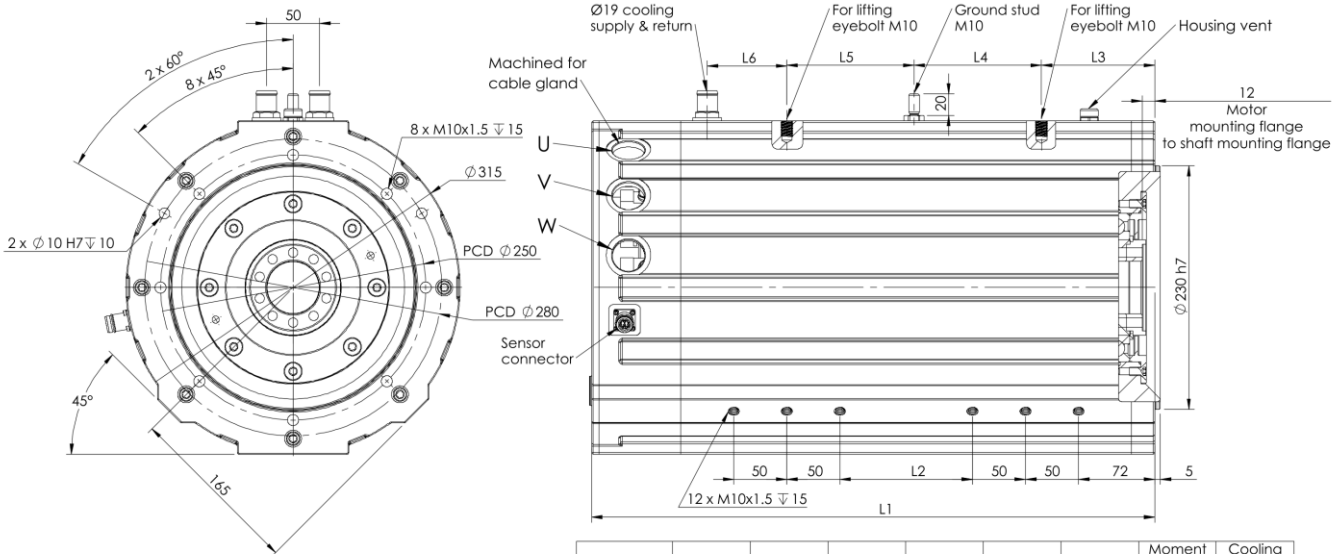
Technical Drawings


Front view


Rear view
S Flange



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 can be required to increase the coefficient of friction in the flange connection. Please contact ENGIRO for further questions.

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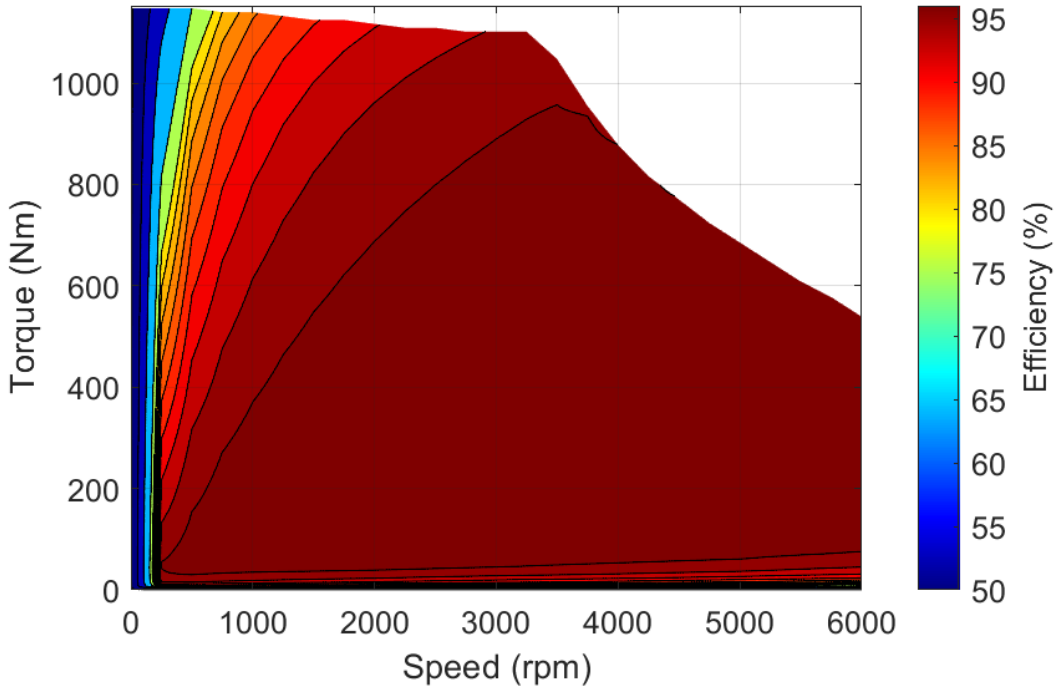
Simulated Efficiency of Motor Application

