

SIMOTICS SD 1LE1 Standard Motors

Motors with High Efficiency IE2

Self-ventilated motors

Cast-iron series 1LE1501/1LE1601 with increased output

IE2

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 ¹⁾	Frame size	η_{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} , 50 Hz	I_{LR}/I_{rated} , 50 Hz	T_B/I_{rated} , 50 Hz	L_{pIA} , 50 Hz	L_{WA} , 50 Hz	1LE1501 – Basic Line	1LE1601 – Performance Line	IE2 version in accordance with IEC 60034-30 with increased output Article No.							
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)	▲ New			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⁾																									
4	4.55	100 L	2905	13	IE2	85.8	87.2	87.0	0.86	7.8	2.5	7.6	3.5	67	79		1LE1 ■ 01-1AA6 ■■■■■■		45	0.0054	16				
5.5	6.3	112 M	2950	18	IE2	87.0	87.5	87.2	0.89	10.3	2.2	7.7	3.3	69	81		1LE1 ■ 01-1BA6 ■■■■■■		53	0.012	16				
11	12.6	132 M	2950	36	IE2	89.4	90.2	90.3	0.89	20	2.3	7.9	3.2	68	80		1LE1 ■ 01-1CA6 ■■■■■■		80	0.031	16				
22	25.3	160 L	2955	71	IE2	91.3	91.7	91.3	0.89	39	3.1	8.4	3.7	70	82		1LE1 ■ 01-1DA6 ■■■■■■		126	0.068	16				
30	33.5	180 L	2940	97	IE2	92.0	92.5	92.2	0.89	53	2.3	7.8	3.4	76	83	▲	1LE1 ■ 01-1EA6 ■■■■■■		180	0.09	16				
45	51	200 L	2950	146	IE2	92.9	93.4	93.1	0.87	81	2.5	7.1	3.2	77	84	▲	1LE1 ■ 01-2AA6 ■■■■■■		245	0.18	16				
55	62	225 M	2960	177	IE2	93.2	93.6	93.2	0.86	99	2.5	7.0	3.3	76	89	▲	1LE1 ■ 01-2BA6 ■■■■■■		320	0.26	16				
75	84	250 M	2970	241	IE2	93.8	93.6	92.6	0.85	136	2.2	7.0	3.3	75	89	▲	1LE1 ■ 01-2CA6 ■■■■■■		390	0.46	13				
110	123	280 M	2975	353	IE2	94.3	94.5	94.1	0.90	187	2.5	7.4	3.1	80	91	▲	1LE1 ■ 01-2DA6 ■■■■■■		620	1.20	16				
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																									
4	4.55	100 L	1460	26	IE2	86.6	87.4	86.7	0.80	8.3	2.2	7.5	3.5	60	72		1LE1 ■ 01-1AB6 ■■■■■■		46	0.014	16				
5.5	6.3	112 M	1460	36	IE2	87.7	88.1	87.4	0.81	11.2	2.5	7.1	3.2	58	70		1LE1 ■ 01-1BB6 ■■■■■■		58	0.017	16				
11	12.6	132 M	1465	72	IE2	89.8	90.6	90.4	0.84	21	2.6	7.7	3.1	64	76		1LE1 ■ 01-1CB6 ■■■■■■		80	0.046	16				
18.5	21.3	160 L	1475	120	IE2	91.2	91.7	91.6	0.85	34.5	2.5	7.7	3.3	65	77		1LE1 ■ 01-1DB6 ■■■■■■		116	0.099	16				
30	34.5	180 L	1465	196	IE2	92.3	93.0	92.9	0.81	58	2.5	7.3	3.3	70	77	▲	1LE1 ■ 01-1EB6 ■■■■■■		185	0.16	16				
37	42.5	200 L	1470	240	IE2	92.7	93.6	93.8	0.84	69	2.4	7.0	3.0	68	75	▲	1LE1 ■ 01-2AB6 ■■■■■■		240	0.25	16				
55	63	225 M	1475	356	IE2	93.5	94.2	94.1	0.84	101	2.5	5.8	2.7	69	82	▲	1LE1 ■ 01-2BB6 ■■■■■■		320	0.47	16				
75	86	250 M	1480	484	IE2	94.0	94.5	94.3	0.86	134	2.3	6.2	2.8	74	87	▲	1LE1 ■ 01-2CB6 ■■■■■■		440	0.85	13				
110	127	280 M	1485	707	IE2	94.5	94.9	94.8	0.87	193	2.5	6.9	3.0	73	87	▲	1LE1 ■ 01-2DB6 ■■■■■■		680	1.70	13				
Relubrication					Motor protection	Fan cover	Bearing size		Converted operation, motor mode		Liability for defects														
