

SIMOTICS SD 1LG Standard Motors

Pole-changing motors

Self-ventilated motors – Cast-iron series 1LG4 for square-law load torque

Selection and ordering data

Operating values at rated output for N1		Operating values at rated output for N2								Cast-iron series 1LG4 – pole-changing for square-law load torque Order No.	m _{IM B3 J}		Torque class													
P _{ra-ted1, 50 Hz}	P _{ra-ted2, 50 Hz}	Frame size	n _{ra-ted1, 50 Hz}	T _{ra-ted1, 50 Hz}	η _{ra-ted1, 50 Hz}	cos φ _{rated1, 50 Hz}	I _{ra-ted1, 50 Hz}	T _{LR/ra-ted1, 50 Hz}	I _{LR/ra-ted1, 50 Hz}		T _{B/ra-ted1, 50 Hz}	n _{ra-ted2, 50 Hz}		T _{ra-ted2, 50 Hz}	η _{ra-ted2, 50 Hz}	cos φ _{rated2, 50 Hz}	I _{ra-ted2, 50 Hz}	T _{LR/ra-ted2, 50 Hz}	I _{LR/ra-ted2, 50 Hz}	T _{B/ra-ted2, 50 Hz}	kg	kgm ²	CL			
kW	kW	FS	rpm	Nm	%	A	rpm	Nm	%		A	rpm		Nm	%	A	rpm	Nm	%	A	rpm	Nm	%	A	rpm	Nm
4/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit																										
			1500 rpm				3000 rpm																			
4.8	18	180 M	1465	31	87.6	0.86	9.2	2.3	7.5	2.8	2935	59	83.4	0.92	34	2.5	8.1	3.0	1LG4183-0BA ■■		155	0.12	10			
5.8	21.5	180 L	1470	38	86.7	0.85	11.4	2.0	6.8	2.8	2950	70	86.1	0.93	39	2.3	7.7	3.3	1LG4186-0BA ■■		180	0.14	10			
8.4	31	200 L	1475	55	89.4	0.87	15.6	2.5	7.6	3.1	2950	100	87.1	0.92	56	2.8	8.7	3.5	1LG4207-0BA ■■		225	0.23	10			
10.5	38	225 S	1480	68	89.3	0.88	19.3	2.4	6.8	2.7	2960	123	86.5	0.92	69	2.4	7.6	3.2	1LG4220-0BA ■■		290	0.40	10			
13	45	225 M	1475	84	89.9	0.89	23.5	2.2	6.2	2.6	2960	145	88.5	0.93	79	2.5	8.1	3.5	1LG4223-0BA ■■		330	0.49	10			
15	55	250 M	1480	97	90.4	0.86	28	2.2	5.6	2.0	2960	177	88.5	0.92	97	2.3	6.6	2.8	1LG4253-0BA ■■		390	0.69	10			
18	67	280 S	1490	115	90.5	0.87	33	2.5	7.0	2.8	2970	215	87.8	0.90	122	2.3	7.6	3.3	1LG4280-0BA ■■		520	1.2	10			
22	80	280 M	1488	141	91.4	0.86	40.5	2.2	6.1	2.4	2975	257	89.7	0.91	141	2.1	7.5	2.9	1LG4283-0BA ■■		560	1.4	10			
26	90	315 S	1492	166	92.2	0.84	48.5	2.4	8.4	2.9	2978	289	89.2	0.88	165	1.9	8.1	3.3	1LG4310-0BA ■■		730	1.9	10			
32	110	315 M	1492	205	92.1	0.87	58	2.3	7.6	2.9	2975	353	89.0	0.93	192	1.7	6.7	2.9	1LG4313-0BA ■■		810	2.3	10			
35	140	315 L	1492	224	93.0	0.87	62	2.2	7.6	2.6	2975	450	91.7	0.93	235	1.8	7.1	2.6	1LG4316-0BA ■■		960	2.9	10			
45	170	315 L	1492	288	93.4	0.88	79	2.2	7.5	2.7	2975	546	92.3	0.94	285	1.9	7.4	2.8	1LG4317-0BA ■■		1060	3.5	10			
6/4-pole: 1000/1500 rpm at 50 Hz with two windings																										
			1000 rpm				1500 rpm																			
5.5	16	180 M	960	55	80.0	0.77	12.1	1.6	4.0	1.8	1460	105	87.4	0.77	32	1.7	5.3	2.5	1LG4183-1BD ■■		155	0.082	10			
6.5	19	180 L	960	65	80.1	0.77	14.3	1.6	4.0	1.8	1460	124	87.9	0.79	37	1.7	5.2	2.4	1LG4186-1BD ■■		175	0.086	10			
9.5	26	200 L	975	93	82.7	0.77	20	1.9	5.0	2.2	1460	170	88.9	0.81	49.5	1.7	5.1	2.4	1LG4207-1BD ■■		235	0.15	10			
12	34	225 S	980	117	84.8	0.77	25	2.3	5.7	2.1	1465	222	89.4	0.82	64	1.7	5.6	2.3	1LG4220-1BD ■■		285	0.30	10			