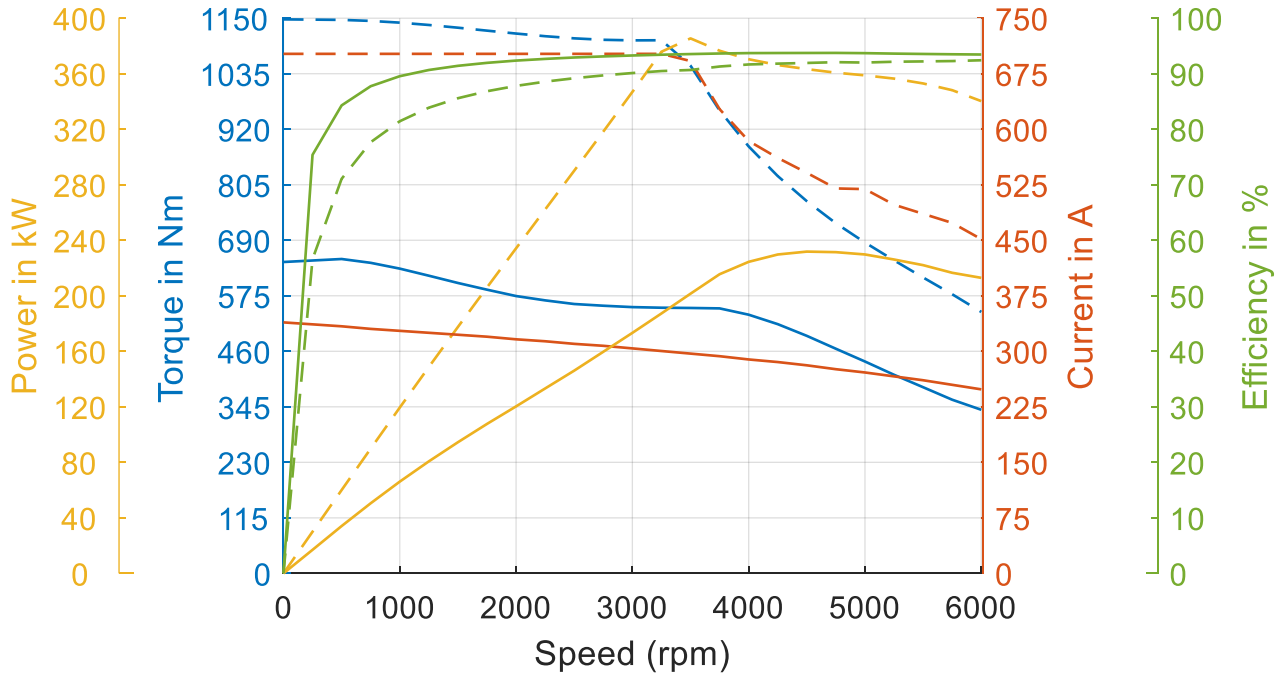
(electric machine only; U_{nom} = 750 V)



Simulated Characteristic Motor Parameters

U_{nom} = 750 V

solid lines: continuous; dashed lines: maximum;



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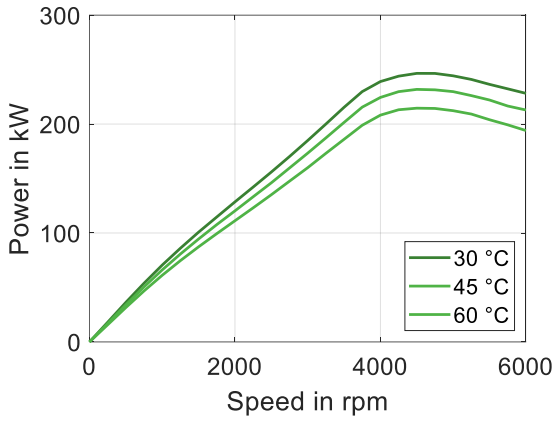
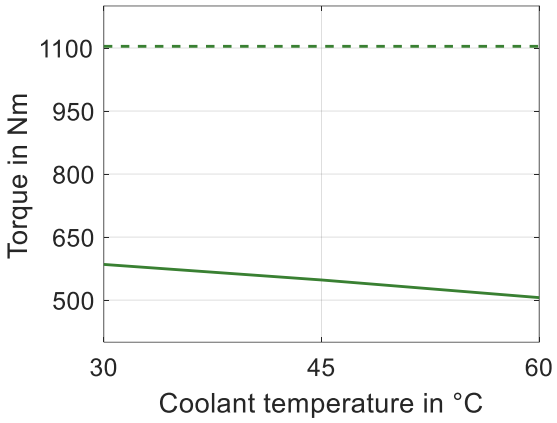
Additional Characteristics

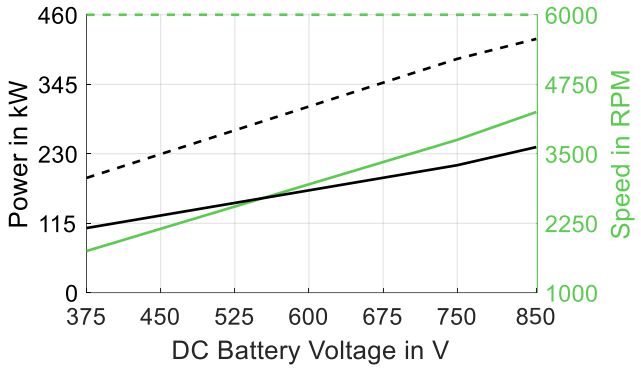
Simulated nominal power at different coolant temperatures - U_{nom} = 750 V



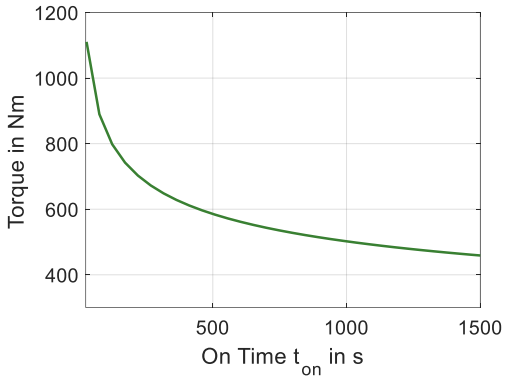
Available torque at different coolant temperatures[1)]



Simulated power and speed over battery voltage[1)]



Torque over feasible maximum on time, S2 operation cycles (45°C coolant temperature)



1) solid lines: continuous; dashed lines: maximum;

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