Contract nr. 125 / 2020, Project Code EUROSTARS-2019-E!12367-iTorque
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BRUSHLESS SERVO-MOTORS WITH STATOR CORE MADE OF SEGMENTS

Description:

The electric servomotor, type SBM 71/121/190 is a high energy permanent magnet brushless synchronous motor, with cylindrical rotor. The new design of the stator core made of segments features higher performances than conventional designs.

The mechanical dimensions of these electric servo-motors allow an easy integration into various industrial applications. The traction flange was designed to allow simple and robust mounting of the electric servo-motor.

Characteristics

- Segmented stators
- 10 or 20 magnetic poles with NdFeB magnets
- Three-phase winding on the stator
- Aluminium housing
- Class F insulation

Options

- Custom windings
- Protection class IP 65
- Additional Feedback Systems (encoder)

Advantages

- Compact construction
- Low ripple torque
- Reduced cogging torque
- High efficiency
- High torque density
- Low weight

Applications

- Servo-systems
- Industrial robots
- Industrial automation
- Machine tools
- Packing machines
- Medical equipment

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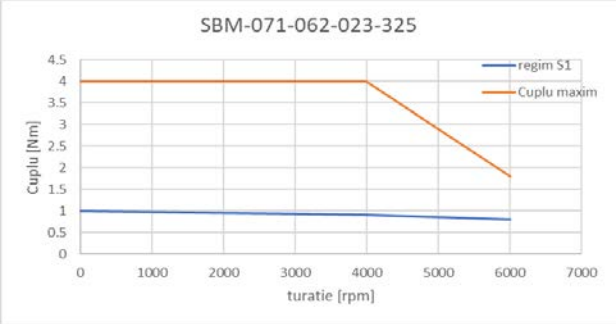
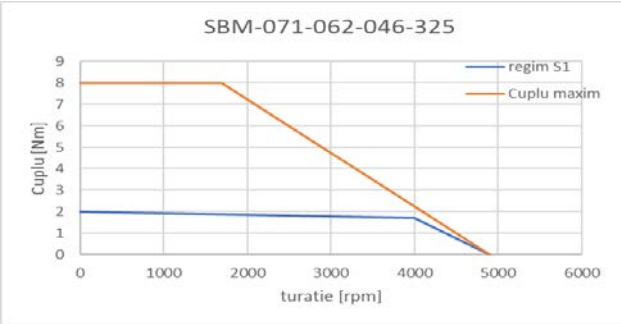
RO92 CARP 0452 P006 5844 R001
Patria Bank - Sucursala Tineretului

