

SIMOTICS GP 1LA Standard Motors

Motors with High Efficiency IE2

IE2

Self-ventilated motors
Aluminum series 1LA9

Selection and ordering data

P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	Operating values at rated output													Aluminum series 1LA9 – IE2 version in accordance with IEC 60034-30 Order No.	m _{IM B3} J	Torque class		
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / I _{rated}	I _{LR} / I _{rated}	T _B / I _{rated}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz					
kW	kW	FS	rpm	Nm	%	%	%	A									Successor 1LE1001	kg	kgm ²	CL

• Cooling: Self-ventilated (IC 411)
• Efficiency: High Efficiency IE2, service factor (SF) 1.15
• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾

0.18	0.21	63 M	2840	0.61	–	67.4	66.9	62.4	0.78	0.50	2.5	4.8	3.1	49	60	1LA9060-2KA	4.0	0.00022	16
0.25	0.29	63 M	2840	0.84	–	69.9	69.9	65.9	0.80	0.65	2.3	4.9	2.5	49	60	1LA9063-2KA	4.7	0.00026	16
0.37	0.43	71 M	2840	1.2	–	72.8	72.8	69.8	0.77	0.95	3.1	6.5	3.1	52	63	1LA9070-2KA	6.0	0.00041	16
0.55	0.63	71 M	2835	1.9	–	74.4	74.4	71.4	0.75	1.42	3.4	6.3	2.9	52	63	1LA9073-2KA	7.2	0.00050	16
0.75	0.86	80 M	2885	2.5	IE2	77.4	77.9	74.4	0.82	1.71	3.5	8.3	3.2	56	67	1LA9080-2KA	10.7	0.0010	16
1.1	1.27	80 M	2860	3.7	IE2	79.6	79.6	78.6	0.89	2.25	3.2	7.0	3.2	56	67	1LA9083-2KA	12.4	0.0013	16
1.5	1.75	90 S	2890	5.0	IE2	81.3	81.3	80.3	0.87	3.05	3.5	7.0	3.5	60	72	1LA9090-2KA	16.2	0.0018	16
2.2	2.55	90 L	2890	7.3	IE2	83.2	83.2	82.2	0.87	4.4	3.5	7.0	3.5	60	72	1LA9096-2KA	18.6	0.0022	16
3	3.45	100 L	2880	9.9	IE2	84.6	84.6	83.6	0.88	5.8	3.1	7.0	3.2	62	74	1LA9106-2KA	25	0.0044	16
4	4.55	112 M	2905	13	IE2	85.8	85.8	84.8	0.89	7.6	2.6	7.0	3.2	63	75	1LA9113-2KA	36.7	0.0077	16
5.5	6.3	132 S	2930	18	IE2	87.0	87.0	86.0	0.90	10.1	2.4	7.0	3.2	68	80	1LA9130-2KA	46.2	0.019	16
7.5	8.6	132 S	2930	24	IE2	88.1	88.1	87.1	0.92	13.4	2.5	7.0	3.1	68	80	1LA9131-2KA	58.1	0.024	16
11	12.6	160 M	2945	36	IE2	89.4	89.4	88.4	0.90	19.7	2.3	7.0	3.1	70	82	1LA9163-2KA	78.6	0.044	16
15	17.3	160 M	2945	49	IE2	90.3	90.3	89.3	0.90	26.5	2.3	7.0	3.1	70	82	1LA9164-2KA	87.6	0.051	16
18.5	21.3	160 L	2940	60	IE2	90.9	90.9	89.9	0.92	32	2.3	7.0	3.1	70	82	1LA9166-2KA	110.4	0.065	16
22	25.3	180 M	2945	71	IE2	91.3	91.3	90.3	0.89	39 ²⁾	2.5	7.2	3.3	70	83	1LA9183-2WA	131	0.090	16
30	34.5	200 L	2950	97	IE2	92.0	92.0	91.0	0.89	53	2.4	7.0	3.2	71	84	1LA9206-2WA	182	0.16	16
37	42.5	200 L	2950	120	IE2	92.5	92.5	91.0	0.89	65 ²⁾	2.4	7.0	3.3	71	84	1LA9207-2WA	211	0.20	16

