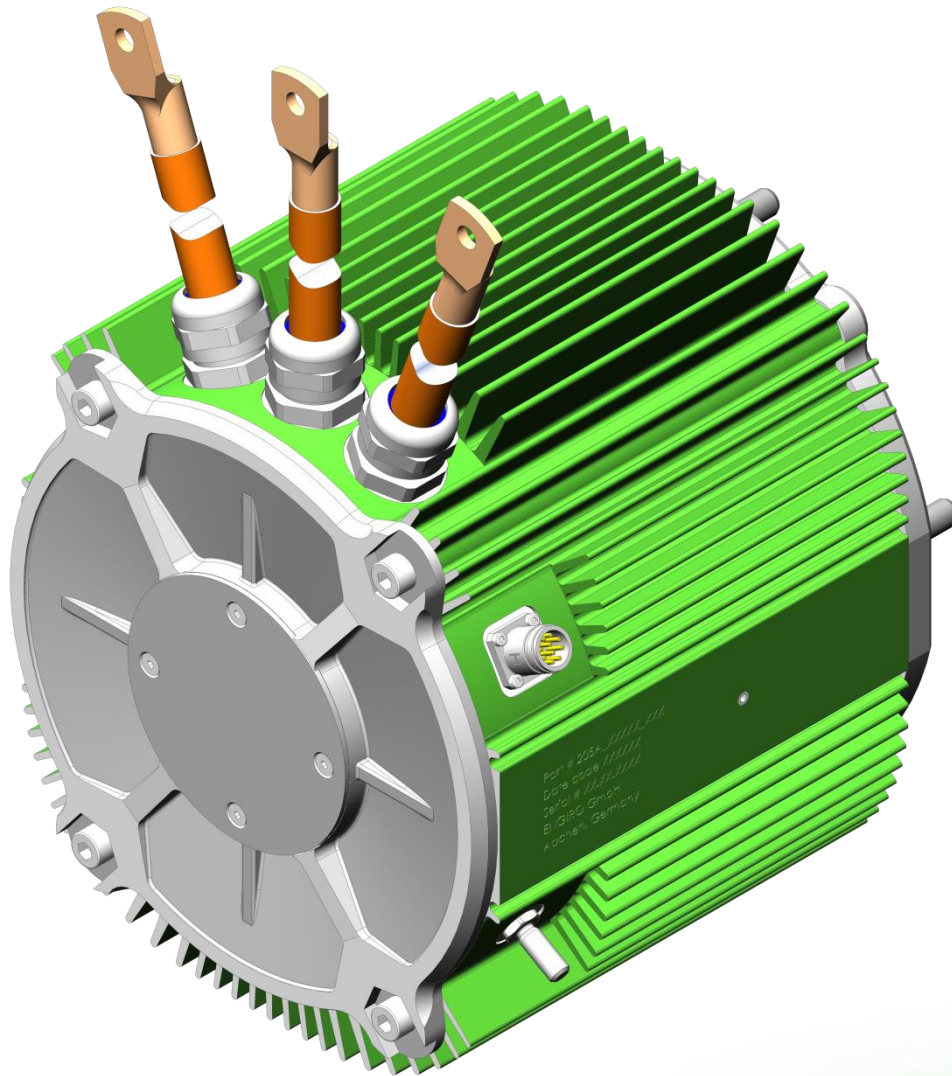


205A-04028-ABC

air-cooled motor / generator with up to 11 kW continuous power



KEY FEATURES

- permanent magnet synchronous machine
- air-cooled
- high peak power for motor applications
- convincing cost-benefit ratio
- recommended voltage range from 48V to 200V
- delivery with controller possible

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Nominal Operation (S1, cooling as specified below)

Torque	T_{nom}	22	22	22	Nm
Power	P_{nom}	3.8	7.5	11	kW
Speed	n_{nom}	1630	3260	4770	rpm
Phase rms-current	I_{nom}	89	89	89	A
Battery voltage (DC)	U_{nom}	48	96	140	V
Electric frequency	$f_{\text{el, nom}}$	108	218	318	Hz
Power factor	$\cos(\varphi)$	0.77	0.76	0.75	

Maximal Values (S2, 10s, cooling as specified below)

