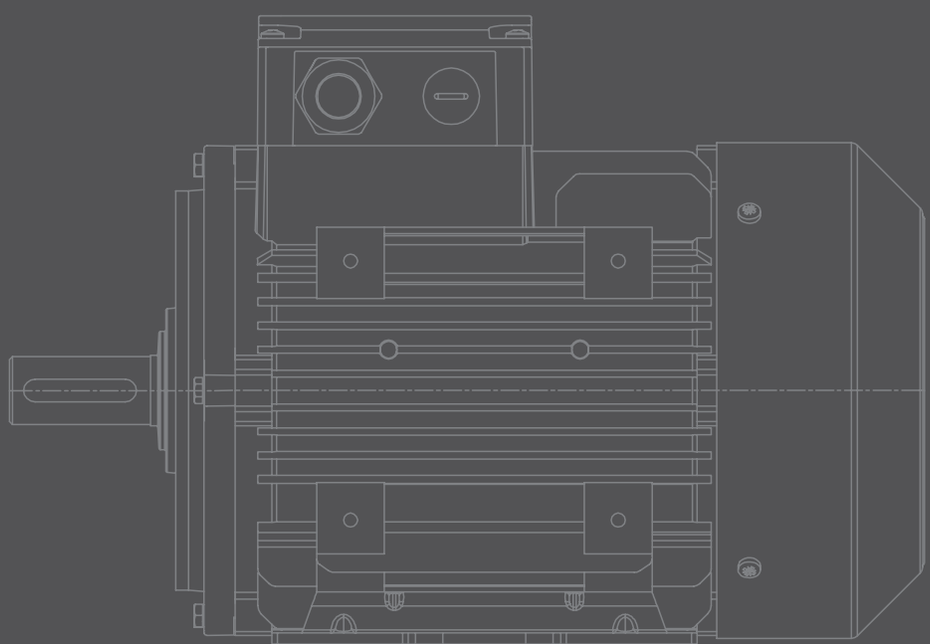
ELK MOTOR

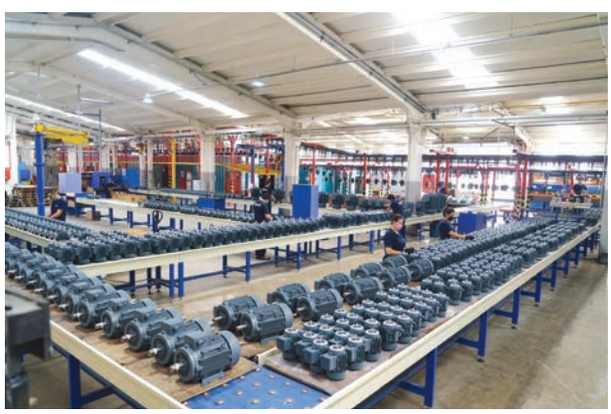
PRODUCT CATALOGUE

ELK 0901-0623

www.elkmotor.com.tr



ELK MOTOR



ELK Motor has been founded by major shareholders of Yılmaz Reduktor, as a continuation of the product family. ELK Motor manufactures electric motors from 63 up to 315 frame size in a 50.000m closed area built on a 135.000 m open area.

All motor series are designed and manufactured in accordance with European standards and in IE2, IE3 and IE4 efficiency classes.

The main design and technology of ELK Motor is completely suitable to the IE3 efficiency class. Since the outside dimensions of the IE3 and IE2 design are completely same, the replacement of the IE2 motor with IE3 motors will be done easily.

In addition to the motors according to the European standards, ELK Motor also manufactures special motors for its customers to decrease the cost and increase the productivity.

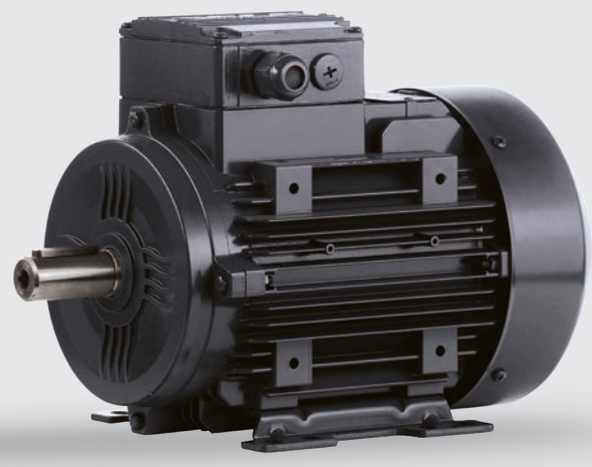
ELK Motors, from engineering to manufacturing processes, are completely manufactured in our factory located in Çerkezköy. Motor shafts and end shields are manufactured by fully automatic CNC machines under a continuous quality control. The rotor and stator cores are manufactured in our fully automatic punching and interlocking lines.

After injecting the pure aluminum into the rotor cores in a fully automatic rotor injection line, the rotor cores become ready for assembly. In automatic winding lines, stator cores are wound and varnished either by automatic dipping method or VPI (Vacuum Pressure Impregnation) method according to the needs and usage area. So the products are always in the best levels of quality and performance.

After all of these operations, our motors which are assembled in accordance with product prescriptions are being tested and controlled fully for the last time and shipped to the customers after packaging.

In addition, ELK Motor has the quality management system and final product certificates, that customers need. Our quality system is certified with ISO 9001 and our products have UL approval.

CONTENTS



Technical Information

IEC / EN / UL Compatibility

All of standard ELK Motors are designed, manufactured and tested according to the IEC and EN standards given below.

IEC 60034-1	Rating and performance
IEC 60034-2-1	Methods for determining losses and efficiency
IEC 60034-5	Classification of degrees of protection
IEC 60034-6	Methods of cooling
IEC 60034-7	Symbols of construction and mounting arrangements
IEC 60034-8	Terminal markings and direction of rotation
IEC 60034-9	Noise limits
IEC 60034-11	Built-in thermal protection
IEC 60034-14	Vibration limits
IEC 60034-18-1	Functional evaluation of insulation system
IEC 60034-30	Efficiency classes (IE Code)
IEC 60038	Standard voltages
EN 50347	Dimensions and output for electrical machines

EN 55014-1	
EN 61000-3-2	Electromagnetic compatibility
EN 61000-3-3	

UL1004-1	Rotating Electrical Machines - General Requirements
CSA C22.2 No. 100	Motors and Generators

All of our motors, which have that UL logo on nameplate are approved by UL and manufactured according to UL1004-1 and CSA C22.2 No. 100 standards with E496161 file number.

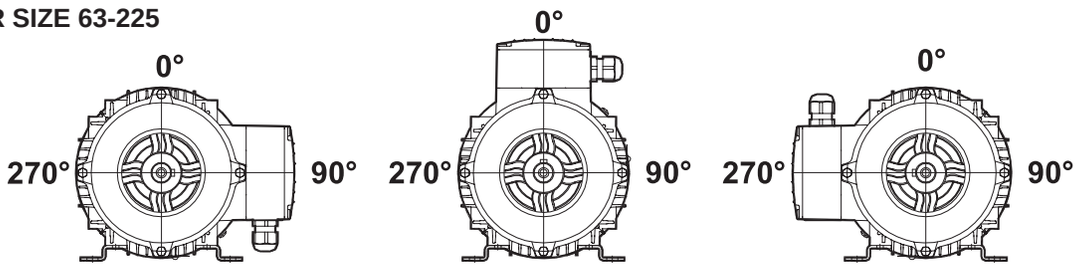
According to IEC 60034-1, catalogue values are permitted to deviate from the real values as follows:

Speed (n)	$\Delta n = \pm 20\% (ns - n_N)$, $P_N > 1$ kW $\Delta n = \pm 30\% (ns - n_N)$, $P_N <= 1$ kW
Efficiency %(η)	$\Delta \eta = -15\% (100 - \eta_N)$
Power Factor (Cosφ)	$\cos\varphi = -1/6 (1 - \cos\varphi)$
Locked rotor current (I_{LN})	$\Delta (I_{LN}) = +20\% (I_{LN})$
Starting torque (M_L/M_N)	min. $(M_L/M_N) = -15\% (M_L/M_N)$ max. $(M_L/M_N) = +25\% (M_L/M_N)$
Break down torque (M_K/M_N)	$(M_K/M_N) = -10\% (M_K/M_N)$
Moment of inertia (J) [kgm²]	$\Delta J = \pm 10\% J$
Sound pressure level (L_{PA}) [dB(A)]	$L_{PA} = +3$ dB (A)

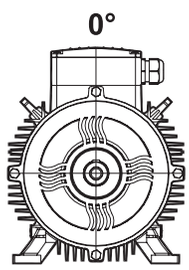
Mechanical Construction

63-225 frame size ELK Motors provides flexibility for different mounting types through their detachable feet which can be mounted on three sides. This feature allows terminal box assembly on the desired side.
Terminal box is on the top for standard motors. 250-315 frame size motors have fixed feet construction.

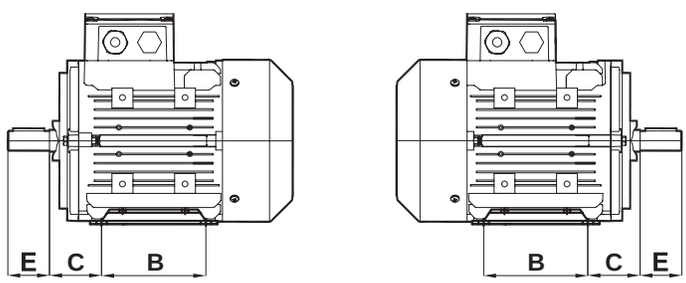
MOTOR SIZE 63-225



MOTOR SIZE 250-315



Additionally the housing and end shields are designed symmetrically for all the frame sizes, so that the drive and non-drive side end shields can be replaced and the direction of the rotor shaft group can be changed.
By making this end shields and rotor shaft group modifications, the user can have a motor with terminal box is at the non-drive side keeping the distance C according to the standards.



The raw materials that are used in our motors depending on the frame size are listed below.

Frame Size	Housing	End Shield DE	End Shield NDE	Terminal Box & Cover	Feet	Fan Cover	Fan
63	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
71	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
80	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
90	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
100	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
112	Aluminum	Aluminum	Aluminum	Aluminum	Steel Sheet	Steel Sheet	Plastic
132	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Steel Sheet Cast Iron	Steel Sheet	Plastic
160	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Steel Sheet	Plastic
180	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Steel Sheet	Plastic
200	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Aluminum Cast Iron	Steel Sheet	Plastic
225	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic
250	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic
280	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic
315	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Steel Sheet	Plastic

Electrical Construction

Standard ELK Motors have insulation Class F while the temperature rise is Class B. This means the motors will have a longer service life and work under hard conditions. Upon the customer's request, Class H insulation motors are manufactured.

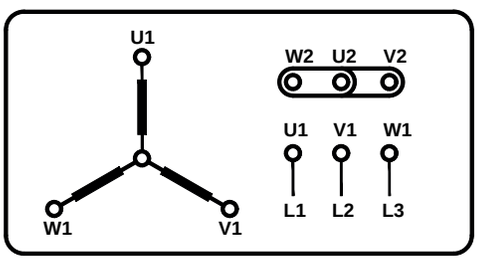
Electrical Connections

Cable Gland and Blind Cap														
Frame Size	063	071	080	090	100	112	132	160	180	200	225	250	280	315
Cable Glands	M16x1,5	M20x1,5			M25x1,5			2 x M32x1,5		2 x M40x1,5	2 x M50x1,5		2 x M63x1,5	
Blind Cap	M16x1,5				M25x1,5			-		-	-		-	

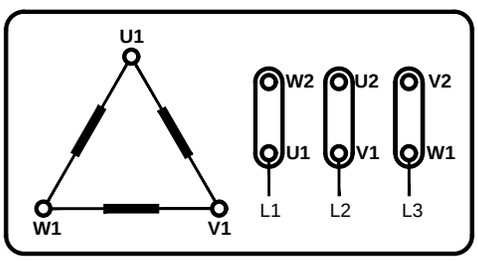
Terminal Connections														
Frame Size	063	071	080	090	100	112	132	160	180	200	225	250	280	315
Terminal Size	M4				M5			M6			M8	M10		M16

The motors shall be connected in star or delta according to rated voltage given in their nameplate and the network voltage that they will be connected. For phase to phase 400V supply the motors with 230/400V nameplate values shall be connected in star and the motors with 400/690V nameplates values shall be connected in delta.
The connection types given below should be applied for single phase motors, depending on the direction of rotation.

Terminal Connection For Three Phase Motor

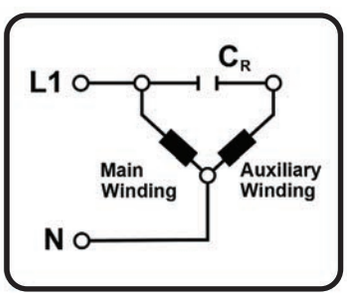


Y Star Connection

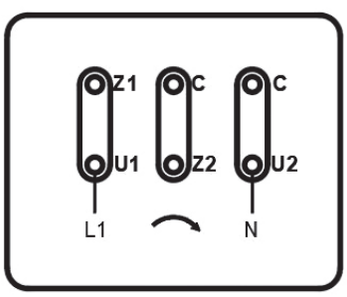


Δ Delta Connection

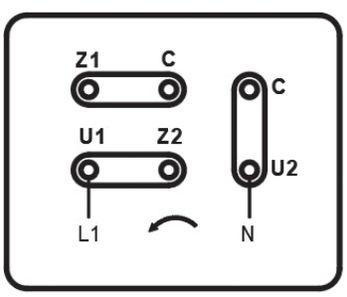
Terminal Connection For Single Phase Motor



Circuit Connection



Clockwise Direction



Counter-Clockwise Direction

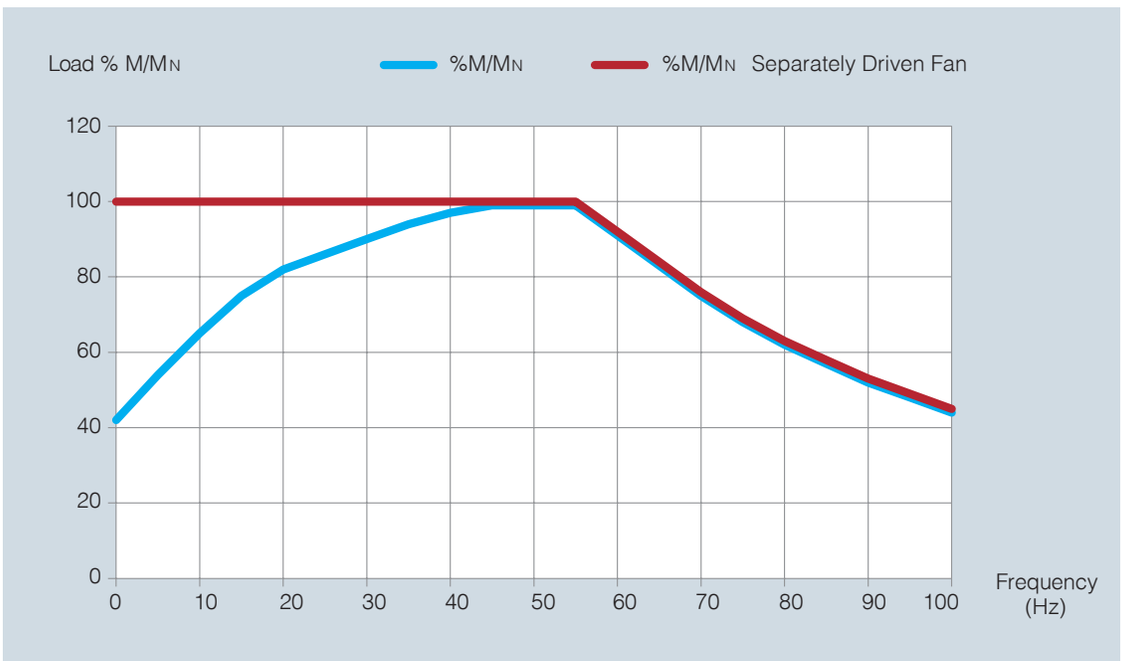
Motors at 60Hz Network

Standard ELK Motors that have been manufactured for 50 Hz power supply can be used at 60Hz network. The ratios given below indicate changes in the given rated values.

