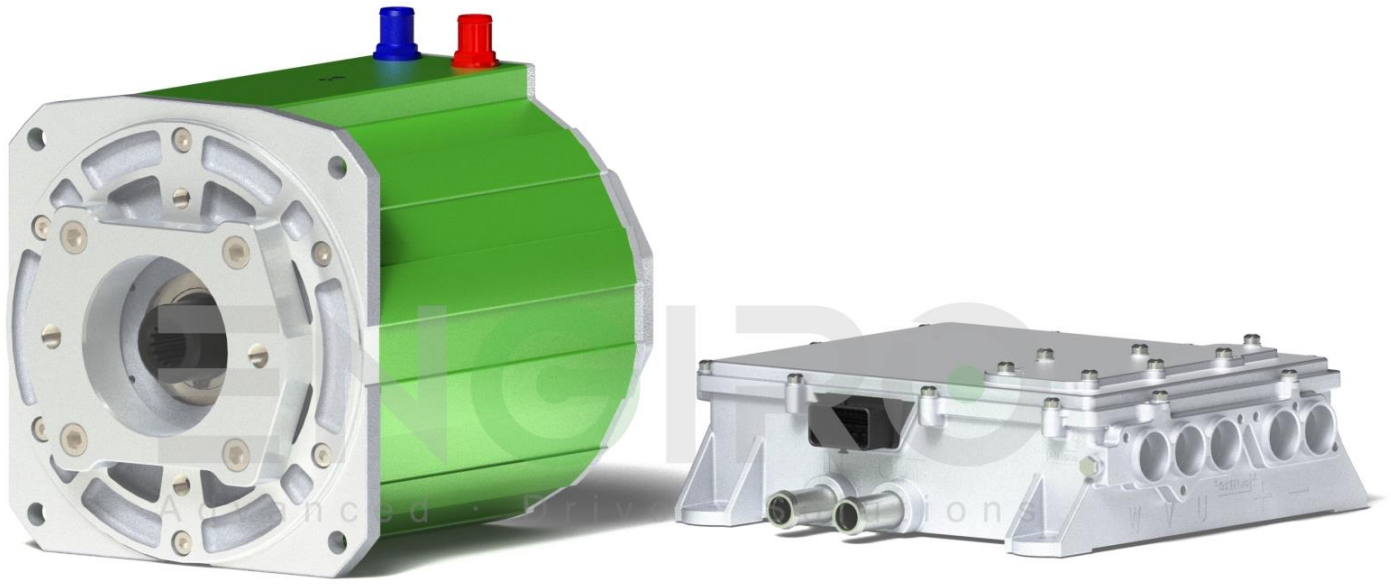
205W-12043-CDR
800V Hydraulic Set

56 kW drive set for hydraulic applications

Art.-No.: 1650



KEY FEATURES

- Interior permanent magnet synchronous machine
- 800V 3-phase motor controller
- Water-cooled
- ANSI B92.1 15 teeth splined shaft for hydraulics application
- SAE B flange

