

# SIMOTICS XP 1LA Explosion-Proof Motors

## Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors with Standard Efficiency IE1  
Aluminum series 1LA7, 1LA5 with order code for explosion protection

# IE1

### Selection and ordering data

P <sub>rated</sub> , 50 Hz kW	P <sub>rated</sub> , 60 Hz kW	Frame size FS	Operating values at rated output										Aluminum series 1LA7/1LA5 – IE1 version for Zone 2 or 21/22 in type of pro- tection Ex n or Ex tD	m <sub>IM B3</sub> J	Torque class			
			n <sub>rated</sub> , 50 Hz rpm	T <sub>rated</sub> , 50 Hz Nm	IE class	η <sub>rated</sub> , 50 Hz, 4/4 %	η <sub>rated</sub> , 50 Hz, 3/4 %	η <sub>rated</sub> , 50 Hz, 2/4 %	COS- φ <sub>rated</sub> , 50 Hz, 4/4	I <sub>rated</sub> , 50 Hz, 400 V A	T <sub>LR</sub> / I <sub>rated</sub>	I <sub>LR</sub> / I <sub>rated</sub>				T <sub>B</sub> / I <sub>rated</sub>	L <sub>pfA</sub> , 50 Hz dB(A)	L <sub>WA</sub> , 50 Hz dB(A)
0.18	0.21	63 M	2820	0.61	–	62.0	60.5	56.0	0.82	0.51	2.0	3.7	2.2	49	60	1LA7060-2AA ■■-Z	3.6	0.00018 16
0.25	0.29	63 M	2830	0.84	–	63.0	62.0	57.0	0.82	0.70	2.0	4.0	2.2	49	60	1LA7063-2AA ■■-Z	4.0	0.00022 16
0.37	0.43	71 M	2740	1.3	–	66.0	65.0	61.0	0.82	0.99	2.3	3.5	2.3	52	63	1LA7070-2AA ■■-Z	5.0	0.00029 16
0.55	0.63	71 M	2800	1.9	–	71.0	71.0	67.0	0.82	1.36	2.5	4.3	2.6	52	63	1LA7073-2AA ■■-Z	6.0	0.00041 16
0.75	0.86	80 M	2855	2.5	IE1	72.1	72.1	68.1	0.86	1.75	2.3	5.6	2.4	56	67	1LA7080-2AA ■■-Z	9.0	0.00079 16
1.1	1.27	80 M	2845	3.7	IE1	75.0	75.0	72.0	0.87	2.45	2.6	6.1	2.7	56	67	1LA7083-2AA ■■-Z	10.7	0.0010 16
1.5	1.75	90 S	2860	5.0	IE1	77.2	77.7	74.2	0.85	3.3	2.4	5.5	2.7	62	74	1LA7090-2AA ■■-Z	13	0.0014 16
2.2	2.55	90 L	2880	7.3	IE1	79.7	79.7	78.7	0.85	4.7	2.8	6.3	3.1	62	74	1LA7096-2AA ■■-Z	15.7	0.0018 16
3	3.45	100 L	2890	9.9	IE1	81.5	81.5	80.5	0.85	6.3	2.8	6.8	3.0	62	74	1LA7106-2AA ■■-Z	21.5	0.0035 16
4	4.55	112 M	2905	13	IE1	83.1	83.1	82.1	0.86	8.1	2.6	7.2	2.9	63	75	1LA7113-2AA ■■-Z	28.5	0.0059 16
5.5	6.3	132 S	2925	18	IE1	84.7	84.7	83.7	0.89	10.5	2.0	5.9	2.8	68	80	1LA7130-2AA ■■-Z	39	0.015 16
7.5	8.6	132 S	2930	24	IE1	86.0	86.0	85.0	0.89	14.1	2.3	6.9	3.0	68	80	1LA7131-2AA ■■-Z	48	0.019 16
11	12.6	160 M	2940	36	IE1	87.6	87.6	86.6	0.88	20.5	2.1	6.5	2.9	70	82	1LA7163-2AA ■■-Z	68	0.034 16
15	17.3	160 M	2940	49	IE1	88.7	88.7	87.7	0.90	27	2.2	6.6	3.0	70	82	1LA7164-2AA ■■-Z	77	0.043 16
18.5	21.3	160 L	2940	60	IE1	89.3	89.3	88.3	0.91	33	2.4	7.0	3.1	70	82	1LA7166-2AA ■■-Z	86	0.051 16
22	24.5	180 M	2940	71	IE1	89.9	89.9	88.9	0.88	40 <sup>2)</sup>	2.5	6.9	3.2	70	83	1LA5183-2AA ■■-Z	113	0.077 16
30	33.5	200 L	2945	97	IE1	90.7	90.7	89.7	0.89	54	2.4	7.2	2.8	71	84	1LA5206-2AA ■■-Z	159	0.14 16
37	41.5	200 L	2945	120	IE1	91.2	91.2	90.2	0.89	66 <sup>2)</sup>	2.4	7.7	2.8	71	84	1LA5207-2AA ■■-Z	179	0.16 16
45	51	225 M	2960	145	IE1	91.7	91.7	90.7	0.89	80 <sup>2)</sup>	2.8	7.7	3.4	71	84	1LA5223-2AA ■■-Z	209	0.20 16

