

# SIMOTICS SD 1LE1 Standard Motors

## Motors with Premium Efficiency IE3

Self-ventilated motors  
Cast-iron series 1LE1503/1LE1603 Basic/Performance Line



### 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	$\eta_{rated, 50\ Hz, 4/4}$	$\eta_{rated, 50\ Hz, 3/4}$	$\eta_{rated, 50\ Hz, 2/4}$	$\cos\phi_{rated, 50\ Hz, 4/4}$	$I_{rated, 50\ Hz, 400\ V}$	$T_{LR}/I_{rated}$	$I_{LR}/I_{rated}$	$T_B/I_{rated}$	$L_{pFA, 50\ Hz}$	$L_{WA, 50\ Hz}$				1LE1503 – Basic Line	1LE1603 – Performance Line	Order No.
kW	kW	FS	rpm	Nm	%	%	%	A								▲ New		kg	kgm <sup>2</sup>	CL	
<ul style="list-style-type: none"> <li>Cooling: Self-ventilated (IC 411)</li> <li>Efficiency: Premium Efficiency IE3, service factor (SF) 1.15</li> <li>Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)</li> </ul>																					
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz <sup>1)</sup>																					
22	24.5	180 M	2950	71	IE3	92.7	93.0	92.4	0.89	38.5	2.5	7.5	3.5	67	80	▲ 1LE1	■ 03-1EA2	■ -■■■■■	160	0.080	16
30	33.5	200 L	2955	97	IE3	93.3	93.7	93.3	0.87	53	2.5	6.6	3.3	67	80	▲ 1LE1	■ 03-2AA4	■ -■■■■■	225	0.13	16
37	41.5	200 L	2955	120	IE3	93.7	94.1	93.8	0.88	65	2.5	6.6	3.2	67	80	▲ 1LE1	■ 03-2AA5	■ -■■■■■	250	0.16	16
45	51	225 M	2960	145	IE3	94.0	94.5	94.4	0.89	78	2.4	6.9	3.3	67	80	▲ 1LE1	■ 03-2BA2	■ -■■■■■	315	0.26	16
55	62	250 M	2975	177	IE3	94.3	94.5	93.9	0.89	95	2.3	6.7	3.1	71	84	▲ 1LE1	■ 03-2CA2	■ -■■■■■	385	0.46	13
75	84	280 S	2975	241	IE3	94.7	94.8	94.1	0.89	128	2.4	6.8	3.0	73	87	▲ 1LE1	■ 03-2DA0	■ -■■■■■	510	0.77	13
90	101	280 M	2975	289	IE3	95.0	95.1	94.6	0.90	152	2.4	7.2	3.1	73	86	▲ 1LE1	■ 03-2DA2	■ -■■■■■	590	0.94	13
110	123	315 S	2982	352	IE3	95.2	95.4	94.9	0.91	183	2.4	7.1	3.1	73	87	▲ 1LE1	■ 03-3AA0	■ -■■■■■	750	1.4	13
132	148	315 M	2982	423	IE3	95.4	95.5	95.2	0.91	220	2.5	7.2	3.1	73	87	▲ 1LE1	■ 03-3AA2	■ -■■■■■	880	1.6	13
160	180	315 L	2982	512	IE3	95.6	95.7	95.2	0.92	265	2.8	7.8	3.3	76	90	▲ 1LE1	■ 03-3AA4	■ -■■■■■	980	1.9	13
200	224	315 L	2982	640	IE3	95.8	95.9	95.5	0.92	330	2.5	7.2	3.0	76	90	▲ 1LE1	■ 03-3AA5	■ -■■■■■	1150	2.3	13
Relubrication		Motor protection		Fan cover		Bearing size		Converter-fed operation		Warranty											
Basic Line		Optional (standard from FS 280 upwards)		Optional		Plastic		62 (63 from FS 280 upwards)		Up to 460 V 12 months		5									
Performance Line		Standard from FS 160 (optional for FS 100 ... 132)		Standard		Steel		63		Up to 460 V 36 months		6									
Voltages				No. of poles		Frame size		Motor type		Version										Order code(s)	
50 Hz		230 VΔ/400 VY		60 Hz <sup>1)</sup>		460 VY		2		180 M ... 315 L		1LE1■03-1E ... -3A		Standard		2		2		-	
50 Hz		400 VΔ/690 VY		60 Hz <sup>1)</sup>		460 VΔ		2		180 M ... 315 L		1LE1■03-1E ... -3A		Standard		3		4		-	
50 Hz		500 VY						2		180 M ... 315 L		1LE1■03-1E ... -3A		Without additional charge		2		7		-	
50 Hz		500 VΔ						2		180 M ... 315 L		1LE1■03-1E ... -3A		Without additional charge		4		0		-	
Further voltages <sup>1)</sup>														For additional charges, code numbers, order codes and descriptions, see supplements and special versions.		9		0		...	
Types of construction				No. of poles		Frame size		Motor type		Version										Order code(s)	
Without flange		IM B3 <sup>2)</sup>		2		180 M ... 315 L		1LE1■03-1E ... -3A		Standard		A								-	
With flange		IM B5 <sup>2)</sup>		2		180 M ... 315 M		1LE1■03-1E ... -3A		With additional charge		F								-	
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 PTC thermistor with 3 temperature sensors		Only possible for Basic Line		2		180 M ... 315 L		1LE1503-1E ... -3A		Standard		A								-	
		Basic Line		2		180 M ... 315 L		1LE1503-1E ... -3A		With additional charge		B								-	
		Performance Line		2		180 M ... 315 L		1LE1603-1E ... -3A		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		180 M ... 315 L		1LE1■03-1E ... -3A		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)	
Options														For additional charges, order codes and descriptions, see supplements and special versions.		1LE1■03- ... ■-■■■■■-Z				...+...+...+...	

