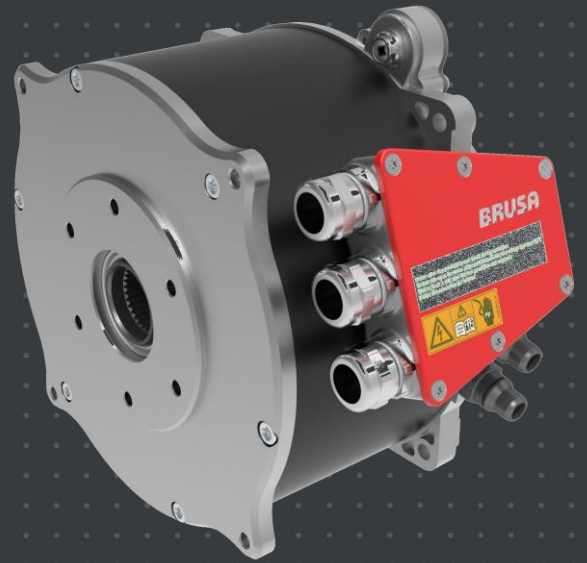


HSM1-10.18.04
Hybrid
Synchronous
Motor



**Optimal performance
from zero speed**

Safety first

Intrinsically safe

Low short circuit torque

Integrated overload
protection against
overheating

Cutting-Edge Technology

High power density

Minimal torque ripple

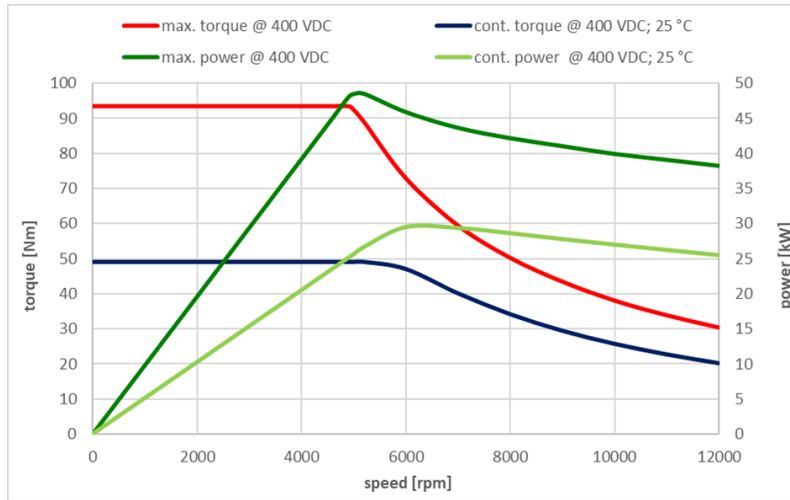
Minimal drag losses

Constant power over a very
wide speed range

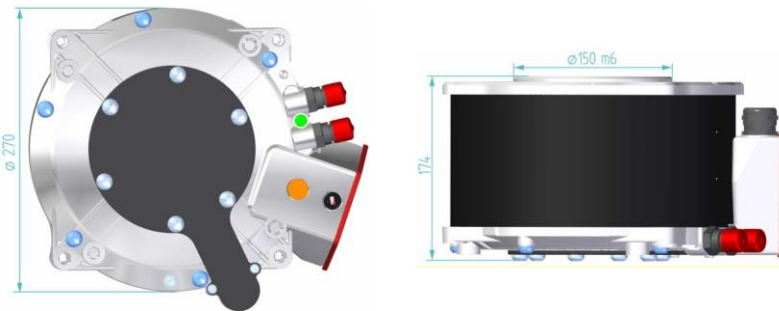
High efficiency over a wide
speed and torque range

Performance data at 400V _{DC}		HSM1-10.18.04	
Nominal speed	4'900	rpm	
Continuous torque	49	Nm	
Max. torque (at max. inverter current)	93	Nm	
Continuous power (acc. S1) at 25°C	29	kW	
Continuous power (acc. ECE R85) at 25°C	30	kW	
Maximum power	48	kW	
Maximum speed	12'000	rpm	
Typical efficiency	95	%	
Basic electrical data			
Compatible inverter	DMC514		
Recommended input voltage	300 - 450	V	
Maximum inverter current	150	A _{RMS}	
Insulation class	H		
Mechanical data / Cooling system / Environment			
Diameter (cooling jacket)	270	mm	
Length	174	mm	
Stator diameter	240	mm	
Weight (dry)	25	kg	
Moment of inertia (rotor)	0.025	kg*m ²	
Ingress protection	IP67		
Ambient temperature range (operation)	-40 to +85	°C	
Ambient temperature range (storage)	-40 to +85	°C	
Amount of coolant in device	0.4	L	
Coolant water mixture water/glycol	50/50	%	
Coolant input temperature range	-20 to +65	°C	
Coolant flow rate	6 to 10	L/min	
Max. pressure drop (8 L/min, T _{coolant} = 25°C)	180	mbar	
Maximum coolant pressure	1.5	bar	
Maximum altitude	4000	m	
Connections			
Phases U, V, W: M6 cable lugs, recommended cross section (Cu)	25	mm ²	
Ground GND: M8 cable lug, recommended cross section (Cu)	25	mm ²	
Key reference standards*			
Environmental	ISO 16750 ISO 20653 EN 60034-5 LV124		
Electrical Safety	IEC 60664-1 LV123		
Additional relevant standards	EN 60034-1		

Performance



Dimensions [mm]



Efficiency [%]

HSM1-10.18.04-A03 efficiency @ 400 V _{DC} (measured with DMC514)							
torque [Nm]	93	86.3	91.2				
	90	86.7	91.7				
	80	88.3	92.4				
	70	90.1	92.9	92.3			
	60	91.2	93.8	93.6			
	50	92.1	94.8	94.8	91.9		
	40	93.2	95.2	95.3	94.2	91.6	
	30	93.5	95.3	95.6	95.0	93.5	90.2
	20	93.9	95.3	95.1	95.2	93.6	92.3
	10	94.6	95.2	94.6	92.7	91.6	88.7
Q1	2000	4000	6000	8000	10000	12000	
	speed [rpm]						