Torque	T_{max}	95	95	95	Nm
Power	P_{max}	11	23	35	kW
Phase rms-current	I_{max}	447	447	447	A
Battery voltage (DC)	U_{max}	280			V
Speed	n_{max}	8000			rpm
Electric frequency	$f_{\text{el, max}}$	533			Hz

Electrical Data

Number of phases	3				
Number of pole pairs	4				
Maximal efficiency	>96 %				
T/I constant ($I < I_{\text{nom}}$)	0.24 Nm/A _{rms}				
U/n constant (AC)	rms:	15.9	peak:	22.5	V/(1000rpm)
K_e constant (AC)	rms:	0.038	peak:	0.054	V/(rad*s ⁻¹)

Additional Data

Weight (w/o cables)	20 kg				
Rotor moment of inertia	0.009 kg*m ²				
Protection category	IP65				
Maximal motor temperature	120 °C				
Allowed ambient temperature	-20 ... 45 ¹⁾ °C				
Cooling (medium, flow rate, inlet temperature, pressure)	air, 5 - 14 m/s, ≤ 45°C				
Temperature monitoring	1 x KTY84-130				
Type approval	CE, EN 60034				
Customs tariff number	8501 5230				

Connectors

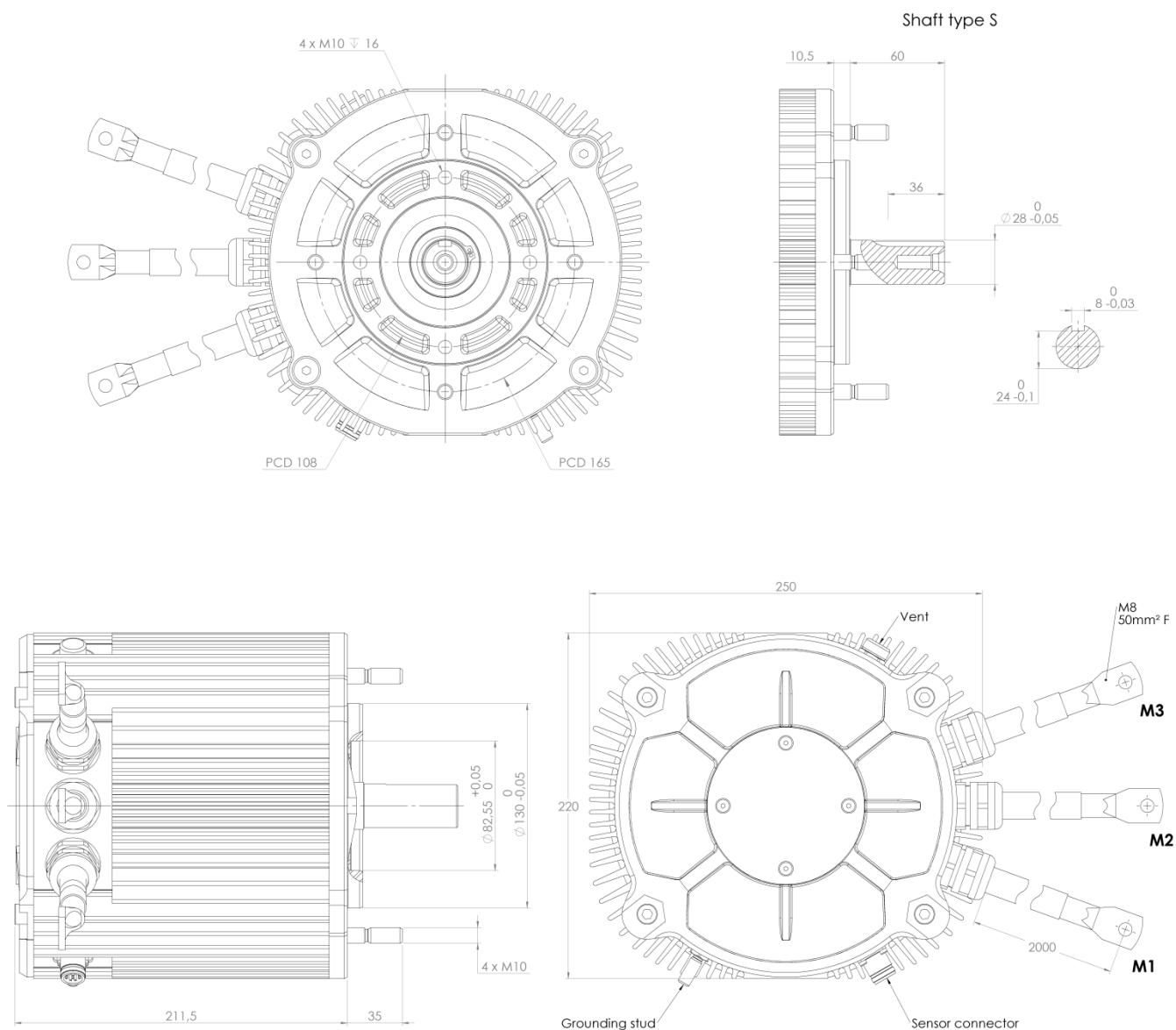
Power terminals	3 x 50mm ² cables with M8 cable lugs				
Weight power cables	3.3 kg				
Length power cables	2 m				
Signal connectors	M16, 10 Pin				

