

SIMOTICS SD 1LP Standard Motors

Motors with Standard Efficiency IE1

Naturally cooled motors without external fan
Cast-iron series 1LP4

IE1



Selection and ordering data

Operating values at rated output														Cast-iron series		m _{IM B3} J		Torque class		
P _{rated} , 50 Hz	P _{rated} , 60 Hz	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 _p fA, 50 Hz	L _{WA} , 50 Hz	1LP4 – IE1 version in accordance with IEC 60034-30	Order No.	kg	kgm ²	CL
kW	kW	FS	rpm	Nm	%	%	%	%	A											
<ul style="list-style-type: none"> Cooling: Naturally cooled without external fan (IC 410) Efficiency: Standard Efficiency IE1 or High Efficiency IE2 or Premium Efficiency IE3, service factor (SF) 1.1 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⁾																				
7.3	–	180 M	2945	24	IE2	88.1	87.6	85.5	0.89	13.4	2.4	6.5	3.4	–	–	1LP4183-2FA	■ ■ ■	140	0.068	16
10	–	200 L	2950	32	IE2	89.1	88.6	86.6	0.89	18.2	2.3	6.4	2.9	–	–	1LP4206-2FA	■ ■ ■	195	0.13	16
12.5	–	200 L	2955	40	IE2	89.8	89.1	86.8	0.90	22.5	2.5	7.1	3.2	–	–	1LP4207-2FA	■ ■ ■	215	0.15	16
15	–	225 M	2960	48	IE2	90.3	90.1	89.0	0.90	26.5	2.3	6.7	3.0	–	–	1LP4223-2FA	■ ■ ■	275	0.22	16
18.5	–	250 M	2970	59	IE2	90.9	90.5	88.7	0.90	32.5	2.0	6.6	3.0	–	–	1LP4253-2FB	■ ■ ■	360	0.40	13
25	–	280 S	2975	80	IE2	91.6	91.1	89.6	0.90	44	2.5	7.6	3.0	–	–	1LP4280-2FB	■ ■ ■	480	0.72	13
30	–	280 M	2975	96	IE2	92.0	91.8	90.7	0.90	52	2.6	7.2	2.9	–	–	1LP4283-2FB	■ ■ ■	520	0.83	13
37	–	315 S	2984	118	IE2	92.5	91.6	89.5	0.90	64	2.3	7.3	3.0	–	–	1LP4310-2FB	■ ■ ■	700	1.2	13
44	–	315 M	2982	141	IE2	92.8	92.2	90.6	0.91	75	2.3	6.8	2.8	–	–	1LP4313-2FB	■ ■ ■	755	1.4	13
53	–	315 L	2982	170	IE2	93.2	92.8	91.3	0.91	90	2.3	6.9	2.9	–	–	1LP4316-2FB	■ ■ ■	880	1.6	13
67	–	315 L	2984	214	IE2	93.6	93.3	92.1	0.92	112	2.1	6.5	2.8	–	–	1LP4317-2FB	■ ■ ■	995	2.1	13
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																				
6.2	–	180 M	1465	40	IE2	88.1	88.5	87.7	0.87	11.7	2.1	6.6	3.0	–	–	1LP4183-4FA	■ ■ ■	135	0.099	16
7.3	–	180 L	1470	47	IE2	88.6	89.0	88.1	0.87	13.7	2.1	6.9	3.1	–	–	1LP4186-4FA	■ ■ ■	150	0.12	16
10	–	200 L	1465	65	IE2	89.5	89.8	89.1	0.88	18.3	2.3	6.6	3.2	–	–	1LP4207-4FA	■ ■ ■	195	0.19	16
12.5	–	225 S	1475	81	IE2	90.1	90.5	89.8	0.86	23	2.3	6.6	3.0	–	–	1LP4220-4FA	■ ■ ■	255	0.37	16
15	–	225 M	1475	97	IE2	90.6	90.9	90.3	0.87	27.5	2.4	7.1	3.1	–	–	1LP4223-4FA	■ ■ ■	290	0.45	16
18.5	–	250 M	1480	119	IE2	91.2	91.4	90.7	0.87	33.5	2.2	6.0	2.6	–	–	1LP4253-4FA	■ ■ ■	375	0.69	16
