

## RPM5000

Technical Data Summary, SBMAX Frame Sizes 105 mm						
Winding selection for 5000 rpm with 220 Vac 3 phase drive						
Issue 3, 22/10/98						
		Frame 105				Units
Reference data:	SBM	5002	5004	5006	5008	
Nominal torque, cont. duty, zero speed (DT=65oC, in air) 1)	Tn	2,2	4,0	6,0	8,0	Nmrms
Nominal torque, cont. duty, zero speed (DT=135oC, flange mount) 2)	T105	3,6	6,3	8,4	10,3	Nmrms
Base speed	wn	524	524	524	524	rad/s
Nominal power,1)	Pn	965	1390	1841	2318	W
Nominal power,2)	P105	1595	2577	3207	3618	W
Torque at max. speed 1)	Tw	1,8	2,7	3,5	4,4	Nmrms
Torque at max. speed 2)	Tw105	3,0	4,9	6,1	6,9	Nmrms
Peak torque,zero speed S.I.R.10% 2)	Tpk	11,5	19,9	26,6	32,4	Nmrms
Physical data:						
Maximum speed	wmax	700	700	700	700	rad/s
Rotor inertia	Jm	0,19	0,335	0,48	0,6205	mkgm2
Acceleration at peak torque	apk	60688	59437	55462	52259	rad/s2
Max. shock on motor, any direction	S	200	200	200	200	m/s2
Max. vibration, radial	Vr	200	200	200	200	m/s2
Max. vibration, axial	Va	50	40	40	40	m/s2
Shaft torsional resonance frequency 3)	fm	N.A.	N.A.	N.A.	N.A.	Hz
Mass	M	4,9	7,0	9,1	11,2	kg
Thermal data:						
Motor losses at nominal power	Ln	65	75	97	122	W
Thermal impedance, motor to air	Rtha	1	0,8667	0,6701	0,5328	oC/W
Thermal impedance, motor to air+flange	Rthf	0,6	0,57	0,55	0,53	oC/W
Thermal capacity	Cth	3077	4395	5714	7032	J/oC
Thermal time constant in air	ta	3077	3809	3829	3747	s
No load losses at base speed	L0	21,206	42,413	63,619	84,826	W
Treshold of built-in PTC	PTCt	130	130	130	130	oC
Electrical data:						
Pole number	PN	8	8	8	8	
Connection		Y	Y	Y	Y	
Back E.M.F. between phases	Ke	0,3182	0,3341	0,334	0,35	Vs
Torque constant	Kt	0,5511	0,5787	0,5785	0,6062	Nm/Arms
Temperature coefficient of E.M.F. and	dKe/dT	-0,09	-0,09	-0,09	-0,09	%/oC
Winding resistance, 20oC	Rw	2,095	0,8156	0,4726	0,3629	Ohm
Winding inductance	Lw	5,5085	3,0375	2,0238	1,6663	mH
Nominal voltage	Vn	179	182	180	188	Vrms
EMF at 1000 rpm	V1000	33	35	35	37	Vrms
Nominal current, zero speed	In0	4,3	7,5	11,2	14,3	Arms
Nominal current at rated power 1)	In	3,6	4,9	6,5	7,9	Arms
Peak current	Ipk	21	34	46	53	Arms
Frequency	fn	334	334	334	334	Hz
Efficiency at rated power	n	0,937	0,949	0,950	0,950	
Min. demagnetization current, 125oC	Idm	21	39	59	75	Apk