



**Electric motors**

# ***3AL, 3LC Series***

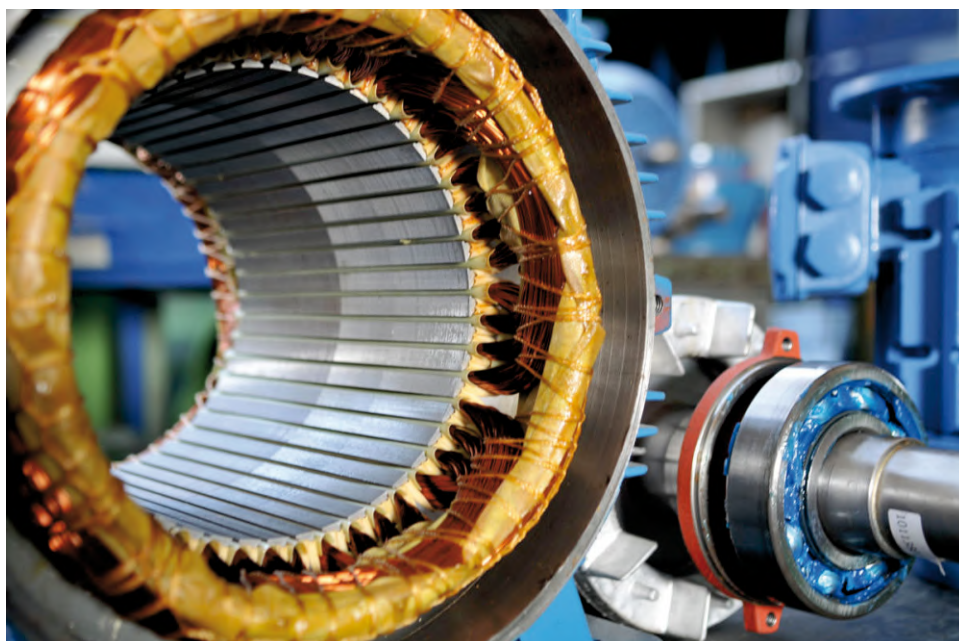
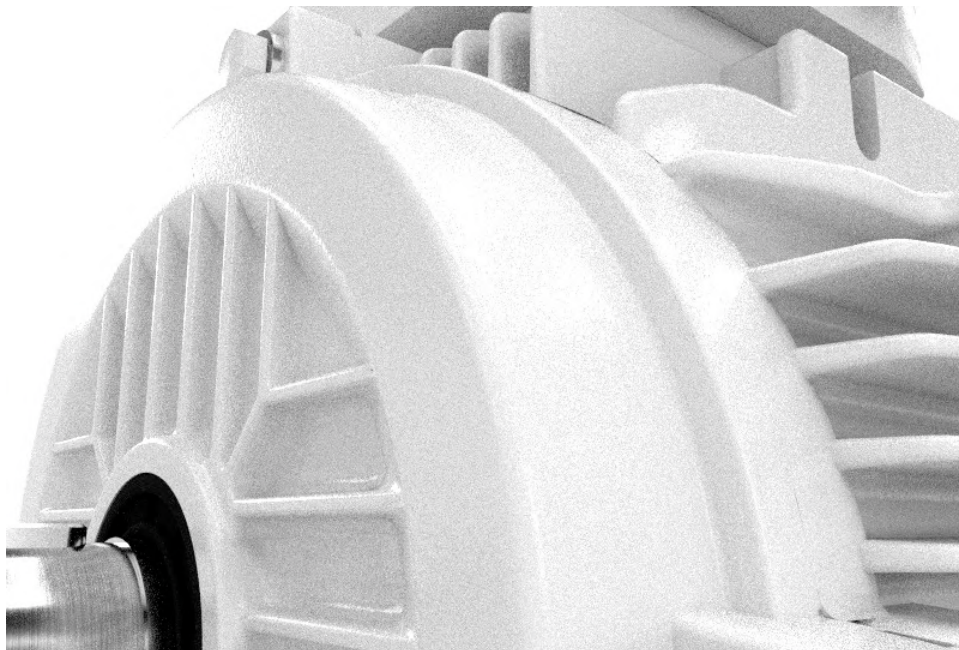
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Powerful, efficient and flexible...

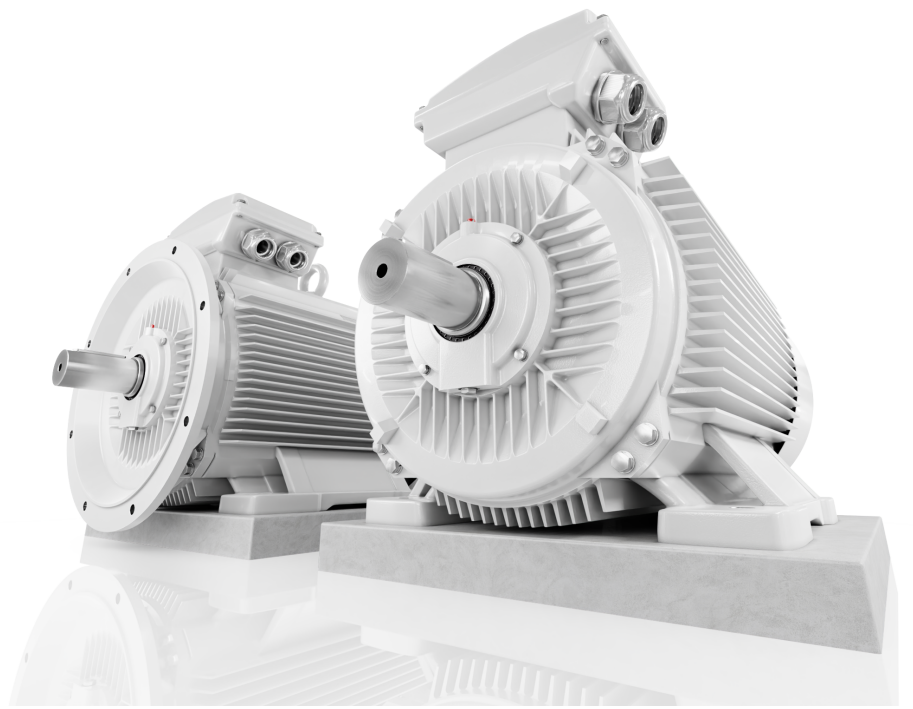
**Technical catalogue**



# Low-voltage induction electric motors







**AL** and **LC** motors  
for all types of industry

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# Quality management and certificates



VYBO Electric is a modern High-tech energy saving company that pays high attention to quality, environment, safety and precision and efficiency of work and energy in production. Therefore, it holds a lot of certificates and quality control systems. **Our priority is quality control.**

## Basic certificates include:

### ISO9001

The primary task of the ISO 9001 standard is to focus on system management and quality management in the organization. The satisfaction of the customer and the fulfillment of his requirements, which are specified in contracts, orders, or technical drawings, are in the first place. The quality management system is linked to all processes in the company. The standard focuses on the management of human and financial resources, on the stability of infrastructure, including buildings, transport, hardware, software and other communication or information technologies. An important part is also the planning of production and services, the management of the purchasing process, but also the management of non-conforming products.



### ISO14001

The main priority of the ISO 14001 standard is to identify and understand the environmental aspects and activities that are related to the entire infrastructure of the company and, based on this, to regulate the environmental impact on the environment.

In its scope, the ISO 14001 standard creates the conditions for determining environmental goals and plans, the fulfillment of which is examined at regular intervals by top management and also by an independent body during internal audits.

This standard is intended for all organizations and companies that consider environmental protection as their primary goal.

The benefit of the standard for society is mainly:

- control over the environmental impact on the environment
- control over produced emissions and waste
- saving material and energy
- prevention of accidents
- compliance of the company's activities with legal requirements
- zero fines for environmental behavior
- creation of a good reputation and prestige of the company





## The ISO 45001

Specification (formerly known as OHSAS 18001) is an internationally recognized standard that declares compliance with the principles of a safe enterprise, managing risks at work and protecting the health of workers during work. It does not only concern danger and accidents, but also emphasizes other aspects such as the good condition and mental well-being of the employee.