50 Hz Rated Voltage	60 Hz Rated Voltage	Rated Speed	Rated Power	Rated Torque	Rated Current	Starting Torque	Break Down Torque	Starting Current
230V	220V	1.193	1	0.84	0.97	0.77	0.8	0.8
400V	380V	1.193	1	0.84	0.97	0.77	0.8	0.8
400V	440V	1.20	1.16	0.97	0.98	0.87	0.9	0.9

Motors With Variable Speed Drives

Standard ELK Motors are suitable for variable speed drives. The frequency range that the motor can be driven wit their fan is given below with blue line. If the motor will be driven in a wider range then a separately driven fan is necessary. By using a separately driven fan, the mo tors can be driven in the range defined by red line.



Motors In Several Environmental Conditions

ELK Motors are designed to operate at ambient temperature up to 40°C according to IEC 60034-1. Rated output will change at the % ratings given below for different ambient temperatures.

Ambient Temperature	<30 °C	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C
% Power Ratio	105	102	100	97	93	87	82

Winding Insulation / Temperature Rise Classes

All standard motors in the ELK Motor range have F (155 ° C) class electrical insulation system. However, by means of its superior design features, the temperature rise of all standard motors remain within the Class B temperature rise limits when operating under rated conditions. Depending on the safety margin of the temperature rise class provided, our motors can provide 15% higher rated output power with a service factor of 1.15 (SF).

INSULATION CLASS	B 130°C	F 155°C	H 180°C
Maximum Winding Temperature			
Tolerance	10°C	10°C	15°C
Limits of Winding Temperature	80°C	105°C	125°C
Ambient Temperature	40°C	40°C	40°C

B

Class B insulation system is shown for referance purposes only. Class B insulation system is not used in ELK motors.

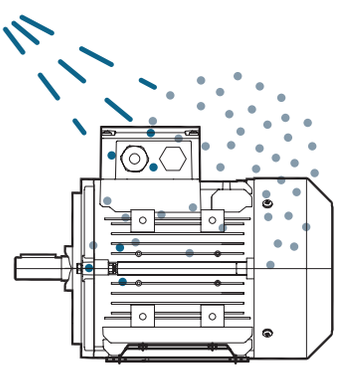
F (Standard)

Our standard motors have class F electrical insulation system. The maximum permissible winding temperature at 40°C ambient temperature is 155°C.

H (Optional)

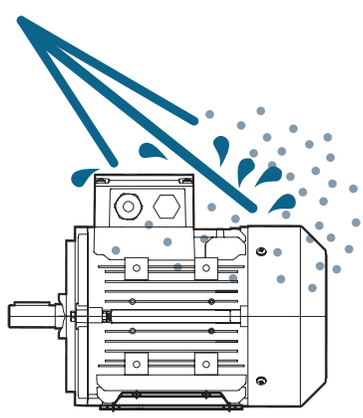
H class insulation is provided on special request. At 40°C ambient temperature, the maximum permissible winding temperature is 180°C

Protection Classes



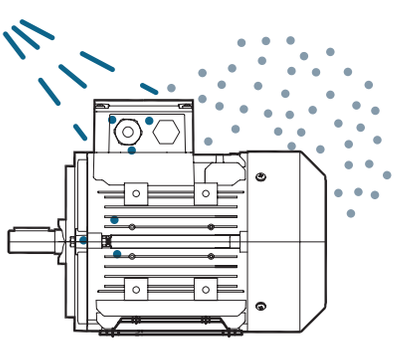
IP55 (Standard)

Limited protection against dust ingress and protected against low pressure water jets from any direction.



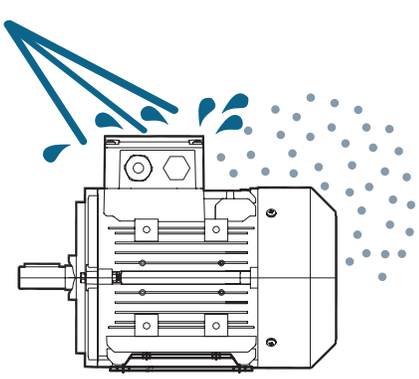
IP56

Limited protection against dust ingress and protected against high pressure water jets from any direction.



IP65

Totally protected against dust ingress and protected against low pressure water jets from any direction.

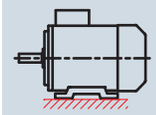
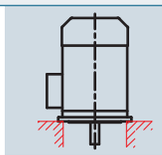
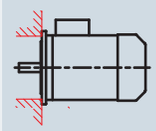
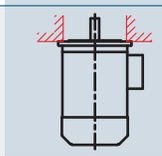
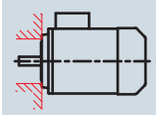
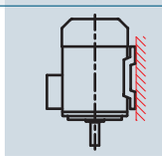
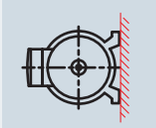
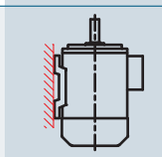
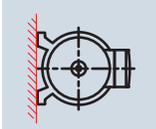
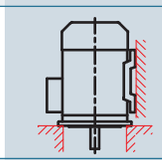
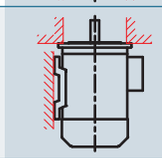
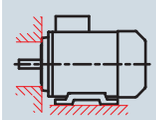
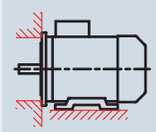


IP66

Totally protected against dust ingress and protected against high pressure water jets from any direction.

Construction Types

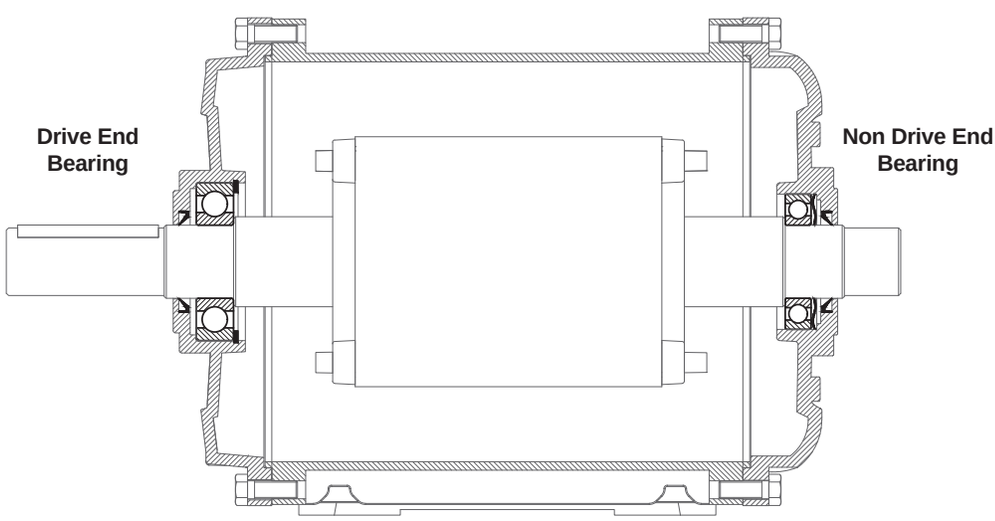
ELK Motors are manufactured according to International Mounting Standard IEC 60034-7.

Mounting codes and diagrams according to IEC 60034-7					
Horizontal Mounting Codes			Vertical Mounting Codes		
	I	II		I	II
	IM B3	IM 1001		IM V1	IM 3011
	IM B5	IM 3001		IM V3	IM 3031
	IM B14	IM 3601		IM V5	IM 1011
	IM B7	IM 1061		IM V6	IM 1031
	IM B6	IM 1051		IM V15	IM 2011
	IM B8	IM 1071		IM V35	IM 2031
	IM B34	IM 2101			
	IM B35	IM 2001			

Bearings

Standard ELK Motors are equipped with ball bearings with ZZ shields as listed below, according to frame size. NU-NJ bearings are optional.

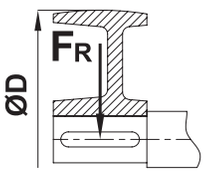
Frame Size	Number of Pole	Drive End Bearing	Non Drive End Bearing
63	2-4-6-8	6201 ZZ	6201 ZZ
71	2-4-6-8	6202 ZZ	6202 ZZ
80	2-4-6-8	6204 ZZ	6204 ZZ
90	2-4-6-8	6205 ZZ	6205 ZZ
100	2-4-6-8	6206 ZZ	6206 ZZ
112	2-4-6-8	6206 ZZ	6206 ZZ
132	2-4-6-8	6208 ZZ	6208 ZZ
160	2-4-6-8	6309 ZZ	6209 ZZ
180	2-4-6-8	6310 ZZ	6210 ZZ
200	2-4-6-8	6312 ZZ	6212 ZZ
225	2-4-6-8	6313 ZZ	6213 ZZ
250	2-4-6-8	6315 ZZ	6215 ZZ
280	2 4-6-8	6315 6317	6315 6317
315	2 4-6-8	6316 6319	6316 6319



Radial Loads

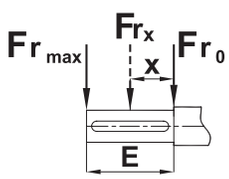
Radial Load (F_R):
Radial load can be calculated according to below written formula.
Calculated radial load must be below permissible radial loads given at tables.
If above, please contact with us.

$$F_R = k \cdot \frac{P}{D \cdot n} \cdot 10^7 \, (N)$$



Correction of Permissible Radial Load
If the radial load is applied between points x_0 and x_{max}, the permissible radial load can be corrected with the following formula.

$$Fr_X = Fr_0 - \frac{x}{E}(Fr_0 - Fr_{max})$$



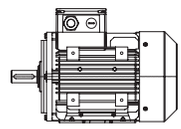
P: Motor Power (kW)
D: Pulley Diameter (mm)
n: Motor speed (rpm)
k: Radial load factor
- Spur Gears, chain drives with low speed = 2,1
- Trigger Belts = 2,5
- V type belts = 5

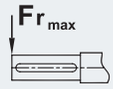
$F_R < Fr_X$: Calculated radial load must be below permissible radial loads given at tables.

Fa: Axial load
Fr_0: Permissible radial load at shaft spigot.
Fr_{max}: Permissible radial load at shaft end point.
Permissible loads are calculated for L_{h10} 20000 h bearing lifetimes according to ISO 281.

Radial Loads

HORIZONTAL MOUNTING - Permissible Radial Loads
Mounting Positions IM: B3, B5, B6, B7, B8, B14, B34, B35

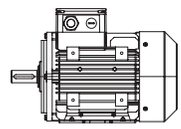


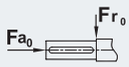
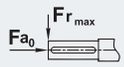
Frame Size	Fa = 0	
		
2 Poles 3000 rpm	**Fr_o [N]**	**Fr_{max} [N]**
63	350	300
71	380	340
80	640	550
90	750	660
100	1050	900
112	1050	910
132	1520	1220
160	2800	2300
180	3250	2650
200	4340	3560
225	4950	4000
250	6050	4800
280	6300	5100
315	6400	5550
4 Poles 1500 rpm	**Fr_o [N]**	**Fr_{max} [N]**
63	430	390
71	520	440
80	800	700
90	950	780
100	1300	1050
112	1300	1050
132	1950	1600
160	3540	2825
180	4100	3400
200	5500	4550
225	6200	4900
250	7500	6000
280	8200	7500
315	8500	8000
6 Poles 1000 rpm	**Fr_o [N]**	**Fr_{max} [N]**
63	500	400
71	580	500
80	870	800
90	1090	900
100	1500	1250
112	1500	1250
132	2200	1800
160	4050	3190
180	4720	3830
200	6350	5150
225	7350	5650
250	8950	7200
280	9500	8500
315	9800	8700

Fa0 : Permissible axial load
Fr : Radial load
Fr0 : Permissible radial load at shaft spigot.
Fr max : Permissible radial load at shaft end point.
Permissible loads are calculated for L_{h10} 20000 h bearing lifetimes according to ISO 281.

Axial Loads

HORIZONTAL MOUNTING - Permissible Axial Loads
Mounting Positions IM: B3, B5, B6, B7, B8, B14, B34, B35

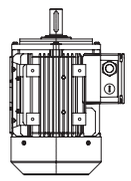


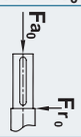
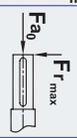
Frame Size	Push			Pull
	Fr = 0	Fr = Fr_0	Fr = Fr_{max}	Fr = 0
				
2 Poles 3000 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	90	90	90	220
71	110	110	110	250
80	190	190	190	395
90	210	210	210	400
100	270	270	270	580
112	270	270	270	580
132	380	380	370	800
160	2280	1060	1020	1670
180	2660	1250	1250	1970
200	3150	1500	1390	2600
225	3850	1850	1760	2750
250	4150	2180	2250	3350
280	4500	2500	2500	3350
315	5200	2700	2700	3410
4 Poles 1500 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	90	90	90	330
71	110	110	110	360
80	190	190	190	560
90	210	210	210	585
100	300	300	300	830
112	300	300	300	830
132	400	400	400	1200
160	2280	1400	1400	2350
180	3100	1570	1500	2800
200	4400	1770	1770	3810
225	4950	2150	2200	4300
250	6050	2400	2400	4500
280	7200	3000	3000	5500
315	7800	4000	3700	5800
6 Poles 1000 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	90	90	90	370
71	110	110	110	430
80	190	190	190	700
90	210	210	210	740
100	290	290	290	1020
112	290	290	290	1020
132	380	380	380	1470
160	3050	1540	1520	2900
180	3540	1780	1700	3410
200	4800	2200	2250	4400
225	5050	2580	2800	5200
250	6050	3100	3150	6500
280	7000	3700	3400	7150
315	8500	4200	3800	6900

Fa_0 : Permissible axial load
Fr : Radial load
Fr_0 : Permissible radial load at shaft spigot.
Fr_{max} : Permissible radial load at shaft end point.
Permissible loads are calculated for L_{h10} 20000 h bearing lifetimes according to ISO 281.

