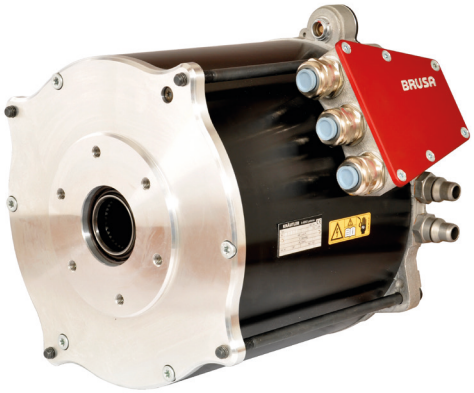
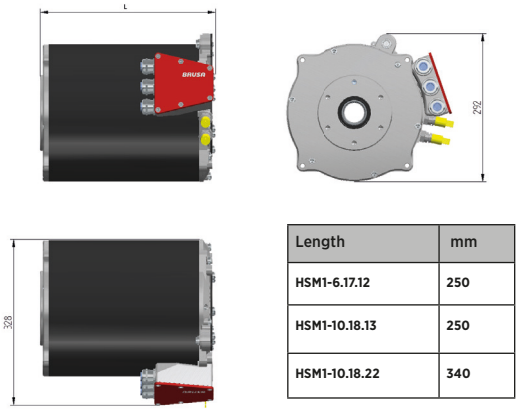
HSM1 - Hybrid Synchronous Motor

Optimum performance from zero speed





Length	mm
HSM1-6.17.12	250
HSM1-10.18.13	250
HSM1-10.18.22	340

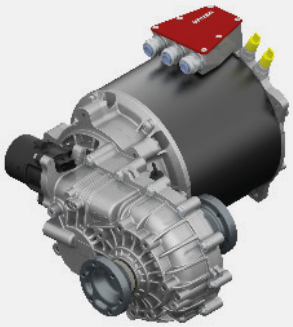
Optimum safety

- Intrinsically safe (induced voltage at max. speed and passive inverter < 520 V)
- Low short circuit torque
- Integrated overload protection against overheating
- Temperature-derating for self-protection of the engine

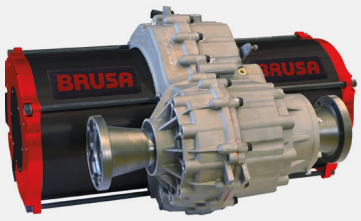
Technical highlights

- Very good power density
- Minimal torque ripple
- Minimal drag losses
- Dynamic torque control through high PWM frequency
- Constant power and high efficiency over a very wide speed range
- Continuous power up to 145 kW
- Optimally matched to the motor inverters available

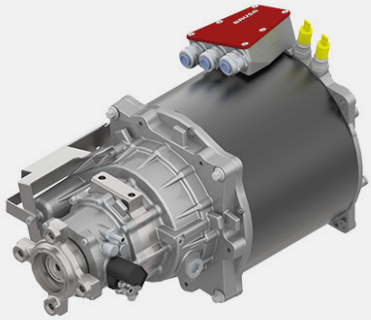
Single Offset Traction Drive (DTSO1)



Double Offset Traction Drive (DTDO1)



Single Planetary Traction Drive (DTSP1)

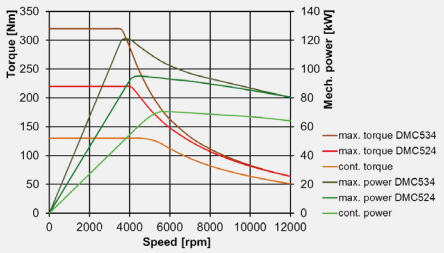


BRUSA Elektronik AG
Neudorf 14
CH-9466 Sennwald
+41 81 758 19 00
info@brusa.biz

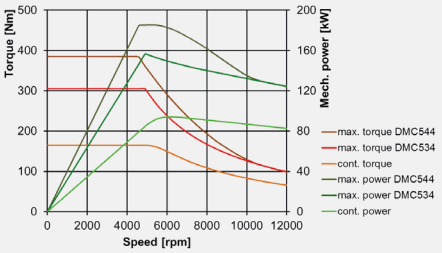
Specifications HSM1

Performance data at 400 V_{DC}	HSM1-6.17.12	HSM1-10.18.13	HSM1-10.18.22	
Nominal speed	4'200	4'900	4'400	rpm
Continuous torque (ECE R85) at 25°C	130	165	270	Nm
Max. torque at max. inverter current	220 / 320	305 / 385	460	Nm
Continuous power (ECE R85) at 25°C	70	93	145	kW
Max. power at max. inverter current	96 / 120	156 / 185	220	kW
Max. speed	12'000	13'000	12'000	rpm
Basic electrical data				
Compatible inverter	DMC524 / 534	DMC534 / 544	DMC544	--
Recommended input voltage of device (min. / max.)	300 - 450	300 - 450	300 - 450	V
Typ. efficiency	95	95	95	%
Number of pole pairs	3	5	5	--
Number of turns	7	9	6	--
Insulation class	H	H	H	--
Nominal frequency (400 V_{DC})	210	408	367	Hz
Max. frequency	600	1'083	1'000	Hz
Cos(φ) (typical) at cont. power	0.94	0.94	0.94	--
Recommended cable diameter phase U, V, W and GND	35	50	70	mm^2
Mechanical data / Cooling system				
Weight without gearbox	51.5	51.0	76.0	kg
Rotor inertia torque	0.06	0.06	0.11	kgm^2
IP-protection	IP67	IP67	IP67	--
Coolant flow rate	6 - 8	6 - 8	6 - 8	l / min
Pressure drop at 6 l / min, coolant temperature = 25°C	150	150	180	mbar
min. / max. coolant temperature at inlet	- 40 / + 65	- 40 / + 65	- 40 / + 65	°C

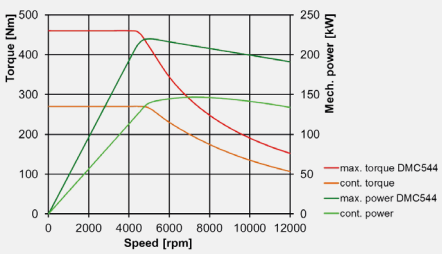
HSM1-6.17.12



HSM1-10.18.13



HSM1-10.18.22



Each possible configuration at 400 V_{DC} and at 25°C.

BRUSA Elektronik AG
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www.brusa.biz