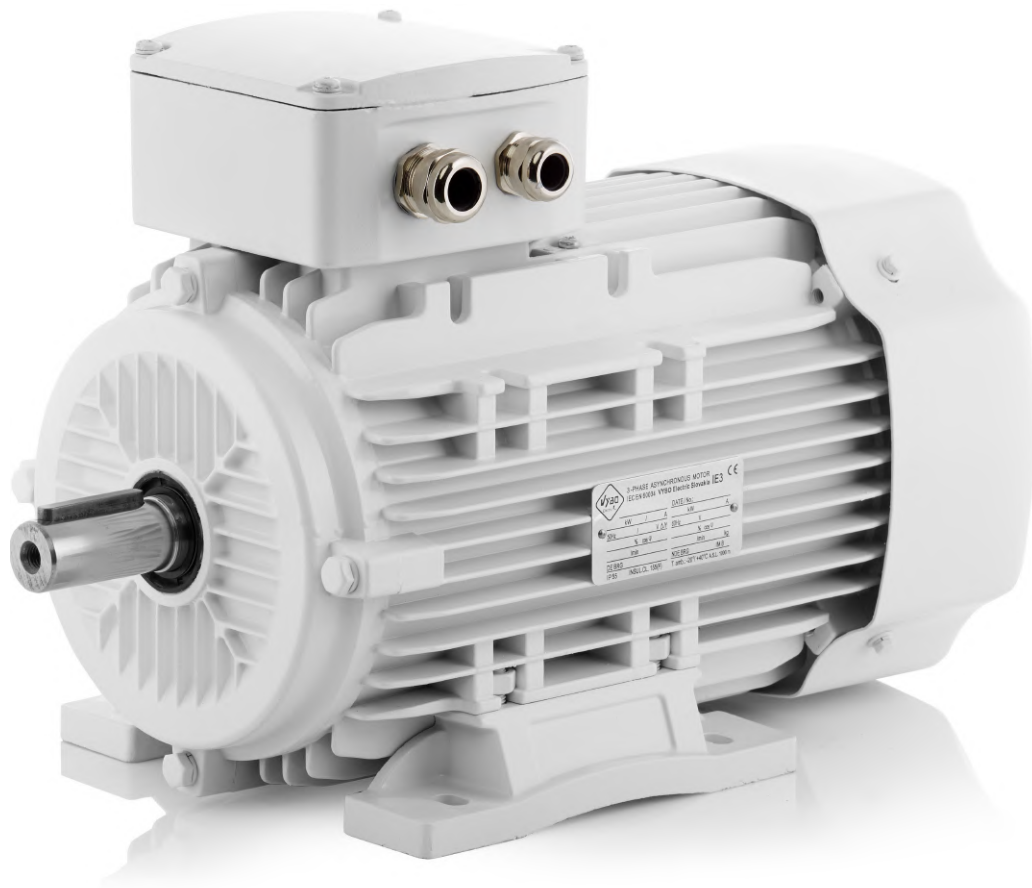
The certificate is held in Slovakia as STN ISO 45001:2019 and is under the title Management systems of safety and health protection at work. Requirements with guidance for use. It replaces the STN OHSAS 18001 standard.



## ISO50001

Energy management systems Energy efficiency help organizations save money, save energy resources and also help to prevent climate change. ISO 50001 encourages organizations in all sectors to use energy more efficiently through the development of an energy management system. The international standard ISO 50001: 2011 specifies the requirements for building, maintaining and improving the energy system. It aims to enable organizations to implement a systematic approach that will help achieve lasting improvements in energy efficiency, energy use and consumption.





# AL Series

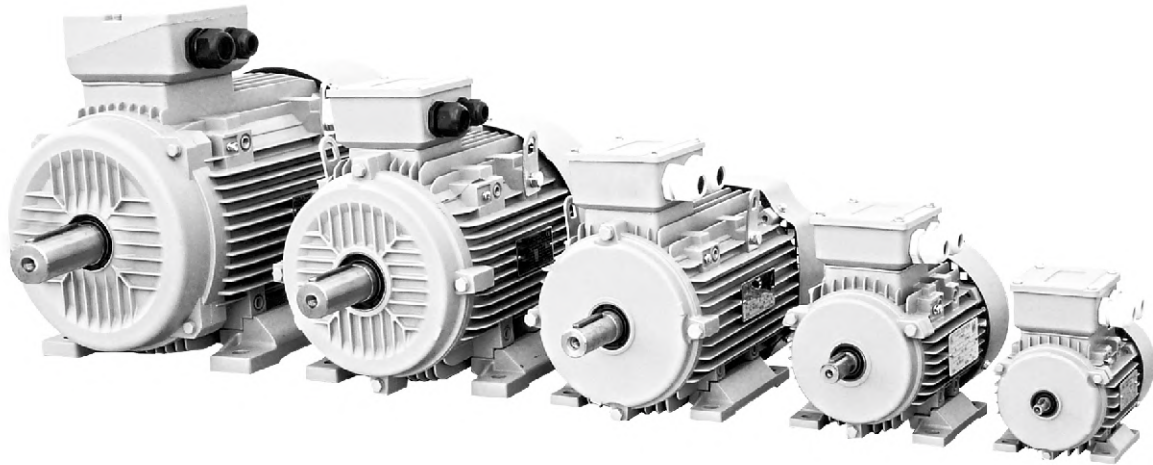
Electric motors for standard and heavy duty in an aluminum frame





# AL SERIES

Motors in AL version - low-voltage electric motors for general and heavy industry

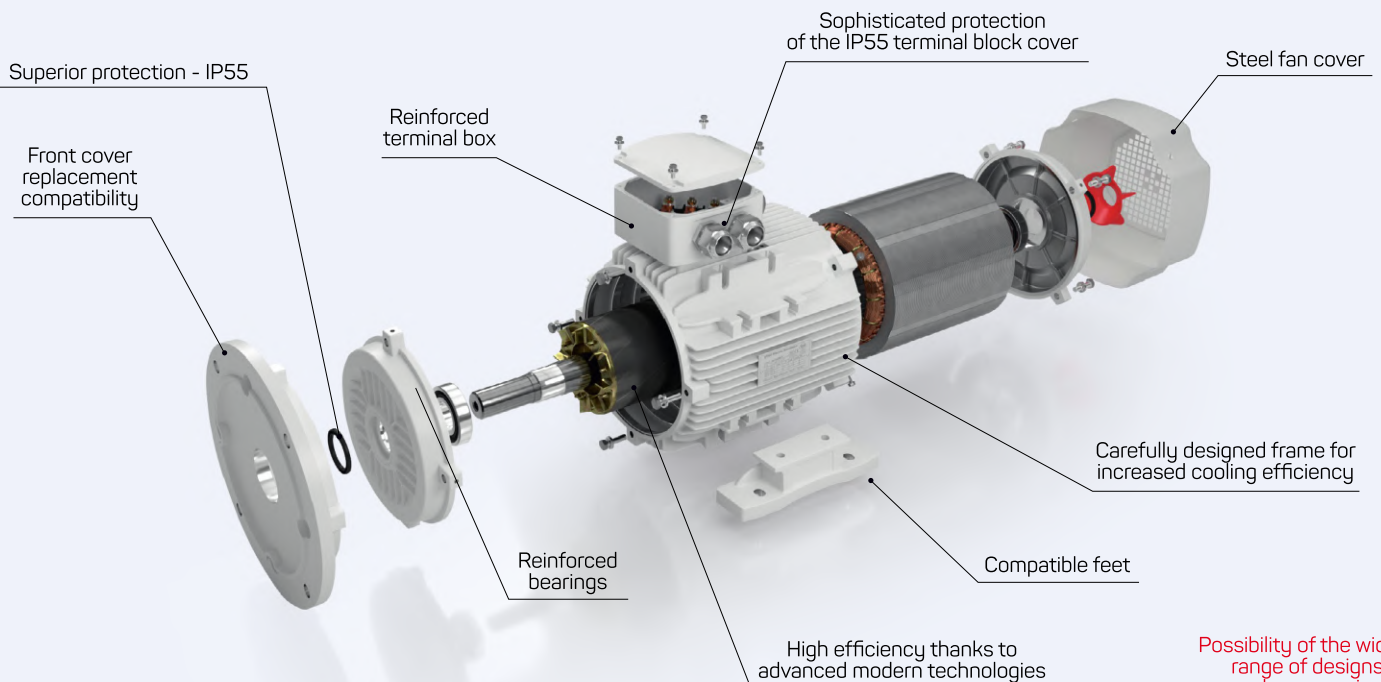


## Kinetics AL Class

Types: 1AL, 2AL, 3AL, 4AL  
Power from 0,12 to 18,5 kW  
Efficiency classes IE1, IE2, IE3, IE4  
Reinforced terminal box

Axial heights: 56 and 160 mm  
Steel fan cover  
Rated frequency 50Hz, 60Hz, 87Hz  
Protection IP55, IP56, IP65

Voltage system 230/400/690 V  
Cooling IC411  
Insulation class F  
Compact feet



Possibility of the widest range of designs and accessories

# AL SERIES

<b>Power:</b>	0.06 - 22 kW
<b>Speed:</b>	3000 / 1500 / 1000 / (750) rpm
<b>Frame size:</b>	56 - 160
<b>Voltage:</b>	230/400 V, 400/690 V, 500 V
<b>Frequency:</b>	50 / 60 Hz
<b>Protection class:</b>	IP55
<b>Efficiency class:</b>	IE1 (Standard efficiency), IE2 (High efficiency), IE3 (Premium efficiency), IE4 (Super premium ef.)
<b>Insulation class:</b>	F/B
<b>Color:</b>	RAL 7030 (stone grey)
<b>Mounting:</b>	IM B3, IM B35, IM B5, IM B14, IM B34
<b>Cooling type:</b>	IC 411 cooling (TENV), IC 416 cooling (TEFV)
<b>Temperature:</b>	-20 °C to +40 °C
<b>Installation height:</b>	1000 m above sea level
<b>Frame material:</b>	aluminium
<b>Direction of rotation:</b>	right/left