Axial Loads

VERTICAL MOUNTING - Shaft Pointing Upwards - Permissible Axial Loads
Mounting Positions IM: V3, V6, V19, V35, V37

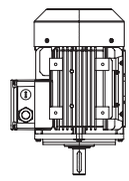


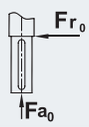
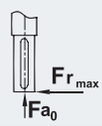
Frame Size	Push			Pull
	Fr = 0	Fr = Fr_0	Fr = Fr_{max}	Fr = 0
				
2 Poles 3000 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	90	90	90	230
71	100	100	100	265
80	170	170	170	425
90	180	180	180	450
100	250	250	250	650
112	250	250	250	660
132	300	300	300	970
160	2080	1060	990	1950
180	2410	1190	1050	2350
200	2900	1265	1265	3000
225	3250	1310	1295	3575
250	3950	1460	1450	4350
280	4100	1500	1500	4700
315	4380	1420	1420	5250
4 Poles 1500 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	90	90	90	345
71	95	95	95	380
80	160	160	160	600
90	170	170	170	650
100	210	210	210	930
112	210	210	210	950
132	240	240	240	1430
160	2500	1250	1220	2160
180	2900	1400	1370	2570
200	3900	1360	1530	3500
225	4450	1570	1680	4000
250	5400	1870	1910	4300
280	6500	2250	2250	7100
315	6000	2050	1600	8850
6 Poles 1000 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	85	85	85	395
71	95	95	95	455
80	160	160	160	745
90	170	170	170	800
100	230	230	230	1120
112	210	210	210	1150
132	250	250	250	1690
160	2980	1490	1450	3300
180	3400	1670	1670	3800
200	4250	1850	1860	5100
225	4800	1980	2080	5800
250	5300	2200	2260	6200
280	6300	2200	2050	7500
315	6800	2290	2200	10750

Fa_0 : Permissible axial load
Fr : Radial load
Fr_0 : Permissible radial load at shaft spigot.
Fr_{max} : Permissible radial load at shaft end point.
Permissible loads are calculated for L_{h10} 20000 h bearing lifetimes according to ISO 281.

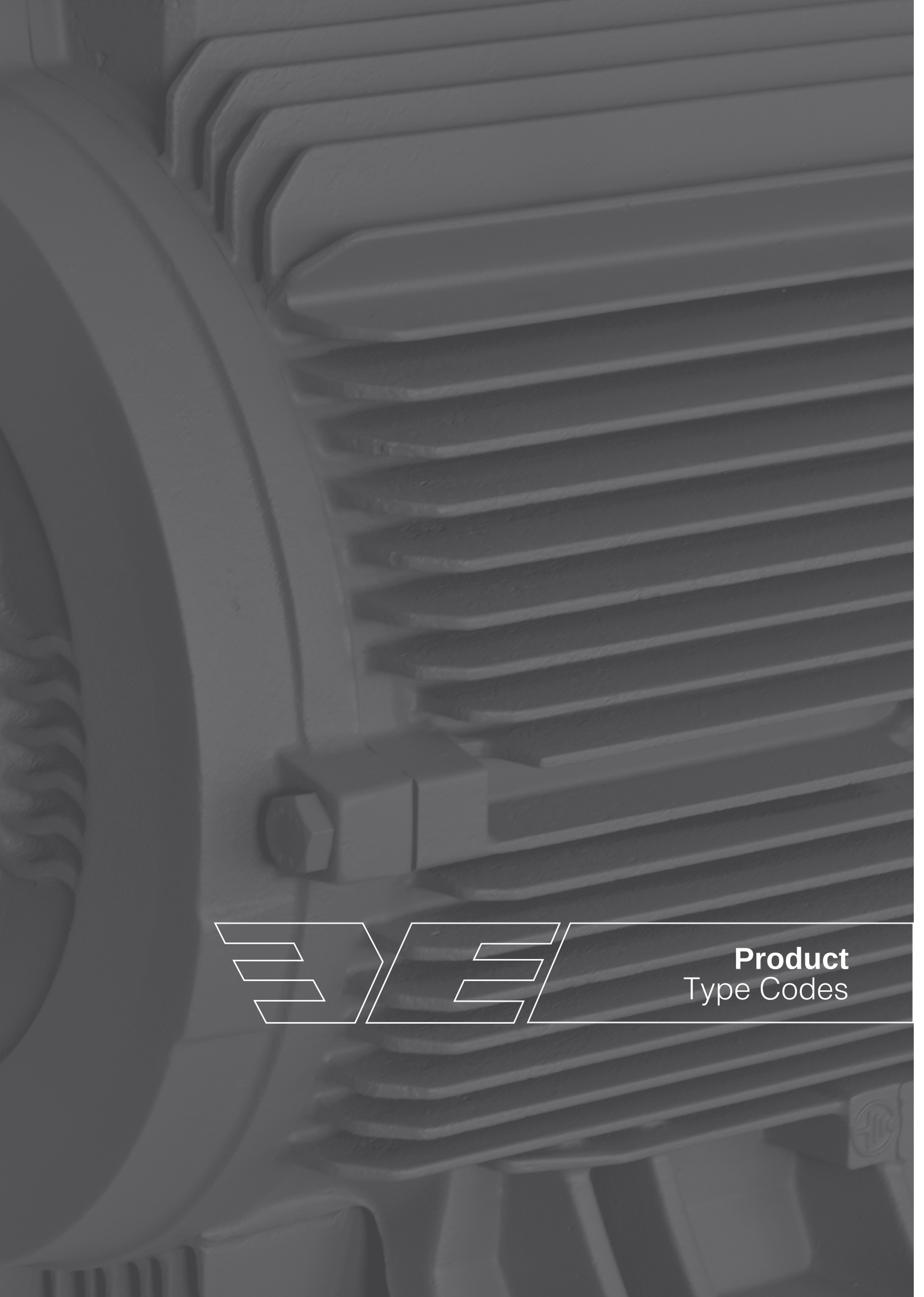
Axial Loads

VERTICAL MOUNTING - Shaft Pointing Downwards - Permissible Axial Loads
Mounting Positions IM: V1, V5, V15, V17, V18



Frame Size	Push			Pull
	Fr = 0	Fr = Fr_0	Fr = Fr_{max}	Fr = 0
				
2 Poles 3000 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	110	110	110	210
71	130	130	130	235
80	220	220	220	385
90	250	250	250	375
100	330	330	330	535
112	340	340	340	520
132	490	550	550	680
160	2600	1550	1500	1500
180	3070	1850	1750	1700
200	3550	2300	2300	2315
225	4250	2680	2670	2630
250	5200	3200	3280	3100
280	6000	3900	3900	2750
315	7320	4370	4350	2825
4 Poles 1500 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	120	110	120	300
71	130	130	130	340
80	220	220	220	540
90	260	260	260	545
100	380	370	370	760
112	410	400	400	740
132	580	570	570	1040
160	3500	1910	1840	2100
180	4000	2300	2170	2450
200	4250	2870	2850	2200
225	5000	3350	3380	3740
250	6200	4200	4000	4440
280	8900	4850	4850	4600
315	10900	6950	6500	3900
6 Poles 1000 rpm	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**	**Fa_0 [N]**
63	110	110	110	360
71	130	130	130	415
80	220	220	220	675
90	250	250	250	700
100	360	360	360	960
112	390	390	390	930
132	560	560	560	1310
160	3100	2130	2120	2650
180	3600	2600	2490	3030
200	5000	3260	3300	4000
225	5550	3710	3810	4650
250	6200	4510	4550	5500
280	7500	5300	5200	5750
315	12800	7400	7800	5500

Fa_0 : Permissible axial load
Fr : Radial load
Fr_0 : Permissible radial load at shaft spigot.
Fr_{max} : Permissible radial load at shaft end point.
Permissible loads are calculated for L_{h10} 20000 h bearing lifetimes according to ISO 281.



Product
Type Codes

Product Type Codes

4	EL	160	L	4	F	PD	BA	000

4 ----→ Motor Efficiency Classes
2: IE2
3: IE3
4: IE4

EL ----→ Basic Motor Type
EL : Aluminum housing standard three phase motors
EG : Cast iron housing standard three phase motors
EC : Aluminum housing three phase compact motors
ED : Cast iron housing three phase compact motors
MD : Aluminum housing standard single phase motors
MC : Aluminum housing single phase compact motors

160 ----→ Frame Size: 63, 71, 80, 90, 100, 112, 132, 160, 180, 200, 225,250,280, 315
Height of the shaft axis from feet base of motor (mm)

L ----→ Housing Length
S : Short
M: Medium
L : Long

4 ----→ Number of Poles
2:2 poles 3000 rpm
4:4 poles 1500 rpm
6:6 poles 1000 rpm
Z: 12 poles 500 rpm

F ----→ Core Length: A, B, C, D, E, F, G

PD ----→ Construction Types / Flange Types
PD : B3 Foot Mounted
FA : B5 Flange
FC : B14 Flange
FS : Special Flange
PA : B35
PC : B34
PS : Foot mounted with special flange
Y0..Y9: With flange for gearbox connection
PX : Foot mounted without drive end shield
XX : Without foot and drive end shield
Z0-Z9: Foot mounted Yılmaz type

BA ----→ Electrical Specifications
AA..ZZ Voltage, Frequency and electrical features

1st digit: Voltage and Frequency
A : 230/400V 50Hz
B : 400/690V 50Hz
C : 240/415V 50Hz
D : 415/720V 50Hz
E : 230/400V 60Hz 1,16 increased rated output power
F : 400/690V 60Hz 1,16 increased rated output power
G : 220V 60Hz
I : 220/380V 60Hz 1,16 increased rated output power
J : 380/660V 60Hz 1,16 increased rated output power
7 : 220V 50Hz
Y : 220V 60Hz

2nd digit : Additional electrical features
0: Standard motor, basic version
A: Motors with thermistor
B: Motors with anti-condensation heater
C: Motors with thermal switch
K: Motors with thermistor anti-condensation heater

000 ----→ Additional Motor Features
000.....ZZZ
000 : Standard Motor


IE2
Motors

Electrical Characteristics

400V 50Hz 3000 rpm

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

IE2

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
230/400	2EL063M2A	0,18	2800	0,50	0,61	0,77	67,5	66,0	62,0	4,5	2,9	3,0	0,00012	3,80	51
	2EL063M2B	0,25	2800	0,67	0,85	0,78	69,0	68,0	63,5	4,5	2,9	3,0	0,00015	4,20	51
	2EL071M2A	0,37	2790	0,90	1,26	0,80	74,2	74,5	72,5	5,0	2,5	2,8	0,00031	5,50	54
	2EL071M2B	0,55	2790	1,27	1,88	0,82	75,8	77,0	76,0	5,0	2,8	2,9	0,00037	6,30	54

UL approved motors have cULus logo on nameplate

400V 50Hz 1500 rpm

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

IE2

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
230/400	2EL063M4B	0,12	1400	0,42	0,82	0,70	60,1	60,5	54,5	3,0	2,1	2,3	0,00018	3,60	42
	2EL063M4C	0,18	1400	0,56	1,23	0,71	64,7	65,8	61,5	3,0	2,1	2,3	0,00022	4,20	42
	2EL071M4B	0,25	1425	0,71	1,68	0,69	74,0	73,5	70,5	4,4	2,0	3,0	0,00067	5,90	46
	2EL071M4C	0,37	1425	1,00	2,47	0,70	76,1	75,5	71,5	4,6	2,0	3,0	0,00082	6,70	46
	2EL080M4B	0,55	1440	1,45	3,65	0,71	77,1	76,7	75,0	5,2	2,0	3,0	0,00175	9,70	50

UL approved motors have cULus logo on nameplate

400V 50Hz 1000 rpm

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

IE2

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
230/400	2EL071M6B	0,18	920	0,60	1,87	0,67	64,5	63,0	57,0	3,2	1,9	2,3	0,00076	5,90	42
	2EL071M6C	0,25	920	0,78	2,59	0,69	66,5	66,0	61,0	3,3	1,9	2,3	0,00096	6,60	42
	2EL080M6A	0,37	925	1,08	3,82	0,69	71,4	71,5	70,0	4,0	2,0	2,6	0,00176	9,10	45
	2EL080M6B	0,55	932	1,50	5,64	0,72	73,5	74,0	71,0	4,2	2,1	2,6	0,00202	9,90	45

UL approved motors have cULus logo on nameplate


IE3
Motors

Electrical Characteristics

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

400V 50Hz 3000 rpm

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
230/400	3EL063M2A	0,18	2805	0,48	0,61	0,77	70,0	68,5	62,8	4,5	3,0	3,1	0,00012	3,80	51
	3EL063M2B	0,25	2805	0,65	0,85	0,79	71,0	69,7	64,2	4,6	3,0	3,1	0,00015	4,20	51
	3EL071M2B	0,37	2830	0,84	1,25	0,82	76,6	77,0	75,0	6,0	2,8	3,0	0,00037	6,20	53
	3EL071M2C	0,55	2830	1,19	1,86	0,84	79,4	80,2	78,8	6,1	2,9	3,3	0,00046	7,20	53
	3EL080M2B	0,75	2880	1,59	2,49	0,84	80,7	82,0	81,5	6,7	3,0	3,6	0,00103	9,6	54
	3EL080M2C	1,10	2880	2,26	3,64	0,85	82,7	83,0	82,4	6,8	3,1	3,8	0,00124	10,9	54
	3EL090S2B	1,50	2900	2,97	4,94	0,86	84,8	85,4	84,2	7,6	3,1	3,9	0,00178	15,6	59
	3EL090L2C	2,20	2900	4,25	7,24	0,87	85,9	86,8	86,1	7,2	3,0	3,8	0,00221	17,0	59
	3EL100L2C	3,00	2910	5,58	9,85	0,89	87,1	87,6	86,9	7,9	3,0	4,1	0,00450	23,3	62
400/690	3EL112M2C	4,00	2915	7,28	13,1	0,90	88,1	88,8	88,2	7,5	2,6	3,9	0,00618	29,1	65
	3EL132S2B	5,50	2945	9,90	17,8	0,90	89,2	89,0	88,6	8,9	2,9	3,9	0,01732	44,4	67
	3EL132S2C	7,50	2945	13,2	24,3	0,91	90,1	90,5	89,7	8,4	2,6	4,0	0,02104	51,5	67
	3EL160M2B	11,0	2950	19,7	35,6	0,88	91,2	91,0	90,5	8,0	2,6	3,9	0,03318	79,7	69
	3EL160M2C	15,0	2950	26,5	48,6	0,89	91,9	92,1	91,6	8,9	3,1	4,2	0,03913	86,0	69
	3EL160L2D	18,5	2945	31,7	60,0	0,91	92,4	92,7	92,3	8,9	3,1	4,2	0,04409	96,8	69
	3EG180M2B	22,0	2957	38,1	71,1	0,90	92,7	92,9	92,0	8,6	2,6	3,9	0,06299	178	70
	3EG200L2B	30,0	2970	52,0	96,5	0,89	93,6	93,8	93,6	8,9	3,2	3,5	0,16168	245	72
	3EG200L2C	37,0	2970	62,6	119	0,91	93,7	93,8	93,4	8,9	3,2	3,4	0,17458	270	72
	3EG225M2C	45,0	2975	75,6	144	0,91	94,3	94,6	94,0	8,9	3,5	3,1	0,25353	335	74
	3EG250M2C	55,0	2970	93,3	177	0,90	94,4	94,8	94,5	8,9	3,3	3,4	0,38000	422	75