Voltages		No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	2	1LA9060 ... 207	Standard	1 –
50 Hz	400 VΔ/690 VY	2	1LA9060 ... 207	Standard	6 –
50 Hz	500 VY	2	1LA9060 ... 207	Without additional charge	3 –
50 Hz	500 VΔ	2	1LA9106 ... 207	Without additional charge	5 –
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, IM V6, IM V5 without protective cover	2	1LA9060 ... 207	Standard	0 –
With flange	IM B5, IM V1 without protective cover IM V3	2	1LA9060 ... 207	With additional charge	1 –
		2	1LA9060 ... 166	With additional charge	1 –
		2	1LA9183 ... 207	With additional charge	9 M1G
With standard flange	IM V1 with protective cover ³⁾ IM B35 IM B14, IM V19, IM V18 without protective cover	2	1LA9060 ... 207	With additional charge	4 –
		2	1LA9060 ... 207	With additional charge	6 –
		2	1LA9060 ... 166	With additional charge	2 –
With special flange	IM B34 IM B14, IM V19, IM V18 without protective cover	2	1LA9060 ... 166	With additional charge	7 –
		2	1LA9060 ... 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.	1LA9 ... -Z ...+...+...+...

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

²⁾ For connection to 230 V, parallel feeders are necessary.

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

SIMOTICS GP 1LA Standard Motors

Motors with High Efficiency IE2

Self-ventilated motors
Aluminum series 1LA9

IE2

Selection and ordering data (continued)

P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	Operating values at rated output													Aluminum series 1LA9 – IE2 version in accordance with IEC 60034-30 Order No.	m _{IM B3} J	Torque class			
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / I _{rated}	I _{LR} / I _{rated}	T _B / I _{rated}	L _{ptA} , 50 Hz	L _{WA} , 50 Hz						
kW	kW	FS	rpm	Nm	%	%	%	A								dB(A)	dB(A)	Successor 1LE1001	kg	kgm ²	CL

• Cooling: Self-ventilated (IC 411)
• Efficiency: High Efficiency IE2, service factor (SF) 1.15
• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾

