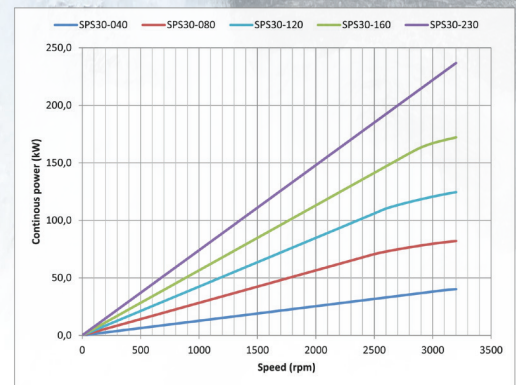
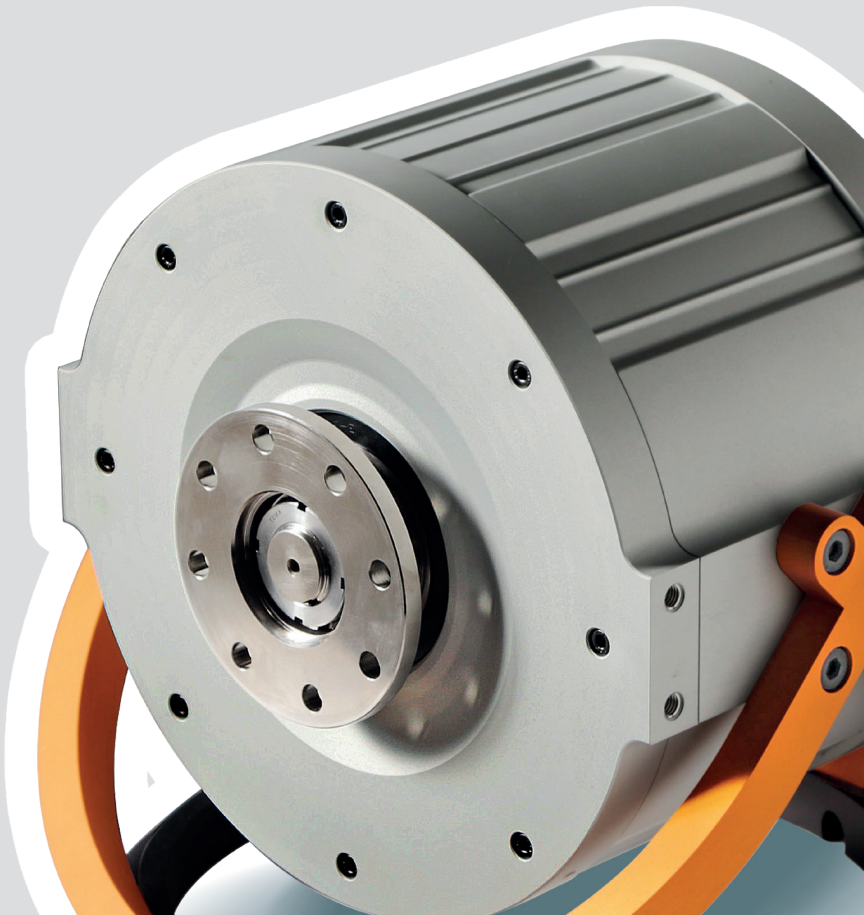


HIGH EFFICIENT

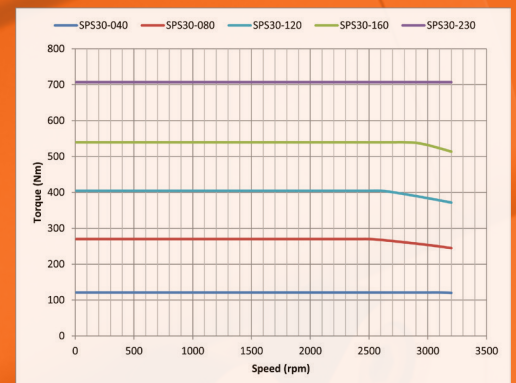
SPS30

AC synchronous electric motor/generator
with permanent magnets



Features:

- › from 40 kW - 230 kW continuous power
- › up to 460 kW with stacking
- › direct drive
- › radial flux / internal rotor
- › suitable for inboard propulsion system
- › continuous short circuit capability
- › short circuit transient immunity
- › standard in NT systems propulsion package