UL approved motors have c UL us logo on nameplate

Electrical Characteristics

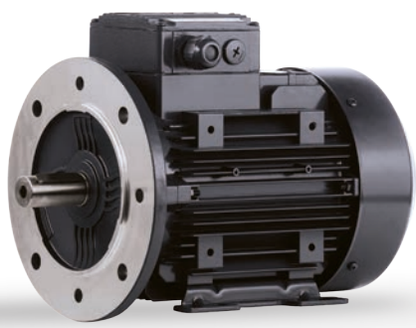
Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

400V 50Hz 1500 rpm

IE3

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
230/400	3EL063M4B	0,12	1405	0,37	0,82	0.70	66.0	64.9	58.2	3,7	2,3	2,7	0,00018	3.60	42
	3EL063M4C	0,18	1405	0,52	1,22	0,71	69,9	68,8	63,6	3,8	2,3	2,8	0,00022	4.20	42
	3EL071M4C	0,25	1435	0,67	1,66	0,71	76,0	75,4	71,5	5,4	2,2	3,0	0,00082	6,80	45
	3EL071M4D	0,37	1435	0,97	2,46	0,70	78,5	78,2	75,0	5,5	2,2	3,1	0,00093	7,50	45
	3EL080M4C	0,55	1450	1,34	3,62	0,73	80,8	80,4	77,0	5,9	2,1	3,1	0,00200	10,5	50
	3EL080M4D	0,75	1450	1,77	4,94	0,74	82,5	82,3	80,0	6,2	2,5	3,4	0,00227	11,6	50
	3EL090S4C	1,10	1450	2,46	7,25	0,76	84,5	84,3	82,0	7,0	2,6	3,6	0,00355	16,3	51
	3EL090L4D	1,50	1445	3,30	9,91	0,77	85,3	85,2	83,0	7,2	2,8	3,8	0,00411	18,0	51
	3EL100L4C	2,20	1450	4,65	14,5	0,79	86,7	87,2	86,0	7,2	2,8	3,6	0,00775	24,4	53
	3EL100L4D	3,00	1450	6,26	19,8	0,79	87,7	88,0	87,0	7,2	2,8	3,6	0,00888	26,7	53
400/690	3EL112M4D	4,00	1460	8,05	26,2	0,81	88,6	88,4	87,5	7,4	2,8	3,8	0,01437	33,9	58
	3EL132S4C	5,50	1465	10,9	36,0	0,81	89,6	90,2	90,0	7,0	3,0	3,4	0,03059	53,4	61
	3EL132M4D	7,50	1465	14,8	48,9	0,81	90,4	90,4	89,4	7,8	3,2	3,4	0,03418	59,5	61
	3EL160M4C	11,0	1465	21,0	71,7	0,83	91,5	92,1	91,7	7,6	2,8	3,3	0,07011	89,2	63
	3EL160L4E	15,0	1465	28,7	97,8	0,82	92,1	92,4	91,9	7,8	2,8	3,6	0,08579	97,5	63
	3EG180M4C	18,5	1475	35,0	120	0,82	92,6	93,2	92,9	7,7	3,0	3,3	0,12901	173	64
	3EG180L4D	22,0	1470	41,4	143	0,82	93,0	93,7	93,7	8,0	3,0	3,4	0,14667	187	64
	3EG200L4D	30,0	1475	54,5	194	0,85	93,6	94,1	94,0	8,0	3,0	3,4	0,28413	258	65
	3EG225S4C	37,0	1478	65,7	239	0,87	93,9	94,5	94,5	8,3	3,2	3,3	0,38229	320	66
	3EG225M4D	45,0	1477	80,0	291	0,86	94,2	94,7	94,7	8,6	3,3	3,2	0,44100	352	67
	3EG250M4D	55,0	1482	95,3	354	0,88	94,6	95,1	95,2	8,7	3,3	3,2	0,73000	470	68

UL approved motors have c UL us logo on nameplate



Electrical Characteristics

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

400V 50Hz 1000 rpm

IE3

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
230/400	3EL071M6C	0,18	930	0,55	1,85	0,69	68,0	67,4	62,6	3,6	2,0	2,4	0,00096	6,70	41
	3EL071M6D	0,25	930	0,77	2,57	0,67	70,0	69,7	66,0	3,6	2,2	2,5	0,00116	7,50	41
	3EL080M6B	0,37	930	1,03	3,80	0,70	74,0	73,8	70,0	4,4	2,1	2,6	0,00202	9,8	43
	3EL080M6C	0,55	935	1,47	5,62	0,70	77,2	77,3	74,4	4,3	2,2	2,7	0,00228	10,6	43
	3EL090S6B	0,75	945	1,96	7,58	0,70	78,9	79,2	77,6	4,7	2,2	2,7	0,00354	14,6	46
	3EL090L6C	1,10	940	2,75	11,2	0,71	81,0	80,8	79,4	5,0	2,2	2,7	0,00428	17,0	46
	3EL100L6B	1,50	955	3,50	15,0	0,75	82,5	82,7	81,4	5,3	2,1	2,8	0,00821	22,5	50
	3EL112M6B	2,20	960	4,95	21,9	0,76	84,3	84,5	83,5	5,5	2,2	3,0	0,01319	27,2	56
400/690	3EL132S6B	3,00	970	6,55	29,4	0,77	85,6	85,5	84,5	6,2	2,1	3,0	0,03051	46,5	58
	3EL132M6C	4,00	970	8,52	39,4	0,78	86,8	87,0	85,5	6,2	2,2	3,0	0,03493	51,0	58
	3EL132M6D	5,50	965	11,6	54,4	0,78	88,0	88,9	88,5	6,2	2,2	3,0	0,03934	56,0	58
	3EL160M6D	7,50	972	15,6	73,7	0,78	89,1	89,4	88,4	6,3	2,6	3,0	0,07870	96,0	61
	3EL160L6E	11,0	972	22,9	108	0,77	90,3	90,9	90,5	6,6	2,9	3,3	0,08580	104	62
	3EG180L6E	15,0	975	30,8	147	0,77	91,2	91,6	91,0	6,7	2,9	3,1	0,15264	187	63
	3EG200L6C	18,5	977	36,4	181	0,80	91,7	91,8	91,8	6,1	2,6	2,6	0,36100	225	64
	3EG200L6D	22,0	978	42,5	215	0,81	92,2	92,9	93,0	6,2	2,6	2,7	0,39355	245	64
	3EG225S6C	30,0	985	57,6	291	0,81	92,9	92,9	92,6	6,6	2,6	2,7	0,60000	326	65
	3EG250M6C	37,0	988	68,8	358	0,83	93,4	93,6	93,5	6,8	2,9	2,8	0,82000	432	65
	3EG280S6B	45,0	989	83,5	435	0,83	93,7	93,9	93,2	6,8	2,9	2,8	1,45000	540	65
	3EG280M6C	55,0	989	102	531	0,83	94,1	94,4	93,5	6,9	2,9	2,8	1,65000	575	65

UL approved motors have c UL us logo on nameplate

Electrical Characteristics

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

400V 50Hz 3000 rpm

Compact IE3

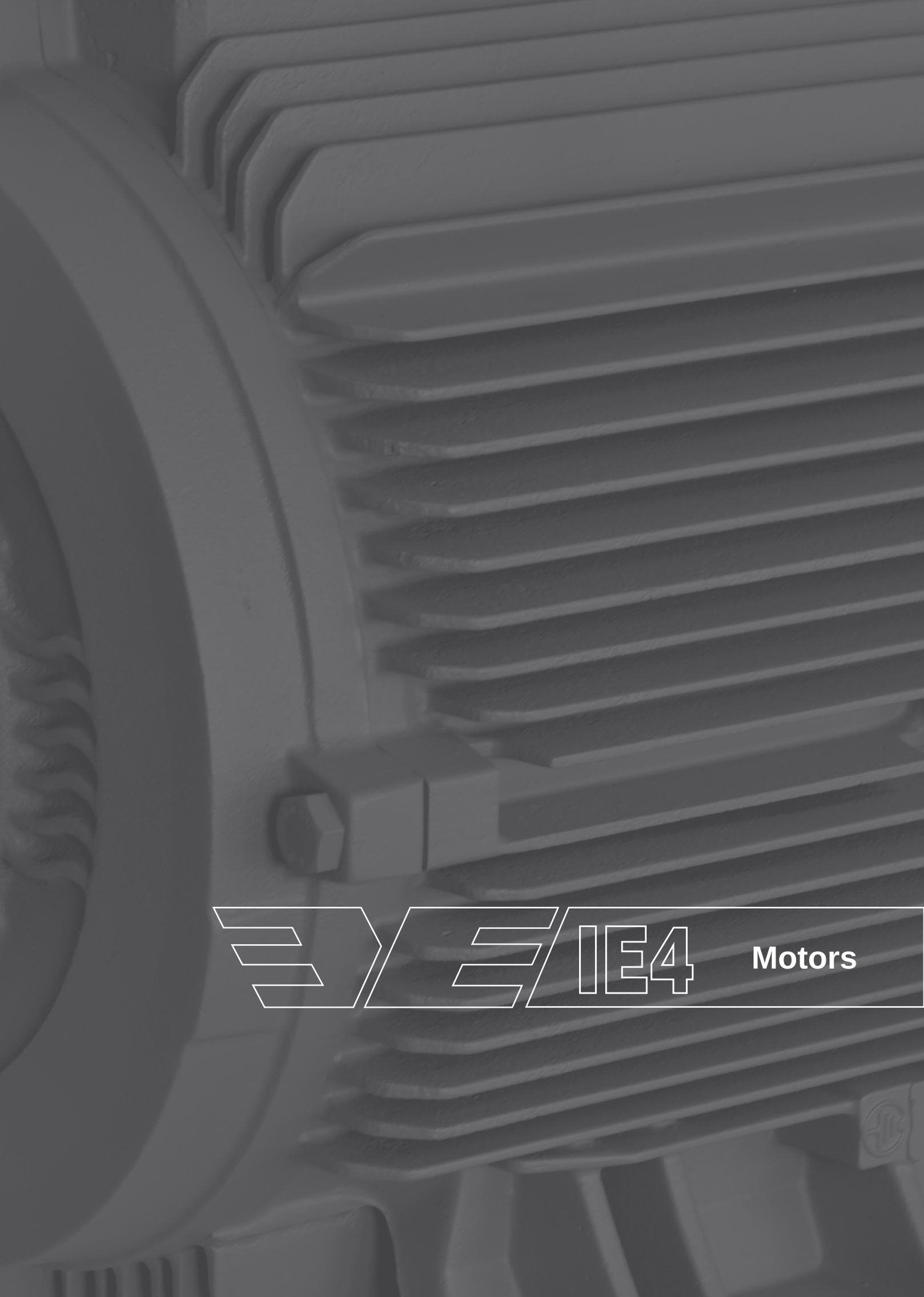
Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
230/400	3EC071M2C	0,75	2810	1,66	2,55	0,81	80,7	81,0	80,3	5,0	2,6	3,1	0,00046	7,50	55
	3EC080M2D	1,50	2850	3,06	5,03	0,84	84,2	84,8	84,2	6,4	3,2	3,6	0,00135	11,8	59
	3EC090L2D	3,00	2875	5,92	9,96	0,84	87,1	87,7	87,5	7,3	3,2	3,8	0,00234	18,0	63
400/690	3EC100L2D	4,00	2900	7,53	13,2	0,87	88,1	89,1	88,6	8,4	3,2	4,2	0,00503	25,4	66
	3EC112M2D	5,50	2940	10,4	17,9	0,86	90,0	90,3	89,3	8,9	3,2	4,4	0,00734	32,0	68
	3EC132M2D	11,0	2940	19,8	35,7	0,88	91,2	91,9	91,5	8,9	3,2	4,4	0,02290	56,0	69
	3EC160L2E	22,0	2940	38,1	71,5	0,90	92,7	93,2	92,8	8,9	3,3	4,4	0,04710	114	70
	3ED180M2C	30,0	2955	51,0	96,9	0,91	93,3	93,9	93,8	9,0	3,5	4,4	0,08800	197	74
	3ED200L2D	45,0	2970	78,1	145	0,89	94,0	94,9	94,7	9,0	3,6	3,5	0,18700	265	77
	3ED225M2C	55,0	2970	94,6	177	0,89	94,3	94,8	94,6	9,0	3,6	3,5	0,25300	350	78
	3ED315L2F	250	2982	414	801	0,91	95,8	95,6	95,2	8,7	3,0	3,3	2.80000	1410	81

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

400V 50Hz 1500 rpm

Compact IE3

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
400/690	3EC112M4F	5,50	1455	11,1	36.1	0,80	89,6	90,2	89,6	7,4	3,1	3,8	0.01620	38.5	64
	3EC132M4E	9,00	1460	17,9	58,9	0,80	90,8	91,6	91,2	7,4	3,1	3,4	0.03600	62.0	64
	3EC132M4F	11,0	1465	21,7	71,7	0,80	91,4	91,6	91,5	7,4	3,1	3,4	0,04320	72,8	64
	3EC160L4F	18,5	1465	35,8	121	0,81	92,6	93,1	92,8	7,4	3,1	3,4	0,09300	115	65
	3ED180L4E	30,0	1470	56,4	195	0,82	93,6	94,1	93,9	7,8	3,1	3,4	0,16400	207	66
	3ED200L4D	37,0	1475	66,1	240	0,86	93,9	94,7	94,9	7,8	3,2	3,4	0,28400	239	68
	3ED225M4E	55,0	1480	97,7	355	0,86	94,6	95,2	95,4	8,0	3,6	3,5	0,50200	370	70
	3ED315L4G	250	1488	423	1604	0,89	96,0	96,4	96,2	8,3	3,4	3,2	5,70000	1530	78


