

SIMOTICS GP 1LA Standard Motors

Pole-changing motors

Self-ventilated motors – Aluminum series 1LA7 and 1LA5 for constant load torque

Selection and ordering data

$P_{ra-ted1}$ 50 Hz		$P_{ra-ted2}$ 50 Hz	Frame size	Operating values at rated output for N1								Operating values at rated output for N2								Aluminum series 1LA7/1LA5 – pole-changing for constant load torque Order No.	$m_{IM B3 J}$	Torque class
$n_{ra-ted1}$ 50 Hz	$T_{ra-ted1}$ 50 Hz	$\eta_{ra-ted1}$ 50 Hz	$\cos\phi_{rated1}$ 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	$\eta_{ra-ted2}$ 50 Hz	$\cos\phi_{rated2}$ 50 Hz	$I_{ra-ted2}$ 50 Hz	$T_{LR}/I_{ra-ted2}$	$I_{LR}/I_{ra-ted2}$	$T_B/I_{ra-ted2}$							
rpm	Nm	%	A	rpm	Nm	%	A	rpm	Nm	%	A	rpm	Nm	%	A							
0.1	0.15	63 M	1330	0.72	43.0	0.79	0.43	1.8	2.7	1.8	2650	0.54	50.0	0.82	0.53	1.8	2.9	1.8	1LA7060-0AA	3.5	0.00029	10
0.15	0.2	63 M	1330	1.1	43.0	0.71	0.71	2.0	3.0	2.0	2750	0.69	55.0	0.73	0.72	2.0	3.3	2.0	1LA7063-0AA	4.1	0.00040	10
0.21	0.28	71 M	1375	1.5	57.0	0.73	0.73	1.6	3.0	1.8	2770	0.97	46.0	0.76	1.16	1.6	3.1	1.8	1LA7070-0AA	4.8	0.00052	10
0.3	0.43	71 M	1390	2.1	62.0	0.76	0.92	1.8	3.7	2.0	2780	1.5	56.0	0.82	1.35	1.8	3.8	2.0	1LA7073-0AA	7.0	0.00076	10
0.48	0.6	80 M	1390	3.3	64.2	0.82	1.32	1.7	3.9	2.0	2810	2.0	62.5	0.84	1.65	1.7	4.0	2.0	1LA7080-0AA	9.0	0.0014	10
0.7	0.85	80 M	1390	4.8	66.9	0.84	1.80	1.8	4.3	2.1	2810	2.9	68.0	0.83	2.15	1.8	4.3	2.1	1LA7083-0AA	10	0.0017	10
1.1	1.4	90 S	1390	7.6	67.0	0.85	2.80	1.6	4.2	1.9	2810	4.8	64.1	0.85	3.70	1.8	4.3	2.0	1LA7090-0AA	13	0.0024	13
1.5	1.9	90 L	1410	10	72.1	0.86	3.50	1.9	4.9	2.0	2860	6.3	70.1	0.85	4.60	1.9	5.3	2.1	1LA7096-0AA	15.6	0.0033	13
2	2.4	100 L	1400	14	79.1	0.84	4.35	1.8	5.0	2.0	2870	8.0	73.2	0.84	5.6	1.8	5.5	2.1	1LA7106-0AA	21	0.0048	13
2.6	3.1	100 L	1400	18	79.7	0.86	5.5	2.3	5.6	2.4	2865	10	72.2	0.80	7.7	2.4	5.6	2.4	1LA7107-0AA	24	0.0055	13
3.7	4.4	112 M	1420	25	77.3	0.85	8.1	2.0	5.6	2.2	2885	15	74.3	0.80	10.7	2.2	5.8	2.3	1LA7113-0AA	31	0.011	13
4.7	5.9	132 S	1450	31	81.3	0.84	9.9	1.7	6.3	2.2	2920	19	78.4	0.85	12.8	1.6	6.5	2.2	1LA7130-0AA	41	0.018	10