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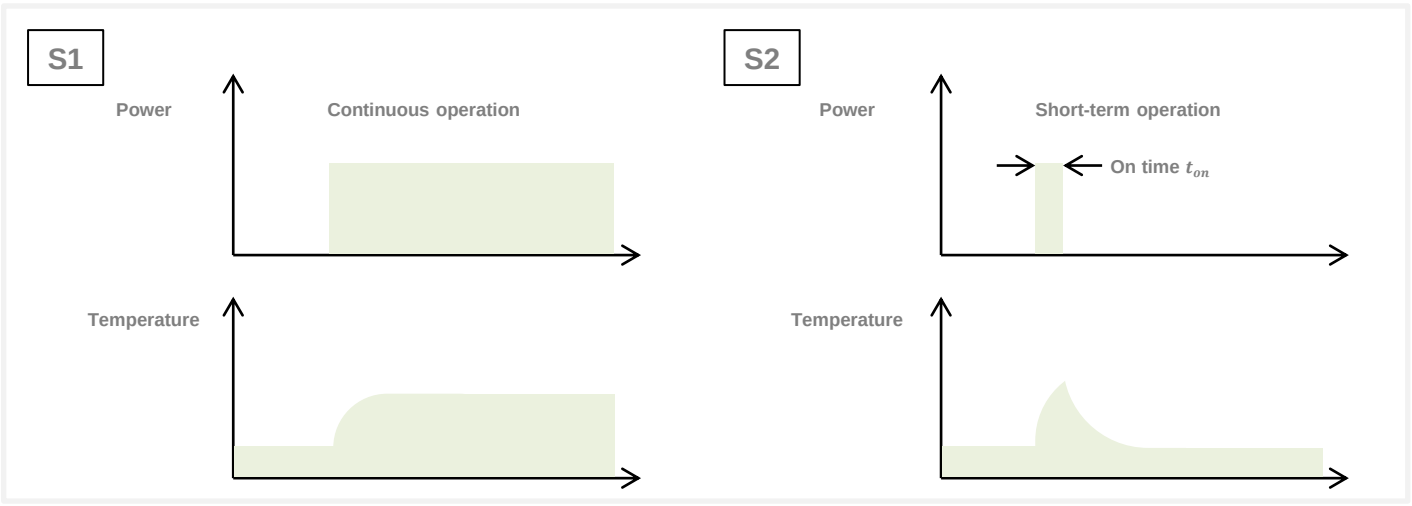
Operating Range

Characteristic Operation Points[1] (cooling as specified on next page)					
		S1	S2	S2	
Feasible operation time	t_{on}	30 min	180 sec	60 sec	
Torque	T	115	215	275	Nm
Power	P	56	93	109	kW
Phase rms-current (AC)	I_{rms}	108	196	290	A
Battery current (DC)	I_{DC}	93	162	198	A
Battery voltage (DC)	U_{DC}	700	700	700	V
Speed	n	4650	4160	3800	rpm
Electric frequency	F_{el}	310	277	253	Hz
Set Efficiency	η_{tot}	86	82	79	%

Maximum Operating Range					
		Min.	Nom.	Max.	
Torque	T_{max}	-	115	275	Nm
Power	P_{max}	-	56	109	kW
Phase rms-current (AC)	$I_{rms,max}$	-	108	290[2]	A
Battery current (DC)	$I_{DC,max}$	-	93	198[2]	A
Battery voltage (DC)	U_{max}	260[3]	700	800[3]	V
Speed	n_{max}	-	4650	8000	rpm
Electric frequency	$f_{el,max}$	-	310	533	Hz



1) Defined Range only valid for a power factor of 1 at DC input
2) Peak rating for max. 60 seconds on time
3) Derating @ 260-450V and > 800V

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Additional Data

Additional Data					
		Motor	Inverter		
Weight (w/o cables)		47	8	kg	
Rotor moment of inertia		0.0182	-	kg*m²	
Allowed range of ambient temperature		-20 … +85	-40 … +90	°C	
Cooling	Advised medium (OAT Coolants)	water/glycol - 50/50 ▪ TL 774-D/F ▪ VIN 878389 ▪ MAN 324 SNF ▪ MTL 5048			
	Flow rate	> 8	8 – 12	l/min	
	Inlet temperature	≤ 60[1)]	≤ 85	°C	
	Pressure drop	> 0.13, max. 0.5	nom. 0.15	bar	
	Maximum pressure	2	2	bar	
	Cooling channel volume	0.89	0.5	l	
DC link capacitance		-	240	µF	
Temperature monitoring		1 x KTY84-130	Internal		
Rotation direction		freely controllable via CAN-Bus			
Ports					
Power terminals		2-Phase HVDC, 3-Phase AC			
Signal connectors		CMC, 28-Pin			
Cooling connectors		inner Ø 15 mm, outer Ø 19 mm			
Control and Communication					
Type		Slave			
		Speed/Torque Control freely controllable via interface			
CAN Bus	Symbol/Baud rate	250/500 kbaud/s			
	Technology	CAN 2.0, J1939 like			
Torque Ramp		Safety limits can be set in inverter by ENGIRO.			
Speed Ramp		Safety limits can be set in inverter by ENGIRO.			