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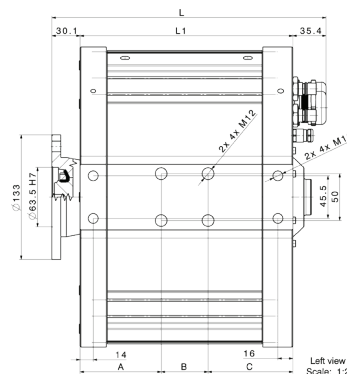
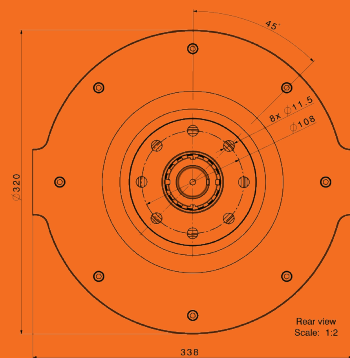
SPS30

AC synchronous electric motor/generator with permanent magnets

Electric motor characteristics

All parameters stipulated for the machine thermalized at 20°C. All values for current are stipulated as RMS.

Basic Information													
Motor Type	AC synchronous electric motor with permanent magnets												
EM circuit topology	radial, internal rotor												
Power	40 kW		80 kW		120 kW		160 kW		230 kW	Units	Tolerance	Note	
Winding type	13Y3	13Y6	13Y2	13Y3	13Y1	13Y2	13Y1	13Y2	13Y1				
Open Circuit Voltage	290	580	387	580	290	580	387	774	582	V	±2%	Peak line to line at 3000 RPM.	
Continuous Torque	128	128	257	257	398	398	530	530	790	Nm	±3%		
Continuous Current	122	61	181	121	370	185	370	185	370	A	±3%	A (RMS)	
Peak Torque	225	225	450	450	675	675	900	900	1350	Nm	±3%		
Peak Current	237	119	355	237	705	353	705	353	705	A	±3%	A (RMS)	
Nominal Speed	3000	3000	3000	3000	3000	3000	3000	3000	3000	RPM	NA		
Cogging Torque (max)	0,7	0,7	1	1	1,5	1,5	2	2	3	Nm p-p		Peak to peak span.	
Torque Constant	1,05	2,1	1,42	2,13	1,07	2,15	1,43	2,86	2,15	Nm/A	±3%	A (RMS), low current loading	
Voltage Constant	0,097	0,194	0,129	0,193	0,097	0,193	0,129	0,258	0,194	V/RPM	±3%	Peak line to line.	
Motor Constant	4,1	4,1	6,6	6,6	8,5	8,5	10	10	12,6	Nm/√W	+5%	Stall & low speed	
Electrical Time Constant	/	/	/	/	/	/	/	/	/	s			
Mechanical Time Constant	/	/	/	/	/	/	/	/	/	s			
Terminal Resistance	43,1	173	30,6	69	10,5	42	13,3	53,2	19	mOhm	±1,5%	Line to line	
Terminal Inductance	0,37	1,5	0,36	0,81	0,14	0,56	0,18	0,70	0,27	mH	±5%	Line to line	
Thermal Resistance	0,057	0,057	0,032	0,032	0,021	0,016	0,016	0,016	0,011	°C/W	±10%	Winding to case.	
Motor Inertia	0,029		0,043		0,072		0,093		0,137	kg-m ²			
Motor Mass	27,6		33,8		44,4		52,6		70,1	kg			
Ambient Storage Temperature	-40 .. +90										°C	NA	
Rotor Poles	30										-	NA	
Additional Data													
Maximum Winding Temperature	180										°C	NA	
Maximum Rotor Temperature	180										°C	NA	
Temperature Sensor for Winding	PT1000										-	NA	
Temp. Sensor – Front Bearing	PT1000										-	NA	optional
Temp. Sensor – Rear Bearing	PT1000										-	NA	optional
Coolant	liquid (50% water 50% ethylene glycol)												
Minimum coolant flow	4	7		9		12		12		L/s			
Maximum coolant inlet temp.	50										°C		
Continuous short circuit capability	Yes												
Short circuit transient immunity	Yes												
Commutation Sensor	Resolver - V23401U7018-B709										-		
IP Rating	IP65												



	40 kW	80 kW	120 kW	160 kW	230 kW
L (mm)	198,4	233,4	267,5	302,5	367,5
L1 (mm)	139,6	174,6	202	237	302
A (mm)	45,3	61,8	75,5	93	125,5
B (mm)	50	50	50	50	50
C (mm)	45,3	62,8	76,5	94	126,5