14.5	40	225 M	980	141	86.6	0.79	29	2.2	5.6	2.1	1470	260	90.7	0.85	73	1.9	5.8	2.3	1LG4223-1BD ■■		340	0.38	10			
18	52	250 M	980	175	87.3	0.83	34.5	2.0	4.9	2.0	1475	337	91.8	0.84	93	2.0	5.9	2.7	1LG4253-1BD ■■		380	0.45	10			
25	70	280 S	982	243	87.9	0.84	47.5	2.1	5.0	1.9	1478	452	90.9	0.85	126	2.2	6.2	2.6	1LG4280-1BD ■■		540	1.2	10			
30	82	280 M	984	291	88.9	0.83	57	2.5	5.5	2.2	1480	529	91.5	0.83	150	2.4	6.6	2.8	1LG4283-1BD ■■		580	1.4	10			
33	92	315 S	990	318	89.8	0.80	65	2.5	5.9	2.5	1488	590	89.7	0.75	185	2.4	6.7	2.9	1LG4310-1BD ■■		730	1.9	10			
45	120	315 M	990	435	89.6	0.82	86	2.4	5.4	2.3	1485	771	92.8	0.82	215	2.3	6.4	2.8	1LG4313-1BD ■■		810	2.3	10			
50	150	315 L	990	483	89.6	0.83	95	2.4	5.2	2.1	1485	966	93.0	0.85	270	2.0	5.9	2.3	1LG4316-1BD ■■		990	2.5	10			
55	170	315 L	988	532	89.4	0.83	103	2.3	5.6	2.1	1488	1091	92.7	0.79	320	2.2	7.9	3.1	1LG4317-1BD ■■		1060	3.5	10			
Voltagess				No. of poles		Motor type		Version												Order code(s)						
50 Hz		230 V		4/2, 6/4		1LG4183 ... 313		Standard		1		-								-						
Direct switch-on		400 V		4/2, 6/4		1LG4183 ... 317		Standard		6		-								-						
		500 V		4/2, 6/4		1LG4183 ... 317		Without add. charge		5		-								-						
		690 V		4/2, 6/4		1LG4183 ... 317		Without add. charge		0		-								-						
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see supplements and special versions.																								
										9		...														
Types of construction				No. of poles		Motor type		Version												Order code(s)						
Without flange		IM B3/6/7/8 ²⁾		4/2, 6/4		1LG4183 ... 317		Standard		0		-								-						
		IM V6 ²⁾		4/2, 6/4		1LG4183 ... 313		Standard		0		-								-						
				4/2, 6/4		1LG4316 ... 317		Without add. charge		9		M1E														
		IM V5 without protective cover ²⁾		4/2, 6/4		1LG4183 ... 313		Standard		0		-								-						
				4/2, 6/4		1LG4316 ... 317		Without add. charge		9		M1D														
With flange		IM B5 ³⁾		4/2, 6/4		1LG4183 ... 317		With add. charge		1		-								-						
		IM V1 without protective cover ³⁾		4/2, 6/4		1LG4183 ... 313		With add. charge		1		-								-						
				4/2, 6/4		1LG4316 ... 317		With add. charge		8		-								-						
		IM V3 ³⁾		4/2, 6/4		1LG4183 ... 313		With add. charge		9		M1G														
		IM V1 with protective cover ³⁾ ⁴⁾		4/2, 6/4		1LG4183 ... 317		With add. charge		4		-								-						
		IM B35		4/2, 6/4		1LG4183 ... 317		With add. charge		6		-								-						
Further types of construction		For additional charges, code numbers and descriptions, see supplements and special versions.																								
										9		...														
Special versions																				Order code(s)						
Options		For additional charges, code numbers and descriptions, see supplements and special versions.																		1LG4 ■■ -Z		...+...+...+...				