¹⁾ other range on request

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Available Type Variants

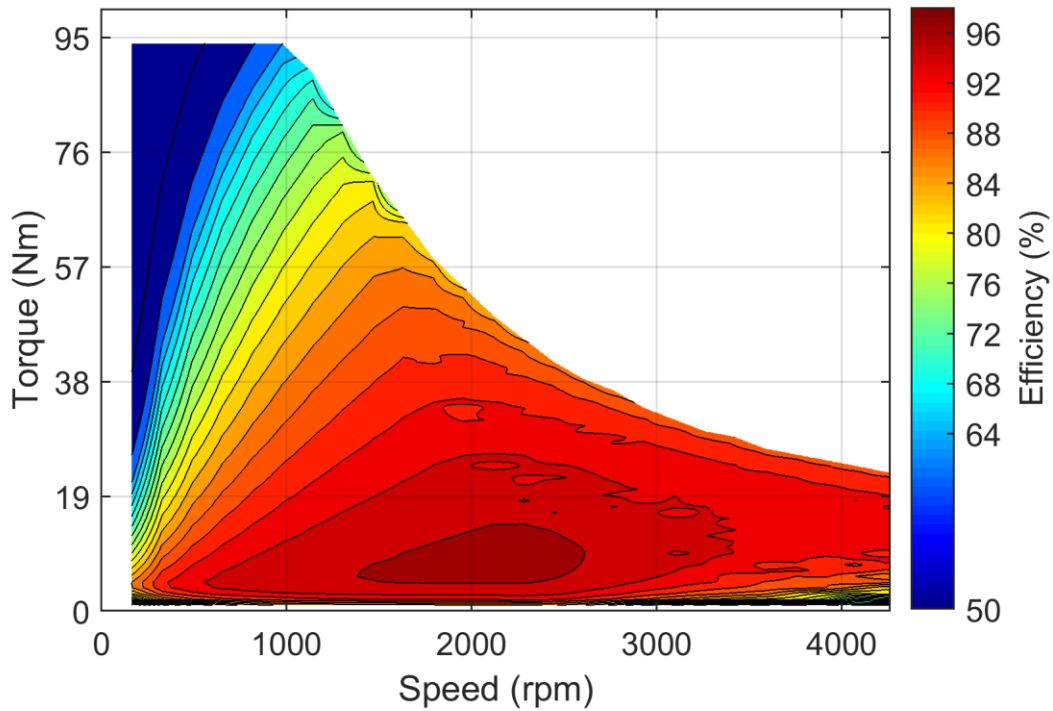
type number	A: flange	B: shaft	C: position sensor
205A-04028-	S: standard	S: cylindrical shaft with keyway	E: sin/cos encoder
			N: none



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Simulated Efficiency of Motor Application