1) Derating for $T_{coolant}$ > 45°C

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Certifications

Certifications			
	Motor	Inverter	
Type approval	CE, EN 60034	-	
Environmental	ISO 9227	-	
Protection grade	ISO 20653 IP6K9K[1)]	ISO 20653 IP67	
Vibrations	ISO 16750-3[2)]	ISO 16750-3	
EMC	-	CISPR25, ECE R10[3)]	
Functional safety	-	Designed for ISO 26262 up to ASIL-C	
Custion tariff number	8501 5290	8504 4088	

1) Only valid if the machines is installed with suitable cable glands and an appropriate shaft sealing.
2) Testing category IV - passenger car, sprung masses
3) Available upon request.

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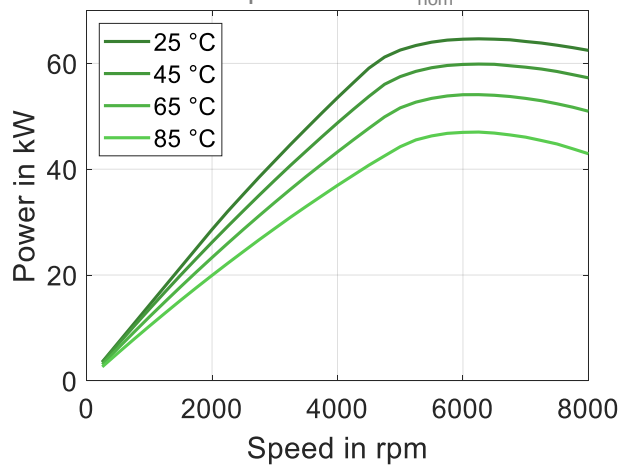
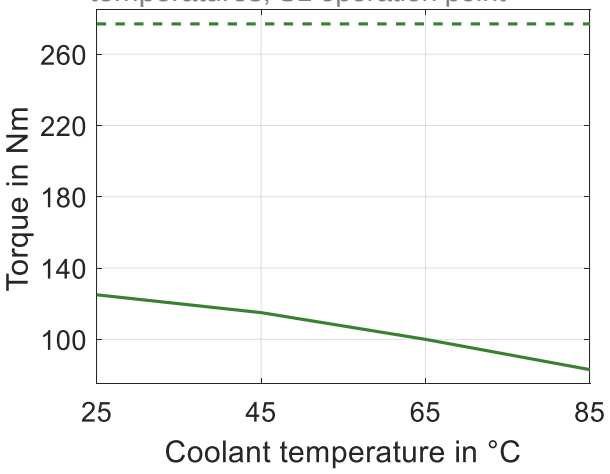
Performance Plots

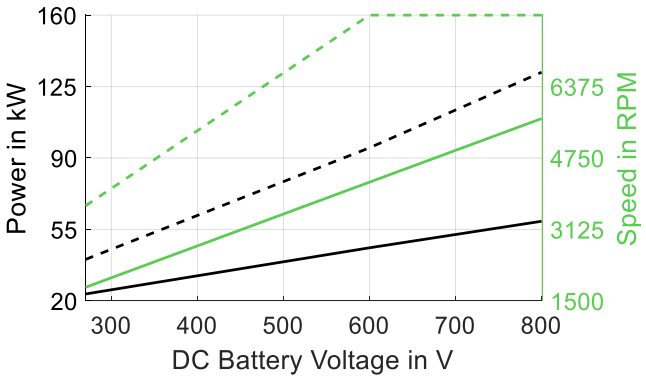
Simulated nominal power at different coolant temperatures - U_{nom} = 700 V