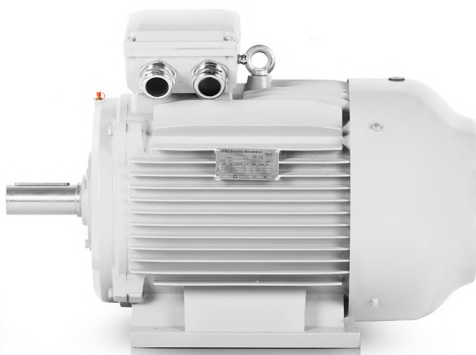






# LC Series

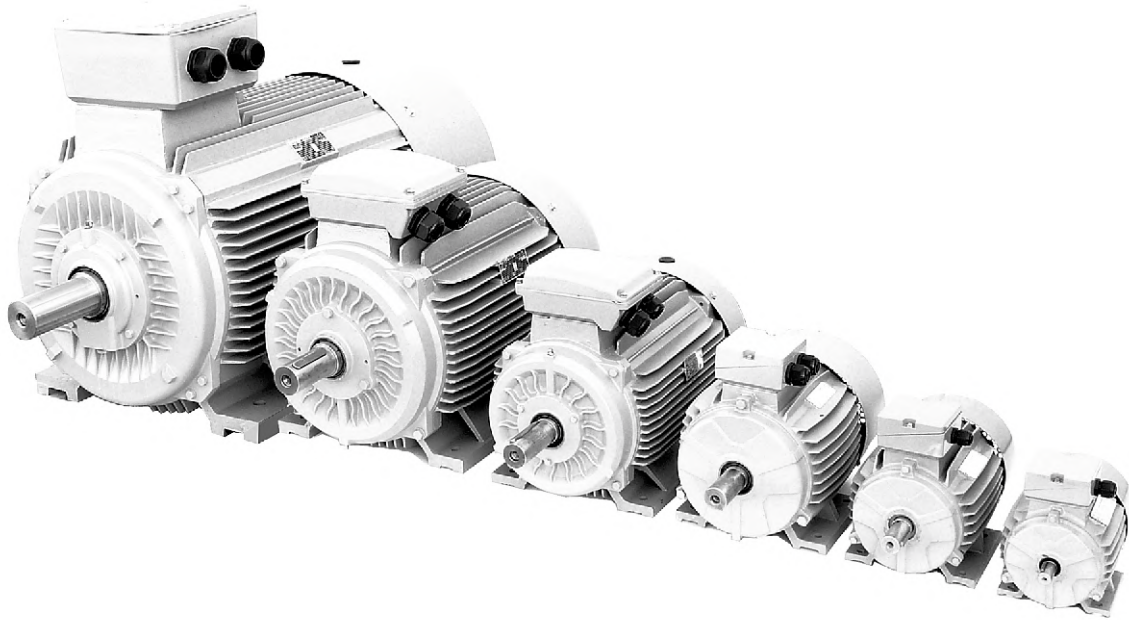
Electric motors for standard and heavy duty in a cast iron frame



SOLUTIONS FOR INDUSTRY

# LC SERIES

Electric motors in LC version - performance in robustness



## Kinetics LC Class

Cast iron frame  
Top motors with high overload capacity  
Heavy industrial processes  
Full range of optional accessories  
Power from 0,12 kW to 1000 kW  
Efficiency classes IE1, IE2, IE3, IE4

Axial heights: 1LP, 2LP, 3LP - 71 to 160 mm  
1LC, 2LC, 3LC - 180 to 355 mm  
4LD - 355 - 450 mm  
Nominal frequency 50 Hz, 60 Hz, 87 Hz  
Protection IP 54, 55, 56, 65, 66  
Voltage system 230/400V, 500V, 400/690V

Cooling IC411, (IC511 special)  
Insulation classes F, H  
Bearing relubrication system  
Thermal protection - PTC thermistors  
Steel fan cover  
Reinforced terminal block cover

High protection against dust and water up to IP66

Design compatibility

Full range of optional accessories

Reinforced bearings

Maximum security of the terminal box

Reinforced terminal box

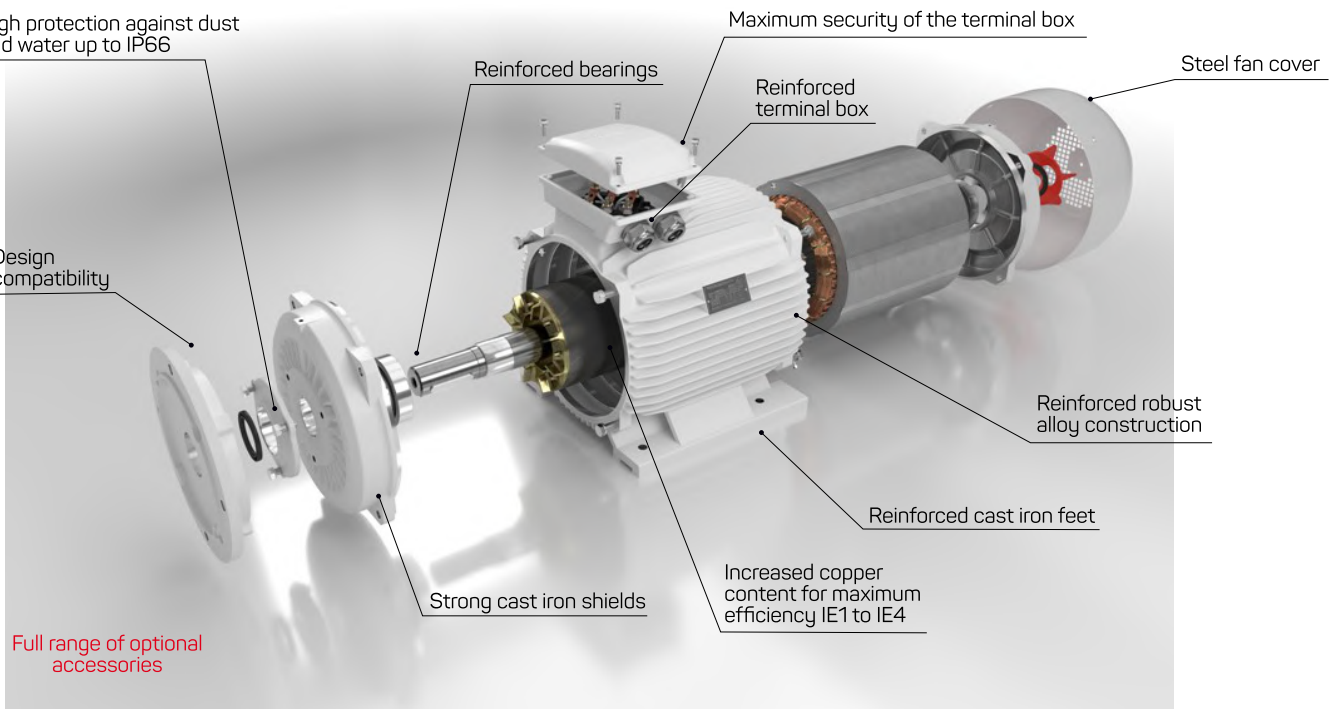
Steel fan cover

Reinforced robust alloy construction

Reinforced cast iron feet

Strong cast iron shields

Increased copper content for maximum efficiency IE1 to IE4





# LC SERIES

<b>Power:</b>	15 - 400 kW
<b>Speed:</b>	3000 / 1500 / 1000 / (750) rpm
<b>Frame size:</b>	160 - 355
<b>Voltage:</b>	230/400 V, 400/690 V, 500 V
<b>Frequency:</b>	50 / 60 Hz
<b>Protection class:</b>	IP55
<b>Efficiency class:</b>	IE1 (Standard efficiency), IE2 (High efficiency), IE3 (Premium efficiency), IE4 (Super premium ef.)
<b>Insulation class:</b>	F/B
<b>Color:</b>	RAL 7030 (stone gray)
<b>Mounting:</b>	IM B3, IM B35, IM B5, IM B14, IM B34
<b>Cooling type:</b>	IC 411 cooling (TENV), IC 416 cooling (TEFV)
<b>Temperature:</b>	-20 °C to +40 °C
<b>Installation height:</b>	1000 m above sea level
<b>Frame material:</b>	cast iron
<b>Direction of rotation:</b>	right/left



