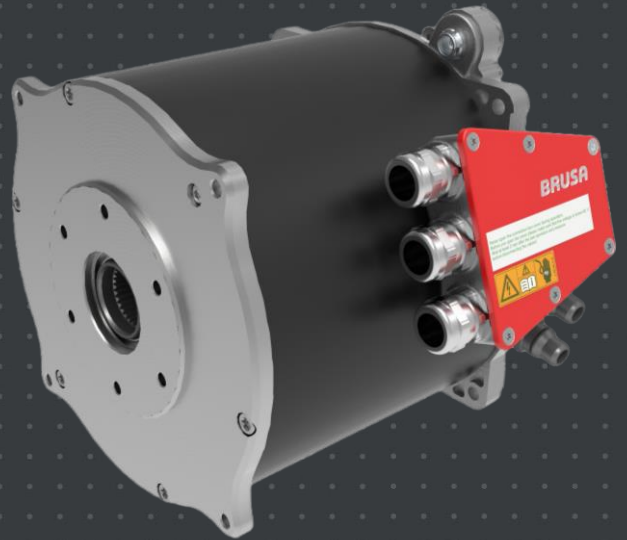


HSM1-6.17.12
Hybrid
Synchronous
Motor



**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

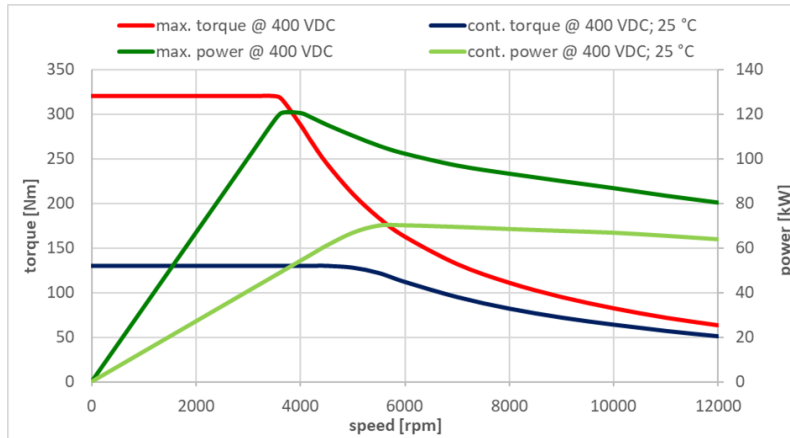
Minimal drag losses

Constant power over a very
wide speed range

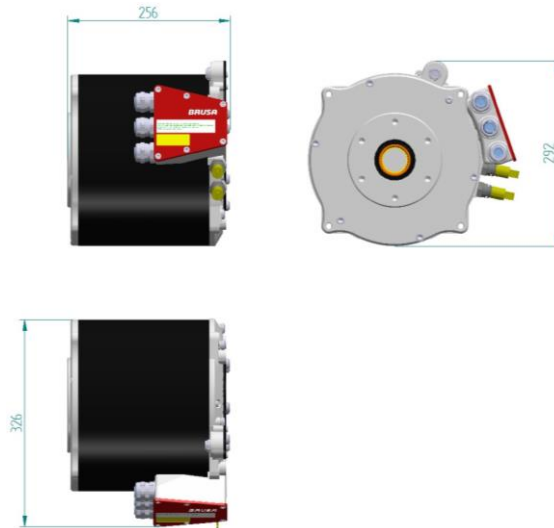
High efficiency over a wide
speed and torque range

Performance data at 400V _{DC}		HSM1-6.17.12	
Nominal speed	3'600	rpm	
Continuous torque	130	Nm	
Maximum torque (at max. inverter current)	320	Nm	
Continuous power (acc. S1) at 25°C	70	kW	
Continuous power (acc. ECE R85) at 25°C	74	kW	
Maximum power	120	kW	
Maximum speed	12'000	rpm	
Typical efficiency	96	%	
Basic electrical data			
Compatible inverter	DMC544-C02		
Recommended input voltage	300 - 450	V	
Maximum inverter current	450	A _{RMS}	
Insulation class	H		
Mechanical data / Cooling system / Environment			
Diameter (cooling jacket)	270	mm	
Length	256	mm	
Stator diameter	240	mm	
Weight (dry)	51.5	kg	
Moment of inertia (rotor)	0.06	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	0.5	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)	225	mbar	
Maximum coolant pressure	1.5	bar	
Maximum altitude	4000	m	
Connections			
Phases U, V, W: M6 cable lugs, recommended cross section (Cu)	50	mm ²	
Ground GND: M8 cable lug, recommended cross section (Cu)	50	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 [%]

HSM1-6.17.12-E02 efficiency @ 400 V _{DC} (measured with DMC544-C02)												
Torque [Nm]	320	80.3	88.2	91.3	92.3							
	300	81.9	89.2	92.1	92.9							
	280	83.4	90.1	92.8	93.5							
	260	84.7	90.9	93.4	94.1							
	240	86.0	91.7	93.9	94.5	93.5						
	220	87.1	92.4	94.4	94.9	94.3						
	200	88.2	92.9	94.8	95.3	95.3	93.6					
	180	89.3	93.5	95.3	95.6	95.9	93.6					
	160	90.2	94.1	95.5	96.0	96.1	94.9	93.6				
	140	91.1	94.7	95.7	96.0	96.2	95.6	93.9				
	120	92.0	95.0	96.0	96.5	96.2	96.1	94.9	93.0	92.5		
	100	92.7	95.3	96.4	96.3	96.8	96.4	95.7	94.5	92.9	91.7	91.1
80	93.7	95.8	96.7	97.0	96.6	96.4	96.0	95.2	94.4	92.8	90.9	90.1
60	94.2	96.1	96.2	96.4	96.3	96.3	95.9	95.4	94.7	93.6	92.6	91.1
50	94.5	96.1	96.6	96.6	96.3	96.3	96.0	95.6	94.6	93.7	92.8	92.0
40	95.0	96.2	97.1	96.3	96.1	96.2	95.8	95.5	94.9	94.0	92.8	94.0
30	95.4	96.2	95.7	96.0	96.0	95.4	95.7	95.6	94.5	93.6	92.6	92.1
20	95.3	96.2	95.3	95.8	95.5	95.8	94.7	94.1	94.7	93.3	92.2	91.5
10	94.6	95.4	95.0	94.4	94.4	92.6	91.5	92.4	90.6	89.6	89.7	87.1
Q1	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
	Speed [rpm]											