<sup>1)</sup> Operating values at rated output for 60 Hz are available on request.

<sup>2)</sup> 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.

# SIMOTICS SD 1LE1 Standard Motors

## Motors with Premium Efficiency IE3



Self-ventilated motors  
Cast-iron series 1LE1503/1LE1603 Basic/Performance Line

### Selection and ordering data (continued)

Operating values at rated output														Cast-iron series		$m_{IM\ B3}$	$J$	Torque class			
$P_{rated, 50\ Hz}$	$P_{rated, 60\ Hz}$	Frame size	$n_{rated, 50\ Hz}$	$T_{rated, 50\ Hz}$	IE class	$\eta_{rated, 50\ Hz, 4/4}$	$\eta_{rated, 50\ Hz, 3/4}$	$\eta_{rated, 50\ Hz, 2/4}$	COS- $\Phi_{rated, 50\ Hz, 4/4}$	$I_{rated, 50\ Hz, 400\ V}$	$T_{LR}/I_{rated}$	$I_{LR}/I_{rated}$	$T_B/I_{rated}$	$L_{pFA, 50\ Hz}$	$L_{WA, 50\ Hz}$				1LE1503 – Basic Line 1LE1603 – Performance Line IE3 version in accordance with IEC 60034-30 Order No.	kg	kgm <sup>2</sup>
kW	kW	FS	rpm	Nm	%	%	%	A		dB(A)						▲ New					
<ul style="list-style-type: none"> <li>Cooling: Self-ventilated (IC 411)</li> <li>Efficiency: Premium Efficiency IE3, service factor (SF) 1.15</li> <li>Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)</li> </ul>																					
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz <sup>1)</sup>																					
18.5	21.3	180 M	1470	120	IE3	92.6	93.2	93.2	0.82	35	2.5	6.9	3.3	57	70	▲ 1LE1	■ 03-1EB2	■-■■■■■	165	0.13	16
22	25.3	180 L	1470	143	IE3	93.0	93.7	93.7	0.83	41	2.5	6.8	3.3	57	70	▲ 1LE1	■ 03-1EB4	■-■■■■■	170	0.14	16
30	34.5	200 L	1470	195	IE3	93.6	94.3	94.4	0.84	55	2.6	6.9	3.1	57	70	▲ 1LE1	■ 03-2AB5	■-■■■■■	240	0.22	16
37	42.5	225 S	1478	239	IE3	93.9	94.5	94.4	0.86	66	2.5	6.4	2.7	57	70	▲ 1LE1	■ 03-2BB0	■-■■■■■	285	0.42	16
45	52	225 M	1478	291	IE3	94.2	94.9	95.1	0.86	80	2.6	6.4	2.7	57	70	▲ 1LE1	■ 03-2BB2	■-■■■■■	320	0.47	16
55	63	250 M	1482	354	IE3	94.6	95.1	95.0	0.87	96	2.5	6.8	2.9	57	70	▲ 1LE1	■ 03-2CB2	■-■■■■■	420	0.85	16
75	86	280 S	1485	482	IE3	95.0	95.3	95.0	0.86	133	2.5	6.9	3.0	65	79	▲ 1LE1	■ 03-2DB0	■-■■■■■	570	1.4	16
90	104	280 M	1485	579	IE3	95.2	95.5	95.3	0.87	157	2.6	7.2	3.0	65	79	▲ 1LE1	■ 03-2DB2	■-■■■■■	670	1.7	16
110	127	315 S	1488	706	IE3	95.4	95.8	95.5	0.87	191	2.6	6.8	2.9	65	79	▲ 1LE1	■ 03-3AB0	■-■■■■■	760	2.2	16