25	–	280 S	1485	161	IE2	91.9	91.7	90.6	0.87	45	2.4	7.0	2.9	–	–	1LP4280-4FA	■ ■ ■	515	1.2	16
30	–	280 M	1485	193	IE2	92.3	92.2	91.1	0.88	53	2.4	7.2	2.9	–	–	1LP4283-4FA	■ ■ ■	560	1.4	16
37	–	315 S	1488	237	IE2	92.7	92.6	91.6	0.87	66	2.2	6.2	2.6	–	–	1LP4310-4FA	■ ■ ■	710	1.9	16
44	–	315 M	1488	282	IE2	93.1	93.0	92.1	0.87	78	2.4	6.7	2.7	–	–	1LP4313-4FA	■ ■ ■	790	2.3	16
53	–	315 L	1488	340	IE2	93.4	93.4	92.8	0.87	94	2.5	6.7	2.7	–	–	1LP4316-4FA	■ ■ ■	935	2.9	16
67	–	315 L	1488	430	IE2	93.8	94.0	93.6	0.88	117	2.3	6.2	2.6	–	–	1LP4317-4FA	■ ■ ■	1040	3.5	16
Voltagess																				
50 Hz 230 VΔ/400 VY			60 Hz ¹⁾ 460 VY			2, 4		1LP4183 ... 313		Standard		1		–		Order code(s)				
50 Hz 400 VΔ/690 VY			60 Hz ¹⁾ 460 VΔ			2, 4		1LP4183 ... 317		Standard		6		–		Order code(s)				
50 Hz 500 VY						2, 4		1LP4183 ... 313		Without add. charge		3		–		Order code(s)				
50 Hz 500 VΔ						2, 4		1LP4183 ... 317		Without add. charge		5		–		Order code(s)				
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see supplements and special versions.																	
Types of construction																				
Without flange			IM B3/6/7/8 ²⁾			2, 4		1LP4183 ... 317		Standard		0		–		Order code(s)				
			IM V6 ²⁾			2, 4		1LP4183 ... 313		Standard		0		–		Order code(s)				
						2		1LP4316 ... 317		With add. charge		9		M1E		Order code(s)				
						4		1LP4316 ... 317		Without add. charge		9		M1E		Order code(s)				
			IM V5 without protective cover ²⁾			2, 4		1LP4183 ... 313		Standard		0		–		Order code(s)				
						2		1LP4316 ... 317		With add. charge		9		M1D		Order code(s)				
						4		1LP4316 ... 317		Without add. charge		9		M1D		Order code(s)				
With flange			IM B5 ³⁾			2, 4		1LP4183 ... 313		With add. charge		1		–		Order code(s)				
			IM V1 without protective cover ^{3) 4)}			2, 4		1LP4183 ... 313		With add. charge		1		–		Order code(s)				
						2, 4		1LP4316 ... 317		With add. charge		8		–		Order code(s)				
			IM V3 ³⁾			2, 4		1LP4183 ... 313		With add. charge		9		M1G		Order code(s)				
			IM B35			2, 4		1LP4183 ... 317		With add. charge		6		–		Order code(s)				
Further types of construction			For additional charges, code numbers and descriptions, see supplements and special versions.																	
Special versions																				
Options			For additional charges, code numbers and descriptions, see supplements and special versions.													1LP4 ... -Z		...+...+...+...		