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
- 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<sup>1)</sup>

0.18	0.21	63 M	2820	0.61	–	62.0	60.5	56.0	0.82	0.51	2.0	3.7	2.2	49	60	1LA7060-2AA ■■-Z	3.6	0.00018 16
0.25	0.29	63 M	2830	0.84	–	63.0	62.0	57.0	0.82	0.70	2.0	4.0	2.2	49	60	1LA7063-2AA ■■-Z	4.0	0.00022 16
0.37	0.43	71 M	2740	1.3	–	66.0	65.0	61.0	0.82	0.99	2.3	3.5	2.3	52	63	1LA7070-2AA ■■-Z	5.0	0.00029 16
0.55	0.63	71 M	2800	1.9	–	71.0	71.0	67.0	0.82	1.36	2.5	4.3	2.6	52	63	1LA7073-2AA ■■-Z	6.0	0.00041 16
0.75	0.86	80 M	2855	2.5	IE1	72.1	72.1	68.1	0.86	1.75	2.3	5.6	2.4	56	67	1LA7080-2AA ■■-Z	9.0	0.00079 16
1.1	1.27	80 M	2845	3.7	IE1	75.0	75.0	72.0	0.87	2.45	2.6	6.1	2.7	56	67	1LA7083-2AA ■■-Z	10.7	0.0010 16
1.5	1.75	90 S	2860	5.0	IE1	77.2	77.7	74.2	0.85	3.3	2.4	5.5	2.7	62	74	1LA7090-2AA ■■-Z	13	0.0014 16
2.2	2.55	90 L	2880	7.3	IE1	79.7	79.7	78.7	0.85	4.7	2.8	6.3	3.1	62	74	1LA7096-2AA ■■-Z	15.7	0.0018 16
3	3.45	100 L	2890	9.9	IE1	81.5	81.5	80.5	0.85	6.3	2.8	6.8	3.0	62	74	1LA7106-2AA ■■-Z	21.5	0.0035 16
4	4.55	112 M	2905	13	IE1	83.1	83.1	82.1	0.86	8.1	2.6	7.2	2.9	63	75	1LA7113-2AA ■■-Z	28.5	0.0059 16
5.5	6.3	132 S	2925	18	IE1	84.7	84.7	83.7	0.89	10.5	2.0	5.9	2.8	68	80	1LA7130-2AA ■■-Z	39	0.015 16
7.5	8.6	132 S	2930	24	IE1	86.0	86.0	85.0	0.89	14.1	2.3	6.9	3.0	68	80	1LA7131-2AA ■■-Z	48	0.019 16
11	12.6	160 M	2940	36	IE1	87.6	87.6	86.6	0.88	20.5	2.1	6.5	2.9	70	82	1LA7163-2AA ■■-Z	68	0.034 16
15	17.3	160 M	2940	49	IE1	88.7	88.7	87.7	0.90	27	2.2	6.6	3.0	70	82	1LA7164-2AA ■■-Z	77	0.043 16
18.5	21.3	160 L	2940	60	IE1	89.3	89.3	88.3	0.91	33	2.4	7.0	3.1	70	82	1LA7166-2AA ■■-Z	86	0.051 16
22	24.5	180 M	2940	71	IE1	89.9	89.9	88.9	0.88	40 <sup>2)</sup>	2.5	6.9	3.2	70	83	1LA5183-2AA ■■-Z	113	0.077 16
30	33.5	200 L	2945	97	IE1	90.7	90.7	89.7	0.89	54	2.4	7.2	2.8	71	84	1LA5206-2AA ■■-Z	159	0.14 16
37	41.5	200 L	2945	120	IE1	91.2	91.2	90.2	0.89	66 <sup>2)</sup>	2.4	7.7	2.8	71	84	1LA5207-2AA ■■-Z	179	0.16 16
45	51	225 M	2960	145	IE1	91.7	91.7	90.7	0.89	80 <sup>2)</sup>	2.8	7.7	3.4	71	84	1LA5223-2AA ■■-Z	209	0.20 16