# Bearing size

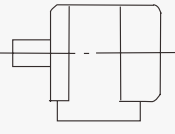
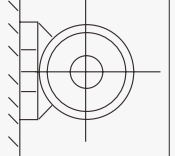
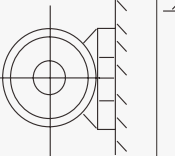
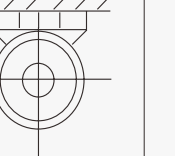
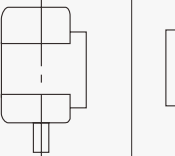
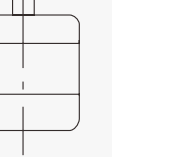
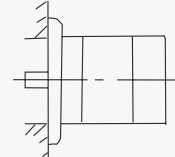
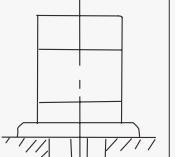
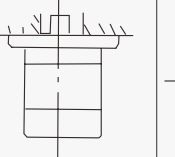
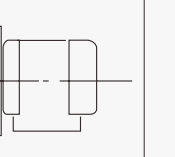
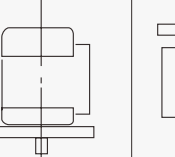
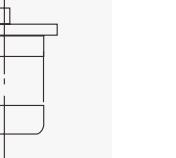
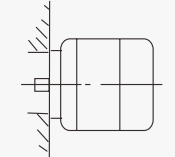
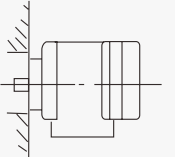
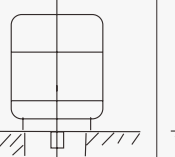
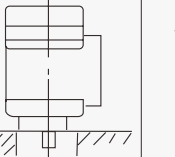
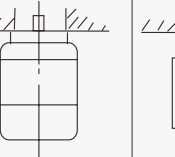
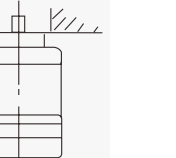
Frame size	Poles	Drive end	Non drive END
		International type	
80	2-4	62042 RZ	62042RZ
90	2-6	62052 RZ	62052 RZ
100	2-6	62062 RZ	62062 RZ
112	2-6	63062 RZ	63062 RZ
132	2-6	63082 RZ	63082 RZ
160	2-6	63092 ZC3	63092ZC3
180	2-6	6311C3	6311C3
200	2-6	6312C3	6312C3
225	2-6	6313C3	63 3C3
250	2-6	6314C3	6314C3
280	2	6314C3	6314C3
	4-6	6317C3	6317C3
315	2	6317C3	6317C3
	4-6	NU319C3	6319C3
355	2	6319C3	6319C3
	4-6	NU322C3	NU322C3

# Main data for terminal box

Classified number	Frame size	Max. F. Amps	Entry hole size
1	H80	2,6	2xM20x1,5
2	H90-100	6,8	2xM25x1,5
3	H112-132	15,4	2xM32x1,5
4	H160-180	42,5	2xM40x1,5
5	H200-225	84,2	2xM50x1,5
6	H250-280	166,6	2xM63x1,5
7	H315	358	2xM63x1,5
8	H355	546	2xM63x1,5

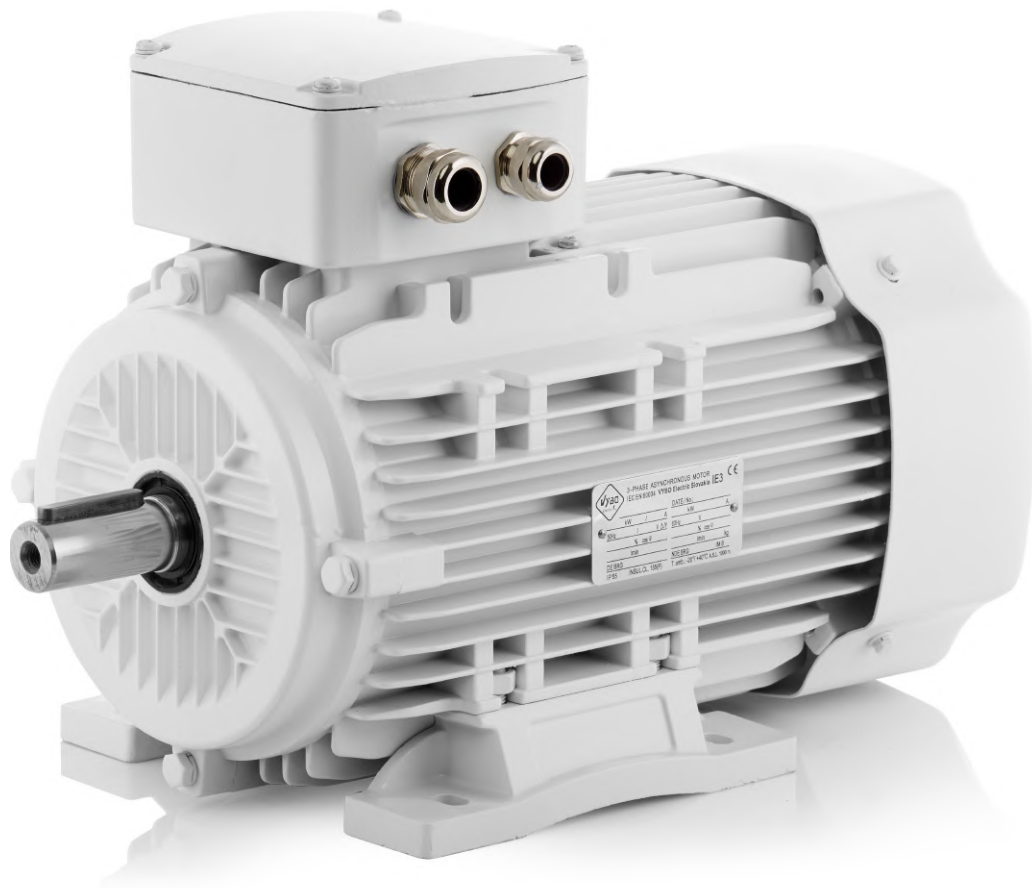


The mounting arrangements of the motors comply with IEC34-7 recommendation. There are four basic arrangements shown as the following tables and figures.

Fundamental arrangement	B3					
Mounting arrangement	B3	B6	B7	B8	V5	V6
Diagram						
Range of Manufacture (frame size)	80-355	80-160				
Fundamental arrangement	B5			B35		
Mounting arrangement	B5	V1	V3	B35	V15	V36
Diagram						
Range of Manufacture (frame size)	80-280	80-355	80-160	80-355	80-160	
Fundamental arrangement	B14					
Mounting arrangement	B14	B34	V18	V58	V19	V69
Diagram						
Range of Manufacture (frame size)	80-132					