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LG Standard Motors

Pole-changing motors

Self-ventilated motors – Cast-iron series 1LG4 for square-law load torque

Selection and ordering data (continued)

P _{ra- ted1,} 50 Hz	P _{ra- ted2,} 50 Hz	Frame size	Operating values at rated output for N1								Operating values at rated output for N2								Cast-iron series 1LG4 – pole-changing for square-law load torque Order No.	m _{IM B3 J}		Torque class
			n _{ra- ted1,} 50 Hz	T _{ra- ted1,} 50 Hz	η _{ra- ted1,} 50 Hz	cos φ _{rated1,} 50 Hz	I _{ra- ted1,} 50 Hz	T _{LR/} I _{ra- ted1,}	I _{LR/} I _{ra- ted1,}	T _{B/} I _{ra- ted1,}	n _{ra- ted2,} 50 Hz	T _{ra- ted2,} 50 Hz	η _{ra- ted2,} 50 Hz	cos φ _{rated2,} 50 Hz	I _{ra- ted2,} 50 Hz	T _{LR/} I _{ra- ted2,}	I _{LR/} I _{ra- ted2,}	T _{B/} I _{ra- ted2,}		kg	kgm ²	

- Cooling: Self-ventilated (IC 411)
- Line operation: Double pole-changing for square-law load torque, e.g. for driving fans
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

8/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit

750 rpm	1500 rpm	750 rpm																	1500 rpm			
4.5	16	180 M	725	59	80.3	0.63	12.8	1.4	3.6	2.0	1465	104	87.2	0.84	31.5	2.2	6.8	3.1	1LG4183-0BB	155	0.12	10
5	18.5	180 L	725	66	81.2	0.62	14.3	1.6	3.7	2.1	1470	120	88.5	0.85	35.5	2.4	7.2	3.3	1LG4186-0BB	180	0.14	10
7.5	28	200 L	730	98	83.3	0.60	21.5	2.1	4.3	2.5	1465	183	89.5	0.86	52	2.7	7.3	2.9	1LG4207-0BB	220	0.19	10
9.5	35	225 S	738	123	84.6	0.61	26.5	2.0	4.4	2.3	1478	226	90.5	0.86	65	1.7	6.9	2.9	1LG4220-0BB	295	0.45	10
11.5	42	225 M	738	149	86.4	0.62	31	1.9	4.5	2.2	1475	272	91.2	0.87	76	2.4	6.9	3.0	1LG4223-0BB	330	0.49	10
14.5	52	250 M	740	187	86.9	0.62	39	2.0	4.0	1.8	1482	335	91.7	0.86	95	2.5	6.8	2.6	1LG4253-0BB	450	0.86	10
19	70	280 S	742	245	89.2	0.62	49.5	1.8	4.0	1.8	1482	451	92.5	0.86	127	2.0	6.3	2.5	1LG4280-0BB	530	1.2	10
23	83	280 M	742	296	89.5	0.63	59	1.9	4.2	1.8	1485	534	92.7	0.87	149	2.2	7.2	2.7	1LG4283-0BB	665	1.7	10
26	95	315 S	744	334	90.0	0.62	67	1.9	4.6	1.9	1490	610	93.0	0.85	174	2.3	6.5	2.6	1LG4310-0BB	730	1.9	10
30	115	315 M	744	385	90.0	0.58	83	2.1	5.0	2.1	1488	738	92.5	0.83	215	2.5	7.4	2.7	1LG4313-0BB	810	2.3	10
35	140	315 L	744	449	91.0	0.62	90	2.0	4.7	2.1	1486	899	93.4	0.86	250	2.4	7.0	2.6	1LG4316-0BB	960	2.9	10
45	175	315 L	744	577	91.0	0.57	125	2.1	4.7	2.2	1490	1125	93.4	0.84	320	3.1	7.5	3.0	1LG4317-0BB	1090	4.2	10

Voltages		No. of poles	Motor type	Version		Order code(s)	
50 Hz	230 V	8/4	1LG4183 ... 313	Standard	1	–	
Direct switch-on	400 V	8/4	1LG4183 ... 317	Standard	6	–	
	500 V	8/4	1LG4183 ... 317	Without additional charge	5	–	
	690 V	8/4	1LG4183 ... 317	Without additional charge	0	–	
Further voltages ¹⁾	For additional charges, code numbers and descriptions, see supplements and special versions.					9	...
Types of construction		No. of poles	Motor type	Version		Order code(s)	
Without flange	IM B3/6/7/8 ²⁾	8/4	1LG4183 ... 317	Standard	0	–	
	IM V6 ²⁾	8/4	1LG4183 ... 313	Standard	0	–	
		8/4	1LG4316 ... 317	Without additional charge	9	M1E	
With flange	IM V5 without protective cover ²⁾	8/4	1LG4183 ... 313	Standard	0	–	
		8/4	1LG4316 ... 317	Without additional charge	9	M1D	
	IM B5 ³⁾	8/4	1LG4183 ... 317	With additional charge	1	–	
	IM V1 without protective cover ³⁾	8/4	1LG4183 ... 313	With additional charge	1	–	
		8/4	1LG4316 ... 317	With additional charge	8	–	
	IM V3 ³⁾	8/4	1LG4183 ... 313	With additional charge	1	M1G	
	IM V1 with protective cover ^{3) 4)}	8/4	1LG4183 ... 317	With additional charge	4	–	
	IM B35	8/4	1LG4183 ... 317	With additional charge	6	–	
Further types of construction	For additional charges, code numbers and descriptions, see supplements and special versions.					9	...
Special versions						Order code(s)	
Options	For additional charges, code numbers and descriptions, see supplements and special versions.			1LG4 ... -Z		...+...+...+...	

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.