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz <sup>1)</sup>	460 VY	2	1LA7060 ... 166	1LA5183 ... 223	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz <sup>1)</sup>	460 VΔ	2	1LA7060 ... 166	1LA5183 ... 223	Standard	6	–
50 Hz	500 VY			2	1LA7106 ... 166	1LA5183 ... 223	Without additional charge	3	–
	500 VΔ			2	1LA7060 ... 166	1LA5183 ... 223	Without additional charge	5	–
Further voltages <sup>1)</sup>		For add. charges, code numbers, order codes and descriptions, see suppl. 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 <sup>3)</sup>	2	1LA7060 ... 166	1LA5183 ... 223	Standard	0	–	
With flange	IM B5 <sup>3)</sup>	2	1LA7060 ... 166	1LA5183 ... 223	With additional charge	1	–	
	IM V3 <sup>3)</sup>	2	1LA7060 ... 166	–	With additional charge	1	–	
		2	–	1LA5183 ... 223	With additional charge	9	M1G	
	IM V1 with prot. cover <sup>3) 4) 5)</sup>	2	1LA7060 ... 166	1LA5183 ... 223	With additional charge	4	–	
	IM B35	2	1LA7060 ... 166	1LA5183 ... 223	With additional charge	6	–	
With standard flange	IM B14, IM V19 <sup>3)</sup>	2	1LA7060 ... 166	–	With additional charge	2	–	
	IM B34	2	1LA7060 ... 166	–	With additional charge	7	–	
With special flange	IM B14, IM V19 <sup>3)</sup>	2	1LA7060 ... 166	–	With additional charge	3	–	
Further types of constr.		For add. charges, code numbers, order codes and descriptions, see suppl. and special versions.					9	...

Design according to ATEX		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Zone 2	Mains-fed operation	2	1LA7060 ... 166	–	With add. charge	1LA ... - ... ■■-Z M72
	Converter-fed operation (FC)	2	1LA7060 ... 166	–	With add. charge	1LA ... - ... ■■-Z M73
Zone 21	Mains-fed operation	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M34
	Converter-fed operation (FC)	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M38
Zone 22	Mains-fed operation	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M35
	Converter-fed operation (FC)	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M39
Zone 2/22 (IP55)	Mains-fed operation	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M74
	Converter-fed operation (FC)	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M75

Special versions		Order code(s)
Options	For add. charges, order codes and descriptions, see suppl. and special versions.	1LA ... - ... ■■-Z ...+...+...+...

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" in supplements and special versions. Operating values at rated output for 60 Hz are available on request.

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

3) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

4) 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

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

# SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with Standard Efficiency IE1  
Aluminum series 1LA7, 1LA5 with order code for explosion protection