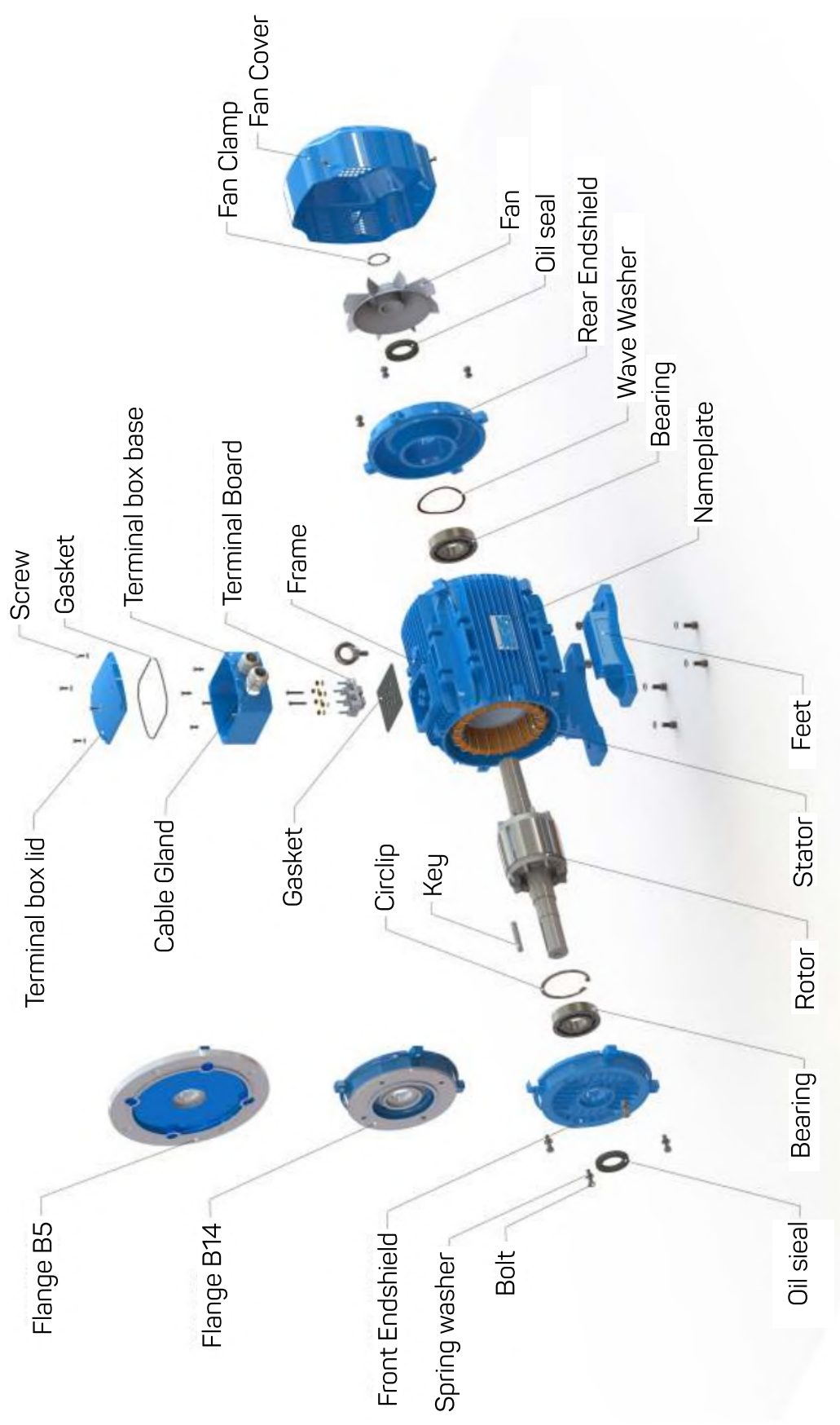




## 3AL Series

Electric motors for standard and heavy duty in an aluminium frame





# Technical data 3AL

Frame reference and size		Rated power	Full load current at rated voltage			Full load speed in revolutions per minute	Direct on line starting torque ratio	Direct on line pull out torque ratio	Direct on line starting current ratio	Efficiency	Power factor	Noise	Weight	Rotor inertia
NO.	Type	Power	Amps (A)			Speed	LRT	BDT	LRA	$\eta$	Power factor	Noise	Weight	J
		kW	380V	400V	415V	r/min	RLT	RLT	RLA	(%)	(cos $\phi$ )	LwdB (A)	kg	kg·m <sup>2</sup>
<b>2 poles electric motors</b>														
1	3AL-56-2	0,12	0,38	0,37	0,35	2700	2,2	2,1	5,2	60,8	0,78	57	4	0,00023
2	3AL-63M1-2	0,18	0,52	0,49	0,48	2720	2,3	2,3	5,5	65,9	0,8	61	4,5	0,00031
3	3AL-63M2-2	0,25	0,67	0,64	0,62	2720	2,3	2,3	5,5	69,7	0,81	61	4,7	0,0006
4	3AL-71M1-2	0,37	0,94	0,89	0,86	2755	2,2	2,3	6,1	73,8	0,81	64	6	0,00075
5	3AL-71M2-2	0,55	1,31	1,24	1,2	2790	2,3	2,3	6,1	77,8	0,82	64	6,3	0,0009
6	3AL-80M1-2	0,75	1,7	1,62	1,56	2845	2,3	2,2	6,1	80,7	0,83	67	9,5	0,0012
7	3AL-80M2-2	1,1	2,41	2,29	2,2	2835	2,3	2,2	6,9	82,7	0,84	67	10,5	0,0014
8	3AL-90S-2	1,5	3,22	3,06	2,95	2850	2,3	2,2	7	84,2	0,84	72	16	0,0029
9	3AL-90L-2	2,2	4,58	4,35	4,19	2855	2,3	2,2	7	85,9	0,85	72	20	0,0055
10	3AL-100L-2	3	6,02	5,71	5,51	2860	2,3	2,2	7,5	87,1	0,87	76	26	0,0109
11	3AL-112M-2	4	7,84	7,45	7,18	2880	2,3	2,2	7,5	88,1	0,88	77	33,5	0,0126
12	3AL-132S1-2	5,5	10,65	10,11	9,75	2900	2,3	2,2	7,5	89,2	0,88	80	45	0,0377
13	3AL-132S2-2	7,5	14,37	13,65	13,16	2900	2,3	2,2	7,5	90,1	0,88	80	51	0,0499
14	3AL-160M1-2	11	20,59	19,56	18,85	2930	2,3	2,2	7,5	91,2	0,89	86	103	0,055
15	3AL-160M2-2	15	27,86	26,47	25,51	2930	2,3	2,2	7,5	91,9	0,89	86	112,5	0,075
16	3AL-160L-2	18,5	33,8	32,11	30,95	2930	2,3	2,2	7,5	92,4	0,9	86	130	0,124
<b>4 poles electric motors</b>														
1	3AL-63M1-4	0,12	0,39	0,37	0,36	1310	2,2	2,1	4,4	64,8	0,72	52	4,5	0,0005
2	3AL-63M2-4	0,18	0,54	0,51	0,49	1310	2,2	2,1	4,4	69,9	0,73	52	4,7	0,0006
3	3AL-71M1-4	0,25	0,7	0,66	0,64	1340	2,2	2,1	5,2	73,5	0,74	55	6	0,0008
4	3AL-71M2-4	0,37	0,97	0,92	0,89	1340	2,2	2,1	5,2	77,3	0,75	55	6,3	0,0013
5	3AL-80M1-4	0,55	1,38	1,31	1,26	1390	2,3	2,4	5,2	80,8	0,75	58	12	0,0018
6	3AL-80M2-4	0,75	1,82	1,73	1,66	1390	2,3	2,3	6	82,5	0,76	58	12,5	0,0021
7	3AL-90S-4	1,1	2,58	2,45	2,36	1390	2,3	2,3	6	84,1	0,77	61	15,5	0,0023
8	3AL-90L-4	1,5	3,43	3,25	3,14	1400	2,3	2,3	6	85,3	0,78	61	19	0,0027
9	3AL-100L1-4	2,2	4,76	4,52	4,36	1420	2,3	2,3	7	86,7	0,81	64	27,5	0,0054
10	3AL-100L2-4	3	6,34	6,02	5,8	1420	2,3	2,3	7	87,7	0,82	64	32	0,0067
11	3AL-112M-4	4	8,37	7,95	7,66	1435	2,3	2,3	7	88,6	0,82	65	39	0,0095
12	3AL-132S-4	5,5	11,24	10,68	10,29	1440	2,3	2,3	7	89,6	0,83	71	55,5	0,0214
13	3AL-132M-4	7,5	15,01	14,26	13,74	1450	2,3	2,3	7	90,4	0,84	71	65	0,0296
14	3AL-160M-4	11	21,51	20,44	19,7	1460	2,3	2,3	7	91,4	0,85	75	107,5	0,0747
15	3AL-160L-4	15	29,11	27,66	26,66	1460	2,3	2,3	7	92,1	0,85	75	125	0,0918



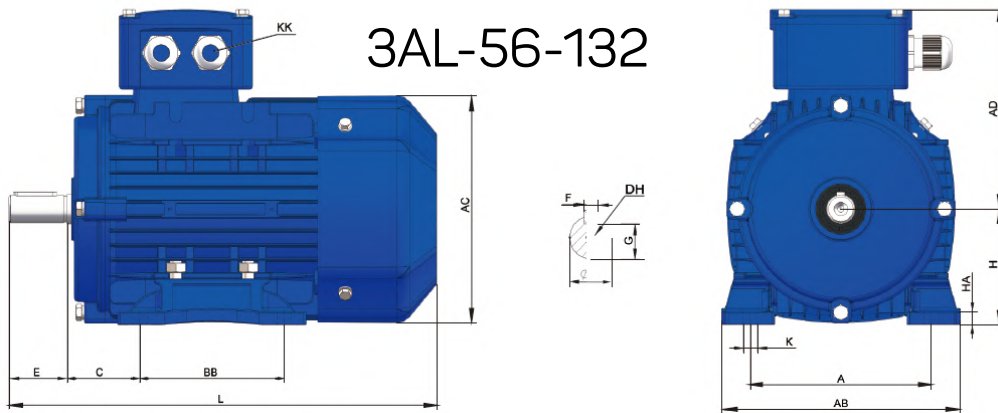
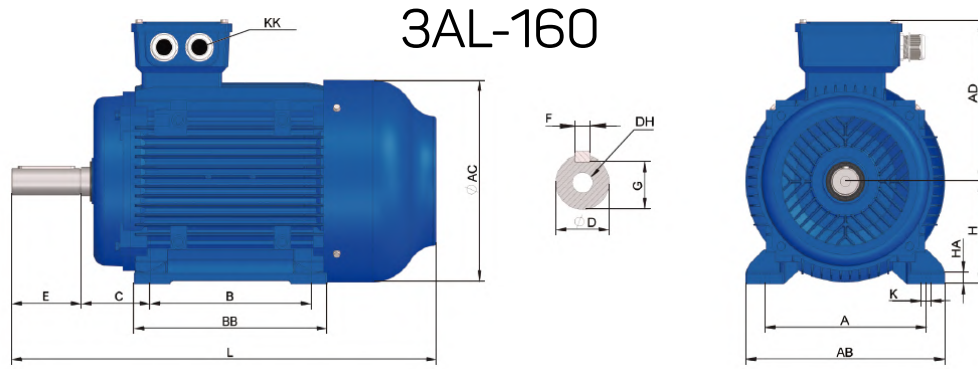


