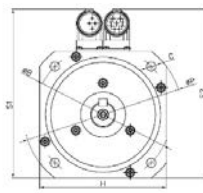
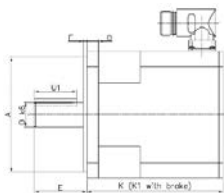


Contract nr. 125 / 2020, Project Code EUROSTARS-2019-E!12367-iTorque  
<http://www.icpe.ro/itorque/>

## BRUSHLESS SERVO-MOTORS WITH STATOR CORE MADE OF SEGMENTS

The electric servomotor type SBM is a permanent magnets brushless synchronous motor with cylindrical rotor. The stator core is made of segmented laminated teeth which allow high copper density and low cogging torque. They have a compact construction, low ripple torque, high efficiency and high torque density.



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

Crt No.	Characteristics	Symbol	Unit	XSMC 71-0100-3	XSM C 71-0200-3	XSM C 71-0270-3	XSM C 121-0520-3	XSM C 121-1000-3	XSM C 121-1400-3	XSMC 190-2500-6	XSMC 190-3800-6	XSMC 190-5000-6
1.	Rated power $\pm 10\%$	$P_n$	kW	0.377	0.71	0.88	1.26	1.95	2.2	1.4	2.5	6.8
2.	Rated torque $\pm 10\%$	$M_n$	Nm	0.9*	1.7*	2.1*	4*	6.2*	7*	9*	16*	26*
3.	Static torque $\pm 10\%$	$M_0$	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?m <sup>2</sup>	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 $\pm 10\%$	$I_n$	A	2.2	2.1	1.7	4.8	7.8	6.5	2.9	3.5	8.4
13.	Static current $\pm 10\%$	$I_0$	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 $\pm 10\%$	$K_T$	Nm/A	0.4	0.81	1.24	0.83	0.8	1.08	3.1	4.6	3.1
16.	Back EMF constant $\pm 10\%$	$K_E$	V/krp m	26	50	76	51	50.2	68	186	280	187
17.	Rated speed $\pm 10\%$	$n_n$	rpm	4000	4000	4000	3000	3000	3000	1500	1500	1500
18.	Line to line motor resistance $\pm 8\%$	$R_L$	$\Omega$	4.7	7.7	10.4	1.5	0.6	0.61	0.07	0.09	0.023
19.	Line to line motor inductance $\pm 20\%$	$L_L$	mH	10	19	28	7.4	3.3	4	3.5	5.2	1.5