## Selection and ordering data (continued)

P <sub>rated</sub> 50 Hz kW	P <sub>rated</sub> 60 Hz kW	Frame size FS	Operating values at rated output										L <sub>pfA</sub> 50 Hz dB(A)	L <sub>WA</sub> 50 Hz dB(A)	Aluminum series 1LA7/1LA5 – IE1 version for Zone 2 or 21/22 in type of pro- tection Ex n or Ex tD	m <sub>IM</sub> B3 J kg	Torque class kgm <sup>2</sup> CL						
			n <sub>rated</sub> 50 Hz rpm	T <sub>rated</sub> 50 Hz Nm	IE class	η <sub>rated</sub> 50 Hz, 4/4 %	η <sub>rated</sub> 50 Hz, 3/4 %	η <sub>rated</sub> 50 Hz, 2/4 %	COS- φ <sub>rated</sub> 50 Hz, 4/4	I <sub>rated</sub> 50 Hz, 400 V A	T <sub>Lr</sub> / I <sub>rated</sub>	I <sub>Lr</sub> / I <sub>rated</sub>						T <sub>B</sub> / I <sub>rated</sub>					
0.12	0.14	63 M	1350	0.85	–	53.6	52.1	47.6	0.75	0.43	1.9	2.8	2.0	42	53	1LA7060-4AB ■■-Z	3.6	0.00029	13				
0.18	0.21	63 M	1350	1.3	–	58.3	56.8	52.3	0.77	0.58	1.9	3.0	1.9	42	53	1LA7063-4AB ■■-Z	4.0	0.00037	13				
0.25	0.29	71 M	1350	1.8	–	61.9	60.4	55.9	0.78	0.75	1.9	3.0	1.9	44	55	1LA7070-4AB ■■-Z	4.8	0.00052	13				
0.37	0.43	71 M	1370	2.6	–	65.8	64.8	60.8	0.78	1.04	1.9	3.3	2.1	44	55	1LA7073-4AB ■■-Z	6.3	0.00077	13				
0.55	0.63	80 M	1395	3.8	–	69.4	69.4	65.4	0.81	1.41	2.2	3.9	2.2	47	58	1LA7080-4AA ■■-Z	8.8	0.0014	16				
0.75	0.86	80 M	1395	5.1	IE1	72.1	72.1	68.1	0.80	1.88	2.3	4.2	2.3	47	58	1LA7083-4AA ■■-Z	10	0.0017	16				
1.1	1.27	90 S	1415	7.4	IE1	75.0	75.0	72.0	0.81	2.6	2.3	4.6	2.4	48	60	1LA7090-4AA ■■-Z	12.9	0.0024	16				
1.5	1.75	90 L	1420	10	IE1	77.2	77.7	74.2	0.81	3.45	2.4	5.3	2.6	48	60	1LA7096-4AA ■■-Z	15.5	0.0033	16				
2.2	2.55	100 L	1420	15	IE1	79.7	79.7	78.7	0.82	4.85	2.5	5.6	2.8	53	65	1LA7106-4AA ■■-Z	21	0.0047	16				
3	3.45	100 L	1420	20	IE1	81.5	81.5	80.5	0.82	6.5	2.7	5.6	3.0	53	65	1LA7107-4AA ■■-Z	24	0.0055	16				
4	4.55	112 M	1440	27	IE1	83.1	83.1	82.1	0.83	8.4	2.7	6.0	3.0	53	65	1LA7113-4AA ■■-Z	30.5	0.012	16				
5.5	6.3	132 S	1455	36	IE1	84.7	84.7	83.7	0.81	11.6	2.5	6.3	3.1	62	74	1LA7130-4AA ■■-Z	41	0.018	16				
7.5	8.6	132 M	1455	49	IE1	86.0	86.0	85.0	0.82	15.4	2.7	6.7	3.2	62	74	1LA7133-4AA ■■-Z	49	0.023	16				
11	12.6	160 M	1460	72	IE1	87.6	87.6	86.6	0.84	21.5	2.2	6.2	2.7	66	78	1LA7163-4AA ■■-Z	73	0.043	16				
15	17.3	160 L	1460	98	IE1	88.7	88.7	87.7	0.84	29	2.6	6.5	3.8	66	78	1LA7166-4AA ■■-Z	85	0.055	16				
18.5	21.3	180 M	1455	121	IE1	89.3	89.3	88.3	0.83	36 <sup>2)</sup>	2.3	7.5	3.0	63	76	1LA5183-4AA ■■-Z	113	0.13	16				
22	25.3	180 L	1455	144	IE1	89.9	89.9	88.9	0.84	42 <sup>2)</sup>	2.3	7.5	3.0	63	76	1LA5186-4AA ■■-Z	123	0.15	16				
30	34.5	200 L	1465	196	IE1	90.7	90.7	89.7	0.86	56	2.6	7.0	3.2	65	78	1LA5207-4AA ■■-Z	157	0.24	16				
37	42.5	225 S	1470	240	IE1	91.2	91.2	90.2	0.87	67 <sup>2)</sup>	2.8	7.0	3.2	65	78	1LA5220-4AA ■■-Z	206	0.32	16				
45	52	225 M	1470	292	IE1	91.7	91.7	90.7	0.87	81 <sup>2)</sup>	2.8	7.7	3.3	65	78	1LA5223-4AA ■■-Z	232	0.36	16				
<b>Voltagess</b>					No. of poles	Motor type 1LA7	Motor type 1LA5	Version								Order code(s)							
50 Hz	230 VΔ/400 VY	60 Hz <sup>1)</sup>	460 VY	4	1LA7060 ... 166	1LA5183 ... 223	Standard								1		–						
50 Hz	400 VΔ/690 VY	60 Hz <sup>1)</sup>	460 VΔ	4	1LA7060 ... 166	1LA5183 ... 223	Standard								6		–						
50 Hz	500 VY			4	1LA7106 ... 166	1LA5183 ... 223	Without additional charge								3		–						
	500 VΔ			4	1LA7060 ... 166	1LA5183 ... 223	Without additional charge								5		–						
Further voltages <sup>1)</sup>			For add. charges, code numbers, order codes and descriptions, see suppl. and special versions.															9		...			
<b>Types of construction</b>					No. of poles	Motor type 1LA7	Motor type 1LA5	Version								Order code(s)							
Without flange			IM B3/6/7/8, IM V6 <sup>3)</sup>		4	1LA7060 ... 166	1LA5183 ... 223	Standard								0		–					
With flange			IM B5 <sup>3)</sup>		4	1LA7060 ... 166	1LA5183 ... 223	With additional charge								1		–					
			IM V3 <sup>3)</sup>		4	1LA7060 ... 166	–	With additional charge								1		–					
					4	–	1LA5183 ... 223	With additional charge								9		M1G					
			IM V1 with prot. cover <sup>3) 4) 5)</sup>		4	1LA7060 ... 166	1LA5183 ... 223	With additional charge								4		–					
With standard flange			IM B35		4	1LA7060 ... 166	1LA5183 ... 223	With additional charge								6		–					
			IM B14, IM V19 <sup>3)</sup>		4	1LA7060 ... 166	–	With additional charge								2		–					
			IM B34		4	1LA7060 ... 166	–	With additional charge								7		–					
With special flange			IM B14, IM V19 <sup>3)</sup>		4	1LA7060 ... 166	–	With additional charge								3		–					
Further types of constr.			For add. charges, code numbers, order codes and descriptions, see suppl. and special versions.															9		...			
<b>Design according to ATEX</b>					No. of poles	Motor type 1LA7	Motor type 1LA5	Version								Order code(s)							
<b>Zone 2</b>			Mains-fed operation		4	1LA7060 ... 166	–	With add. charge		1LA		...-... ■■-Z		M72									
			Converter-fed operation (FC)		4	1LA7060 ... 166	–	With add. charge		1LA		...-... ■■-Z		M73									
<b>Zone 21</b>			Mains-fed operation		4	1LA7060 ... 166	1LA5183 ... 223	With add. charge		1LA		...-... ■■-Z		M34									
			Converter-fed operation (FC)		4	1LA7060 ... 166	1LA5183 ... 223	With add. charge		1LA		...-... ■■-Z		M38									
<b>Zone 22</b>			Mains-fed operation		4	1LA7060 ... 166	1LA5183 ... 223	With add. charge		1LA		...-... ■■-Z		M35									
			Converter-fed operation (FC)		4	1LA7060 ... 166	1LA5183 ... 223	With add. charge		1LA		...-... ■■-Z		M39									
<b>Zone 2/22 (IP55)</b>			Mains-fed operation		4	1LA7060 ... 166	1LA5183 ... 223	With add. charge		1LA		...-... ■■-Z		M74									
			Converter-fed operation (FC)		4	1LA7060 ... 166	1LA5183 ... 223	With add. charge		1LA		...-... ■■-Z		M75									
<b>Special versions</b>															Order code(s)								
Options			For add. charges, order codes and descriptions, see suppl. and special versions.															1LA		...-... ■■-Z		...+...+...+...	