# Technical data 3AL

NO.	Frame reference and size	Rated power	Full load current at rated voltage			Full load speed in revolutions per minute	Direct on line starting torque ratio	Direct on line pull out torque ratio	Direct on line starting current ratio	Efficiency	Power factor	Noise	Weight	Rotor inertia
			LRT	BDT	LRA									
Type	Power	Amps (A)			Speed	RLT	RLT	RLA	$\eta$	Power factor	Noise	Weight	J	
	kW	380V	400V	415V	r/min				(%)	(cos $\phi$ )	LwdB (A)	kg	kg*m <sup>2</sup>	
<b>6 poles electric motors</b>														
1	3AL-71M1-6	0,18	0,65	0,62	0,59	870	2	1,9	4	63,9	0,66	52	6	0,0011
2	3AL-71M2-6	0,25	0,81	0,77	0,75	870	2	1,9	4	68,6	0,68	52	6,3	0,0014
3	3AL-80M1-6	0,37	1,09	1,04	1	880	2	1,9	4,7	73,5	0,7	54	13	0,0016
4	3AL-80M2-6	0,55	1,5	1,43	1,38	880	2,1	1,9	4,7	77,2	0,72	54	14	0,0019
5	3AL-90S-6	0,75	2,01	1,91	1,84	905	2,1	2	5,3	78,9	0,72	57	16	0,0029
6	3AL-90L-6	1,1	2,83	2,69	2,59	905	2,1	2	5,5	81	0,73	57	20,5	0,0035
7	3AL-100L-6	1,5	3,63	3,45	3,33	920	2,1	2	5,5	82,5	0,76	61	26,5	0,0069
8	3AL-112M-6	2,2	5,22	4,96	4,78	935	2,1	2	6,5	84,3	0,76	65	32,5	0,014
9	3AL-132S-6	3	7,01	6,66	6,42	960	2,1	2,1	6,5	85,6	0,76	69	45	0,0286
10	3AL-132M1-6	4	9,21	8,75	8,44	960	2,1	2,1	6,5	86,8	0,76	69	56,5	0,0357
11	3AL-132M2-6	5,5	12,33	11,72	11,29	960	2,1	2,1	6,5	88	0,77	69	63	0,0449
12	3AL-160M-6	7,5	16,4	15,58	15,01	970	2,1	2	6,5	89,1	0,78	73	102,5	0,081
13	3AL-160L-6	11	23,43	22,26	21,45	970	2,1	2	6,5	90,3	0,79	73	116	0,0116
<b>8 poles electric motors</b>														
1	3AL-80M1-8	0,18	0,76	0,73	0,7	645	1,9	1,8	3,3	58,7	0,61	52	11,5	0,0025
2	3AL-80M2-8	0,25	0,97	0,92	0,89	645	1,9	1,8	3,3	64,1	0,61	52	12,6	0,003
3	3AL-90S-8	0,37	1,33	1,26	1,22	675	1,9	1,8	4	69,3	0,61	56	15	0,0051
4	3AL-90L-8	0,55	1,88	1,78	1,72	680	2	1,8	4	73	0,61	56	17,2	0,0065
5	3AL-100L1-8	0,75	2,27	2,15	2,08	680	2	1,8	4	75	0,67	59	26,5	0,0095
6	3AL-100L2-8	1,1	3,12	2,96	2,85	680	2	1,8	5	77,7	0,69	59	29	0,011
7	3AL-112M-8	1,5	4,09	3,88	3,74	690	2	1,8	5	79,7	0,7	61	32,5	0,0245
8	3AL-132S-8	2,2	5,75	5,46	5,26	710	2	1,8	6	81,9	0,71	64	46	0,0314
9	3AL-132M-8	3	7,48	7,1	6,85	710	2	1,8	6	83,5	0,73	64	52	0,0395
10	3AL-160M1-8	4	9,82	9,33	8,99	720	2	1,9	6	84,8	0,73	68	89	0,0753
11	3AL-160M2-8	5,5	13,1	12,45	12	720	2	2	6,5	86,2	0,74	68	103	0,0931



# Mounting data for 3AL

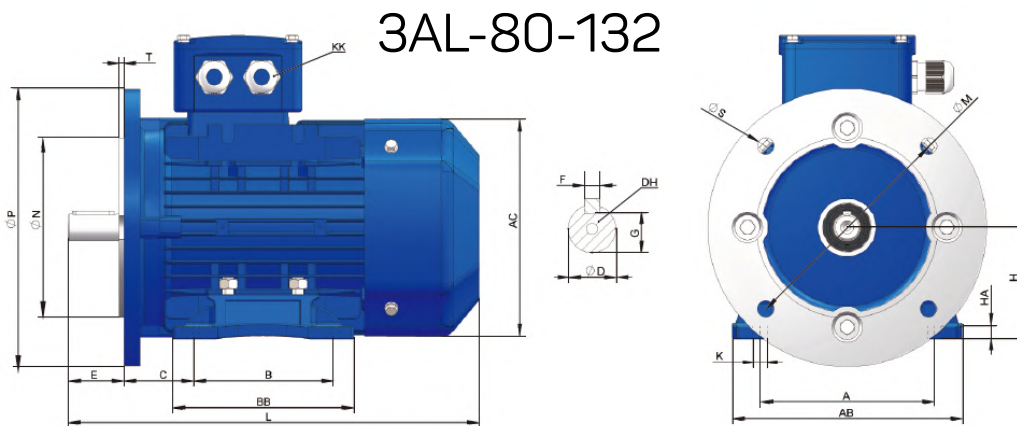
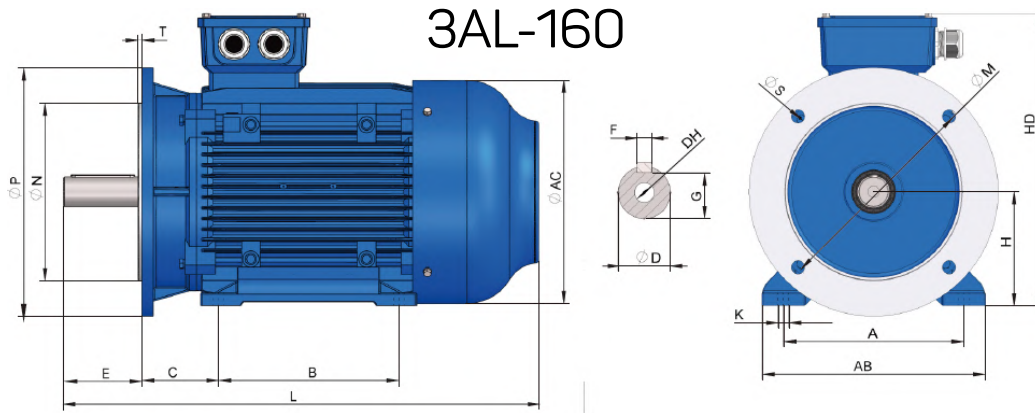


## Frame with feet and end-shield without flange (IM B3)

Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	AB	AC	AD	HD	L	DH*
56	2468	90	45	71	36	9	20	3	7,2	56	5,8	115	110	110	156	199	M4X12
63	2468	100	50	80	40	11	23	4	8,5	63	7	137	123	111	174	221	M4X12
71	2468	112	56	90	45	14	30	5	11	71	7	133	137	127	198	247	M5X12
80M	2468	125	62,5	100	50	19	40	6	15,5	80	10	165	158	140	220	295	M6X16
90S	2468	140	70	100	56	24	50	8	20	90	10	180	177	160	255	353	M8X19
90L	2468	140	70	125	56	24	50	8	20	90	10	180	177	160	255	373	M8X19
100L	2468	160	80	140	63	28	60	8	24	100	12	205	198	172	270	433	M10X22
112M	2468	190	95	140	70	28	60	8	24	112	12	226	235	193	300	461	M10X22
132S	2468	216	108	140	89	38	80	10	33	132	12	262	293	225	349	499	M12X28
132M	2468	216	108	178	89	38	80	10	33	132	12	262	293	225	349	521	M12X28
160M	2468	254	127	210	108	42	110	12	37	160	15	320	315	255	420	660	M16X36
160L	2468	254	127	254	108	42	110	12	37	160	15	320	315	255	420	730	M16X36