IE4
Motors

Electrical Characteristics

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

400V 50Hz 3000 rpm

IE4

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
230/400	4EL071M2B	0,37	2825	0,83	1,25	0,82	78,1	78,3	76,5	5,7	2,8	3,2	0,00037	6,50	58
	4EL071M2C	0,55	2825	1,17	1,86	0,83	81,5	81,9	79,5	6,2	2,9	3,5	0,00046	7,50	58
	4EL080M2C	0,75	2875	1,56	2,49	0,83	83,5	84,0	81,0	6,8	2,9	3,5	0,00124	11,0	59
	4EL080M2D	1,10	2880	2,19	3,65	0,85	85,2	85,5	84,9	7,5	2,9	3,7	0,00135	12,0	59
	4EL090S2C	1,50	2900	2,95	4,94	0,85	86,5	86,9	85,7	7,8	2,9	3,7	0,00221	17,2	64
	4EL090L2D	2,20	2900	4,20	7,24	0,86	88,0	88,5	87,6	8,2	3,0	3,8	0,00234	20,0	64
	4EL100L2D	3,00	2910	5,50	9,85	0,88	89,1	89,5	88,5	8,5	3,0	4,0	0,00503	25,9	67
400/690	4EL112M2D	4,00	2940	7,30	13,0	0,88	90,0	90,3	89,7	8,7	3,0	4,2	0,00734	32,5	70
	4EL132S2C	5,50	2945	9,60	17,8	0,91	90,9	90,9	90,0	8,9	3,2	4,2	0,02104	52,5	72
	4EL132S2D	7,50	2945	13,0	24,5	0,91	91,7	92,2	91,8	8,5	3,2	4,2	0,02290	54,0	72
	4EL160M2C	11,0	2950	18,9	35,6	0,91	92,6	92,7	91,2	8,5	3,3	4,3	0,03913	89,0	74
	4EL160M2D	15,0	2950	25,6	48,6	0,91	93,3	93,6	92,8	8,5	3,3	4,3	0,04409	95,2	74
	4EL160L2E	18,5	2955	31,4	59,8	0,91	93,7	93,8	92,9	8,7	3,2	4,3	0,05000	101	74
	4EG180M2C	22,0	2960	37,2	71,1	0,91	94,0	94,4	93,5	8,9	3,0	4,0	0,07000	195	74
	4EG200L2C	30,0	2970	51,0	96,5	0,90	94,5	94,7	94,0	8,3	3,2	3,7	0,17500	272	74
	4EG200L2D	37,0	2970	63,3	120	0,89	94,8	95,0	94,2	8,3	3,2	4,0	0,20000	295	74
	4EG225M2D	45,0	2975	76,0	145	0,90	95,0	95,2	94,9	9,0	3,4	4,2	0,29000	385	74
	4EG250M2D	55,0	2975	90,5	177	0,92	95,3	95,5	94,9	8,2	3,4	3,7	0,52000	520	74
	4EG280S2C	75,0	2982	124	240	0,91	95,6	95,6	95,2	7,7	2,7	3,2	0,98000	640	76
	4EG280M2D	90,0	2985	149	288	0,91	95,8	95,9	95,0	7,7	2,8	3,5	1,10000	720	77
	4EG315S2C	110	2985	182	352	0,91	96,0	96,0	95,7	7,8	2,6	3,3	1,60000	905	77
	4EG315M2D	132	2986	217	422	0,91	96,2	96,3	96,0	8,0	2,6	3,3	2,00000	1085	77
	4EG315L2E	160	2986	260	512	0,92	96,3	96,5	96,0	8,0	2,7	3,4	2,20000	1195	78
	4EG315L2F	200	2987	325	639	0,92	96,5	96,7	96,2	8,1	2,9	3,5	2,70000	1310	78

UL approved motors have c UL us logo on nameplate

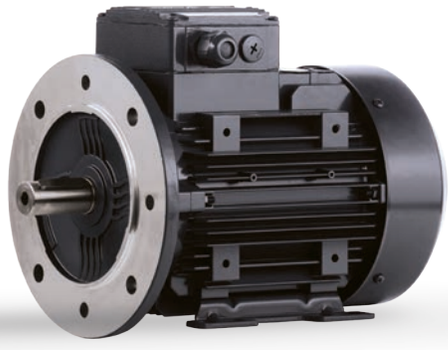
Electrical Characteristics

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

400V 50Hz 1500 rpm

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
400/690	4EL132S4D	5,50	1470	11,1	35,7	0,78	91,9	91,8	90,6	7,7	3,8	3,7	0,03418	60,0	61
	4EL132M4F	7,50	1470	14,6	48,7	0,80	92,6	92,7	91,5	7,7	3,8	4,0	0,04316	72,8	62
	4EL160M4E	11,0	1470	21,0	71,5	0,81	93,3	93,5	93,3	7,7	3,0	3,6	0,08600	116	64
	4EL160L4F	15,0	1475	28,9	97,5	0,80	93,9	94,1	93,8	8,7	3,7	4,3	0,12000	130	64
	4EG180M4D	18,5	1475	34,6	120	0,82	94,2	94,4	94,0	8,0	3,1	3,5	0,14700	190	64
	4EG180L4E	22,0	1475	41,0	142	0,82	94,5	94,7	94,2	8,2	3,2	3,8	0,17000	212	64
	4EG200L4E	30,0	1480	53,0	194	0,86	94,9	95,3	95,2	8,3	3,3	3,8	0,35000	310	64
	4EG225S4D	37,0	1480	65,0	239	0,86	95,2	95,7	95,0	8,1	3,3	3,3	0,44100	355	70
	4EG225M4E	45,0	1480	79,2	290	0,86	95,4	95,6	95,6	8,2	3,5	3,3	0,52000	405	70
	4EG250M4E	55,0	1485	94,3	354	0,88	95,7	96,0	96,0	8,3	3,3	3,4	1,05000	522	70
	4EG280S4D	75,0	1487	127	482	0,89	96,0	96,3	96,2	7,6	3,0	3,2	1,50000	670	70
	4EG280M4E	90,0	1488	152	578	0,89	96,1	96,3	96,3	7,6	3,1	3,2	1,95000	790	71
	4EG315S4D	110	1490	187	705	0,88	96,3	96,5	96,0	7,8	2,8	3,3	2,80000	975	73
	4EG315M4E	132	1490	225	846	0,88	96,4	96,7	96,2	8,0	2,9	3,3	3,30000	1050	73
	4EG315L4F	160	1490	269	1026	0,89	96,6	96,9	96,5	8,2	3,1	3,4	4,40000	1250	76
	4EG315L4G	200	1490	335	1282	0,89	96,7	97,0	96,6	8,3	3,3	3,5	5,20000	1490	76

UL approved motors have c UL us logo on nameplate



Electrical Characteristics

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

400V 50Hz 1000 rpm

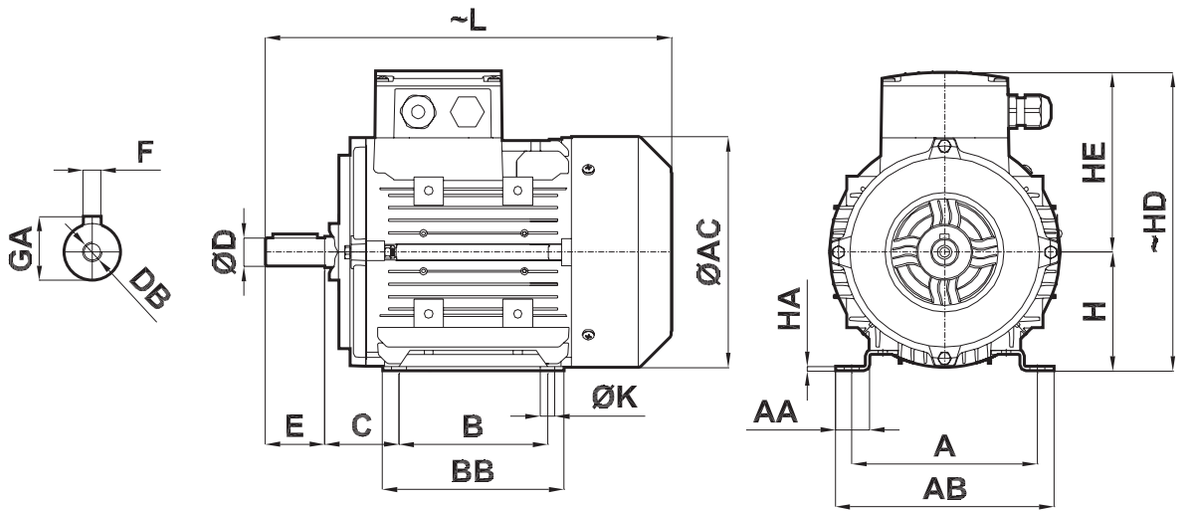
IE4

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Moment of Inertia	B3 Motor Weight	Sound Pressure Level
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	kgm²	kg	dB(A)
400/690	4EG315S6C	75,0	994	135	721	0,84	95,4	95,5	95,2	7,4	2,7	3,1	3,50000	940	67
	4EG315M6D	90,0	994	162	865	0,84	95,6	95,7	95,4	7,5	2,7	3,1	3,80000	1060	67
	4EG315L6E	110	995	195	1056	0,85	95,8	96,1	95,7	7,5	2,7	3,1	4,50000	1210	68
	4EG315L6F	132	995	233	1267	0,85	96,0	96,2	95,8	7,6	2,8	3,1	5,20000	1320	68

UL approved motors have logo on nameplate

Dimensions

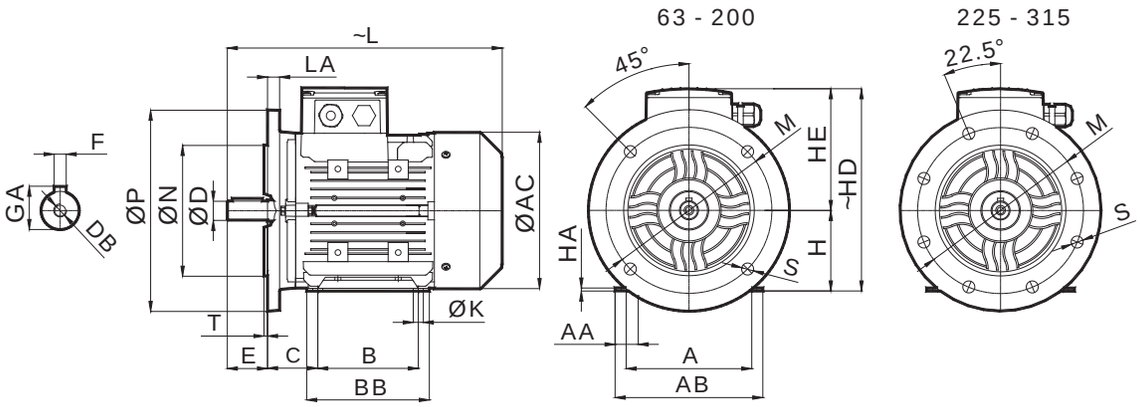
B3 Construction Type



Frame Size	Efficiency Class	Number of Poles	D[1]	E	L	AC	H[2]	HE	HD	F	GA	DB	C	ØK	B	BB	HA	AA	A	AB
063M	IE2/IE3	2-4-6-8	11	23	213	119	63	97	160	4	12,5	M4	40	7	80	104	3	18	100	115
071M	IE2/IE3/IE4	2-4-6-8	14	30	242	137	71	112	183	5	16	M5	45	7	90	110	3	19	112	128
080M	IE2/IE3/IE4	2-4-6-8	19	40	274	155	80	123	203	6	21,5	M6	50	10	100	122	3	25	125	148
090S	IE3/IE4	2-4-6-8	24	50	325	176	90	132	222	8	27	M8	56	10	100	151	4	27	140	167
090L	IE3/IE4	2-4-6-8	24	50	325	176	90	132	222	8	27	M8	56	10	125	151	4	27	140	167
100L	IE3/IE4	2-4-6-8	28	60	368,5	193	100	148	248	8	31	M10	63	12	140	170	4	31	160	191
112M	IE3/IE3C/IE4	2-4-6-8	28	60	392	215	112	161	273	8	31	M10	70	12	140	177	4	36	190	217
112M[3][4]	IE3C/IE4	4	28	60	432	215	112	161	273	8	31	M10	70	12	140	177	4	36	190	217
132S	IE3/IE4	2-4-6-8	38	80	495	257	132	181	313	10	41	M12	89	12	140	212	5	34	216	254
132M	IE3/IE3C/IE4	2-4-6-8	38	80	495	257	132	181	313	10	41	M12	89	12	178	212	5	34	216	254
132M[3][5]	IE3C/IE4	4	38	80	543	257	132	181	313	10	41	M12	89	12	178	212	5	34	216	254
160M	IE3/IE4	2-4-6-8	42	110	604,5	316	160	219,5	379,5	12	45	M16	108	14,5	210	328	15	65	254	293
160L	IE3/IE4	2-4-6-8	42	110	604,5	316	160	219,5	379,5	12	45	M16	108	14,5	254	328	15	65	254	293
180M	IE3/IE4	2-4-6-8	48	110	696	348	180	239	419	14	51,5	M16	121	14,5	241	319	15	63	279	316
180L	IE3/IE4	2-4-6-8	48	110	696	348	180	239	419	14	51,5	M16	121	14,5	279	319	15	63	279	316
200L	IE3/IE4	2-4-6-8	55	110	737	396	200	294	494	16	59	M20	133	18,5	305	350	18	76	318	372
225S	IE3/IE4	2	55	110	797,5	438	225	312,5	537,5	16	59	M20	149	18,5	286	373	20	89	356	420
		4-6-8	60	140	827,5					18	64									
225M	IE3/IE4	2	55	110	797,5	438	225	312,5	537,5	16	59	M20	149	18,5	311	373	20	89	356	420
		4-6-8	60	140	827,5					18	64									
250M	IE3/IE4	2	60	140	896	481	250	337	587	18	64	M20	168	24	349	433	32,5	105	406	475
		4-6-8	65								69									
280S	IE3/IE4	2	65	140	1011,5	547	280	402	682	18	69	M20	190	24	368	500	36	121	457	558
		4-6-8	75							20	79,5									
280M	IE3/IE4	2	65	140	1011,5	547	280	402	682	18	69	M20	190	24	419	500	36	121	457	558
		4-6-8	75							20	79,5									
315S	IE3/IE4	2	65	140	1388,5	622	315	499	814	18	69	M20	216	28	406	800	50	136	508	623
		4-6-8	85	170	1418,5					22	90									
315M	IE3/IE4	2	65	140	1388,5	622	315	499	814	18	69	M20	216	28	457	800	50	136	508	623
		4-6-8	85	170	1418,5					22	90									
315L	IE3/IE4	2	65	140	1388,5	622	315	499	814	18	69	M20	216	28	508	800	50	136	508	623
		4-6-8	85	170	1418,5					22	90									

[1] Tolerance “j6” up to 28mm, “k6” from 28mm to 48mm, “m6” over 48mm TS EN 50347
[2] Tolerance 063-250 “-0.5mm” / 280-315 “-1mm” TS EN 50347
[3] Extended motor housing for higher efficiency
[4] 5.50kW IE3 Compact Motors
[5] 11.0kW IE3 Compact / 7.50kW IE4 Motors