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" in supplements and special versions. Operating values at rated output for 60 Hz are available on request.

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

3) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

4) 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

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

# SIMOTICS XP 1LA Explosion-Proof Motors

## Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors with Standard Efficiency IE1  
Aluminum series 1LA7, 1LA5 with order code for explosion protection

# IE1

### Selection and ordering data (continued)

P <sub>rated</sub> 50 Hz kW	P <sub>rated</sub> 60 Hz kW	Frame size FS	Operating values at rated output										Aluminum series 1LA7/1LA5 – IE1 version for Zone 2 or 21/22 in type of pro- tection Ex n or Ex tD	m <sub>IM</sub> B3 J		Torque class
			n <sub>rated</sub> 50 Hz rpm	T <sub>rated</sub> 50 Hz Nm	IE class	η <sub>rated</sub> 50 Hz, 4/4 %	η <sub>rated</sub> 50 Hz, 3/4 %	η <sub>rated</sub> 50 Hz, 2/4 %	COS- φ <sub>rated</sub> 50 Hz, 4/4	I <sub>rated</sub> 50 Hz, 400 V A	T <sub>LR</sub> / I <sub>rated</sub>	I <sub>LR</sub> / I <sub>rated</sub>		T <sub>B</sub> / I <sub>rated</sub>	L <sub>pfA</sub> 50 Hz dB(A)	

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
- 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 <sup>1)</sup>