# Mounting data for 3AL

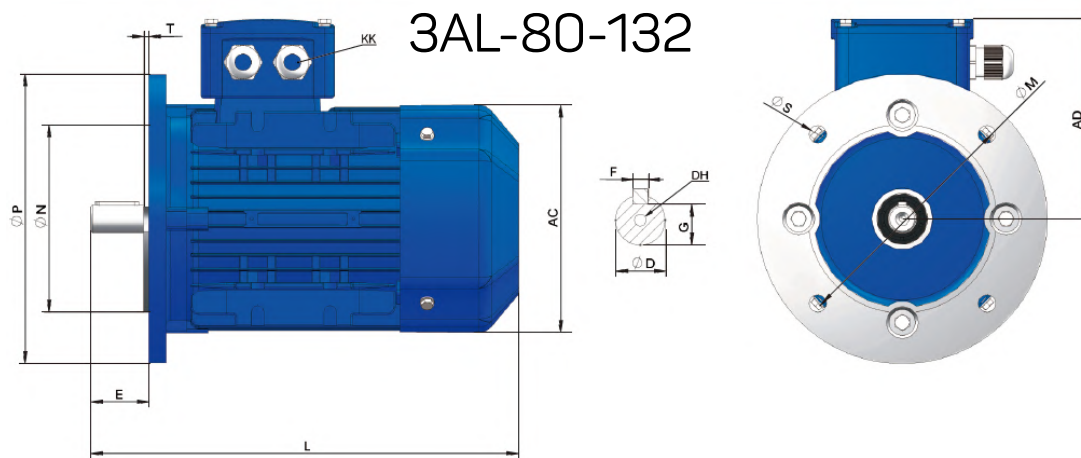
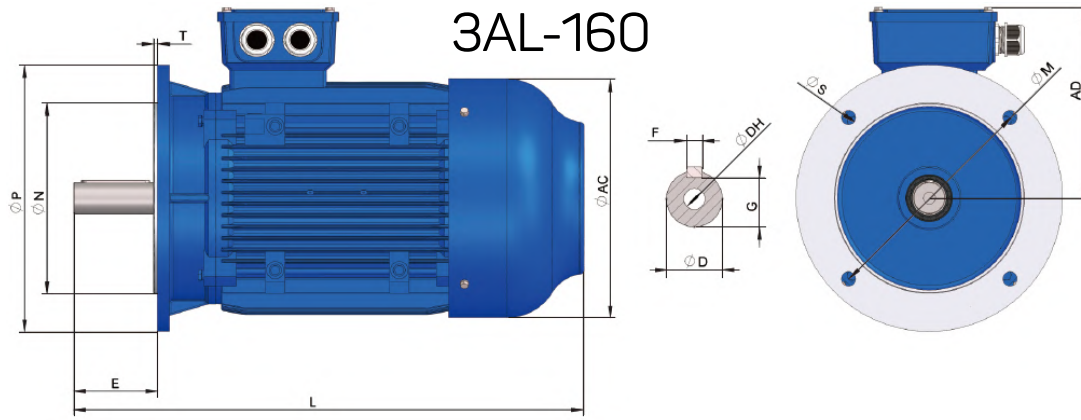


## Frame with feet and end-shield with flange (IM B35)

Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	M	N	P	S	T	Flange holes	AB	AC	AD	HD	L	DH*
56	2 4 6 8	90	45	71	36	9	20	3	7,2	56	5,8	100	80	120	7	3	4	115	110	100	156	199	M4X12
63	2 4 6 8	100	50	80	40	11	23	4	8,5	63	7	115	95	140	10	3	4	137	123	111	174	221	M4X12
71	2 4 6 8	112	56	90	45	14	30	5	11	71	7	130	110	160	10	3,5	4	133	137	127	198	247	M5X12
80M	2 4 6 8	125	62,5	100	50	19	40	6	15,5	80	10	165	130	200	12	3,5	4	165	158	140	220	295	M6X16
90S	2 4 6 8	140	70	100	56	24	50	8	20	90	10	165	130	200	12	3,5	4	180	177	160	255	353	M8X19
90L	2 4 6 8	140	70,0	125	56	24	50	8	20	90	10	165	130	200	12	3,5	4	180	177	160	255	373	M8X19
100L	2 4 6 8	160	80,0	140	63	28	60	8	24	100	12	215	180	250	15	4	4	205	198	172	270	433	M10X22
112M	2 4 6 8	190	95,0	140	70	28	60	8	24	112	12	215	180	250	15	4	4	226	235	193	300	461	M10X22
132S	2 4 6 8	216	108,0	140	89	38	80	10	33	132	12	265	230	300	15	4	4	262	293	225	349	499	M12X28
132M	2 4 6 8	216	108	178	89	38	80	10	33	132	12	265	230	300	15	4	4	262	293	225	349	521	M12X28
160M	2 4 6 8	254	127	210	108	42	110	12	37	160	15	300	250	350	19	5	4	320	315	255	420	660	M16X36
160L	2 4 6 8	254	127	254	108	42	110	12	37	160	15	300	250	350	19	5	4	320	315	255	420	730	M16X36



# Mounting data for 3AL



## Frame without feet and end-shield with flange (IM B5)

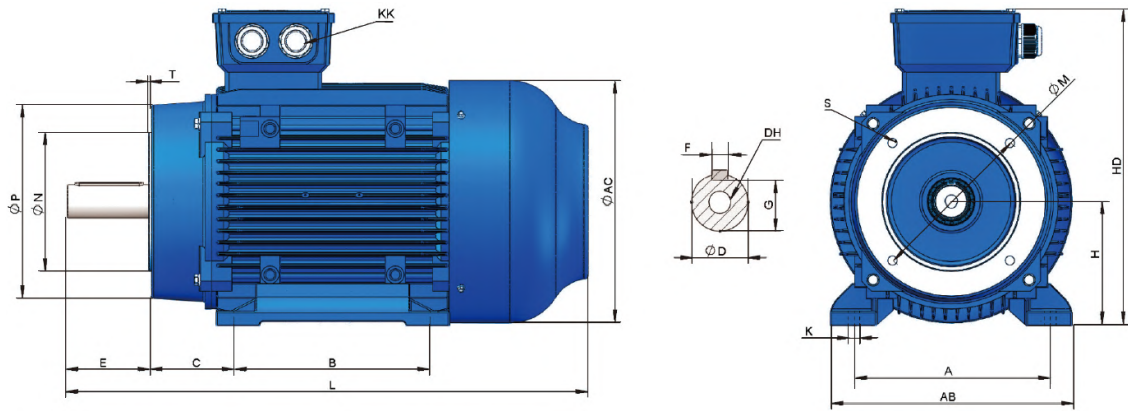
Frame size	Poles	D	E	F	G	M	N	P	S	T	Flange holes	AC	AD	L	DH*
56	2 4 6 8	9	20	3	7,2	100	80	120	7	3	4	110	100	199	M4X12
63	2 4 6 8	11	23	4	8,5	115	95	140	10	3	4	120	111	221	M4X12
71	2 4 6 8	14	30	5	11	130	110	160	10	3,5	4	137	127	247	M4X12
80M	2 4 6 8	19	40	6	15,5	165	130	200	12	3,5	4	158	140	295	M6X16
90S	2 4 6 8	24	50	8	20	165	130	200	12	3,5	4	177	160	353	M8X19
90L	2 4 6 8	24	50	8	20	165	130	200	12	3,5	4	177	160	373	M8X19
100L	2 4 6 8	28	60	8	24	215	180	250	15	4	4	198	172	433	M10X22
112M	2 4 6 8	28	60	8	24	215	180	250	15	4	4	235	193	461	M10X22
132S	2 4 6 8	38	80	10	33	265	230	300	15	4	4	293	225	499	M12X28
132M	2 4 6 8	38	80	10	33	265	230	300	15	4	4	293	225	521	M12X28
160M	2 4 6 8	42	110	12	37	300	250	350	19	5	4	315	255	730	M16X36
160L	2 4 6 8	42	110	12	37	300	250	350	19	5	4	315	255	740	M16X36