0.12	0.14	63 M	1395	0.82	–	53.6	52.1	47.6	0.65	0.50	2.6	3.5	2.6	42	53	1LA9060-4KA	4.0	0.00037	16
0.18	0.21	63 M	1395	1.2	–	72.1	72.1	68.1	0.68	0.53	2.8	3.6	2.7	42	53	1LA9063-4KA	4.7	0.00045	16
0.25	0.29	71 M	1410	1.7	–	74.0	74.0	71.0	0.64	0.76	3.2	4.3	3.1	44	55	1LA9070-4KA	6.0	0.00076	16
0.37	0.43	71 M	1385	2.6	–	76.1	76.1	73.1	0.73	0.96	2.8	4.2	3.0	44	55	1LA9073-4KA	7.0	0.00095	16
0.55	0.63	80 M	1410	3.7	–	78.1	78.6	75.6	0.77	1.32	2.8	5.6	2.9	47	58	1LA9080-4KA	10.7	0.0017	16
0.75	0.86	80 M	1400	5.1	IE2	79.6	79.6	78.6	0.75	1.81	3.6	5.8	3.5	47	58	1LA9083-4KA	12.4	0.0024	16
1.1	1.27	90 S	1440	7.3	IE2	81.4	81.4	80.4	0.77	2.55	2.7	6.4	3.2	48	60	1LA9090-4KA	16.2	0.0033	16
1.5	1.75	90 L	1440	9.9	IE2	82.8	82.8	81.8	0.77	3.4	3.1	6.7	3.4	48	60	1LA9096-4KA	18.6	0.0040	16
2.2	2.55	100 L	1435	15	IE2	84.3	84.3	83.3	0.82	4.6	3.1	7.0	3.6	53	65	1LA9106-4KA	26	0.0052	16
3	3.45	100 L	1435	20	IE2	85.5	85.5	84.5	0.81	6.3	3.5	7.0	3.9	53	65	1LA9107-4KA	31	0.0077	16
4	4.55	112 M	1440	27	IE2	86.6	86.6	85.6	0.81	8.2	2.8	6.9	3.2	53	65	1LA9113-4KA	38.7	0.014	16
5.5	6.3	132 S	1455	36	IE2	87.7	87.7	86.7	0.84	10.8	2.9	7.0	3.6	62	74	1LA9130-4KA	49.2	0.023	16
7.5	8.6	132 M	1455	49	IE2	88.7	88.7	87.7	0.84	14.5	3.0	7.0	3.6	62	74	1LA9133-4KA	62.1	0.029	16
11	12.6	160 M	1460	72	IE2	89.8	89.8	88.8	0.85	21	2.7	6.9	3.2	66	78	1LA9163-4KA	86.6	0.055	16
15	17.3	160 L	1460	98	IE2	90.6	90.6	89.6	0.86	28	2.9	7.0	3.3	66	78	1LA9166-4KA	115.4	0.072	16
18.5	21.3	180 M	1465	121	IE2	91.2	91.2	90.2	0.84	35 ²⁾	2.5	7.0	3.2	63	76	1LA9183-4WA	126	0.15	16
22	25.3	180 L	1470	143	IE2	91.6	91.6	90.6	0.84	41.5 ²⁾	2.6	7.3	3.4	63	76	1LA9186-4WA	146	0.19	16
30	34.5	200 L	1465	196	IE2	92.3	92.3	91.3	0.87	54	2.6	7.0	3.2	65	78	1LA9207-4WA	196	0.32	16

Voltages		No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	4	1LA9060 ... 207	Standard	1 –
50 Hz	400 VΔ/690 VY	4	1LA9060 ... 207	Standard	6 –
50 Hz	500 VY	4	1LA9060 ... 207	Without additional charge	3 –
50 Hz	500 VΔ	4	1LA9106 ... 207	Without additional charge	5 –
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		4	1LA9060 ... 207	Standard	0 –
With flange		4	1LA9060 ... 207	With additional charge	1 –
		4	1LA9060 ... 166	With additional charge	1 –
		4	1LA9183 ... 207	With additional charge	9 M1G
		4	1LA9060 ... 207	With additional charge	4 –
		4	1LA9060 ... 207	With additional charge	6 –
With standard flange		4	1LA9060 ... 166	With additional charge	2 –
		4	1LA9060 ... 166	With additional charge	2 –
		4	1LA9060 ... 166	With additional charge	7 –
With special flange		4	1LA9060 ... 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.		1LA9 ... -Z	...+...+...+...

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

²⁾ For connection to 230 V, parallel feeders are necessary.

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

Selection and ordering data (continued)

