

Motors and gearboxes

Asynchronous high-speed motors 1 MB for high speeds



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Asynchronous high-speed motors ■ 1 MB for high speeds**Documentation**

- Project planning manual

**Robust and reliable**

- Rated torques up to 875 Nm
- Maximum speeds up to 20,000 rpm
- Large spindle cutoff
- Excellent running smoothness
- Easy integration into the machine

The 1MB frameless (kit) motors are maintenance-free asynchronous motors with high power density. For different performance requirements and installation situations, our product range offers 9 motor sizes with different overall lengths and diameters.

Typical areas of application of these motors are the main spindles of modern CNC machines and machining centers. These frameless (kit) motors excel by their superb running smoothness and perfect servo quality for C-axis machining, thread cutting and spindle positioning.

Technical data**Electrical data**

Type	Rated speed	Maximum speed	Rated torque	Rated power	Rated current	Maximum current	Moment of inertia
	n_N	n_{Max}	M_N	P_N	I_N	I_{Max}	J
	[1/min]	[1/min]	[Nm]	[kW]	[A]	[A]	[kgm ²]
1MS105N-4A	4,500	15,000	15	7	29	73.68	0.0033
1MS105N-4B	2,400	12,000	22	5.5	16.4	35.11	
1MS140B-4A	7,500	20,000	7		3.7	18	41.79
1MS140B-4B	5,000			25		52.69	
1MS140D-4B	4,000	16,000	14	6	43	89.37	0.0061
1MS140F-4A	3,000	15,000	24	7.5		111.27	0.0082
1MS140H-4B			34	10.5	58	127.28	0.0103
1MS160B-4A		12,000	16	5	36	78.37	0.0084
1MS160D-4A			32	10	48	112.83	0.0121
1MS160D-4B	2,000	8,000		6.7	23.8	53.28	
1MS160E-4B	1,000	4,000	33	3.5	19	34.77	0.0149

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Type	Rated speed	Maximum speed	Rated torque	Rated power	Rated current	Maximum current	Moment of inertia
	n_N	n_{Max}	M_N	P_N	I_N	I_{Max}	J
	[1/min]	[1/min]	[Nm]	[kW]	[A]	[A]	[kgm ²]
1MS160F-4A	3,000	12,000	48	15	74	169.43	0.0161
1MS160F-4B					45	99.87	
1MS160F-4D	2,500	10,000		12.5	23.2	54.15	
1MS160F-4E	3,000	12,000		15	53	114.57	
1MS160H-4A			64	20	58	132.2	0.0201
1MS160N-4A	2,000	8,000	89	28	75	170.83	0.0267
1MS160N-4B				18.6	60	135.51	
1MS160N-4C				14	26	67.76	
1MS200C-4A	1,500	6,000	57	9	50	114.48	0.041
1MS200D-4B			85	13.5	48	115.76	
1MS200D-4C	5,000	20,000	59	31	75	157.18	0.037
1MS200D-4D	2,500	10,000	85	22	59	144.29	
1MS200D-4E	1,500	6,000		13.5	84	201.91	
1MS200D-4F	6,000	18,000	49	31	82	182.24	0.059
1MS200E-4B	1,800	7,200	85	16	41.4	111.08	
1MS200E-4C	3,900	15,600	74	30.2	65	139.44	
1MS200H-4B	1,500	6,000	124	19.5	68	171	0.069
1MS200H-4D					52.6	128.21	
1MS240B-4A	1,000	4,000	62	6.5	46	101.06	0.078
1MS240F-4A			123	13	74	164.18	0.12
1MS240H-4B			169	18	56	124.16	0.153
1MS241D-6A			112	12	62	139.52	0.135
1MS241D-6C					27	59.68	
1MS241H-6C	1,800	7,200	202	32	75.5	184.55	0.227
1MS241H-6D	850	3,400		18	66.4	127.88	
1MS241H-6G	800	3,200		16.9	39.7	91.92	
1MS242N-4B	1,700	6,800	185	33	98	224.31	0.135
1MS270C-4B	1,500	6,000	190	30	96	228.5	0.258
1MS310B-6B	1,000	4,000	260	27	75	164.03	0.477
1MS310B-6D	700	2,800		19	81	178.92	
1MS310B-6E	440	1,760		12	58	125.75	
1MS310D-6B	800	3,200	340	28.5	81	174.17	0.492
1MS310F-6A	400	1,600	480	20	61	138.75	0.723
1MS310F-6B	900	3,600		35	111	246.64	
1MS375B-6B	600	2,400	636	40	120	257.22	1.39
1MS375D-6B			875	55	150	329.29	1.73
1MS375D-6D	300	1,200	875	27.5	94	210.01	

All specifications are based on operation with liquid cooling and 540 V DC bus voltage.

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Dimensions

Type	Ø A	B	Ø C	Earth			
	[mm]	[mm]	[mm]	Stator [kg]	Rotor [kg]		
1MS105N-4A	120	350	40.5	11.2	2.8		
1MS105N-4B							
1MS140B-4A	160	150	45	5.3	3.3		
1MS140B-4B							
1MS140D-4B		190		8.2	4.5		
1MS140F-4A		240		11.8	6.1		
1MS140H-4B		290		15.5	7.3		
1MS160B-4A	180	160	60	6.8	5.3		
1MS160D-4A		205		11.1	7.3		
1MS160D-4B		240		15.8	10.2		
1MS160E-4B						14.4	9.4
1MS160F-4A		255		21	9.8		
1MS160F-4B							
1MS160F-4D							
1MS160F-4E		310		28.1	12.7		
1MS160H-4A							
1MS160N-4A							
1MS160N-4B							
1MS160N-4C	220	240	66	21	15		
1MS200C-4A		295		29	19		
1MS200D-4B							
1MS200D-4C							
1MS200D-4D							
1MS200D-4E							
1MS200D-4F		330		34	22		
1MS200E-4B							
1MS200E-4C							
1MS200H-4B		380		41	26		
1MS200H-4D							
1MS240B-4A	270		72			29	19
1MS240F-4A		360		48	29		
1MS240H-4B		430		62	37		
1MS241D-6A	270	290	111	38	24		
1MS241D-6C							
1MS241H-6C		410		63	39		
1MS241H-6D							
1MS241H-6G							
1MS242N-4B	440	71	81	37			

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Type	Ø A	B	Ø C	Earth	
	[mm]	[mm]	[mm]	Stator [kg]	Rotor [kg]
1MS270C-4B	300	400	120	82	52
1MS310B-6B	340	385	125	67	65
1MS310B-6D					
1MS310B-6E					
1MS310D-6B		450		86	80
1MS310F-6A		520		103	97
1MS310F-6B					
1MS375B-6B	405	620	170	162	106
1MS375D-6B				205	132
1MS375D-6D					

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The data specified above only serve to describe the product. As our products are constantly being further developed, no statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification.

It must be remembered that our products are subject to a natural process of wear and aging.