



Structure of the 16-digit order number for standard motors 1LE, 1FP, 1MB and 1PC

1.	2.	3.	Motor type	4.	Motor series
1	L	E	Standard low voltage motors	1	IEC motor series
1	F	P	Synchronous reluctance motors – VSD4000 Line	5	IEC motor series (2nd generation)
1	M	B	Motors for hazardous areas		
1	P	C	Industry specific motors		

6.	Versions – 1LE1/5, 1FP1
0	Standard IEC motors
1	Pole-changing (1LE1) or Synchronous reluctance motors VSD4000 Line (1FP1)
2	NEMA MG1 motors – Eagle Line
3	1LE5 SD Add motors
4	APAC Line
7	ABNT Line IR3
8	1LE1 motors with Premium insulation and 1LE5 SD Pro motors
9	VSD10 Line motors for converter operation

8.	9.	Frame size
0	B	63
0	C	71
0	D	80
0	E	90
1	A	100
1	B	112
1	C	132
1	D	160
1	E	180
2	A	200
2	B	225
2	C	250
2	D	280
3	A	315
3	B	355
4	A	400
4	B	450

10.	Number of poles
A	2-pole
B	4-pole
C	6-pole
D	8-pole
F	4-pole 1FP1 for speed 3000-3600 rpm
J	4/2-pole const. load torque
L	8/4-pole const. load torque
P	4/2-pole square-law load torque
Q	6/4-pole square-law load torque
R	8/4-pole square-law load torque

11. Construction length (0-8) core length encoded, usually more than one core length exists for one frame size, please see the table for examples

14.	Type of construction
A	IM B3, IM B6, IM B7, IM B8, IM V5, IM V6, stamped IM B3
C	IM V5 / IM 1011
D	IM V6 / IM 1031
F	IM B5 / IM 3001, IM V1, IM V3, stamped IM B5 flange
G	IM V1 / IM 3011 flange
H	IM V3 / IM 3031 flange
J	IM B35 / IM 2001 flange
K	IM B14 / IM 3601, IM V19 / IM 3631, IM V18 / IM 3611, stamped IM B14 standard flange
L	IM V19 / IM 3631 standard flange
M	IM V18 / IM 3611 standard flange
N	IM B34 / IM 2101 standard flange
T	IM B6 / IM 1051
U	IM B7 / IM 1061
V	IM B8 / IM 1071
W	IM V15 / IM 2011 flange
Y	IM V35 / IM 2031 flange
Some corresponding options:	
	H00 protective cover (vertical, shaft down, required for Ex)
	P01 next large flange
	P02 next smaller flange

15.	Motor protection
A	None
B	1 or 3 PTC thermistors – for tripping (2 terminals) – for 1MB/5 and 1PC1 always 3 pcs
C	2 or 6 PTC thermistors – for alarm and tripping (4 terminals) – for 1MB1/5 and 1PC1 always 6 pcs
F	1 KTY84-130 temperature sensor (2 terminals)
G	2 KTY84-130 temperature sensors (4 terminals)
H	3 Pt100 resistance thermometers – 2-wire input (6 terminals)
J	6 Pt100 resistance thermometers – 2-wire input (12 terminals)
K	1 Pt1000 resistance thermometer (2 terminals)
L	2 Pt1000 resistance thermometers (4 terminals)
P	1 Pt100 resistance thermometer – 2-wire input (2 terminals)
Q	3 Pt100 resistance thermometers – 3-wire input (9 terminals)
R	6 Pt100 resistance thermometers – 3-wire input (18 terminals)
Z	Other (NTC, bimetal etc.), must be specified by option code Qxx

MLFB structured into the 16 digits (with some example such as below)

Digit	1.	2.	3.	4.	5.	6.	7.	–	8.	9.	10.	11.	12.	–	13.	14.	15.	16.	Option
Order number	1	L	E	1	5	0	3	–	1	C	A	1	2	–	2	A	B	4	-Z...