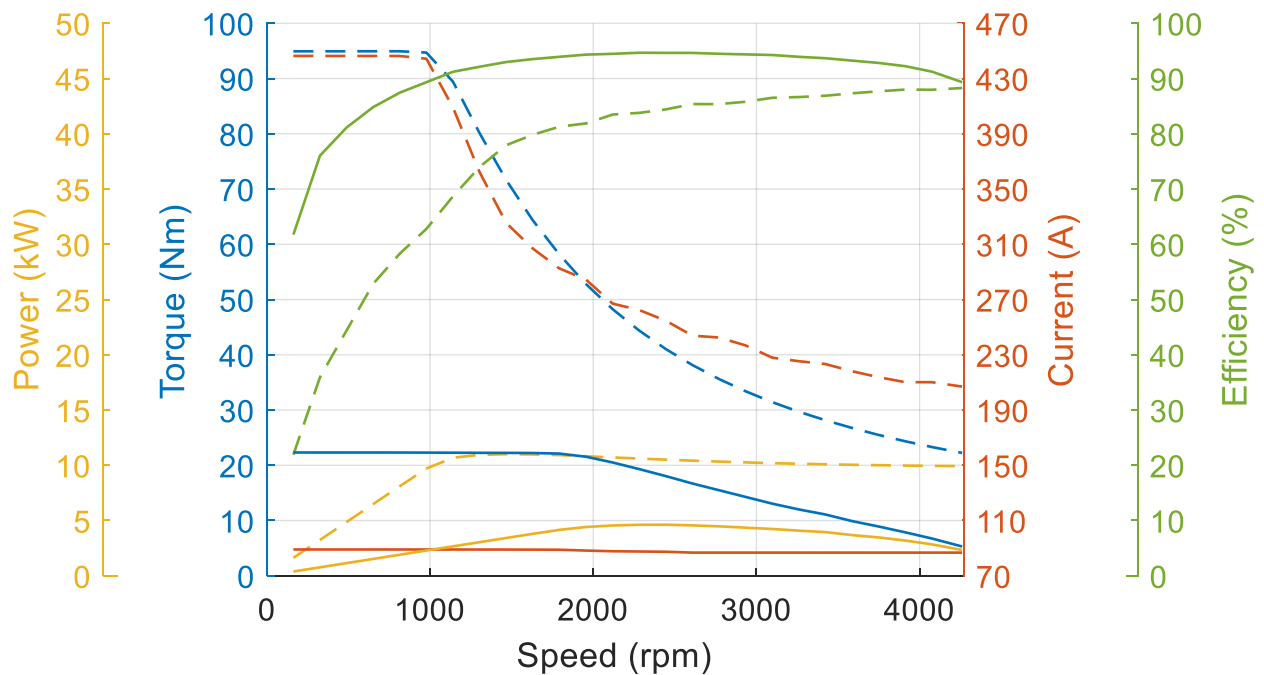
(electric machine only; $U_{\text{nom}} = 48 \text{ V}$; machine at 100°C ;))



Simulated Characteristic Motor Parameters

$U_{\text{nom}} = 48 \text{ V}$

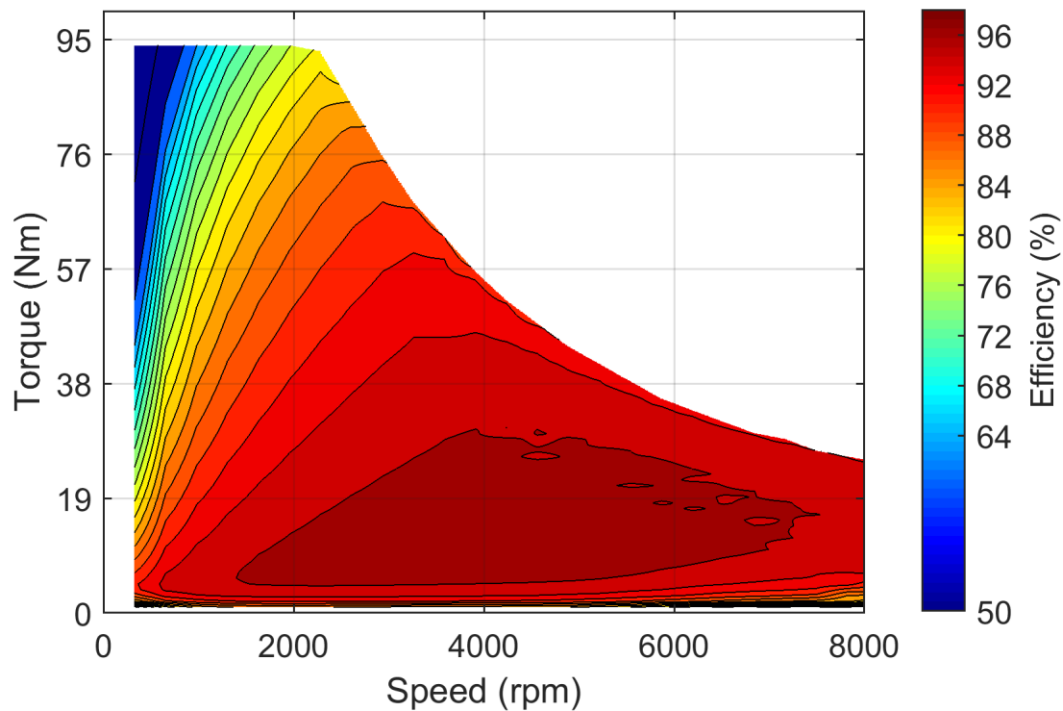
solid lines: continuous; dashed lines: maximum;
 (jitter is caused by numerical inaccuracies in the simulation software)