Basic Line		Optional (standard from FS 280 upwards)			Optional	Plastic	62 (63 from FS 280 upwards)		up to 500 V		12 months		5												
Performance Line		Standard from FS 160 (optional for FS 100 to 132)			Standard PTC	Steel	63		up to 500 V		36 months		6												
Voltages						No. of poles		Frame size		Motor type		Version								Order code(s)					
50 Hz			230 VΔ/400 VY		60 Hz ¹⁾		460 VY		2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		Standard		2 2		–						
50 Hz			400 VΔ/690 VY		60 Hz ¹⁾		460 VΔ		2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		Standard		3 4		–						
50 Hz			500 VY						2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		Without add. charge		2 7		–						
50 Hz			500 VΔ						2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		Without add. charge		4 0		–						
Further voltages ¹⁾			For add. charges, code numbers, order codes and descr., see suppl. and special versions.														9 0				...				
Types of construction						No. of poles		Frame size		Motor type		Version								Order code(s)					
Without flange			IM B3 ²⁾				2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		Standard				A		–						
With flange			IM B5 ²⁾				2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		With additional charge				F		–						
With standard flange			IM B14 ²⁾				2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		With additional charge				K		–						
Further types of construction			For additional charges, code letters and descriptions, see supplements and special versions.														■				...				
Motor protection						Line		No. of poles		Frame size		Motor type		Version						Order code(s)					
Without			Only possible for Basic Line			2, 4		100 L ... 280 M		1LE1501-1A ... -1D		Standard				A		–							
PTC thermistor with 3 temperature sensors			Basic Line			2, 4		100 L ... 280 M		1LE1501-1A ... -1D		With additional charge				B		–							
			Performance Line			2, 4		100 L ... 280 M		1LE1601-1A ... -1D		Standard				B		–							
Further motor protection			For additional charges, code letters and descriptions, see supplements and special versions.														■				...				
Connection box position						No. of poles		Frame size		Motor type		Version								Order code(s)					
Connection box at top							2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		Standard				4		–						
Further connection box positions			For additional charges, code numbers and descriptions, see supplements and special versions.																						
Special versions						No. of poles		Frame size		Motor type										Order code(s)					
Forced-air cooled motors without ext. fan/fan cover (IC 416)						2, 4		100 L ... 280 M		1LE1■■01-1A ... -1D		1LE1■■01-.... ■■■■■■		-Z F90 +...+...+...											
Options						For add. charges, order codes and descr., see suppl. and special versions.														1LE1■■01-.... ■■■■■■		-Z ...+...+...+...			