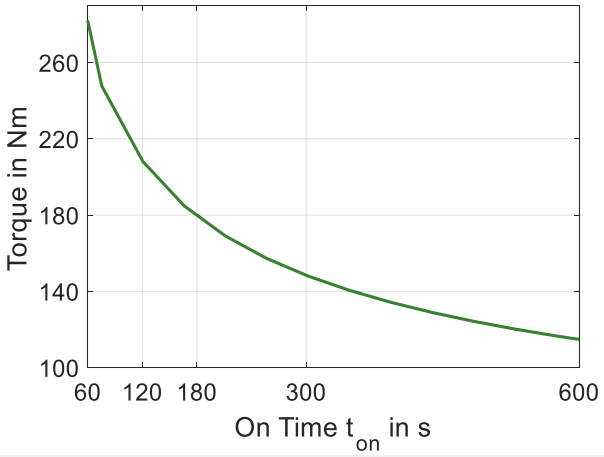
Available torque at different coolant temperatures, S1 operation point [1)]



Simulated power and speed over battery voltage[1)]

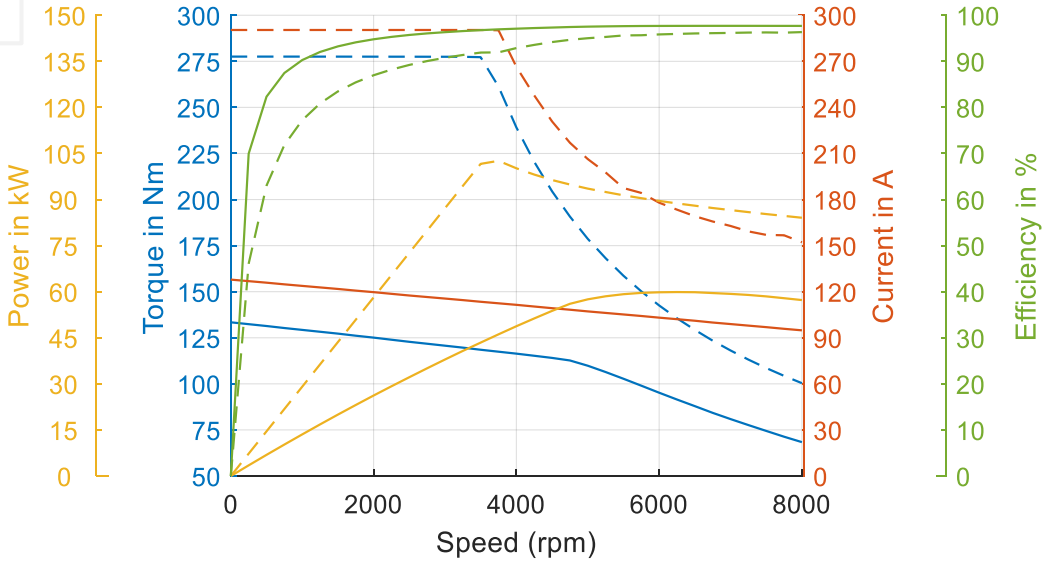


Torque over feasible maximum on time, S2 operation cycles - 45°C coolant temperature