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Simulated Efficiency of Motor Application

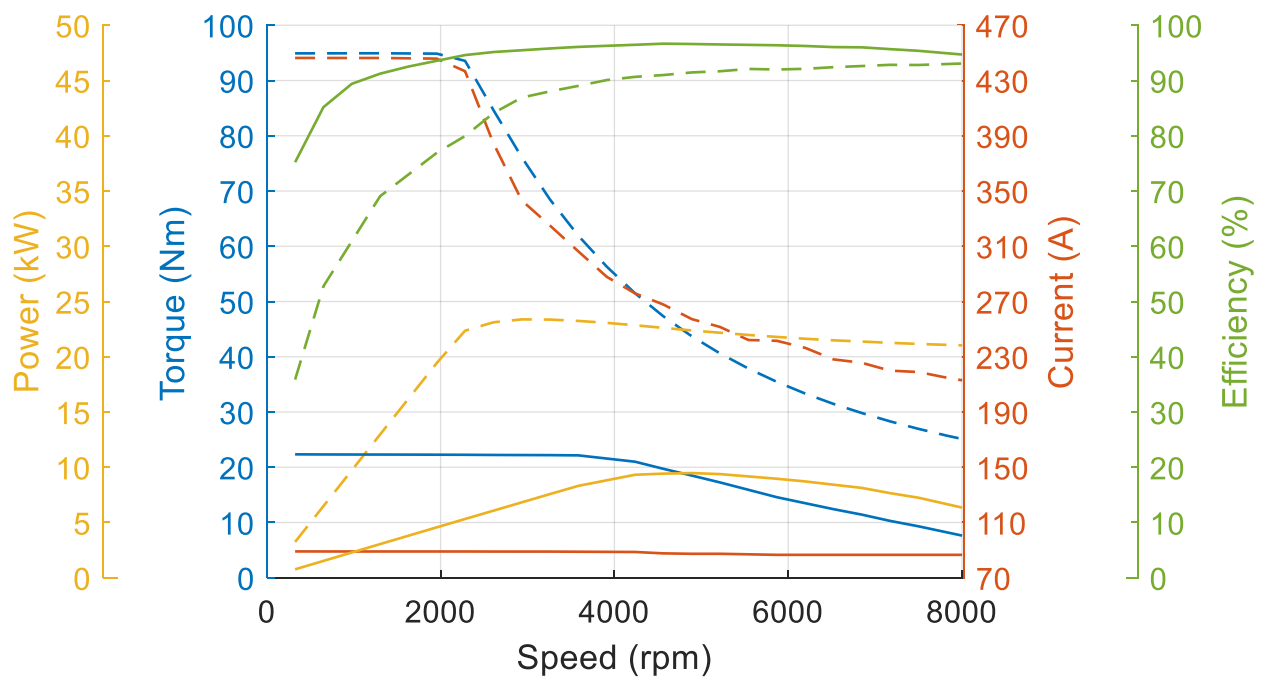
(electric machine only; $U_{\text{nom}} = 96 \text{ V}$; machine at 100°C ;))