132	152	315 M	1490	846	IE3	95.6	95.9	95.9	0.87	230	2.8	7.3	3.0	65	79	▲ 1LE1	■ 03-3AB2	■-■■■■■	960	2.9	16
160	184	315 L	1490	1025	IE3	95.8	96.1	96.1	0.87	275	2.9	7.3	3.1	65	79	▲ 1LE1	■ 03-3AB4	■-■■■■■	990	3.1	16
200	230	315 L	1490	1284	IE3	96.0	96.3	96.1	0.88	340	3.2	7.4	3.0	65	79	▲ 1LE1	■ 03-3AB5	■-■■■■■	1190	3.7	16
Basic Line		Relubrication		Optional (standard from FS 280 upwards)	Motor protection	Optional	Fan cover	Plastic	Bearing size	62 (63 from FS 280 upwards)	Converter-fed operat.	Up to 460 V	Warranty	12 months	5						
Performance Line		Standard from FS 160 (optional for FS 100 ... 132)		Standard PTC	Steel	63	Up to 460 V	36 months	6												
Voltages				No. of poles	Frame size	Motor type	Version					Order code(s)									
50 Hz	230 VΔ/400 VY	60 Hz <sup>1)</sup>	460 VY	4	180 M ... 315 L	1LE1■03-1E ... -3A	Standard	2	2					–							
50 Hz	400 VΔ/690 VY	60 Hz <sup>1)</sup>	460 VΔ	4	180 M ... 315 L	1LE1■03-1E ... -3A	Standard	3	4					–							
50 Hz	500 VY			4	180 M ... 315 L	1LE1■03-1E ... -3A	Without additional charge	2	7					–							
50 Hz	500 VΔ			4	180 M ... 315 L	1LE1■03-1E ... -3A	Without additional charge	4	0					–							
Further voltages <sup>1)</sup>				For additional charges, code numbers, order codes and descriptions, see supplements and special versions.				9	0					...							
Types of construction				No. of poles	Frame size	Motor type	Version					Order code(s)									
Without flange		IM B3 <sup>2)</sup>		4	180 M ... 315 L	1LE1■03-1E ... -3A	Standard					A	–								
With flange		IM B5 <sup>2)</sup>		4	180 M ... 315 M	1LE1■03-1E ... -3A	With additional charge					F	–								
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		4	180 M ... 315 L	1LE1503-1E ... -3A	Standard					A	–								
PTC thermistor with 3 temperature sensors		Basic Line		4	180 M ... 315 L	1LE1503-1E ... -3A	With additional charge					B	–								
		Performance Line		4	180 M ... 315 L	1LE1603-1E ... -3A	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				4	180 M ... 315 L	1LE1■03-1E ... -3A	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)										
Options				For additional charges, order codes and descriptions, see supplements and special versions.				1LE1■03- ... ■-■■■■■-Z				...									