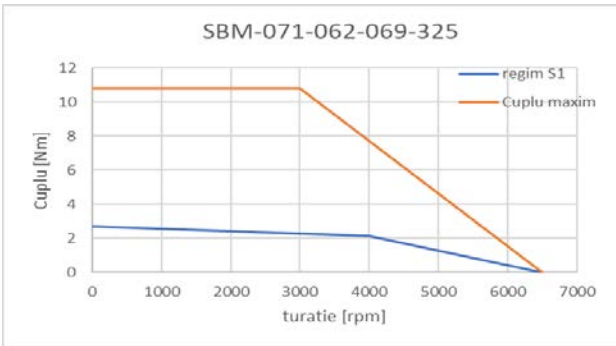
Technical characteristics

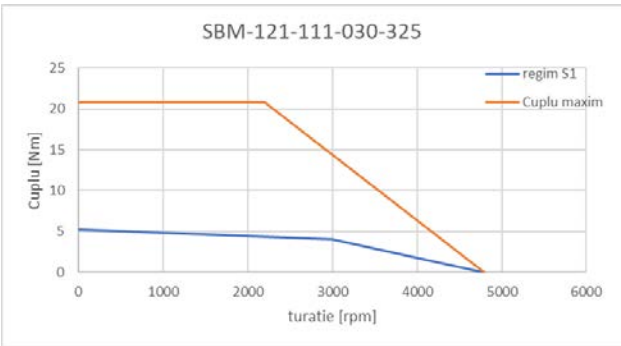
No.	Characteristic	Symbol	Unit	SBM-071-062-023-325	SBM-071-062-046-325	SBM-071-062-069-325	SBM-121-111-030-325	SBM-121-111-060-325	SBM-121-111-090-325	SBM-190-170-060-325	SBM-190-170-090-325	SBM-190-170-120-325
1.	Rated power ±10% [1]	P_n	kW	0.377	0.71	0.88	1.26	1.95	2.2	1.4	2.5	6.8
2.	Rated torque ±10%[1]	M_n	Nm	0.9	1.7	2.1	4	6.2	7	9	16	26
3.	Static torque ±10% [1]	M_0	Nm	1	2	2.7	5.2	10	14	25	38	50
4.	Motor constant	K_M	N/√W	0.18	0.29	0.38	0.68	1.03	1.38	11.72	51.1	134.78
5.	Electrical time constant	T_E	msec	2.13	2.47	2.7	4.93	5.5	6.56	50	57.8	65.2
6.	Maximum cogging torque	M_p	mNm	40	80	108	208	400	560	1	1.52	2
7.	Motor inertia	J	kg·cm^2	0.16	0.3	0.6	1.6	2.6	4	27.2	52	77
8.	Motor weight	W_t	kg	1.4	2	2.6	3.6	4.7	7	15	21	27
9.	Number of poles	N_p		10	10	10	10	10	10	20	20	20
10.	Insulation class			F	F	F	F	F	F	F	F	F
11.	Rated voltage	U_n	V_{cc}	325	325	325	325	325	325	565	565	565
12.	Rated current ±10% [1]	I_n	A	2.2	2.1	1.7	4.8	7.8	6.5	2.9	3.5	8.4
13.	Static current ±10% [1]	I_0	A	2.5	2.6	2.2	6.3	12.5	13	8.1	11	16.1
14.	Maximum static torque	M_{0_max}	Nm	4.6	4.8	10.8	20.8	40	56	56	108	200
15.	Torque constant ±10% [1]	K_T	Nm/A	0.4	0.81	1.24	0.83	0.8	1.08	3.1	4.6	3.1
16.	Back EMF constant ±10% [2]	K_E	V/krpm	26	50	76	51	50.2	68	186	280	187
17.	Rated speed ±10%	n_o	rpm	4000	4000	4000	3000	3000	3000	1500	1500	1500
18.	Line to line resistance ±8% [2]	R_L	Ω	4.7	7.7	10.4	1.5	0.6	0.61	0.07	0.09	0.023
19.	Line to line inductance ±20% [2]	L_L	mH	10	19	28	7.4	3.3	4	3.5	5.2	1.5

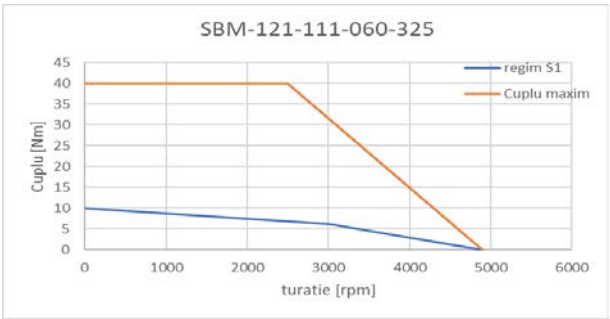
1) Motor mounted on a metallic flange with an area equal to twice the cross section of the housing; ambient temperature 40 °C
2) Measured at 25 °C