Simulated Characteristic Motor Parameters

$U_{\text{nom}} = 96 \text{ V}$

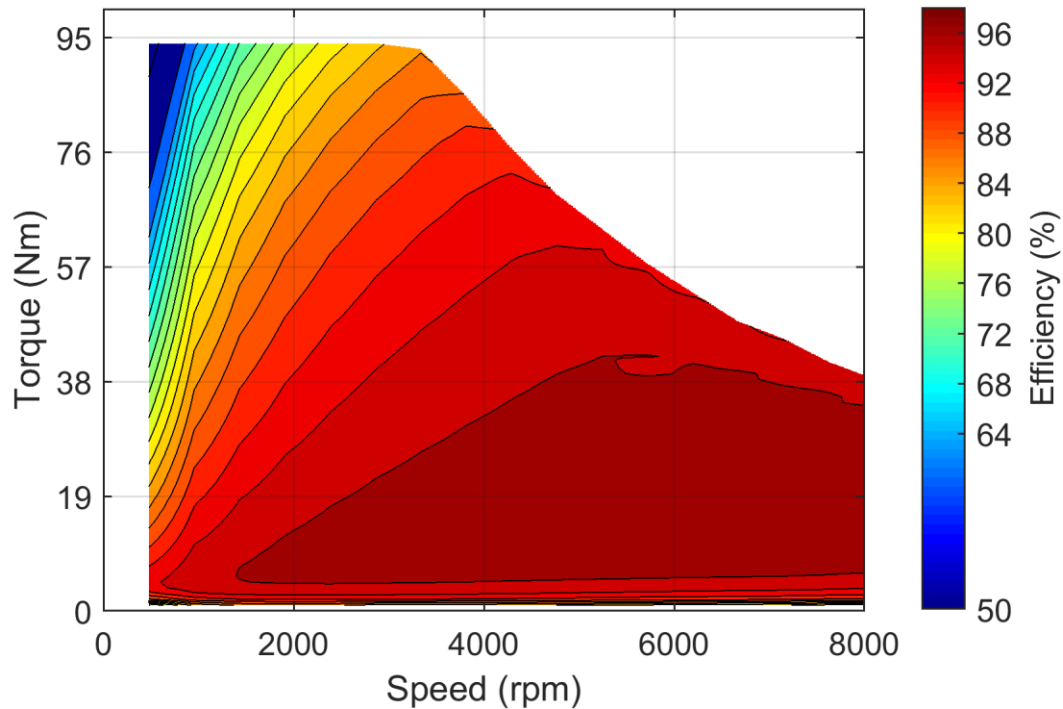
solid lines: continuous; dashed lines: maximum;
 (jitter is caused by numerical inaccuracies in the simulation software)



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Simulated Efficiency of Motor Application

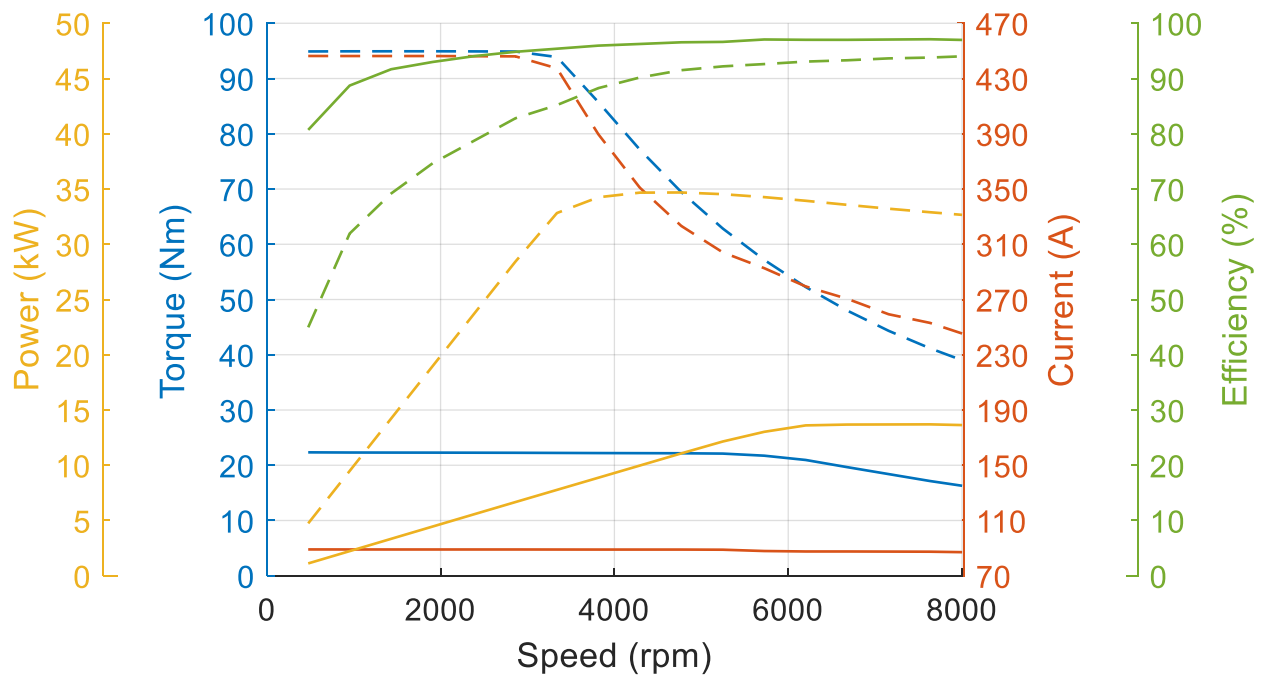
(electric machine only; $U_{\text{nom}} = 140 \text{ V}$; machine at 100°C ;)



