

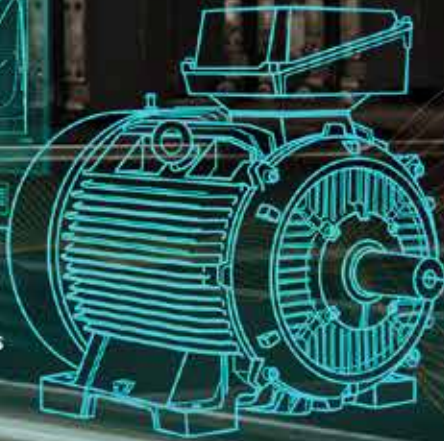
**SIEMENS**

*Ingenuity for life*

**1990**  
1LA0 Superbreed  
series introduced

**1966**  
Kalwa Motor  
Works begins  
operation

**2000**  
Introduction  
of 1LA8 N  
Compact motors



**2007**  
Champion  
series of motors  
launched

**2014**  
Leads the industry  
by selling more than  
100,000 IE motors

**2011**  
First to launch  
indigenised  
IE2/IE3 motors

**2016**  
Launched the  
SIMOTICS 1LE7  
global range

**2018**

IE2

IE3

## 1LE7 SIMOTICS Motors- Redefining the world of energy efficiency

Presenting a wide range of energy efficient  
low voltage motors

[www.siemens.co.in/lv-motors](http://www.siemens.co.in/lv-motors)

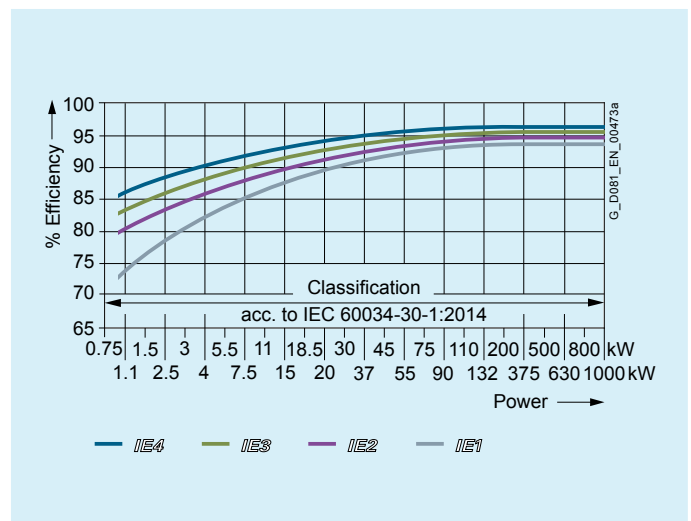
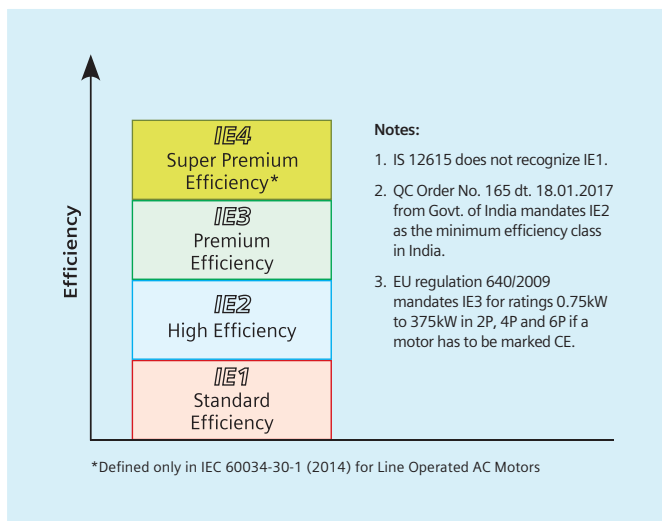
## The values of efficiency for motors to classify as IE2 or IE3 in accordance with the IS:12615-2011 are as under:

kW	2 Pole			4 Pole			6 Pole		
	Frame Size	Efficiency %		Frame Size	Efficiency %		Frame Size	Efficiency %	
		IE2	IE3		IE2	IE3		IE2	IE3
0.37	71	72.2	75.5	71	70.1	73.0	80	69.0	71.9
0.55	71	74.8	78.1	80	75.1	78.0	80	72.9	75.9
0.75	80	77.4	80.7	80	79.6	82.5	90S	75.9	78.9
1.1	80	79.6	82.7	90S	81.4	84.1	90L	78.1	81
1.5	90S	81.3	84.2	90L	82.8	85.3	100L	79.8	82.5
2.2	90L	83.2	85.9	100L	84.3	86.7	112M	81.8	84.3
3.7	100L	85.5	87.8	112M	86.3	88.4	132S	84.3	86.5
5.5	132S	87	89.2	132S	87.7	89.6	132M	86	88
7.5	132S	88.1	90.1	132M	88.7	90.4	160M	87.2	89.1
11	160M	89.4	91.2	160M	89.8	91.4	160L	88.7	90.3
15	160M	90.3	91.9	160L	90.6	92.1	180L	89.7	91.2
18.5	160L	90.9	92.4	180M	91.2	92.6	200L	90.4	91.7
22	180M	91.3	92.7	180L	91.6	93	200L	90.9	92.2
30	200L	92	93.3	200L	92.3	93.6	225M	91.7	92.9
37	200L	92.5	93.7	225S	92.7	93.9	250M	92.2	93.3
45	225M	92.9	94	225M	93.1	94.2	280S	92.7	93.7
55	250M	93.2	94.3	250M	93.5	94.6	280M	93.1	94.1
75	280S	93.8	94.7	280S	94	95	315S	93.7	94.6
90	280M	94.1	95	280M	94.2	95.2	315M	94	94.9
110	315S	94.3	95.2	315S	94.5	95.4	315M#	94.3	95.1
125	315M	94.5	95.3	315M	94.6	95.5	315M#	94.4	95.2
132	315M#	94.6	95.4	315M#	94.7	95.6	315L#	94.6	95.4
160	315L#	94.8	95.6	315L#	94.9	95.8	355L	94.8	95.6
200	315L	95	95.8	315L	95.1	96	355L	95	95.8
250	355L	95	95.8	355L	95.1	96	355L	95	95.8
315	355L	95	95.8	355L	95.1	96	355L	95	95.8
375	355L	95	95.8	355L	95.1	96	355L	95	95.8

### Notes:

1. IS:1231 defines Frame Size to output co-relation only up to Frame Size 315M.
  2. EN 50347:2001 specifies 132kW for 315M in 2P and 4P.
  3. Frame Sizes indicated in italics are left to manufacturer catalogue.
- # These frames are indicated as "preferred" in IS:12615-2011.

## The Efficiency Classes are as under



# SIMOTICS – the most comprehensive range of motors

The history of today's most comprehensive range of motors worldwide started about 150 years ago in 1866 when Werner von Siemens developed the dynamo-electric principle. This principle allowed powerful electric motors to be designed and built, thereby creating the basis for their widespread use in industry today. Since then, motor development has been one of the core business of the company, and with greater than a century worth of experience, Siemens sets the pace when it comes to innovative motor technology. Today, millions of Siemens motors are efficiently powering machines and equipment in industrial facilities around the world. In all sectors, applications and power classes. Siemens energy-efficient low-voltage motors with high dynamic performance have proven themselves in use, and are attractive as a result of their quality, efficiency and compactness.

In line with the tradition of naming the various series of motors the new range of motors will be called as **SIMOTICS**

The new SIMOTICS range of motors are offered in line with the range of motors offered worldwide from the house of Siemens.

SIMOTICS stands for:

- More than 150 years of motor production worldwide **and 50 years of motor production in India**
- Optimum solutions in all sectors, regions and power classes
- Innovative motor technology with the highest quality and reliability
- Highest dynamic performance, precision and efficiency, with an optimum degree of compactness
- Integration of the motors in the drive train to create an overall system
- **The global network of skill sets and round the clock service worldwide**