Operating values at rated output																Aluminum series		m _{IM B3} J		Torque class	
P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / I _{rated}	I _{LR} / I _{rated}	T _B / I _{rated}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	1LA9 – IE2 version in accordance with IEC 60034-30 Order No.	kg	kgm ²	CL		
kW	kW	FS	rpm	Nm	%	%	%	A								Successor 1LE1001					
• Cooling: Self-ventilated (IC 411) • Efficiency: High Efficiency IE2, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																					
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																					
0.75	0.86	90 S	925	7.7	IE2	75.9	75.9	72.9	0.72	1.98	2.5	4.4	2.5	43	55	▶ 1LA9090-6KA ■■	16.9	0.0033	16		
1.1	1.27	90 L	940	11	IE2	78.1	78.6	75.6	0.70	2.9	3.2	5.7	3.2	43	55	▶ 1LA9096-6KA ■■	19.6	0.0050	16		
1.5	1.75	100 L	935	15	IE2	79.8	79.8	78.8	0.73	3.7	3.4	6.2	3.4	47	59	▶ 1LA9106-6KA ■■	26	0.0055	16		
2.2	2.55	112 M	955	22	IE2	81.8	81.8	80.8	0.70	5.5	2.7	6.2	3.0	52	64	▶ 1LA9113-6KA ■■	38.7	0.014	16		
4	4.55	132 M	960	40	IE2	84.6	84.6	83.6	0.81	8.4	2.5	6.3	2.7	63	75	▶ 1LA9133-6KA ■■	53.2	0.025	16		
5.5	6.3	132 M	960	55	IE2	86.0	86.0	85.0	0.77	12	3.3	7.3	3.6	63	75	▶ 1LA9134-6KA ■■	66.1	0.034	16		
7.5	8.6	160 M	965	74	IE2	87.2	87.2	86.2	0.72	17.2	2.2	5.5	2.5	66	78	▶ 1LA9163-6KA ■■	103.6	0.063	16		
11	12.6	160 L	960	109	IE2	88.7	88.7	87.7	0.78	23	2.9	6.9	3.2	66	78	▶ 1LA9166-6KA ■■	113.4	0.072	16		
15	18	180 L	970	148	IE2	89.7	89.7	88.7	0.75	32	2.0	6.5	2.5	66	78	▶ 1LA9186-6WA ■■	144	0.19	16		
18.5	22	200 L	975	181	IE2	90.4	90.4	89.4	0.77	38.5	2.5	6.2	2.5	66	78	▶ 1LA9206-6WA ■■	183	0.28	16		
22	26.5	200 L	975	215	IE2	90.9	90.9	89.9	0.77	45.5	2.5	6.2	2.5	66	78	▶ 1LA9207-6WA ■■	214	0.36	16		
Voltages										No. of poles	Motor type	Version	Order code(s)								
50 Hz			230 VΔ/400 VY		60 Hz ¹⁾ 460 VY		6			1LA9090 ... 207	Standard	1	–								
50 Hz			400 VΔ/690 VY		60 Hz ¹⁾ 460 VΔ		6			1LA9090 ... 207	Standard	6	–								
50 Hz			500 VY				6			1LA9090 ... 207	Without additional charge	3	–								
50 Hz			500 VA				6			1LA9106 ... 207	Without additional charge	5	–								
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see supplements and special versions.																			
Types of construction										No. of poles	Motor type	Version	Order code(s)								
Without flange			IM B3/6/7/8, IM V6, IM V5 without protective cover		6			1LA9090 ... 207	Standard	0	–										
With flange			IM B5, IM V1 without protective cover		6			1LA9090 ... 207	With additional charge	1	–										
			IM V3		6			1LA9090 ... 166	With additional charge	1	–										
			IM V1 with protective cover ²⁾		6			1LA9183 ... 207	With additional charge	9	M1G										
			IM B35		6			1LA9090 ... 207	With additional charge	4	–										
With standard flange			IM B14, IM V19, IM V18 without protective cover		6			1LA9090 ... 166	With additional charge	6	–										
			IM B34		6			1LA9090 ... 166	With additional charge	2	–										
With special flange			IM B14, IM V19, IM V18 without protective cover		6			1LA9090 ... 166	With additional charge	7	–										
					6			1LA9090 ... 166	With additional charge	3	–										
Further types of construction		For additional charges, code numbers and descriptions, see supplements and special versions.																			
Special versions										Order code(s)											
Options		For additional charges, code numbers and descriptions, see supplements and special versions.														1LA9 ... -Z		...+...+...+...			

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ The "Second shaft extension" option, order code K16 is not possible.