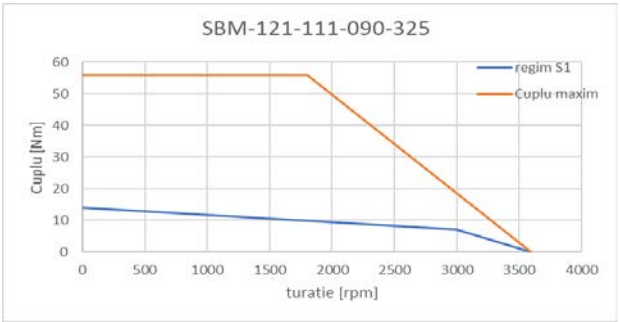


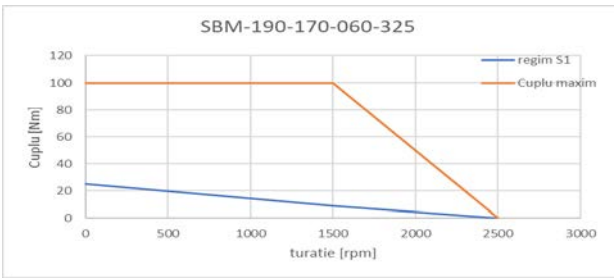


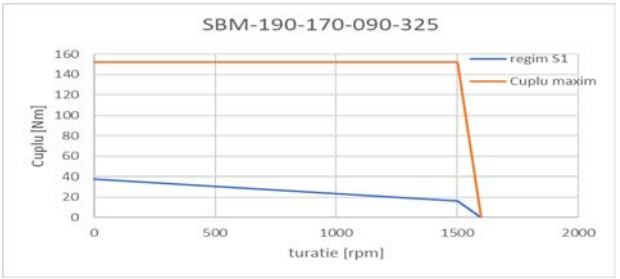


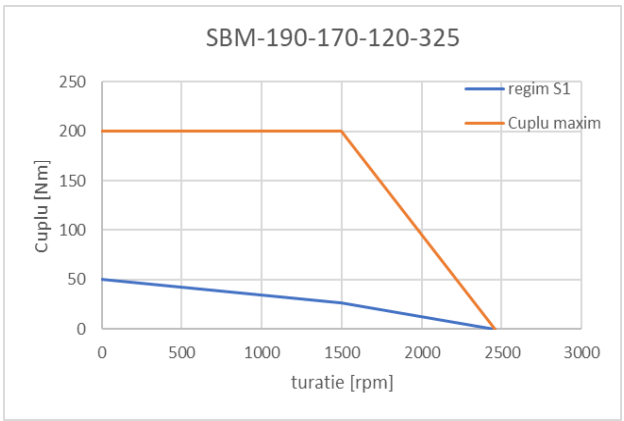












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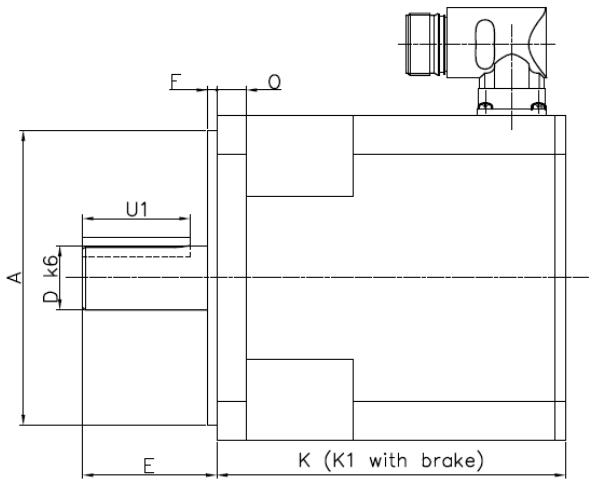

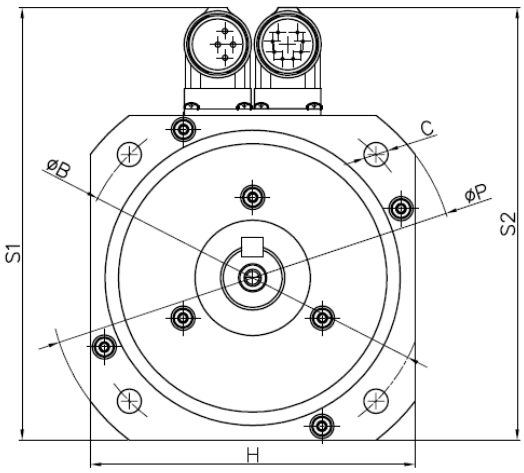

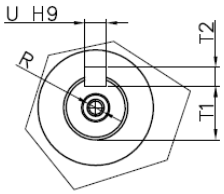

Type	Size	A (j6)	B	C	D (k6)	E	F	H	K	K1	M	O	P	R	T1	T2 (h9)	U (h9)	U1
SBM-071-062-023	71	60	75	5,5	11	23	2,5	71	100	130	94	8,5	94	M4x10	12,5	3	4	16
SBM-071-062-046	71	60	75	5,5	11	23	2,5	71	123	153	94	8,5	94	M4x10	12,5	3	4	16
SBM-071-062-069	71	60	75	5,5	11	23	2,5	71	146	176	71	8,5	94	M4x10	12,5	3	4	16
SBM-121-111-030	121	110	130	9	24	50	3,5	121	130	170	121	11	152	M8·20	27	3	8	40
SBM-121-111-060	121	110	130	9	24	50	3,5	121	160	200	121	11	152	M8·20	27	3	8	40
SBM-121-111-090	121	110	130	9	24	50	3,5	121	190	230	121	11	152	M8·20	27	3	8	40
SBM-190-170-060	190	180	215	13,5	32	60	4	190	200	240	190	11	253	M4·16	7,2	3	3	40
SBM-190-170-090	190	180	215	13,5	32	60	4	190	230	270	190	11	253	M4·16	7,2	3	3	40
SBM-190-170-120	190	180	215	13,5	32	60	4	190	260	300	190	11	253	M4·16	7,2	3	3	40

Dimensions in mm