# Ordering codes for new SIMOTICS 1LE7-IE2 series of motors

## Efficiency higher than IE2



Output kW	Pole	Frame Size	Ordering Code (MLFB)*	Output kW	Pole	Frame Size	Ordering Code (MLFB)*	Output kW	Pole	Frame Size	Ordering Code (MLFB)*
			12-13 14 15 16				12-13 14 15 16				12-13 14 15 16
				0.25	4	71	1LE7501-0CB22-3AA4	0.18	6	71	1LE7501-0CC22-3AA4
				0.37	4	71	1LE7501-0CB32-3AA4	0.25	6	71	1LE7501-0CC32-3AA4
0.37	2	71	1LE7501-0CA22-3AA4	0.37	4	71	1LE7501-0CB32-3AA4	0.37	6	80	1LE7501-0DC22-3AA4
0.55	2	71	1LE7501-0CA32-3AA4	0.55	4	80	1LE7501-0DB22-3AA4	0.55	6	80	1LE7501-0DC32-3AA4
0.75	2	80	1LE7501-0DA22-3AA4	0.75	4	80	1LE7501-0DB32-3AA4	0.75	6	90S	1LE7501-0EC02-3AA4
1.1	2	80	1LE7501-0DA32-3AA4	1.1	4	90S	1LE7501-0EB02-3AA4	1.1	6	90L	1LE7501-0EC42-3AA4
1.5	2	90S	1LE7501-0EA02-3AA4	1.5	4	90L	1LE7501-0EB42-3AA4	1.5	6	100L	1LE7501-1AC42-3AA4
2.2	2	90L	1LE7501-0EA43-5AA4	2.2	4	100L	1LE7501-1AB43-5AA4	2.2	6	112M	1LE7501-1BC23-5AA4
3.7	2	100L	1LE7501-1AA53-5AA4	3.7	4	112M	1LE7501-1BB23-5AA4	3.7	6	132S	1LE7501-1CC13-5AA4
5.5	2	132S	1LE7501-1CA03-5AA4	5.5	4	132S	1LE7501-1CB03-5AA4	5.5	6	132M	1LE7501-1CC33-5AA4
7.5	2	132S	1LE7501-1CA13-5AA4	7.5	4	132M	1LE7501-1CB23-5AA4	7.5	6	160M	1LE7501-1DC23-5AA4
11	2	160M	1LE7501-1DA23-5AA4	11	4	160M	1LE7501-1DB23-5AA4	11	6	160L	1LE7501-1DC43-5AA4
15	2	160M	1LE7501-1DA33-5AA4	15	4	160L	1LE7501-1DB43-5AA4	15	6	180L	1LE7501-1EC43-5AA4
18.5	2	160L	1LE7501-1DA43-5AA4	18.5	4	180M	1LE7501-1EB23-5AA4	18.5	6	200L	1LE7501-2AC43-5AA4
22	2	180M	1LE7501-1EA23-5AA4	22	4	180L	1LE7501-1EB43-5AA4	22	6	200L	1LE7501-2AC53-5AA4
30	2	200L	1LE7501-2AA43-5AA4	30	4	200L	1LE7501-2AB53-5AA4	30	6	225M	1LE7501-2BC23-5AA4
37	2	200L	1LE7501-2AA53-5AA4	37	4	225S	1LE7501-2BB03-5AA4				
45	2	225M	1LE7501-2BA23-5AA4	45	4	225M	1LE7501-2BB23-5AA4				

\*Refer pg. 7 for details

### Salient Features of SIMOTICS Low voltage motors:

Shaft height	71 to 225
Power range	0.37kW to 45kW, 2 Pole   0.25kW to 45kW, 4 Pole   0.18kW to 30kW, 6 Pole
No. of poles	2/4/6
Motor/material	Frame: Cast Iron Terminal box: Aluminium (upto 132 Frame Size) (Cast Iron on request with Z=R64) & Cast Iron for 160 Frame onwards Fan cover: Sheet steel
Efficiency class	IE2 - High Efficiency
Marking	Classification according to IS 12615: 2011 / IEC 60034-1
Degree of protection	IP 55
Voltages	220V to 460V (415V Standard) (Additional voltages - > 460V to 690V on request)
Frequency	50 Hz (60 Hz against enquiry)
Type of construction	IMB3, IMB5, IMV1, IMB35 (for all frame sizes) and IMB14 & IMB34 (for Frame Sizes 71 to 132) (other construction variants of these basic ones upon enquiry)
Cooling method	IC411 Totally enclosed fan cooled [TEFC]
Temperature class	155°C (F) utilized to 130°C (B)
Insulation system	VFD suitable insulation scheme for voltages up to 460V as a standard
Standard series concept	Diagonally split terminal box (ease of termination of cables) Terminal box can be rotated through 360° in steps of 90° Increased cantilever force bearings at DE as an option