700V

Simulated characteristic drive set parameters[1)] - U_{nom} = 700 V



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

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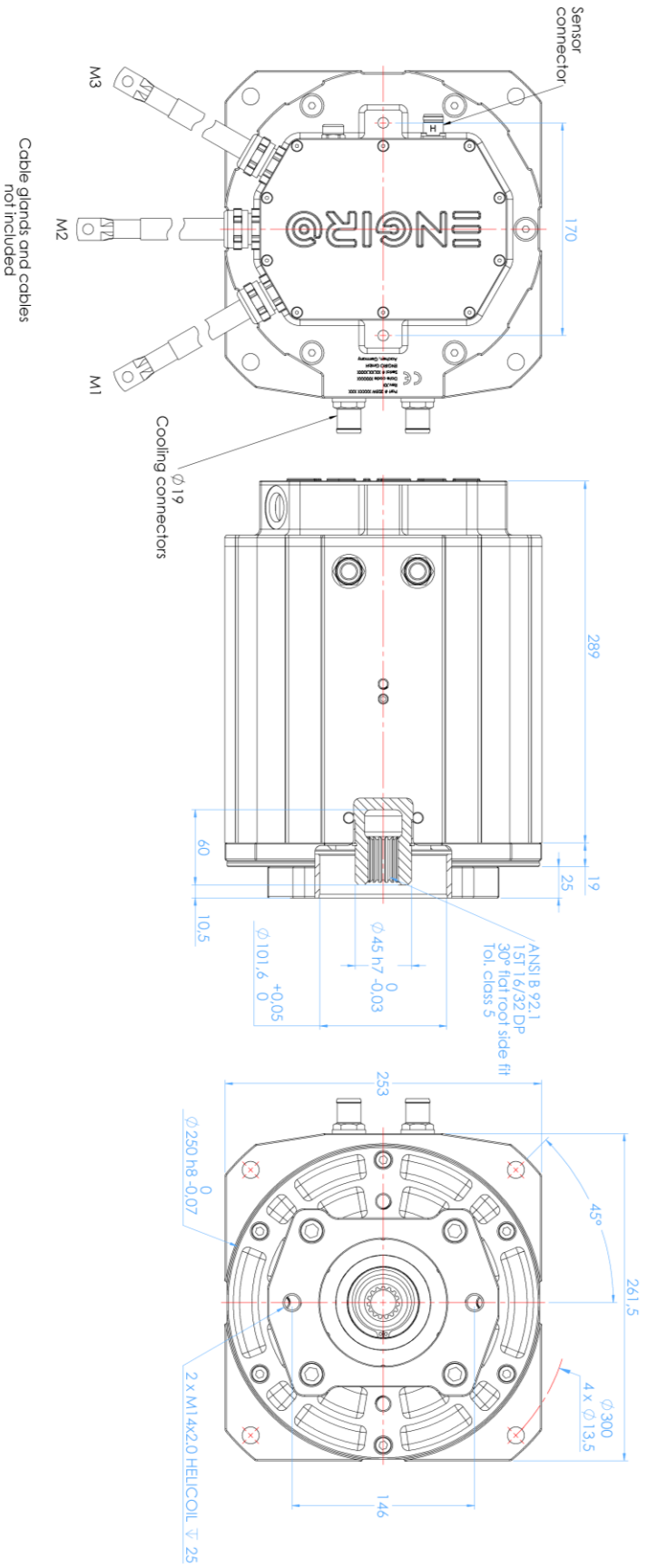
Technical Drawings