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

²⁾ If 1LP4 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⁾ 1LP4220 to 1LP4317 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⁾ 2-pole motors 1LP4316-... and 1LP4317-... (motor series 1LP4 frame size 315 L) in 60 Hz version available on request.



IE1

SIMOTICS SD 1LP Standard Motors

Motors with Standard Efficiency IE1

Naturally cooled motors without external fan
Cast-iron series 1LP4

Selection and ordering data (continued)

Operating values at rated output															Cast-iron 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	cosφ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / I _{rated}	I _{LR} / I _{rated}	T _B / I _{rated}	L _{pA} , 50 Hz	L _{WA} , 50 Hz	1LP4 – IE1 version in accordance with IEC 60034-30 Order No.	kg	kgm ²	CL
kW	kW	FS	rpm	Nm	%	%	%		A										
<ul style="list-style-type: none"> Cooling: Naturally cooled without external fan (IC 410) Efficiency: Standard Efficiency IE1 or High Efficiency IE2 or Premium Efficiency IE3, service factor (SF) 1.1 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⁾																			
5	–	180 L	970	49	IE3	87.6	88.7	88.7	0.83	9.9	2.1	5.3	2.4	–	–	1LP4186-6FA	145	0.18	16
6.2	–	200 L	975	61	IE3	88.4	89.0	88.5	0.83	12.2	2.2	5.7	2.4	–	–	1LP4206-6FA	185	0.24	16
7.3	–	200 L	975	71	IE3	89.0	89.7	89.2	0.82	14.4	2.3	5.8	2.4	–	–	1LP4207-6FA	195	0.29	16
10	–	225 M	980	97	IE3	90.0	90.7	90.5	0.84	19.1	2.3	5.5	2.4	–	–	1LP4223-6FA	270	0.49	16
12.5	–	250 M	982	122	IE3	90.7	91.3	91.0	0.84	23.5	2.3	5.8	2.2	–	–	1LP4253-6FA	355	0.76	16
15	–	280 M	986	145	IE3	91.2	91.7	91.3	0.86	27.5	2.1	6.0	2.3	–	–	1LP4280-6FA	455	1.1	16
18.5	–	280 M	986	179	IE3	91.7	92.4	92.5	0.86	34	2.1	6.0	2.4	–	–	1LP4283-6FA	490	1.4	16
25	–	315 S	990	241	IE3	92.5	92.6	91.9	0.87	45.5	2.2	6.6	2.7	–	–	1LP4310-6FA	665	2.1	16
30	–	315 M	988	290	IE3	92.9	93.1	92.6	0.86	54	2.3	6.8	2.8	–	–	1LP4313-6FA	730	2.5	16
37	–	315 L	988	358	IE3	93.3	93.6	93.2	0.87	66	2.2	6.6	2.7	–	–	1LP4316-6FA	870	3.2	16
44	–	315 L	990	424	IE3	93.7	93.9	93.5	0.87	78	2.7	7.2	2.9	–	–	1LP4317-6FA	960	4.0	16
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
3.7	–	180 L	725	49	–	86.5	87.3	86.9	0.76	8.1	1.5	4.4	2.0	–	–	1LP4186-8FB	145	0.17	13
5	–	200 L	730	65	–	86.5	87.5	87.1	0.78	10.7	2.0	5.1	2.5	–	–	1LP4207-8FB	195	0.29	13
6.2	–	225 S	735	81	–	88.0	89.4	89.8	0.80	12.7	2.1	5.6	2.6	–	–	1LP4220-8FB	260	0.48	13
7.3	–	225 M	735	95	–	88.5	89.2	88.7	0.81	17.7	2.1	5.7	2.7	–	–	1LP4223-8FB	280	0.55	13
10	–	250 M	735	130	–	90.0	90.7	90.4	0.82	19.6	2.0	5.4	2.5	–	–	1LP4253-8FB	370	0.84	13
12.5	–	280 S	735	162	–	90.5	91.2	91.0	0.82	24.5	1.9	4.9	2.1	–	–	1LP4280-8FB	455	1.1	13
15	–	280 M	735	195	–	91.0	91.7	91.5	0.81	29.5	1.9	5.0	2.0	–	–	1LP4283-8FB	495	1.4	13
18.5	–	315 S	740	239	–	91.5	91.9	91.4	0.83	35	2.0	5.8	2.5	–	–	1LP4310-8FB	660	2.1	13
25	–	315 M	738	323	–	92.0	92.6	92.5	0.84	46.5	2.0	5.7	2.5	–	–	1LP4313-8FB	725	2.5	13
30	–	315 L	740	387	–	92.0	92.6	92.4	0.84	56	2.0	5.8	2.6	–	–	1LP4316-8FB	845	3.1	13
37	–	315 L	740	477	–	93.0	93.5	93.3	0.84	68	2.2	6.0	2.7	–	–	1LP4317-8FB	1000	3.9	13
Voltagess																			
50 Hz			230 VΔ/400 VY		60 Hz ¹⁾		460 VY		No. of poles		Motor type		Version		Order code(s)				
50 Hz			400 VΔ/690 VY		60 Hz ¹⁾		460 VΔ		6, 8		1LP4186 ... 313		Standard		1				
50 Hz			500 VY						6, 8		1LP4186 ... 313		Without add. charge		3				
50 Hz			500 VΔ						6, 8		1LP4186 ... 317		Without add. charge		5				
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see supplements and special versions.																
Types of construction																			
Without flange			IM B3/6/7/8 ²⁾						No. of poles		Motor type		Version		Order code(s)				
			IM V6 ²⁾						6, 8		1LP4186 ... 317		Standard		0				
									6, 8		1LP4186 ... 313		Standard		0				
									6, 8		1LP4316 ... 317		Without add. charge		9				
			IM V5 without protective cover ²⁾						6, 8		1LP4186 ... 313		Standard		0				
									6, 8		1LP4316 ... 317		Without add. charge		9				
With flange			IM B5 ³⁾						6, 8		1LP4186 ... 317		With add. charge		1				
			IM V1 without protective cover ³⁾						6, 8		1LP4186 ... 313		With add. charge		1				
									6, 8		1LP4316 ... 317		With add. charge		8				
			IM V3 ³⁾						6, 8		1LP4186 ... 313		With add. charge		9				
			IM B35						6, 8		1LP4186 ... 317		With add. charge		6				
Further types of construction			For additional charges, code numbers and descriptions, see supplements and special versions.																
Special versions																			
Options															1LP4 ... -Z		Order code(s)		
For additional charges, code numbers and descriptions, see supplements and special versions.																	...+...+...+...		

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

2) If 1LP4 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) 1LP4220 to 1LP4317 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.