# Ordering codes for new SIMOTICS 1LE7-IE3 series of motors

## Efficiency higher than IE3



Output kW	Pole	Frame Size	Ordering Code (MLFB)*	Output kW	Pole	Frame Size	Ordering Code (MLFB)*	Output kW	Pole	Frame Size	Ordering Code (MLFB)*
			12-13 14 15 16				12-13 14 15 16				12-13 14 15 16
				0.25	4	71	1LE7503-OCB22-3AA4	0.18	6	71	1LE7503-OCC22-3AA4
				0.37	4	71	1LE7503-OCB32-3AA4	0.25	6	71	1LE7503-OCC32-3AA4
0.37	2	71	1LE7503-OCA22-3AA4	0.37	4	71	1LE7503-OCB32-3AA4	0.37	6	80	1LE7503-ODC22-3AA4
0.55	2	71	1LE7503-OCA32-3AA4	0.55	4	80	1LE7503-ODB22-3AA4	0.55	6	80	1LE7503-ODC32-3AA4
0.75	2	80	1LE7503-ODA22-3AA4	0.75	4	80	1LE7503-ODB32-3AA4	0.75	6	90S	1LE7503-OEC02-3AA4
1.1	2	80	1LE7503-ODA32-3AA4	1.1	4	90S	1LE7503-OEB02-3AA4	1.1	6	90L	1LE7503-OEC42-3AA4
1.5	2	90S	1LE7503-OEA02-3AA4	1.5	4	90L	1LE7503-OEB42-3AA4	1.5	6	100L	1LE7503-1AC42-3AA4
2.2	2	90L	1LE7503-OEA43-5AA4	2.2	4	100L	1LE7503-1AB43-5AA4	2.2	6	112M	1LE7503-1BC23-5AA4
3.7	2	100L	1LE7503-1AA53-5AA4	3.7	4	112M	1LE7503-1BB23-5AA4	3.7	6	132S	1LE7503-1CC13-5AA4
5.5	2	132S	1LE7503-1CA03-5AA4	5.5	4	132S	1LE7503-1CB03-5AA4	5.5	6	132M	1LE7503-1CC33-5AA4
7.5	2	132S	1LE7503-1CA13-5AA4	7.5	4	132M	1LE7503-1CB23-5AA4	7.5	6	160M	1LE7503-1DC23-5AA4
11	2	160M	1LE7503-1DA23-5AA4	11	4	160M	1LE7503-1DB23-5AA4	11	6	160L	1LE7503-1DC43-5AA4
15	2	160M	1LE7503-1DA33-5AA4	15	4	160L	1LE7503-1DB43-5AA4	15	6	180L	1LE7503-1EC43-5AA4
18.5	2	160L	1LE7503-1DA43-5AA4	18.5	4	180M	1LE7503-1EB23-5AA4	18.5	6	200L	1LE7503-2AC43-5AA4
22	2	180M	1LE7503-1EA23-5AA4	22	4	180L	1LE7503-1EB43-5AA4	22	6	200L	1LE7503-2AC53-5AA4
30	2	200L	1LE7503-2AA43-5AA4	30	4	200L	1LE7503-2AB53-5AA4	30	6	225M	1LE7503-2BC23-5AA4
37	2	200L	1LE7503-2AA53-5AA4	37	4	225S	1LE7503-2BB03-5AA4				
45	2	225M	1LE7503-2BA23-5AA4	45	4	225M	1LE7503-2BB23-5AA4				

\*Refer pg. 7 for details

### Salient Features of SIMOTICS Low voltage motors:

Shaft height	71 to 225
Power range	0.37kW to 45kW, 2 Pole   0.25kW to 45kW, 4 Pole   0.18kW to 30kW, 6 Pole
No. of poles	2/4/6
Motor/material	Frame: Cast Iron Terminal box: Aluminium (upto 132 Frame Size) (Cast Iron on request with Z=R64) & Cast Iron for 160 Frame onwards Fan cover: Sheet steel
Efficiency class	IE3 - Premium Efficiency
Marking	Classification according to IS 12615: 2011 / IEC 60034-1
Degree of protection	IP 55
Voltages	220V to 460V (415V Standard) (Additional voltages - > 460V to 690V on request)
Frequency	50 Hz (60 Hz against enquiry)
Type of construction	IMB3, IMB5, IMV1, IMB35 (for all frame sizes) and IMB14 & IMB34 (for Frame Sizes 71 to 132) (other construction variants of these basic ones upon enquiry)
Cooling method	IC411 Totally enclosed fan cooled [TEFC]
Temperature class	155°C (F) utilized to 130°C (B)
Insulation system	VFD suitable insulation scheme for voltages up to 460V as a standard
Standard series concept	Diagonally split terminal box (ease of termination of cables) Terminal box can be rotated through 360° in steps of 90° Increased cantilever force bearings at DE as an option