6.5	8	132 M	1450	43	80.4	0.84	13.9	2.0	6.9	2.5	2930	26	80.5	0.84	17.1	2.1	7.5	2.6	1LA7133-0AA	50	0.023	10
9.3	11.5	160 M	1455	61	86.9	0.85	18.2	2.0	6.7	2.6	2930	37	78.5	0.89	23.5	1.8	7.4	2.4	1LA7163-0AA	74	0.043	10
13	17	160 L	1455	85	85.6	0.84	26	2.5	7.6	3.0	2930	55	85.6	0.88	32.5	2.8	8.5	3.0	1LA7166-0AA	92	0.060	10
15	18	180 M	1470	97	89.3	0.83	29	2.1	6.7	2.7	2950	58	85.1	0.80	38	2.2	7.5	3.2	1LA5183-0AA	113	0.13	10
18	21.5	180 L	1465	117	89.8	0.84	34.5	2.0	6.4	2.6	2950	70	85.7	0.85	42.5	2.2	7.3	3.1	1LA5186-0AA	123	0.15	10
26	31	200 L	1465	169	90.8	0.86	48	2.6	6.7	2.8	2940	101	85.2	0.85	62	2.6	7.5	3.3	1LA5207-0AA	157	0.24	10
Voltages			No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)															
50 Hz			230 V	4/2	1LA7060 ... 166	1LA5183 ... 207	Standard	1	–													
Direct switch-on			400 V	4/2	1LA7060 ... 166	1LA5183 ... 207	Standard	6	–													
			500 V	4/2	1LA7060 ... 166	1LA5183 ... 207	Without additional charge	5	–													
			690 V	4/2	1LA7060 ... 166	1LA5183 ... 207	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 1LA7	Motor type 1LA5	Version	Order code(s)															
Without flange			IM B3/6/7/8, IM V6, IM V5 without protective cover	4/2	1LA7060 ... 166	1LA5183 ... 207	Standard	0	–													
With flange			IM B5, IM V1 without protective cover ²⁾	4/2	1LA7060 ... 166	1LA5183 ... 207	With additional charge	1	–													
			IM V3	4/2	1LA7060 ... 166	–	With additional charge	1	–													
				4/2	–	1LA5183 ... 207	With additional charge	9	M1G													
			IM V1 with protective cover ^{2) 3)}	4/2	1LA7060 ... 166	1LA5183 ... 207	With additional charge	4	–													
			IM B35	4/2	1LA7060 ... 166	1LA5183 ... 207	With additional charge	6	–													
With standard flange			IM B14, IM V19, IM V18 without protective cover	4/2	1LA7060 ... 166	–	With additional charge	2	–													
			IM B34	4/2	1LA7060 ... 166	–	With additional charge	7	–													
With special flange			IM B14, IM V19, IM V18 without protective cover	4/2	1LA7060 ... 166	–	With additional charge	3	–													
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.				1LA -Z	. . . + . . . + . . .														