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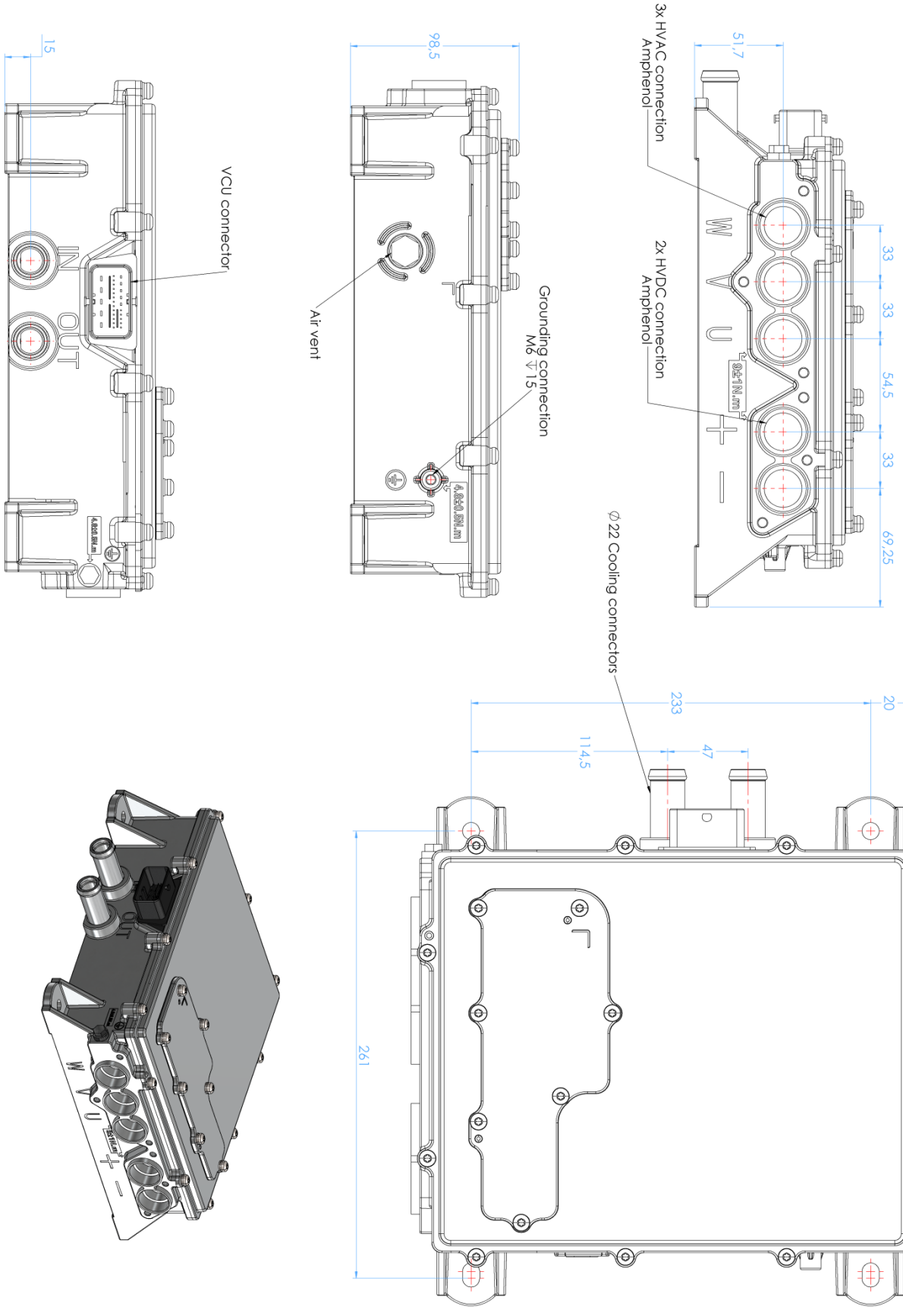

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Delivery Content

205W-12043-CDR 800V Set						
Item description				Article number		
Available Motor Variants	A: flange	B: shaft	C: position sensor	Component	Set	
	C: flange for fan without insert	D: hollow shaft with internal splines ANSI B 92.1 with 15 teeth	R: resolver	205W_12043_CDR	1649	
ENGIRO 800V 3-phase motor controller 200/300A				1579	1x	included in set
Cables	Amphenol AC port 3 x 35mm² Leoni cables with connector; Length: 2 m UVW			1587	1x	
	Amphenol DC port 2 x 35 mm² cable with connector, Length: 2 m			1588	1x	
	Resolver + Temp. data cable for ENGIRO 205W / 3-phase motor controller, Length: 2m			1417	1x	
Cable glands M25 shielded Pflitsch blueglobe IP6K9K				1378	3x	
Cable lugs DIN 46234 35-8				1332	3x	

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