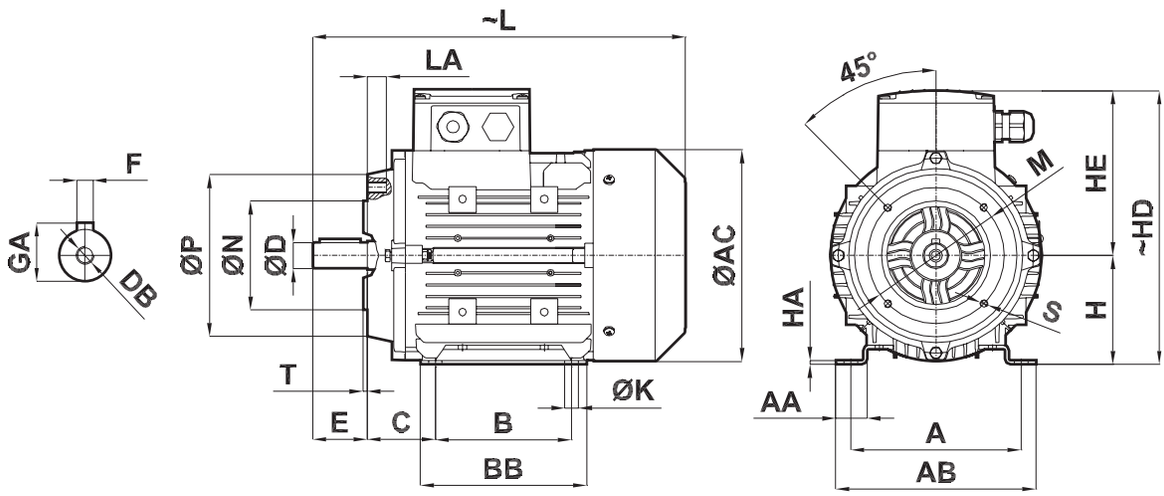
B5- B35 Construction Types



Frame Size	Efficiency Class	Number of Poles	D[1]	E	N[2]	P	T	LA	L	AC	S	M	H[3]	HE	HD	F	GA	DB	C	ØK	B	BB	HA	AA	A	AB
063M	IE2/IE3	2-4-6-8	11	23	95	140	3	8	213	119	10	115	63	97	160	4	12,5	M4	40	7	80	104	3	18	100	115
071M	IE2/IE3/IE4	2-4-6-8	14	30	110	160	3,5	8	242	137	10	130	71	112	183	5	16	M5	45	7	90	110	3	19	112	128
080M	IE2/IE3/IE4	2-4-6-8	19	40	130	200	3,5	12	274	155	12	165	80	123	203	6	21,5	M6	50	10	100	122	3	25	125	148
090S	IE3/IE4	2-4-6-8	24	50	130	200	3,5	12	325	176	12	165	90	132	222	8	27	M8	56	10	100	151	4	27	140	167
090L	IE3/IE4	2-4-6-8	24	50	130	200	3,5	12	325	176	12	165	90	132	222	8	27	M8	56	10	125	151	4	27	140	167
100L	IE3/IE4	2-4-6-8	28	60	180	250	4	15	368,5	193	14,5	215	100	148	248	8	31	M10	63	12	140	170	4	31	160	191
112M	IE3/IE3C/IE4	2-4-6-8	28	60	180	250	4	15	392	215	14,5	215	112	161	273	8	31	M10	70	12	140	177	4	36	190	217
112M[4][5]	IE3C/IE4	4	28	60	180	250	4	15	432	215	14,5	215	112	161	273	8	31	M10	70	12	140	177	4	36	190	217
132S	IE3/IE4	2-4-6-8	38	80	230	300	4	20	495	257	14 ,5	265	132	181	313	10	41	M12	89	12	140	212	5	34	216	254
132M	IE3/IE3C/IE4	2-4-6-8	38	80	230	300	4	20	495	257	14,5	265	132	181	313	10	41	M12	89	12	178	212	5	34	216	254
132M[3][6]	IE3C/IE4	4	38	80	230	300	4	20	543	257	14,5	265	132	181	313	10	41	M12	89	12	178	212	5	34	216	254
160M	IE3/IE4	2-4-6-8	42	110	250	350	5	20	604,5	316	18,5	300	160	220	380	12	45	M16	108	14,5	210	328	15	65	254	293
160L	IE3/IE4	2-4-6-8	42	110	250	350	5	20	604,5	316	18,5	300	160	220	380	12	45	M16	108	14,5	254	328	15	65	254	293
180M	IE3/IE4	2-4-6-8	48	110	250	350	5	14	696	348	18,5	300	180	239	419	14	51,5	M16	121	14,5	241	319	15	63	279	316
180L	IE3/IE4	2-4-6-8	48	110	250	350	5	14	696	348	18,5	300	180	239	419	14	51,5	M16	121	14,5	279	319	15	63	279	316
200L	IE3/IE4	2-4-6-8	55	110	300	400	5	14	737	396	18,5	350	200	294	494	16	59	M20	133	18,5	305	350	18	76	318	372
225S	IE3/IE4	2	55	110	350	450	5	20	797,5	438	18,5	400	225	313	538	16	59	M20	149	18,5	286	373	20	89	356	420
		4-6-8	60	140					827,5							18	64									
225M	IE3/IE4	2	55	110	350	450	5	20	797,5	438	18,5	400	225	313	538	16	59	M20	149	18,5	311	373	20	89	356	420
		4-6-8	60	140					827,5							18	64									
250M	IE3/IE4	2	60	140	450	550	5	20	896	481	18,5	500	250	337	587	18	64	M20	168	24	349	433	32,5	105	406	475
		4-6-8	65														69									
280S	IE3/IE4	2	65	140	450	550	5	20	1011,5	547	18,5	500	280	402	682	18	69	M20	190	24	368	500	36	121	457	558
		4-6-8	75													20	79,5									
280M	IE3/IE4	2	65	140	450	550	5	20	1011,5	547	18,5	500	280	402	682	18	69	M20	190	24	419	500	36	121	457	558
		4-6-8	75													20	79,5									
315S	IE3/IE4	2	65	140	550	660	6	25	1388,5	622	24	600	315	499	814	18	69	M20	216	28	406	800	50	136	508	623
		4-6-8	85	170					1418,5							22	90									
315M	IE3/IE4	2	65	140	550	660	6	22	1388,5	622	24	600	315	499	814	18	69	M20	216	28	457	800	50	136	508	623
		4-6-8	85	170					1418,5							22	90									
315L	IE3/IE4	2	65	140	550	660	6	22	1388,5	622	24	600	315	499	814	18	69	M20	216	28	508	800	50	136	508	623
		4-6-8	85	170					1418,5							22	90									

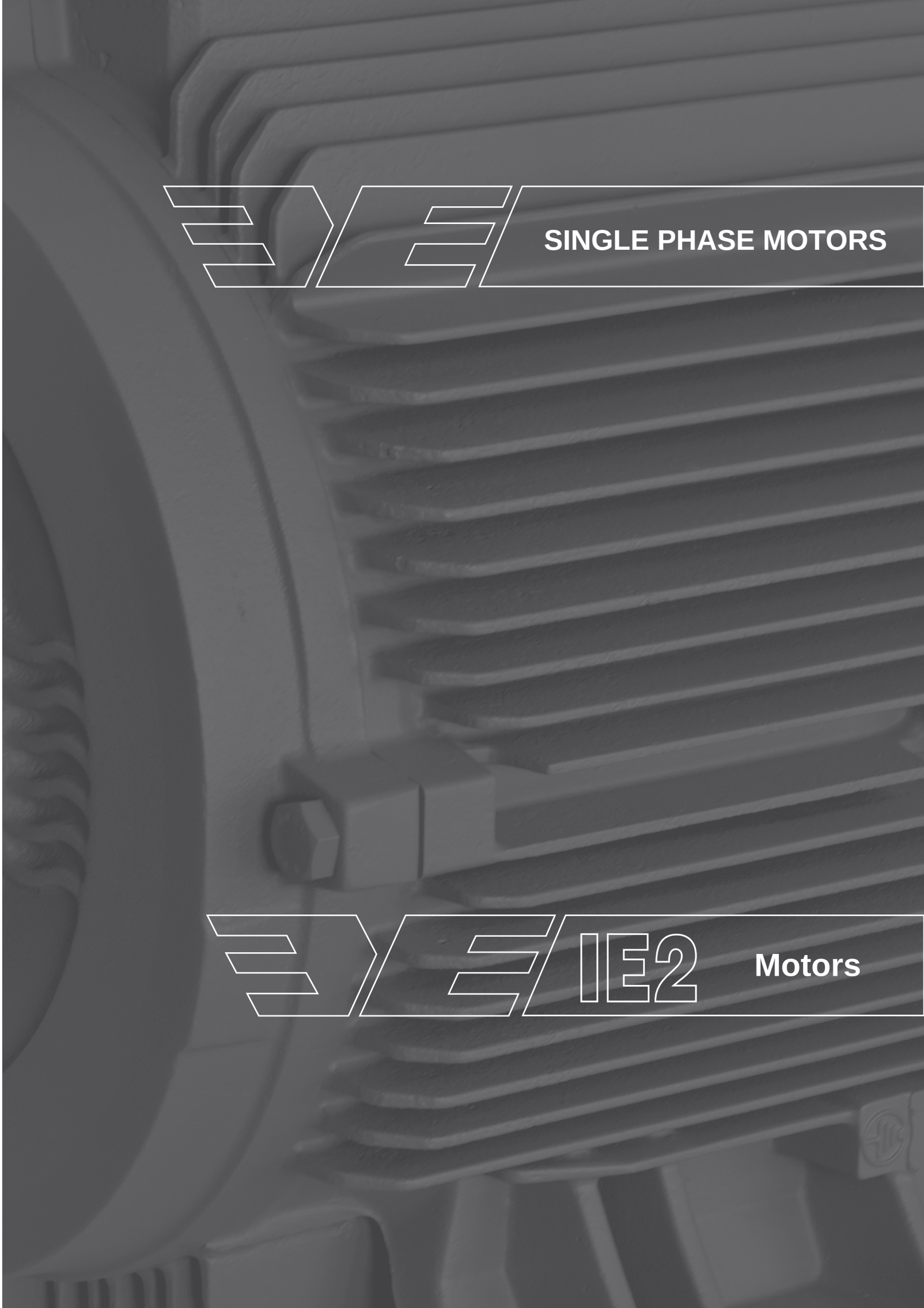
[1] Tolerance “j6” up to 28mm, “k6” from 28mm to 48mm, “m6” over 48mm TS EN 50347
[2] Tolerance “j6” up to 250mm, “h6” over 250mm TS EN 50347
[3] Tolerance 063-250 “-0.5mm” / 280-315 “-1mm” TS EN 50347
[4] Extended motor housing for higher efficiency
[5] 5.50kW IE3 Compact Motors
[6] 11.0kW IE3 Compact / 7.50kW IE4 Motors

B14 - B34 Construction Types



Frame Size	Efficiency Class	Number of Poles	D[1]	N[2]	P	E	T	LA	L	AC	S	M	H[3]	HE	HD	F	GA	DB	C	ØK	B	BB	HA	AA	A	AB
063M	IE2/IE3	2-4-6-8	11	60	90	23	2,5	10	213	119	M5	75	63	97	160	4	12,5	M4	40	7	80	104	3	18	100	115
071M	IE2/IE3/IE4	2-4-6-8	14	70	105	30	2,5	12	242	137	M6	85	71	112	183	5	16	M5	45	7	90	110	3	19	112	128
080M	IE2/IE3/IE4	2-4-6-8	19	80	119	40	3	12	274	155	M6	100	80	123	203	6	21,5	M6	50	10	100	122	3	25	125	148
090S	IE3/IE4	2-4-6-8	24	95	137	50	3	15	325	176	M8	115	90	132	222	8	27	M8	56	10	100	151	4	27	140	167
090L	IE3/IE4	2-4-6-8	24	95	137	50	3	15	325	176	M8	115	90	132	222	8	27	M8	56	10	125	151	4	27	140	167
100L	IE3/IE4	2-4-6-8	28	110	160	60	3,5	17	368,5	193	M8	130	100	148	248	8	31	M10	63	12	140	170	4	31	160	191
112M	IE3/IE3C/IE4	2-4-6-8	28	110	160	60	3,5	17	392	215	M8	130	112	161	273	8	31	M10	70	12	140	177	4	36	190	217
112M[4][5]	IE3C/IE4	4	28	110	160	60	3,5	17	432	215	M8	130	112	161	273	8	31	M10	70	12	140	177	4	36	190	217
132S	IE3/IE4	2-4-6-8	38	130	200	80	3,5	20	495	257	M10	165	132	181	313	10	41	M12	89	12	140	212	5	34	216	254
132M	IE3/IE3C/IE4	2-4-6-8	38	130	200	80	3,5	20	495	257	M10	165	132	181	313	10	41	M12	89	12	178	212	5	34	216	254
132M[3][6]	IE3C/IE4	4	38	130	200	80	3,5	20	543	257	M10	165	132	181	313	10	41	M12	89	12	178	212	5	34	216	254
160M	IE3/IE4	2-4-6-8	42	180	250	110	4	23	604,5	316	M12	215	160	224	384	12	45	M16	108	14,5	210	323	15	65	254	295
160L	IE3/IE4	2-4-6-8	42	180	250	110	4	23	604,5	316	M12	215	160	224	384	12	45	M16	108	14,5	254	323	15	65	254	295

[1] Tolerance “j6” up to 28mm, “k6” over 28mm TS EN 50347
[2] Tolerance “j6” TS EN 50347
[3] Tolerance “-0.5mm” TS EN 50347
[4] Extended motor housing for higher efficiency
[5] 5.50kW IE3 Compact Motors
[6] 11.0kW IE3 Compact / 7.50kW IE4 Motors



SINGLE PHASE MOTORS

IE2 Motors

Electrical Characteristics

220V 50Hz 3000 rpm with Run Capacitor

Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

IE2

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Run Capacitor Capacity	Moment of Inertia	B3 Motor Weight
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	d/d	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	µF	kgm²	kg
1~ 220V 50Hz	2MD063M2A	0,18	2780	1,25	0,62	0,97	68,0	65,9	59,7	2,70	0,60	1,60	10	0,00013	4,10
	2MD063M2B	0,25	2780	1,65	0,86	0,98	70,1	68,6	60,4	2,70	0,60	1,60	15	0,00016	4,30
	2MD071M2B	0,37	2840	2,25	1,24	0,99	74,4	72,1	64,6	3,70	0,60	1,90	20	0,00032	6,60
	2MD071M2C	0,55	2840	3,30	1,85	0,99	76,5	75,2	68,0	3,80	0,60	1,90	25	0,00039	7,60
	2MD080M2B	0,75	2830	4,50	2,53	0,99	77,4	75,4	68,3	3,80	0,60	2,00	30	0,00094	9,90
	2MD080M2C	1,10	2820	6,40	3,73	0,99	79,6	79,1	73,3	3,80	0,57	2,00	40	0,00108	11,6
	2MD090S2B	1,50	2830	8,60	5,06	0,99	81,3	80,4	74,2	4,00	0,57	2,10	60	0,00160	16,2
	2MD090L2C	2,20	2830	12,2	7,42	0,99	83,2	82,3	75,3	4,10	0,55	2,10	80	0,00187	17,7

220V 50Hz 1500 rpm with Run Capacitor

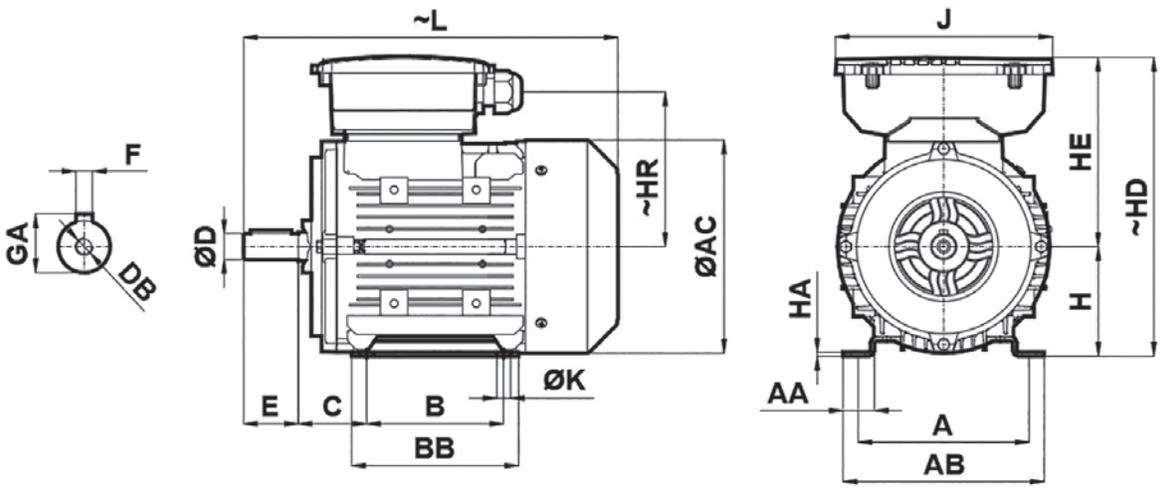
Duty Cycle : S1 (Continuous Operation)
Insulation Class : F (155°C)
Temperature Rise : B (80°K)