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

³⁾ The "Second shaft extension" option, order code K16 is not possible.

²⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

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Pole-changing motors

Self-ventilated motors – Aluminum series 1LA7 and 1LA5 for constant load torque

Selection and ordering data (continued)

Operating values at rated output for N1		Operating values at rated output for N2								Aluminum series		$m_{IM\ B3}$	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	$\cos\phi$ rated1, 50 Hz	I_{ra-} ted1, 50 Hz	T_{LR}/I_{ra-} ted1	T_B/I_{ra-} ted1	n_{ra-} ted2, 50 Hz	T_{ra-} ted2, 50 Hz				η_{ra-} ted2, 50 Hz	$\cos\phi$ rated2, 50 Hz	I_{ra-} ted2, 50 Hz	T_{LR}/I_{ra-} ted2	T_B/I_{ra-} ted2	1LA7/1LA5 – pole-changing for constant load torque	Order No.	kg
kW	kW	FS	rpm	Nm	%	A				rpm	Nm	%	A				▶ Successor 1LE1011					
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Line operation: Double pole-changing for constant load torque • 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							
0.35	0.5	90 S	675	5.0	58.0	0.71	1.19	1.3	2.5	1.6	1365	3.5	63.0	0.79	1.41	1.3	3.2	1.6	1LA7090-0AB	11	0.0023	10
0.5	0.7	90 L	675	7.1	61.0	0.72	1.59	1.4	3.0	1.7	1380	4.8	60.0	0.78	2.10	1.5	3.5	1.8	1LA7096-0AB	13.2	0.0031	10
0.75	1.1	100 L	680	11	63.0	0.74	2.25	1.7	3.3	2.0	1360	7.7	59.0	0.80	3.25	1.6	3.5	1.9	▶ 1LA7106-0AB	20	0.0051	10
0.9	1.5	100 L	690	12	67.0	0.70	2.70	1.8	3.5	2.0	1380	10	65.7	0.80	4.05	1.6	3.6	1.9	▶ 1LA7107-0AB	22	0.0063	10
1.4	1.9	112 M	690	19	67.1	0.73	4.00	1.4	3.6	1.7	1410	13	68.1	0.75	5.2	1.5	4.4	1.8	▶ 1LA7113-0AB	25	0.013	10
1.8	3.6	132 S	720	24	70.1	0.57	6.3	2.0	4.3	2.3	1430	24	79.3	0.90	7.1	1.3	5.4	1.8	▶ 1LA7130-0AB	41	0.018	10
2.2	5.5	132 M	720	29	71.2	0.60	7.2	2.0	4.3	2.3	1430	37	78.4	0.90	11	1.3	5.4	1.8	▶ 1LA7133-0AB	49	0.023	10
3	7	160 M	725	40	76.2	0.56	9.9	2.0	4.0	2.3	1450	46	84.4	0.89	13.2	1.4	5.4	1.8	▶ 1LA7163-0AB	73	0.043	10
5.6	11	160 L	725	74	76.4	0.56	18.5	2.2	4.2	2.4	1450	72	81.5	0.89	21.5	1.7	5.9	2.0	▶ 1LA7166-0AB	91	0.060	10
11	18	180 L	725	145	82.0	0.69	27.5	1.9	5.2	2.2	1455	118	82.1	0.87	36	2.0	6.2	2.2	1LA5186-0AB	123	0.21	13
17	27	200 L	730	222	87.6	0.68	40.5	2.4	5.4	2.5	1465	176	88.2	0.86	51	2.3	6.6	2.5	1LA5207-0AB	157	0.37	13
Voltages			No. of poles	Motor type 1LA7	Motor type 1LA5	Version						Order code(s)										
50 Hz			230 V	8/4	1LA7060 ... 166	1LA5183 ... 207	Standard	1					–									
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			690 V	8/4	1LA7060 ... 166	1LA5183 ... 207	Without additional charge	0					–									
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see supplements and special versions.								9	...										
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Without flange			IM B3/6/7/8, IM V6, IM V5 without protective cover	8/4	1LA7060 ... 166	1LA5183 ... 207	Standard	0					–									
With flange			IM B5, IM V1 without protective cover ²⁾	8/4	1LA7060 ... 166	1LA5183 ... 207	With additional charge	1					–									
			IM V3	8/4	1LA7060 ... 166	–	With additional charge	1					–									
				8/4	–	1LA5183 ... 207	With additional charge	9					M1G									
			IM V1 with protective cover ^{2) 3)}	8/4	1LA7060 ... 166	1LA5183 ... 207	With additional charge	4					–									
			IM B35	8/4	1LA7060 ... 166	1LA5183 ... 207	With additional charge	6					–									
With standard flange			IM B14, IM V19, IM V18 without protective cover	8/4	1LA7060 ... 166	–	With additional charge	2					–									
			IM B34	8/4	1LA7060 ... 166	–	With additional charge	7					–									
With special flange			IM B14, IM V19, IM V18 without protective cover	8/4	1LA7060 ... 166	–	With additional charge	3					–									
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.												1LA ■ -Z	. . . + . . . + . . . + . . .						

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³⁾ The "Second shaft extension" option, order code K16 is not possible.