Examples	1LE1003-1DB23 4GB5-Z H00	1MB1533-0EA42-2AA4
→ 1LE1 IEC motor	→ 1MB1 IEC motor for hazardous areas	
→ Aluminium housing, IE3 = 003	→ Cast iron housing, Basic Line (5)	
→ Shaft height 160 (1D)	→ Ex ec IIC T3 protection type (3)	
→ 4-pole (B)	→ IE3 Premium Efficiency (3)	
→ Construction length code 2 (corresponds to 11 kW)	→ Shaft height 90 (0E)	
→ 400 VΔ / 690 VY at 50 Hz (3-4)	→ 2-pole (A)	
→ IM V1 (G)	→ Construction length code 4 (corresponds to 2.2 kW)	
→ Motor protection: 3 PTC thermistors (B)	→ 230 VΔ / 400 VY at 50 Hz (2-2)	
→ Terminal box on RHS (5)	→ IM B3 (A)	
→ Option Z: protective cover (H00)	→ Without motor protection (A)	
	→ Terminal box on top (4)	

5.	Housing material – 1LE1/5, 1FP1, 1MB1/5	7.	Efficiency class – 1LE1/5, 1FP1, 1MB1/5
0	Aluminium housing	1	Motors with IE2 High Efficiency (or 1LE1 pole-changing motor with one winding)
5	Cast iron housing:	2	Motors with IE1 Standard Efficiency (or 1LE1 pole-changing motor with two windings)
6	Basic Line	3	Motors with IE3 Premium Efficiency
7	Performance Line	4	Motors with IE4 Super Premium Efficiency (including VSD4000)
8	ABNT Line IR3 (for 1LE5)	6	IE2 with reduced starting current I _{st} /I _n = 600% (1MB)
	Premium insulation system (for 1MB)	7	IE3 with reduced starting current I _{st} /I _n = 700% (1MB)

Digits 8-11, assigned to power ratings of "standard" (see below) motors in IE3 efficiency class	2-pole	4-pole	6-pole	8-pole
0.18 kW			0CC2	
0.25 kW		0CB2	0CC3	
0.37 kW	0CA2	0CB3	0DC2	
0.55 kW	0CA3	0DB2	0DC3	
0.75 kW	0DA2	0DB3	0ECO	
1.1 kW	0DA3	0EB0	0EC4	
1.5 kW	0EA0	0EB4	1AC4	
2.2 kW	0EA4	1AB4	1BC2	1CD0
3 kW	1AA4	1AB5	1CC0	1CD2
4 kW	1BA2	1BB2	1CC2	1DD2
5.5 kW	1CA0	1CB0	1CC3	1DD3
7.5 kW	1CA1	1CB2	1DC2	1DD4
11 kW	1DA2	1DB2	1DC4	1ED4
15 kW	1DA3	1DB4	1EC4	2AD5
18.5 kW	1DA4	1EB2	2AC4	2BD0
22 kW	1EA2	1EB4	2AC5	2BD2
30 kW	2AA4	2AB5	2BC2	2CD2
37 kW	2AA5	2BB0	2CC2	2DD0
45 kW	2BA2	2BB2	2DC0	2DD2
55 kW	2CA2	2CB2	2DC2	3AD0
75 kW	2DA0	2DB0	3AC0	3AD2
90 kW	2DA2	2DB2	3AC2	3AD4
110 kW	3AA0	3AB0	3AC4	3AD5
132 kW	3AA2	3AB2	3AC5	3AD6
160 kW	3AA4	3AB4	3AC6	3AD7
200 kW	3AA5	3AB5	3AC7	3AD8
250 kW	3AA6	3AB6	3AC8	3BD1
315 kW	3AA7	3AB7	3BC2	3BD2
355 kW	3BA3	3BB3	3BC3	4AD3
400 kW	3BA4	3BB4	3BC4	4AD5
450 kW			4AC3	4AD7
500 kW	3BA5	3BB5	4AC5	4BD3
560 kW	4AA3	4AB3	4AC7	4BD5
630 kW	4AA5	4AB5	4BC3	4BD7
710 kW	4AA7	4AB7	4BC5	
800 kW	4BA3	4BB3	4BC7	
900 kW	4BA5	4BB5		
1000 kW	4BA7	4BB7		

Valid in general for the following motors, when they exist in the relevant frame size, pole number and efficiency class:
 1LE1003, 1LE1043, 1LE1083 1LE1503, 1LE1543, 1LE1583
 1LE1603, 1LE1643 1LE5503, 1LE5533, 1LE5603, 1LE5633
 1MB1013, 1MB1023, 1MB1033 1MB1513, 1MB1523, 1MB1533, 1MB1553
 1MB1613, 1MB1623, 1MB1633 1MB5513, 1MB5523, 1MB5533, 1MB5553
 1PC1433
 Not valid for motors "with increased power". Individual exceptions also occur. For details please see the catalog.