<sup>1)</sup> Operating values at rated output for 60 Hz are available on request.  
<sup>2)</sup> 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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Self-ventilated motors  
Cast-iron series 1LE1503/1LE1603 Basic/Performance Line



### Selection and ordering data (continued)

Operating values at rated output														Cast-iron series		m <sub>IM B3</sub> J	Torque class			
P <sub>rated</sub> , 50 Hz	P <sub>rated</sub> , 60 Hz 1)	Frame size	n <sub>rated</sub> , 50 Hz	T <sub>rated</sub> , 50 Hz	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	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	L <sub>WA</sub> , 50 Hz			1LE1503 – Basic Line	1LE1603 – Performance Line	Order No.
kW	kW	FS	rpm	Nm	%	%	%		A					dB(A)	dB(A)	▲ New		kg	kgm <sup>2</sup>	CL

- Cooling: Self-ventilated (IC 411)
  - Efficiency: Premium Efficiency IE3, 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)

15	18	180 L	975	147	IE3	91.2	92.4	92.6	0.80	29.5	2.3	5.9	2.8	56	69	▲ 1LE1	▲ 03-1EC4	■-■■■■■	180	0.19	16
18.5	22	200 L	978	181	IE3	91.7	92.5	92.5	0.79	37	2.5	5.6	2.6	57	70	▲ 1LE1	▲ 03-2AC4	■-■■■■■	215	0.28	16
22	26.5	200 L	978	215	IE3	92.2	93.1	93.3	0.79	43.5	2.5	5.6	2.6	57	70	▲ 1LE1	▲ 03-2AC5	■-■■■■■	230	0.32	16
30	36	225 M	982	292	IE3	92.9	93.6	93.5	0.83	56	2.6	6.6	3.0	57	70	▲ 1LE1	▲ 03-2BC2	■-■■■■■	325	0.67	16
37	44.5	250 M	985	359	IE3	93.3	94.0	94.0	0.85	67	2.7	7.0	2.9	57	70	▲ 1LE1	▲ 03-2CC2	■-■■■■■	405	1.0	16
45	54	280 S	988	435	IE3	93.7	94.3	94.2	0.85	82	3.0	6.8	2.8	58	71	▲ 1LE1	▲ 03-2DC0	■-■■■■■	510	1.4	16
55	66	280 M	988	532	IE3	94.1	94.5	94.2	0.85	99	3.2	7.2	3.0	58	71	▲ 1LE1	▲ 03-2DC2	■-■■■■■	560	1.6	16
75	90	315 S	990	723	IE3	94.6	94.7	94.1	0.84	136	2.6	7.3	3.1	59	73	▲ 1LE1	▲ 03-3AC0	■-■■■■■	750	2.6	16
90	108	315 M	991	867	IE3	94.9	95.1	94.7	0.85	161	2.5	6.7	2.8	59	73	▲ 1LE1	▲ 03-3AC2	■-■■■■■	890	3.1	16
110	132	315 L	991	1060	IE3	95.1	95.3	95.1	0.84	199	2.8	7.2	3.0	60	74	▲ 1LE1	▲ 03-3AC4	■-■■■■■	990	3.9	16
132	158	315 L	991	1272	IE3	95.4	95.3	94.5	0.84	240	2.7	7.2	3.0	60	74	▲ 1LE1	▲ 03-3AC5	■-■■■■■	1110	4.4	16
160	192	315 L	991	1542	IE3	95.6	95.8	95.4	0.83	290	3.3	7.7	3.5	63	77	▲ 1LE1	▲ 03-3AC6	■-■■■■■	1160	4.6	16

	Relubrication	Motor protection	Fan cover	Bearing size	Converter-fed operat.	Warranty																	
<b>Basic Line</b>	Optional (standard from FS 280 upwards)	Optional	Plastic	62 (63 from FS 280 upwards)	Up to 460 V	12 months	5																
<b>Performance Line</b>	Standard from FS 160 (optional for FS 100 ... 132)	Standard PTC	Steel	63	Up to 460 V	36 months	6																
<b>Voltagess</b>			No. of poles	Frame size	Motor type	Version															Order code(s)		
50 Hz	230 VΔ/400 VY	60 Hz <sup>1)</sup>	460 VY	6	180 M ... 315 L	1LE1■03-1E ... -3A	<b>Standard</b>	2	2												–		
50 Hz	400 VΔ/690 VY	60 Hz <sup>1)</sup>	460 VΔ	6	180 M ... 315 L	1LE1■03-1E ... -3A	<b>Standard</b>	3	4												–		
50 Hz	500 VY			6	180 M ... 315 L	1LE1■03-1E ... -3A	Without additional charge	2	7												–		
50 Hz	500 VΔ			6	180 M ... 315 L	1LE1■03-1E ... -3A	Without additional charge	4	0												–		
Further voltages <sup>1)</sup>								9	0												...		
<b>Types of construction</b>			No. of poles	Frame size	Motor type	Version															Order code(s)		
Without flange	IM B3 <sup>2)</sup>		6	180 M ... 315 L	1LE1■03-1E ... -3A	<b>Standard</b>															A	–	
With flange	IM B5 <sup>2)</sup>		6	180 M ... 315 M	1LE1■03-1E ... -3A	With additional charge															F	–	
Further types of construction																					■	...	
<b>Motor protection</b>	Line		No. of poles	Frame size	Motor type	Version															Order code(s)		
Without PTC thermistor with 3 temperature sensors	Only possible for <b>Basic Line</b>		6	180 M ... 315 L	1LE1503-1E ... -3A	<b>Standard</b>															A	–	
	<b>Basic Line</b>		6	180 M ... 315 L	1LE1503-1E ... -3A	With additional charge															B	–	
	<b>Performance Line</b>		6	180 M ... 315 L	1LE1603-1E ... -3A	<b>Standard</b>															B	–	
Further motor protection																					■	...	
<b>Connection box position</b>			No. of poles	Frame size	Motor type	Version															Order code(s)		
Connection box at top			6	180 M ... 315 L	1LE1■03-1E ... -3A	<b>Standard</b>															4	–	
Further conn. box positions																						For additional charges, code numbers and descriptions, see supplements and special versions.	
<b>Special versions</b>			No. of poles	Frame size	Motor type																Order code(s)		
Options																					1LE1■03- ... ■-■■■■■	-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.