0.09	0.10	63 M	850	1.0	–	50.2	48.7	44.2	0.66	0.39	1.8	2.0	1.9	39	50	1LA7063-6AB ■■-Z	4.0	0.00037	13
0.18	0.21	71 M	850	2.0	–	57.3	55.8	51.3	0.68	0.67	2.1	2.3	1.9	39	50	1LA7070-6AA ■■-Z	4.8	0.00055	16
0.25	0.29	71 M	860	2.8	–	61.9	60.4	55.9	0.76	0.77	2.2	2.7	2.0	39	50	1LA7073-6AA ■■-Z	5.8	0.00080	16
0.37	0.43	80 M	920	3.8	–	64.1	63.1	59.1	0.72	1.16	1.9	3.1	2.1	40	51	1LA7080-6AA ■■-Z	8.6	0.0014	16
0.55	0.63	80 M	910	5.8	–	67.5	67.0	63.5	0.74	1.59	2.1	3.4	2.2	40	51	1LA7083-6AA ■■-Z	9.8	0.0017	16
0.75	0.86	90 S	915	7.8	IE1	70.0	70.0	66.0	0.76	2.05	2.2	3.7	2.2	43	55	1LA7090-6AA ■■-Z	12.6	0.0024	16
1.1	1.27	90 L	915	11	IE1	72.9	72.9	69.9	0.77	2.85	2.3	3.8	2.3	43	55	1LA7096-6AA ■■-Z	15.7	0.0033	16
1.5	1.75	100 L	925	15	IE1	75.2	75.2	72.2	0.75	3.85	2.3	4.0	2.3	47	59	1LA7106-6AA ■■-Z	21	0.0047	16
2.2	2.55	112 M	940	22	IE1	77.7	78.2	75.2	0.78	5.2	2.2	4.6	2.5	52	64	1LA7113-6AA ■■-Z	26	0.0091	16
3	3.45	132 S	950	30	IE1	79.7	79.7	78.7	0.76	7.1	1.9	4.2	2.2	63	75	1LA7130-6AA ■■-Z	38	0.015	16
4	4.55	132 M	950	40	IE1	81.4	81.4	80.4	0.76	9.3	2.1	4.5	2.4	63	75	1LA7133-6AA ■■-Z	44	0.019	16
5.5	6.3	132 M	950	55	IE1	83.1	83.1	82.1	0.76	12.6	2.3	5.0	2.6	63	75	1LA7134-6AA ■■-Z	52	0.025	16
7.5	8.6	160 M	960	75	IE1	84.7	84.7	83.7	0.74	17.3	2.1	4.6	2.5	66	78	1LA7163-6AA ■■-Z	74	0.044	16
11	12.6	160 L	960	109	IE1	86.4	86.4	85.4	0.74	25	2.3	4.8	2.6	66	78	1LA7166-6AA ■■-Z	95	0.063	16
15	18	180 L	970	148	IE1	87.7	87.7	86.7	0.77	32	2.0	5.2	2.4	66	78	1LA5186-6AA ■■-Z	126	0.15	16
22	22	200 L	975	181	IE1	88.6	88.6	87.6	0.77	39	2.7	5.5	2.8	66	78	1LA5206-6AA ■■-Z	161	0.24	16
22	26.5	200 L	975	215	IE1	89.2	89.2	88.2	0.77	46	2.8	5.5	2.9	66	78	1LA5207-6AA ■■-Z	183	0.28	16
30	36	225 M	978	293	IE1	90.2	90.2	89.2	0.77	62 <sup>2)</sup>	2.8	5.7	2.9	66	78	1LA5223-6AA ■■-Z	214	0.36	16

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz <sup>1)</sup>	460 VY	6	1LA7063 ... 166	1LA5186 ... 223	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz <sup>1)</sup>	460 VΔ	6	1LA7063 ... 166	1LA5186 ... 223	Standard	6	–
50 Hz	500 VY			6	1LA7106 ... 166	1LA5186 ... 223	Without additional charge	3	–
	500 VΔ			6	1LA7063 ... 166	1LA5186 ... 223	Without additional charge	5	–
Further voltages <sup>1)</sup>		For additional charges, code numbers, order codes 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 <sup>3)</sup>	6	1LA7063 ... 166	1LA5186 ... 223	Standard	0	–
With flange	IM B5 <sup>3)</sup>	6	1LA7063 ... 166	1LA5186 ... 223	With additional charge	1	–
	IM V3 <sup>3)</sup>	6	1LA7063 ... 166	–	With additional charge	1	–
	–	6	–	1LA5186 ... 223	With additional charge	9	M1G
With standard flange	IM V1 with prot. cover <sup>3) 4) 5)</sup>	6	1LA7063 ... 166	1LA5186 ... 223	With additional charge	4	–
	IM B35	6	1LA7063 ... 166	1LA5186 ... 223	With additional charge	6	–
With special flange	IM B14, IM V19 <sup>3)</sup>	6	1LA7063 ... 166	–	With additional charge	2	–
	IM B34	6	1LA7063 ... 166	–	With additional charge	7	–
Further types of constr.	For add. charges, code numbers, order codes and descriptions, see suppl. and special versions.					9	...