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

2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate.

The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

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Cast-iron series 1LE1501/1LE1601 with increased output

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 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} , 50 Hz	I_{LR}/I_{rated} , 50 Hz	T_B/I_{rated} , 50 Hz	L_{pFA} , 50 Hz	L_{WA} , 50 Hz	1LE1501 – Basic Line 1LE1601 – Performance Line IE2 version in accordance with IEC 60034-30 with increased output Article No.						
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)	▲ New	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)																						
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz 1)																						
2.2	2.55	100 L	965	22	IE2	81.8	82.5	81.5	0.76	5.1	1.9	5.7	2.9	59	71	1LE1 ■ 01-1AC6 ■-■■■■	49	0.014	16			
3	3.45	112 M	960	30	IE2	83.3	84.1	83.6	0.79	6.6	2.1	6.0	3.1	57	69	1LE1 ■ 01-1BC6 ■-■■■■	53	0.017	16			
7.5	8.6	132 M	970	74	IE2	87.2	87.8	87.3	0.77	16.1	2.1	6.5	3.0	63	75	1LE1 ■ 01-1CC6 ■-■■■■	87	0.046	16			
15	17.3	160 L	975	147	IE2	89.7	90.6	90.5	0.81	30	1.9	6.5	2.9	67	79	1LE1 ■ 01-1DC6 ■-■■■■	147	0.12	16			
18.5	22	180 L	975	181	IE2	90.4	91.1	90.8	0.77	38.5	2.3	6.0	2.9	73	80	▲ 1LE1 ■ 01-1EC6 ■-■■■■	165	0.21	16			
30	34.5	200 L	975	294	IE2	91.7	92.5	92.5	0.77	61	2.6	6.3	2.7	68	75	▲ 1LE1 ■ 01-2AC6 ■-■■■■	245	0.38	16			
37	44.5	225 M	978	361	IE2	92.2	93.0	92.9	0.83	70	2.5	6.3	2.9	64	77	▲ 1LE1 ■ 01-2BC6 ■-■■■■	325	0.67	16			
45	54	250 M	985	436	IE2	92.7	93.7	94.0	0.84	83	2.9	6.9	3.0	67	81	▲ 1LE1 ■ 01-2CC6 ■-■■■■	410	1.00	16			
75	90	280 M	986	726	IE2	93.7	94.3	94.4	0.85	136	3.2	7.0	2.9	66	80	▲ 1LE1 ■ 01-2DC6 ■-■■■■	570	1.80	16			
8-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz 1)																						
15	18	180 L	720	199	IE2	87.9	88.9	88.2	0.73	33.5	2.2	4.9	2.5	67	75	▲ 1LE1 ■ 01-1ED6 ■-■■■■	190	0.26	13			
18.5	22	200 L	720	245	IE2	88.6	89.9	90.1	0.78	38.5	2.6	5.8	3.0	65	72	▲ 1LE1 ■ 01-2AD6 ■-■■■■	250	0.42	13			
30	36	225 M	732	391	IE2	90.8	92.0	92.1	0.77	62	2.8	6.1	3.2	62	76	▲ 1LE1 ■ 01-2BD6 ■-■■■■	325	0.67	13			
37	44.5	250 M	730	484	IE2	91.6	92.6	92.7	0.83	70	2.3	5.5	2.6	63	77	▲ 1LE1 ■ 01-2CD6 ■-■■■■	405	1.00	13			
55	66	280 M	735	715	IE2	92.9	93.4	93.0	0.81	105	2.3	5.4	2.3	70	81	▲ 1LE1 ■ 01-2DD6 ■-■■■■	550	1.60	13			
Relubrication					Motor protection	Fan cover	Bearing size		Converter-fed operation, motor mode		Liability for defects											
Basic Line		Optional (standard from FS 280 upwards)			Optional	Plastic	62 (63 from FS 280 upwards)		up to 500 V		12 months		5									
Performance Line		Standard from FS 160 (optional for FS 100 to 132)			Standard PTC	Steel	63		up to 500 V		36 months		6									
Voltages							No. of poles	Frame size		Motor type		Version						Order code(s)				
50 Hz			230 VΔ/400 VY		60 Hz ¹⁾		460 VY		6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		Standard		2 2		–			
50 Hz			400 VΔ/690 VY		60 Hz ¹⁾		460 VΔ		6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		Standard		3 4		–			
50 Hz			500 VY						6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		Without add. charge		2 7		–			
50 Hz			500 VΔ						6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		Without add. charge		4 0		–			
Further voltages 1)					For add. charges, code numbers, order codes and descr., see suppl. and special versions.														9 0		...	
Types of construction							No. of poles	Frame size		Motor type		Version						Order code(s)				
Without flange			IM B3 ²⁾				6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		Standard				A		–			
With flange			IM B5 ²⁾				6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		With additional charge				F		–			
With standard flange			IM B14 ²⁾				6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		With additional charge				K		–			
Further types of construction					For additional charges, code letters and descriptions, see supplements and special versions.														■		...	
Motor protection					Line			No. of poles	Frame size		Motor type		Version						Order code(s)			
Without			Only possible for Basic Line			6, 8		100 L ... 280 M		1LE1501-1A ... -1D		Standard				A		–				
PTC thermistor with 3 temperature sensors			Basic Line			6, 8		100 L ... 280 M		1LE1501-1A ... -1D		With additional charge				B		–				
			Performance Line			6, 8		100 L ... 280 M		1LE1601-1A ... -1D		Standard				B		–				
Further motor protection					For additional charges, code letters and descriptions, see supplements and special versions.														■		...	
Connection box position							No. of poles	Frame size		Motor type		Version						Order code(s)				
Connection box at top							6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		Standard				4		–			
Further connection box positions					For additional charges, code numbers and descriptions, see supplements and special versions.																	
Special versions							No. of poles	Frame size		Motor type								Order code(s)				
Forced-air cooled motors without ext. fan/fan cover (IC 416)							6, 8		100 L ... 280 M		1LE1 ■ 01-1A ... -1D		1LE1 ■ 01-... ■-■■■■		-Z		F90 +...+...+...					
Options							For add. charges, order codes and descr., see suppl. and special versions.							1LE1 ■ 01-... ■-■■■■		-Z		...+...+...+...				

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

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.