Simulated Characteristic Motor Parameters

$U_{\text{nom}} = 140 \text{ V}$

solid lines: continuous; dashed lines: maximum;
 (jitter is caused by numerical inaccuracies in the simulation software)

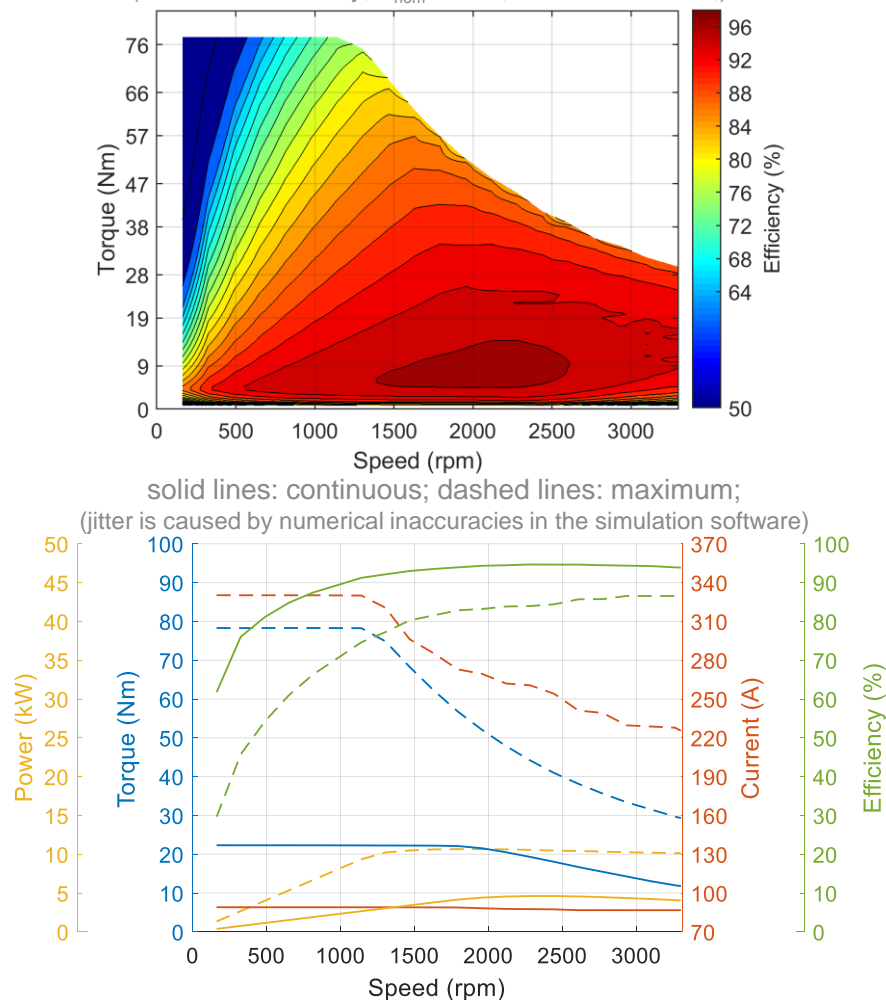


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Nominal Operation Drive Set (S1)			
Torque	T_{nom}	22	Nm
Power	P_{nom}	3.8	kW
Speed	n_{nom}	1630	rpm
Phase rms-current	I_{nom}	89	A
Battery voltage (DC)	U_{nom}	48	V
Electric frequency	$f_{el,\text{nom}}$	108	Hz
Power factor	$\cos(\varphi)$	0.77	
Maximal Values Drive Set (S2, 1-10s)			
Torque	T_{max}	78	Nm
Power	P_{max}	11	kW
Phase rms-current	I_{max}	331	A
Battery voltage (DC)	U_{max}	48	V
Speed	n_{max}	3300	rpm
Electric frequency	$f_{el,\text{max}}$	220	Hz