## Ordering codes for new SIMOTICS 1LE7-IE3 series of motors Efficiency higher than IE3



Output kW	Pole	Frame Size	Ordering Code (MLFB)*			
			12	13	14	15 16
55	2	250M	1	LE7503-2CA23-5	AA4	
75	2	280S	1	LE7503-2DA03-5	AA4	
90	2	280M	1	LE7503-2DA23-5	AA4	
110	2	315S	1	LE7503-3AA03-5	AA4	
132	2	315M	1	LE7503-3AA23-5	AA4	
160	2	315L	1	LE7503-3AA43-5	AA4	
200	2	315L	1	LE7503-3AA63-5	AA4	

Output kW	Pole	Frame Size	Ordering Code (MLFB)*			
			12	13	14	15 16
55	4	250M	1	LE7503-2CB23-5	AA4	
75	4	280S	1	LE7503-2DB03-5	AA4	
90	4	280M	1	LE7503-2DB23-5	AA4	
110	4	315S	1	LE7503-3AB03-5	AA4	
132	4	315M	1	LE7503-3AB23-5	AA4	
160	4	315L	1	LE7503-3AB43-5	AA4	
200	4	315L	1	LE7503-3AB63-5	AA4	

Output kW	Pole	Frame Size	Ordering Code (MLFB)*			
			12	13	14	15 16
37	6	250M	1	LE7503-2CC23-5	AA4	
45	6	280S	1	LE7503-2DC03-5	AA4	
55	6	280M	1	LE7503-2DC23-5	AA4	
75	6	315S	1	LE7503-3AC03-5	AA4	
90	6	315M	1	LE7503-3AC23-5	AA4	
110	6	315L	1	LE7503-3AC43-5	AA4	
132	6	315L	1	LE7503-3AC63-5	AA4	

Output kW	Pole	Frame Size	Ordering Code (MLFB)*			
			12	13	14	15 16
30	8	250M	1	LE7503-2CD23-5	AA4	
37	8	280S	1	LE7503-2DD03-5	AA4	
45	8	280M	1	LE7503-2DD23-5	AA4	
55	8	315S	1	LE7503-3AD03-5	AA4	
75	8	315M	1	LE7503-3AD23-5	AA4	
90	8	315L	1	LE7503-3AD43-5	AA4	
110	8	315L	1	LE7503-3AD53-5	AA4	

\*Refer pg. 7 for details

### Salient Features of SIMOTICS Low voltage motors:

<b>Shaft height</b>	250 to 315
<b>Power range</b>	30 kW to 200 kW
<b>No. of poles</b>	2/4/6/8
<b>Motor/material</b>	Frame: Cast Iron Terminal box: Cast Iron Fan cover: Sheet steel
<b>Efficiency class</b>	IE3 - Premium Efficiency
<b>Standards</b>	Conforming to IS 12615: 2011 / IEC 60034-1
<b>Degree of protection</b>	IP 55
<b>Voltages</b>	415V Standard Voltage (Additional Voltages available from 220V to 690V)
<b>Frequency</b>	50 Hz (60 Hz against enquiry)
<b>Type of construction</b>	IIMB3, IMV1 and IMB35 (other construction variants of these basic ones upon enquiry)
<b>Cooling method</b>	IC411 - Totally enclosed fan cooled [TEFC] Standard / IC416 against enquiry
<b>Temperature class</b>	155°C (F) utilized to 130°C (B)
<b>Insulation system</b>	VFD suitable insulation scheme for voltages up to 500V as a standard
<b>Standard series concept</b>	Diagonally split terminal box (ease of termination of cables) Terminal box can be rotated through 360° in steps of 90° Identical bearings at DE and NDE standard Increased cantilever force bearings at DE as an option Insulated bearings at NDE as an option for frames 250 to 315