Design according to ATEX		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Zone 2	Mains-fed operation	6	1LA7063 ... 166	–	With add. charge	1LA ... - ... ■■-Z M72
	Converter-fed operation (FC)	6	1LA7063 ... 166	–	With add. charge	1LA ... - ... ■■-Z M73
Zone 21	Mains-fed operation	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M34
	Converter-fed operation (FC)	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M38
Zone 22	Mains-fed operation	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M35
	Converter-fed operation (FC)	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M39
Zone 2/22 (IP55)	Mains-fed operation	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M74
	Converter-fed operation (FC)	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... ■■-Z M75

Special versions		Order code(s)
Options	For add. charges, order codes and descriptions, see suppl. and special versions.	1LA ... - ... ■■-Z ...+...+...+...

<sup>1)</sup> Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" in supplements and special versions. Operating values at rated output for 60 Hz are available on request.

<sup>2)</sup> For connection to 230 V, parallel feeders are necessary.

<sup>3)</sup> The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

<sup>4)</sup> 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

<sup>5)</sup> The "Second shaft extension" option, order code K16 is not possible.

# SIMOTICS XP 1LA Explosion-Proof Motors

## Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with Standard Efficiency IE1  
Aluminum series 1LA7, 1LA5 with order code for explosion protection

### Selection and ordering data (continued)

P <sub>rated</sub> , 50 Hz kW	P <sub>rated</sub> , 60 Hz kW	Frame size FS	Operating values at rated output											Aluminum series 1LA7/1LA5 – IE1 version for Zone 2 or 21/22 in type of pro- tection Ex n or Ex tD	m <sub>IM B3</sub> J		Torque class CL		
			n <sub>rated</sub> , 50 Hz rpm	T <sub>rated</sub> , 50 Hz Nm	IE class	η <sub>rated</sub> , 50 Hz, 4/4	η <sub>rated</sub> , 50 Hz, 3/4	η <sub>rated</sub> , 50 Hz, 2/4	COS- φ <sub>rated</sub> , 50 Hz, 4/4	I <sub>r</sub> <sub>rated</sub> , 50 Hz, 400 V	I <sub>L</sub> <sub>rated</sub> /I <sub>r</sub> <sub>rated</sub>	I <sub>L</sub> <sub>rated</sub> /I <sub>r</sub> <sub>rated</sub>	T <sub>B</sub> /I <sub>r</sub> <sub>rated</sub>		L <sub>pfA</sub> , 50 Hz dB(A)	L <sub>WA</sub> , 50 Hz dB(A)		Order No. with order code for Ex prot.	kg
0.09	0.104	71 M	630	1.4	–	51.0	49.5	45.0	0.68	0.38	1.9	2.2	1.7	36	47	1LA7070-8AB ■■-Z	5.8	0.00080	13
0.12	0.14	71 M	645	1.8	–	51.0	49.5	45.0	0.64	0.53	2.2	2.2	2.0	36	47	1LA7073-8AB ■■-Z	5.8	0.00080	13
0.18	0.21	80 M	675	2.5	–	49.0	47.5	43.0	0.68	0.78	1.7	2.3	1.9	41	52	1LA7080-8AB ■■-Z	8.8	0.0014	13
0.25	0.29	80 M	685	3.5	–	53.0	51.5	47.0	0.64	1.06	2.0	2.6	2.2	41	52	1LA7083-8AB ■■-Z	9.9	0.0017	13
0.37	0.43	90 S	675	5.2	–	61.0	59.5	55.0	0.75	1.17	1.6	2.9	1.8	41	53	1LA7090-8AB ■■-Z	11	0.0023	13
0.55	0.63	90 L	675	7.8	–	64.0	63.0	59.0	0.76	1.63	1.7	3.0	1.9	41	53	1LA7096-8AB ■■-Z	12.6	0.0031	13
0.75	0.86	100 L	680	11	–	64.0	63.0	59.0	0.76	2.25	1.6	3.0	1.9	45	57	1LA7106-8AB ■■-Z	19	0.0051	13
1.1	1.27	100 L	680	15	–	70.0	70.0	66.0	0.76	3.0	1.8	3.3	2.1	45	57	1LA7107-8AB ■■-Z	21.5	0.0063	13
1.5	1.75	112 M	705	20	–	72.1	72.1	68.1	0.76	3.95	1.8	3.7	2.1	49	61	1LA7113-8AB ■■-Z	24	0.013	13
2.2	2.55	132 S	700	30	–	73.2	73.2	70.2	0.74	5.9	1.9	3.9	2.3	53	65	1LA7130-8AB ■■-Z	38	0.014	13
3	3.45	132 M	700	41	–	75.2	75.2	72.2	0.74	7.8	2.1	4.1	2.4	53	65	1LA7133-8AB ■■-Z	44	0.019	13
4	4.55	160 M	715	53	–	78.3	78.8	75.8	0.72	10.2	2.2	4.5	2.6	63	75	1LA7163-8AB ■■-Z	64	0.036	13
5.5	6.3	160 M	710	74	–	81.9	81.9	80.9	0.73	13.3	2.3	4.7	2.7	63	75	1LA7164-8AB ■■-Z	74	0.046	13
7.5	8.6	160 L	715	100	–	83.9	83.9	82.9	0.72	17.9	2.7	5.3	3.0	63	75	1LA7166-8AB ■■-Z	94	0.064	13
11	13.2	180 L	725	145	–	85.5	85.5	84.5	0.75	25	2.0	5.0	2.2	60	73	1LA5186-8AB ■■-Z	128	0.21	13
15	18	200 L	725	198	–	86.1	86.1	85.1	0.78	32	2.1	5.0	2.2	58	71	1LA5207-8AB ■■-Z	176	0.37	13
18.5	22	225 S	725	244	–	87.8	87.8	86.8	0.79	38.5	2.1	4.5	2.2	58	71	1LA5220-8AB ■■-Z	184	0.37	13
22	26.5	225 M	725	290	–	89.3	89.3	88.3	0.79	45	2.2	4.8	2.3	58	71	1LA5223-8AB ■■-Z	214	0.45	13