12.	13.	Voltage code
0	1	50 Hz 230 VΔ (Ex eb, Ex db and Ex db eb motors)
0	2	50 Hz 400 VY, 60 Hz 460 VY
0	4	50 Hz 400 VΔ, 60 Hz 460 VΔ
0	6	50 Hz 690 VY
1	7	60 Hz 220 VΔ/380 VY
1	8	60 Hz 230 VΔ/400 VY
2	1	50 Hz 220 VΔ/380 VY, 60 Hz 440 VY (standard induction motors)
2	2	50 Hz 380 V, 60 Hz 440 V, 87 Hz 380 V (VSD10 Line and VSD4000 Line)
2	2	50 Hz 230 VΔ/400 VY, 60 Hz 460 VY
2	3	50 Hz 240 VΔ/415 VY, 60 Hz 480 VY
2	6	50 Hz 480 V, 60 Hz 550 V, 87 Hz 480 V (VSD10 Line)
2	7	50 Hz 500 VY, 60 Hz 575 VY (some types not for 575 VY)
3	0	60 Hz 380 VΔ/660 VY (some types not for 660 VY)
3	1	60 Hz 400 VΔ/690 VY (some types not for 690 VY)
3	3	50 Hz 380 VΔ/660 VY, 60 Hz 440 VΔ (standard induction motors, some types not for 660 VY or 440 VΔ)
3	3	50 Hz 660 V, 87 Hz 660 V (VSD10 Line)
3	4	50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ (some types not for 690 VY)
3	5	50 Hz 415 VΔ, 60 Hz 480 VΔ
4	0	50 Hz 500 VΔ, 60 Hz 575 VΔ (some types not for 575 VΔ)
4	4	50 Hz 600 VΔ, 60 Hz 690 VΔ
4	6	50 Hz 660 VΔ
4	7	50 Hz 690 VΔ
6	0	60 Hz 230 VY/460 VY, 50 Hz power, 9 main terminals and electrical version according to NEMA
6	1	60 Hz 230 VY/460 VY, 60 Hz power, 9 main terminals and electrical version according to NEMA
6	2	60 Hz 230 VΔ/460 VΔ, 50 Hz power, 12 main terminals and electrical version according to NEMA
6	3	60 Hz 230 VΔ/460 VΔ, 60 Hz power, 12 main terminals and electrical version according to NEMA
6	4	60 Hz 220 VΔ/380 VY, 440 VΔ, 50 Hz power (ABNT Line)
9	0	Other (typically 60 Hz, 87 Hz or non-standard), must be specified by option code Mxx

16.	Terminal box position
0	Terminal box base left with terminal box at the top (only 1LE5/1MB5)
1	Terminal box base right with terminal box at the top (only 1LE5/1MB5)
2	Terminal box base left with oblique terminal box 45° (only 1LE5/1MB5)
3	Terminal box base right with oblique terminal box 45° (only 1LE5/1MB5)
4	Terminal box top
5	Terminal box right-hand side
6	Terminal box left-hand side
7	Terminal box at bottom
8	Terminal box non drive end (only 1PC1423 roller table)
9	Other (eg. bottom on side), must be specified by option code Rxx (only 1LE5/1MB5)

MOTORS

SIMOTICS

Low Voltage Motors

Structure of the 16-digit ordering number (MLFB)

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This flyer provides general information about the motor order number structure. However, it does not cover all possible combinations and it does not define which digits and the combinations that are applicable for each product. To select a specific product, please refer to the catalog or the configuration tools (LV Easy, Drive Technology Configurator). The best way to understand the MLFB structure and the motor parameters is to have access to a real motor. You can then scan the QR code printed on the motor rating plate using the SIDRIVE IQ Twin app on your smartphone or tablet.

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