IE2

Voltage (V)	Type	Rated Values								Starting Values		Break Down Torque	Run Capacitor Capacity	Moment of Inertia	B3 Motor Weight
		Power	Speed	Current	Torque	Power Factor	Efficiency % η			Current	Torque				
		kW	rpm	A	Nm	Cos φ	4/4	3/4	1/2	I_A/I_N	M_A/M_N	M_K/M_N	µF	kgm²	kg
1~ 220V 50Hz	2MD063M4B	0,12	1400	0,95	0,82	0,94	62,0	58,8	45,1	2,20	0,60	1,70	10	0,00019	4,40
	2MD063M4C	0,18	1400	1,35	1,23	0,95	64,7	59,2	45,5	2,25	0,60	1,70	15	0,00023	5,00
	2MD071M4C	0,25	1440	1,75	1,66	0,95	68,5	61,9	50,8	3,50	0,55	2,00	15	0,00071	7,40
	2MD071M4D	0,37	1435	2,45	2,45	0,95	72,7	65,3	52,6	3,30	0,57	1,90	20	0,00086	8,20
	2MD080M4C	0,55	1410	3,35	3,73	0,98	77,1	73,2	63,2	3,50	0,57	2,00	30	0,00184	10,6
	2MD080M4D	0,75	1400	4,40	5,10	0,98	79,6	78,2	70,5	3,50	0,57	1,80	30	0,00210	12,4
	2MD090S4D	1,10	1420	6,45	7,40	0,96	81,4	78,5	70,2	4,00	0,45	1,80	40	0,00295	18,1
	2MD090L4E	1,50	1420	8,45	10,1	0,98	82,8	81,0	73,2	4,00	0,48	1,70	60	0,00373	18,7

Dimensions

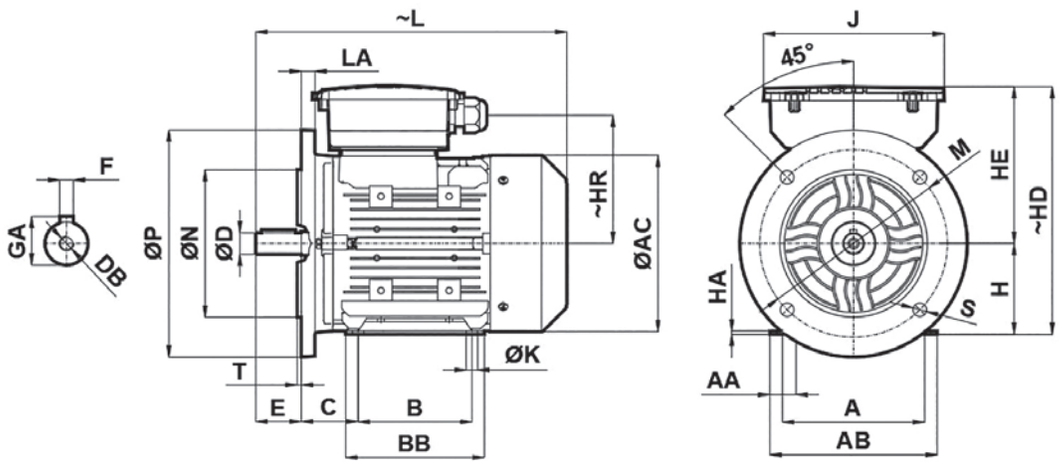
B3 Construction Type



Frame Size	Number of Poles	D[1]	E	L	AC	HR	H[2]	HE	HD	F	GA	DB	C	ØK	B	BB	HA	AA	A	AB	J
063M	2-4-6-8	11	23	213	119	90	63	117	180	4	12,5	M4	40	7	80	104	3	18	100	115	153
071M	2-4-6-8	14	30	242	137	104	71	129	200	5	16	M5	45	7	90	110	3	19	112	128	159
080M	2-4-6-8	19	40	274	155	113	80	137	217	6	21,5	M6	50	10	100	122	3	25	125	148	159
090L	2-4-6-8	24	50	325	176	130	90	163	253	8	27	M8	56	10	125	151	4	27	140	167	173

[1] Tolerance “j6” TS EN 50347
[2] Tolerance “-0.5mm” TS EN 50347

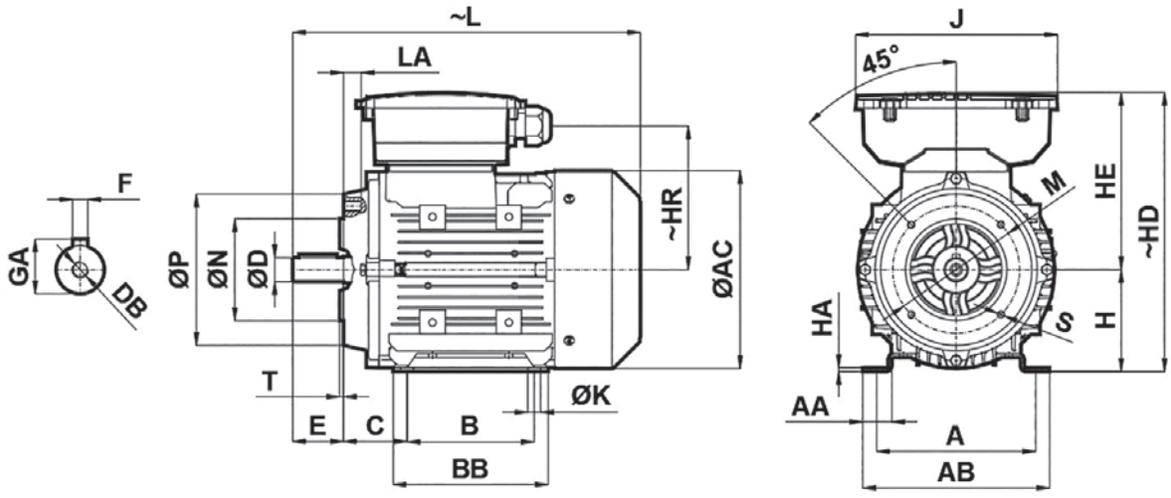
B5- B35 Construction Types



Frame Size	Number of Poles	D[1]	E	N[2]	P	T	LA	L	AC	S	M	HR	H[3]	HE	HD	F	GA	DB	C	ØK	B	BB	HA	AA	A	AB	J
063M	2-4-6-8	11	23	95	140	3,0	8	213	119	10	115	90	63	117	180	4	12,5	M4	40	7	80	104	3	18	100	115	153
071M	2-4-6-8	14	30	110	160	3,5	8	242	137	10	130	104	71	129	200	5	16	M5	45	7	90	110	3	19	112	128	159
080M	2-4-6-8	19	40	130	200	3,5	12	274	155	12	165	113	80	137	217	6	21,5	M6	50	10	100	122	3	25	125	148	159
090L	2-4-6-8	24	50	130	200	3,5	12	325	176	12	165	130	90	163	253	8	27	M8	56	10	125	151	4	27	140	167	173

[1] Tolerance “j6” TS EN 50347
[2] Tolerance “j6” TS EN 50347
[3] Tolerance “-0.5mm” TS EN 50347

B14 - B34 Construction Types

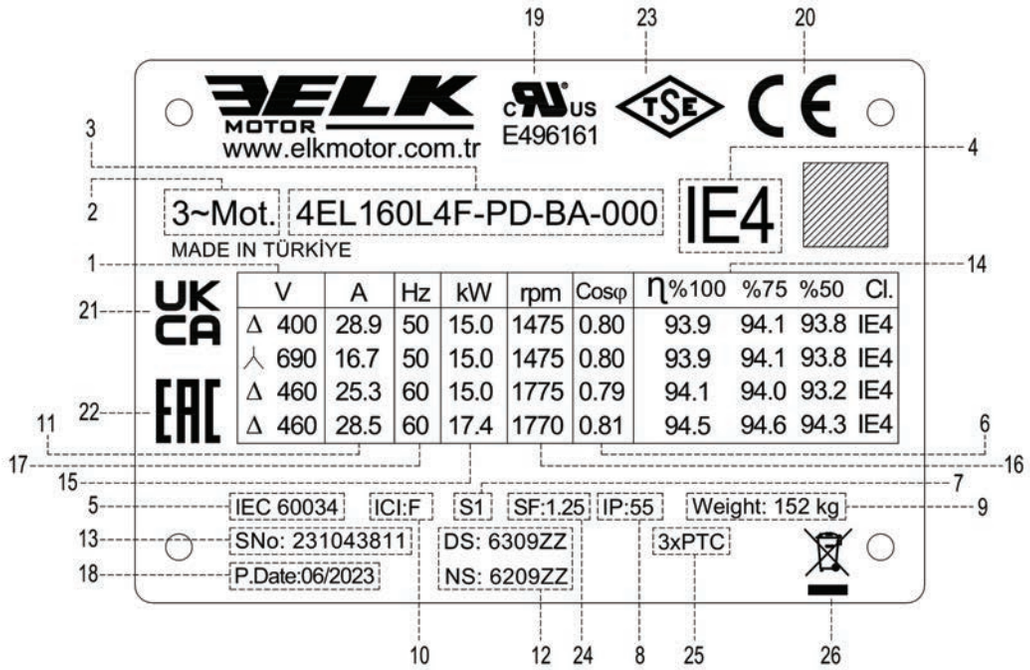


Frame Size	Number of Poles	D[1]	N[2]	P	E	T	LA	L	AC	S	M	HR	H[3]	HE	HD	F	GA	DB	C	ØK	B	BB	HA	AA	A	AB	J
063M	2-4-6-8	11	60	90	23	2,5	10	213	119	M5	75	90	63	117	180	4	12,5	M4	40	7	80	104	3	18	100	115	153
071M	2-4-6-8	14	70	105	30	2,5	12	242	137	M6	85	104	71	129	200	5	16	M5	45	7	90	110	3	19	112	128	159
080M	2-4-6-8	19	80	119	40	3	12	274	155	M6	100	113	80	137	217	6	21,5	M6	50	10	100	122	3	25	125	148	159
090L	2-4-6-8	24	95	137	50	3	15	325	176	M8	115	130	90	163	253	8	27	M8	56	10	125	151	4	27	140	167	173

[1] Tolerance “j6” TS EN 50347
[2] Tolerance “j6” TS EN 50347
[3] Tolerance “-0.5mm” TS EN 50347

Additional Information

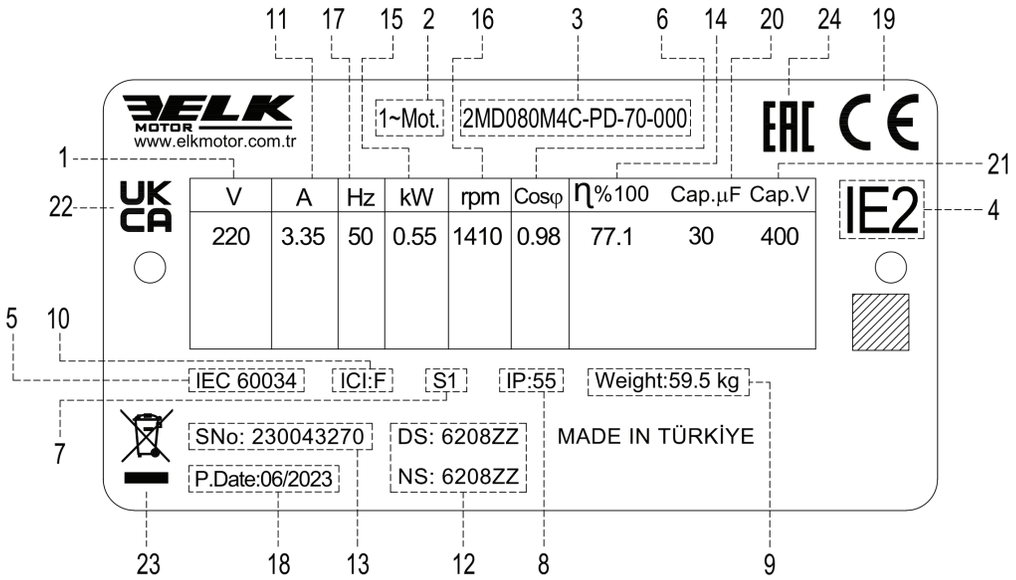
Three Phase Motors Nameplate Description



1.	Rated Voltage	14.	Efficiency
2.	Motor Type: 3 Phase Asynchronous	15.	Output Power
3.	Motor Code	16.	Speed
4.	Efficiency Class	17.	Frequency
5.	Manufacture Standard	18.	Production Date
6.	Power Factor	19.	UL Logo
7.	Duty Cycle	20.	CE Mark
8.	Protection Class	21.	UKCA Mark
9.	Motor Weight	22.	EAC Logo
10.	Insulation Class	23.	TSE Logo
11.	Rated Current	24.	Service Factor
12.	Bearing Type	25.	3xPTC Thermistor
13.	Serial Number	26.	WEEE Symbol

The nameplate shows the identification, and the most important technical data. The nameplate also defines the limits of proper usage, and manufacturing year of the motors. The first two digits in the serial number, shows the manufacturing year. For example, 23XXXXXXX shows that the product is manufactured in 2023.