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz <sup>1)</sup>	460 VY	8	1LA7070 ... 166	1LA5186 ... 223	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz <sup>1)</sup>	460 VΔ	8	1LA7070 ... 166	1LA5186 ... 223	Standard	6	–
50 Hz	500 VY			8	1LA7106 ... 166	1LA5186 ... 223	Without additional charge	3	–
	500 VΔ			8	1LA7070 ... 166	1LA5186 ... 223	Without additional charge	5	–
Further voltages <sup>1)</sup>		For add. charges, code numbers, order codes and descriptions, see suppl. 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 <sup>2)</sup>	8	1LA7070 ... 166	1LA5186 ... 223	Standard	0	–	
With flange	IM B5 <sup>2)</sup>	8	1LA7070 ... 166	1LA5186 ... 223	With additional charge	1	–	
	IM V3 <sup>2)</sup>	8	1LA7070 ... 166	–	With additional charge	1	–	
		8	–	1LA5186 ... 223	With additional charge	9	M1G	
	IM V1 with prot. cover <sup>2)3)4)</sup>	8	1LA7070 ... 166	1LA5186 ... 223	With additional charge	4	–	
	IM B35	8	1LA7070 ... 166	1LA5186 ... 223	With additional charge	6	–	
With standard flange	IM B14, IM V19 <sup>2)</sup>	8	1LA7070 ... 166	–	With additional charge	2	–	
	IM B34	8	1LA7070 ... 166	–	With additional charge	7	–	
With special flange	IM B14, IM V19 <sup>2)</sup>	8	1LA7070 ... 166	–	With additional charge	3	–	
Further types of constr.		For add. charges, code numbers, order codes and descriptions, see suppl. and special versions.					9	...

Design according to ATEX		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Zone 2	Mains-fed operation	8	1LA7070 ... 166	–	With add. charge	1LA ..... ■■-Z M72
	Converter-fed operation (FC)	8	1LA7070 ... 166	–	With add. charge	1LA ..... ■■-Z M73
Zone 21	Mains-fed operation	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ..... ■■-Z M34
	Converter-fed operation (FC)	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ..... ■■-Z M38
Zone 22	Mains-fed operation	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ..... ■■-Z M35
	Converter-fed operation (FC)	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ..... ■■-Z M39
Zone 2/22 (IP55)	Mains-fed operation	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ..... ■■-Z M74
	Converter-fed operation (FC)	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ..... ■■-Z M75

Special versions		Order code(s)
Options	For add. charges, order codes and descriptions, see suppl. and special versions.	1LA ..... ■■-Z ...+...+...+...

<sup>1)</sup> Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" in supplements and special versions. Operating values at rated output for 60 Hz are available on request.

<sup>2)</sup> The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

<sup>3)</sup> 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

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