# SIMOTICS 1LE7

## Voltage Code (Specified in MLFB Positions 12 & 13)

Frequency 50Hz						Frequency 60Hz				
Position 12 & 13	Connection		Position 12 & 13	Connection		Short Code	Position 12 & 13	Standard 50Hz Power		Short Code
	Δ	Y		Δ	Y			Δ	Y	
18	200VΔ		90	220VΔ	-	M1Y	90	220VΔ	380VY	M2A
20	-	360VY	90	230VΔ	-	M1Y	90	380VΔ	660VY	M2B
21	-	380VY	90	240VΔ	-	M1Y	90		440VY	M2C
22	-	400VY	90	360VΔ	-	M1Y	90	440VΔ		M2D
23	-	415VY	90	440VΔ	-	M1Y	90		460VY	M2E
27	-	500VY	90	460VΔ	-	M1Y	90	460VΔ		M2F
33	380VΔ	-	90	480VΔ	-	M1Y	90		575VY	M2G
34	400VΔ	-	90	525VΔ	-	M1Y	90	575VΔ		M2H
35	415VΔ	-	90	-	660VY	M1Y	90	400VΔ	690VY	M2J
40	500VΔ	-	90	-	690VY	M1Y	90		480Y	M2K
43	(575VΔ)	-					90	480VΔ		M2L
46	660VΔ	-					90	230VΔ	400Y	M2M
47	690VΔ	-								
90	Any other voltage					M1Y	90	Any other voltage apart from those listed above.		M1Y

Notes: • Short codes are mandatory when 12 and 13 in MLFB is 9 and 0 respectively. • M1Y requires Hz, V and kW to be specified in plain text • 60Hz mandates that a "Z", Z = B59 to be specified. • For 1LE77 motors only 2-3 or 3-5 is possible. For 60Hz please enquire. • For 1LE75 and 1LE76 all above voltagees are possible for frames 71 - 225. • For frames 250-315, please enquire with nearest sales office as not all above voltages may be possible.

## Construction Code (Specified in MLFB Position 14)

14 <sup>th</sup>	← Position in the MLFB
A	IM B3, IM B6, IM B7, IM B8, IM V5, IM V6, <b>(stamped IM B3)</b>
B	
C	IM V5 / IM 1011 (for frames up to 315L only)
D	IM V6 / IM 1031 (for frames up to 315L only)
E	
F	IM B5 / IM 3001, IM V1, IM V3, <b>(stamped IM B5)</b> flange (upto 315M only)
G	IM V1 / IM 3011 flange
H	IM V3 / IM 3031 flange (for frames up to 315M only)
J	IM B35 / IM 2001 flange
K	IM B14 / IM 3601, IM V19 / IM 3631, IM V18 / IM 3611 <b>(stamped IMB14)</b> ; standard flange (for frames up to 132M only)
L	IM V19 / IM 3631 standard flange (for frames up to 132M only)
M	IM V18 / IM 3611 standard flange (for frames up to 132M only)
N	IM B34 / IM 2101 standard flange (for frames up to 132M only)
T	IM B6 / IM 1051 (for frames up to 315L only)
U	IM B7 / IM 1061 (for frames up to 315L only)
V	IM B8 / IM 1071 (for frames up to 315L only)
W	IMV15
Y	IMV36 <b>(IMV35 when used with B59)</b> (frames up to 315L only)

## Motor Protection (Specified in MLFB Position 15)

15 <sup>th</sup>	← Position in the MLFB
A	Without winding protection
B	3x PTC thermistors for tripping (Class F)
C	6x PTC thermistors - 3x for alarm and 3x for tripping (Class F)
H	3x PT100 resistance thermometers in stator winding - 2 wire
J	6x PT100 resistance thermometers in stator winding - 2 wire
K	1x Temperature sensor - PT1000
L	2x Temperature sensor - PT1000
Z	Q1B 3x PT100 resistance thermometers in stator winding - 3 wire from sensor
Z	Q2B 6x PT100 resistance thermometers in stator winding - 3 wire from sensor
Z	Q3A 3x Bi-metallic sensors for trip operation (Thermostats)
Z	Q9A 6x Bi-metallic sensors (3x for alarm, 3x for tripping) (Thermostats)
<b>Addition to Position 15 (Value of Positon 15 = B)</b>	
B	-Z = Q11 Additional 3x PTC thermistors for tripping
<b>Addition to Position 15 (Value of Positon 15 = B or C with or without Q11)</b>	
B or C	-Z = Q90 Class B PTC thermistors (Alarm 130°C, Trip 140°C)

Only few cases shown as examples. For further options, please consult nearest Sales office.

## Terminal Box Position (Specified in MLFB Position 16)

16 <sup>th</sup>	← Position in the MLFB
4	Terminal box on TOP
5	Terminal box on RHS
6	Terminal box on LHS
7	Terminal box at bottom (only for horizontal constructions without feet)