Single Phase Motors Nameplate Description



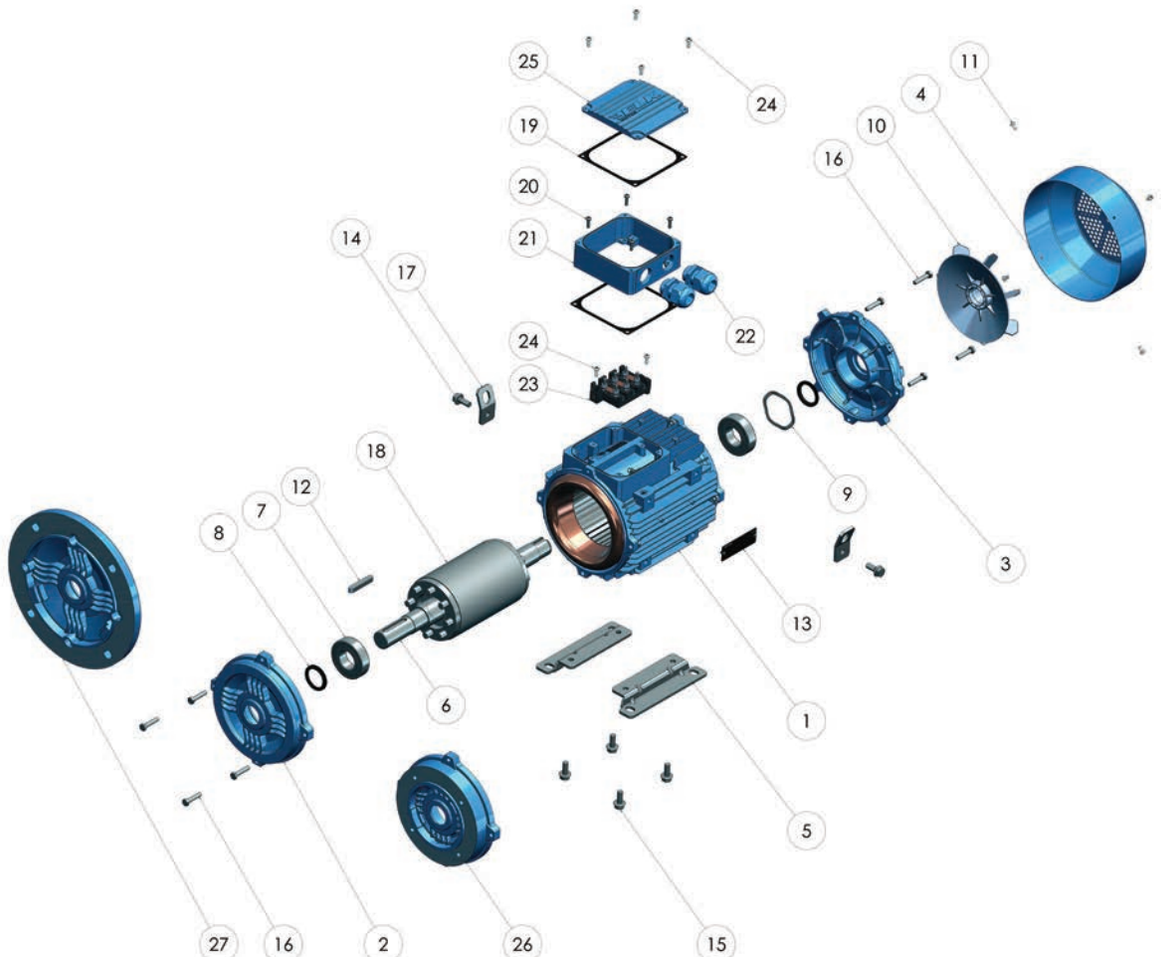
1.	Rated Voltage	13.	Serial Number
2.	Motor Type: 1 Phase Asynchronous	14.	Efficiency
3.	Motor Code	15.	Output Power
4.	Efficiency Class	16.	Speed
5.	Manufacture Standard	17.	Frequency
6.	Power Factor	18.	Production Date
7.	Duty Cycle	19.	CE Mark
8.	Protection Class	20.	Run Capacitor Capacity
9.	Motor Weight	21.	Run Capacitor Voltage
10.	Insulation Class	22.	UKCA Mark
11.	Rated Current	23.	WEEE Symbol
12.	Bearing Type	24.	EAC Logo

The nameplate shows the identification, and the most important technical data. The nameplate also defines the limits of proper usage, and manufacturing year of the motors. The first two digits in the serial number, shows the manufacturing year. For example, 23XXXXXXX shows that the product is manufactured in 2023.

Spare Parts

Three Phase Motors Spare Parts

All the standard three phase motors are produced by ELK MOTOR consist of the following main parts;

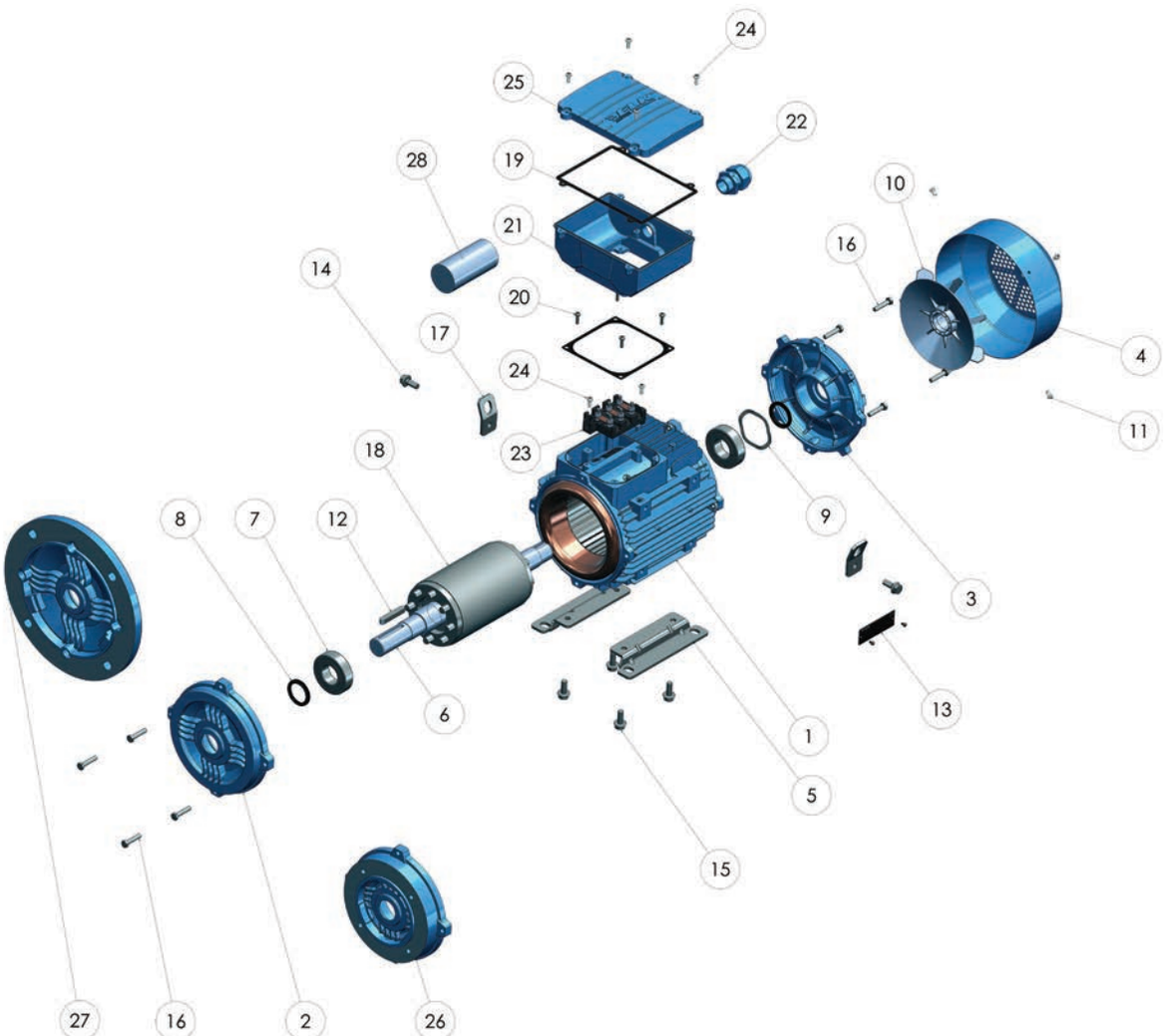


1.	Housing	15.	Screw
2.	End Shield (DE)	16.	Bolt
3.	End Shield (NDE)	17.	Lifting Lug
4.	Fan Cover	18.	Squirrel Cage Rotor
5.	Mounting Foot	19.	Terminal Box Gasket
6.	Shaft	20.	Screw
7.	Bearing	21.	Terminal Box
8.	Shaft Sealing	22.	Cable Gland
9.	Spring Washer	23.	Terminal
10.	Fan	24.	Screw
11.	Screw	25.	Terminal Box Cover
12.	Key	26.	Flange B14
13.	Nameplate	27.	Flange B5
14.	Screw		

When ordering spare parts, the motor serial number, full type designation, and product code, as stated on the nameplate, must be specified. For field service, spare parts and additional information, please contact with us.

Single Phase Motors Spare Parts

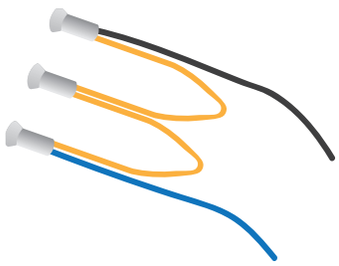
All the standard single phase motors are produced by ELK MOTOR consist of the following main parts;

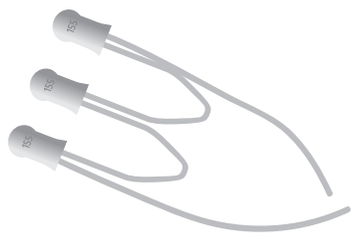


1.	Housing	15.	Screw
2.	End Shield (DE)	16.	Bolt
3.	End Shield (NDE)	17.	Lifting Lug
4.	Fan Cover	18.	Squirrel Cage Rotor
5.	Mounting Foot	19.	Terminal Box Gasket
6.	Shaft	20.	Screw
7.	Bearing	21.	Single Phase Motor Terminal Box
8.	Shaft Sealing	22.	Cable Gland
9.	Spring Washer	23.	Terminal
10.	Fan	24.	Screw
11.	Screw	25.	Terminal Box Cover
12.	Key	26.	Flange B14
13.	Nameplate	27.	Flange B5
14.	Screw	28.	Run Capacitor

When ordering spare parts, the motor serial number, full type designation, and product code, as stated on the nameplate, must be specified. For field service, spare parts and additional information, please contact with us.

PTC Thermistor and Thermal Switch





PTC Thermistor

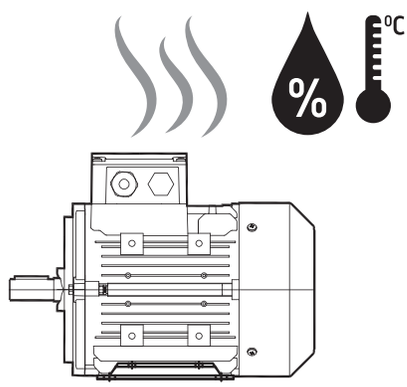
If the motor is exposed to excessive load, the internal resistance of the thermistor attached to the motor windings increases due to the heating of the motor windings and opens the circuit when the insulation class limit value is reached. This prevents the winding from being damaged by cutting off the current in the windings. Only can be used with an electronic circuit.

Thermal Switch

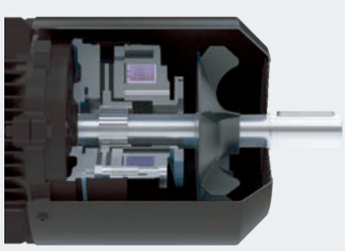
When the motor is overloaded winding temperature exceeds the insulation class limit value, and the thermal switch assembled to the winding opens the circuit. In many applications, thermal switch can be connected in series to the main contactor coil. Depending on the opening of the thermal switch, the main contactor is released and damage to the motor is prevented.

Anti-Condensation Heater and Drain Hole

Water condensation inside the motor can occur in high humidity environments. To prevent this, heaters anti-condensation heaters are assembled to the motor windings to maintain a certain temperature.
In addition, drain holes are opened to prevent water from accumulating in the motor body in the event of water condensation inside the motor.



Non Drive End Shaft Extension and Canopy



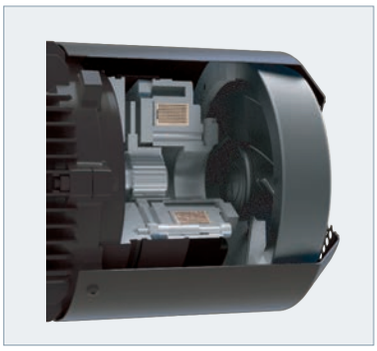
Non Drive End Shaft Extension

Non drive end shaft is used when it is desired to transfer the motor power to a second load or to manually rotate it when the motor is not energized.

Canopy

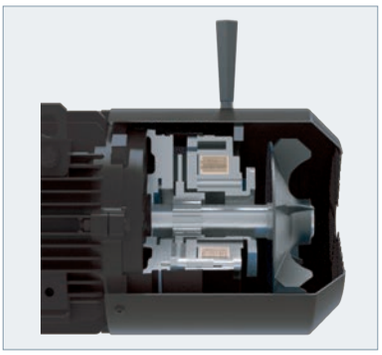
It is used for operation in the outside environment where the motor fan is pointing upwards. This prevents the rainwater from entering the motor housing.

Brake, Hand Release, Separately Driven Fan Encoder and Backstop



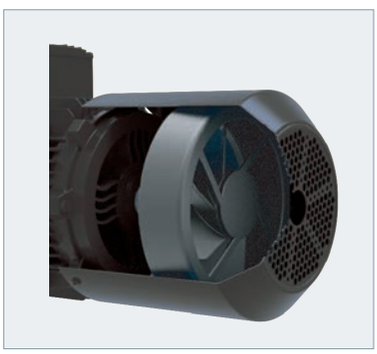
Electromagnetic Brake

For each motor size we have the option of electromagnetic brake. Brakes with 24 Volt, 230 Volt and 400 Volt DC from 5Nm to 1600Nm are alternatively can be used as needed.



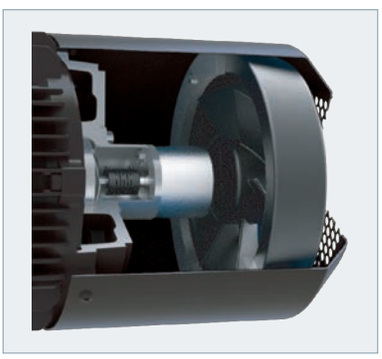
Brake with Hand Release

Hand release on the brake is used to release the system when the power is cut off or the power is not turned on.



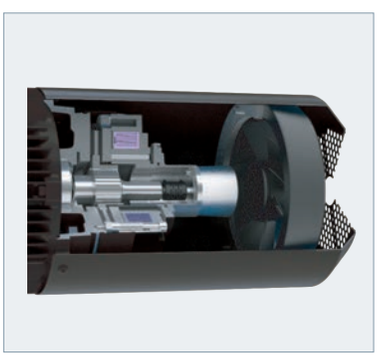
Separately Driven Fan

Separately driven fan is used particularly in applications where the motor is driven by variable speed drives to keep the air flow at a constant level.



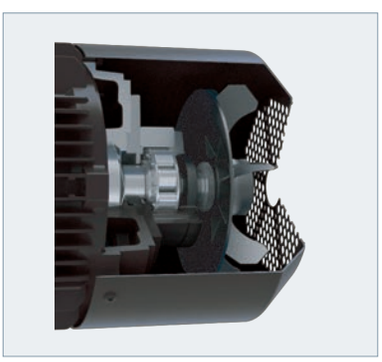
Separately Driven Fan with Encoder

In applications where synchronous operation is desired, encoder application is used. The motor fan cannot be used since the encoder is mounted on the non drive end cover. For this reason, the motor is cooled by a separately driven fan.



Separately driven fan with brake and encoder

In applications where both brake and synchro-nous operation are desired, brake, encoder and separately driven fan options are all mounted to the non drive side of the motor.



Backstop

Backstop is used when the motor should rotate only in one direction and the motor should not rotate in the other direction. The backstop option in the fan cover is widely used.