Simulated Efficiency and Motor Characteristic of Motor Application

(electric machine only; $U_{\text{nom}} = 48 \text{ V}$; machine at 100°C ;

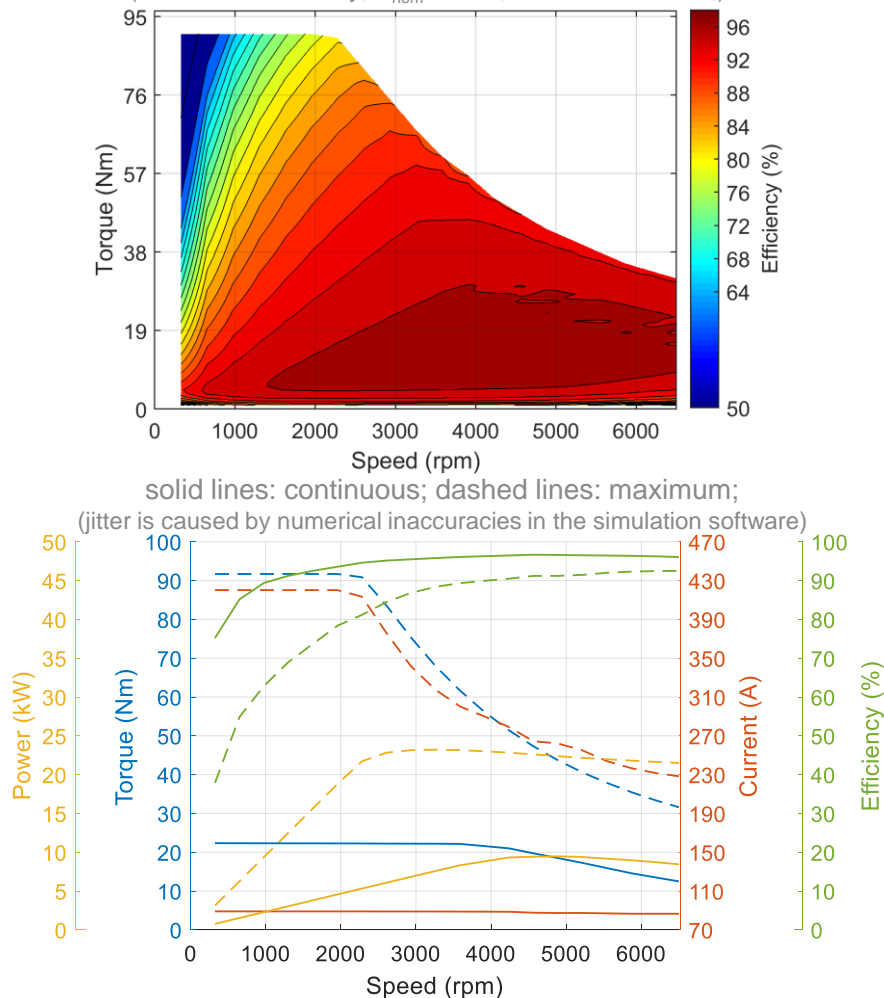


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Nominal Operation Drive Set (S1)			
Torque	T_{nom}	22	Nm
Power	P_{nom}	7.5	kW
Speed	n_{nom}	3260	rpm
Phase rms-current	I_{nom}	89	A
Battery voltage (DC)	U_{nom}	96	V
Electric frequency	$f_{el,\text{nom}}$	218	Hz
Power factor	$\cos(\varphi)$	0.76	
Maximal Values Drive Set (S2, 1-10s)			
Torque	T_{max}	92	Nm
Power	P_{max}	23	kW
Phase rms-current	I_{max}	421	A
Battery voltage (DC)	U_{max}	96	V
Speed	n_{max}	6500	rpm
Electric frequency	$f_{el,\text{max}}$	433	Hz

Simulated Efficiency and Motor Characteristic of Motor Application

(electric machine only; $U_{\text{nom}} = 96 \text{ V}$; machine at 100°C ;)



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