# Mounting data for 3AL

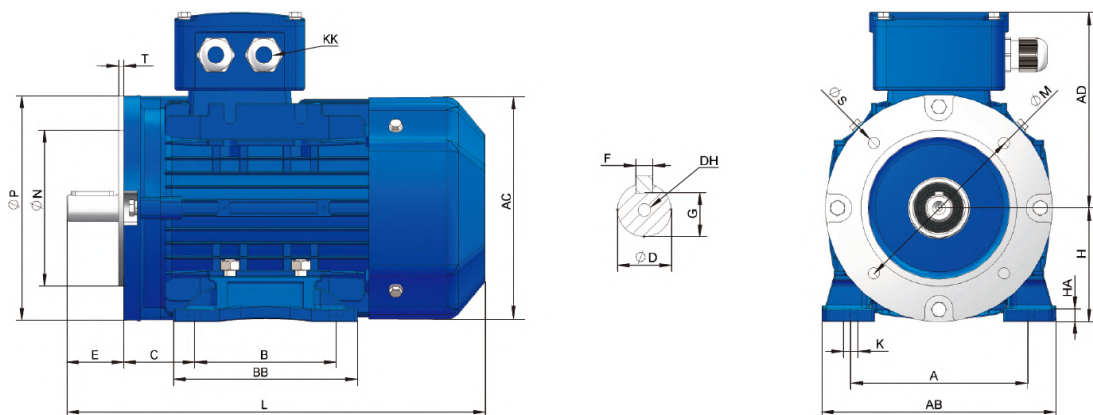
## 3AL-160



## Frame with feet and end-shield with flange (IM B34)

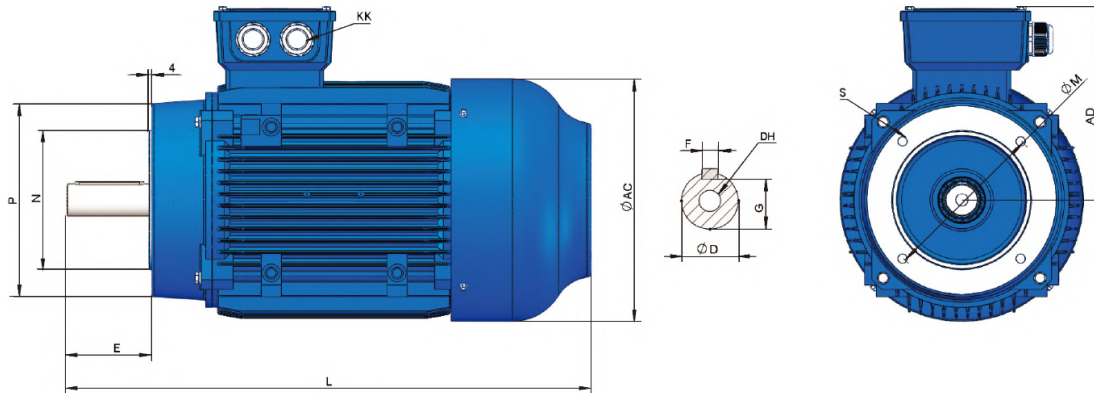
Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	M	N	P	S	T	Flange holes	AB	AC	AD	HD	L	DH*
56	2468	90	45	71	36	9	20	3	7,2	56	5,8	65	50	80	M5	3	4	115	110	100	156	199	M4X12
63	2468	100	50	80	40	11	23	4	8,5	63	7	75	60	90	M5	3	4	137	123	111	174	221	M4X12
71	2468	112	56	90	45	14	30	5	11	71	7	85	70	105	M5	3,5	4	133	137	127	198	247	M5X12
80M	2468	125	62,5	100	50	19	40	6	16	80	10	100	80	120	M6	3	4	165	158	140	220	295	M6X16
90S	2468	140	70	100	56	24	50	8	20	90	10	115	95	140	M6	3	4	180	177	160	255	353	M8X19
90L	2468	140	70	125	56	24	50	8	20	90	10	115	95	140	M6	3	4	180	177	160	255	373	M8X19
100L	2468	160	80	140	63	28	60	8	24	100	12	130	110	160	M8	3,5	4	205	198	172	270	433	M10X22
112M	2468	190	95	140	70	28	60	8	24	112	12	130	110	160	M8	3,5	4	226	235	193	193	461	M10X22
132S	2468	216	108	140	89	38	80	10	33	132	12	165	130	200	M10	3,5	4	262	293	225	225	499	M12X28
132M	2468	216	108	178	89	38	80	10	33	132	12	165	130	200	M10	3,5	4	262	293	225	225	521	M12X28
160M	2468	254	127	210	108	42	110	12	37	160	15	215	180	250	M12	4	4	314	314	255	415	632	M16X36
160L	2468	254	127	254	108	42	110	12	37	160	15	215	180	250	M12	4	4	314	314	255	415	677	M16X36

## 3AL-80-132



# Mounting data for 3AL

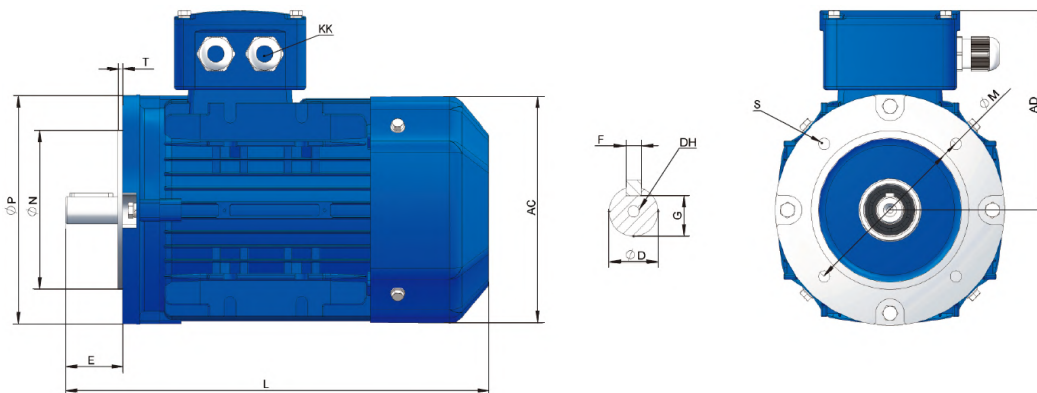
## 3AL-160

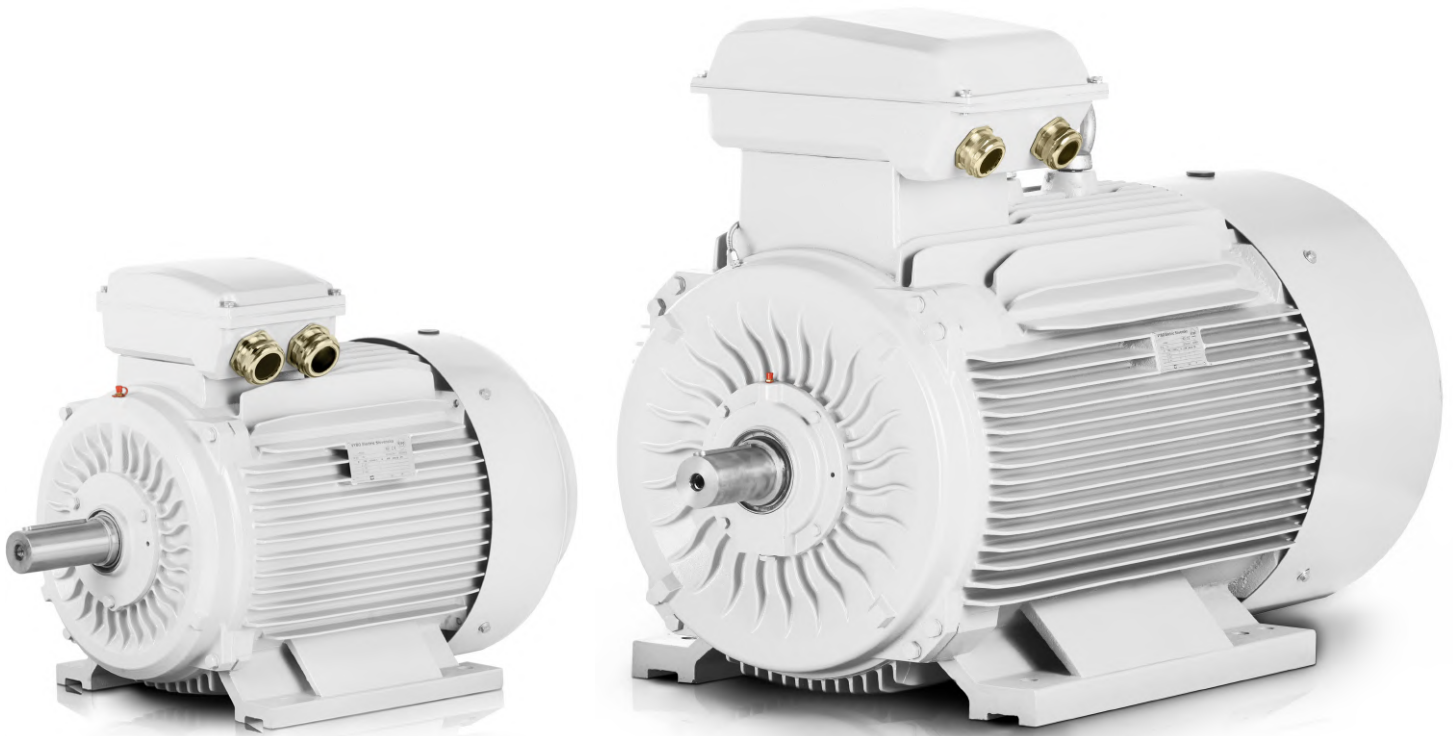


## Frame with feet and end-shield with flange (IM B14)

Frame size	AC	AD	D	DH	E	F	KK		L	B14A					B14B				
							Metric	PG		M	N	P	S	T	M	N	P	S	T
56	110	100	9	M4X12	20	3	2-M20X1,5	2-PG13,5	199	65	50	80	M5	2,5	85	70	105	M6	2,5
63	120	109	11	M4X12	23	4	2-M20X1,5	2-PG13,5	221	75	60	90	M5	2,5	100	80	120	M6	2,5
71	137	127	14	M5X12	30	5	2-M20X1,5	2-PG13,5	247	85	70	105	M6	2,5	115	95	140	M8	3
80M	156	138	19	M6X16	40	6	2-M25X1,5	2-PG16	295	100	80	120	M6	3	130	110	160	M8	3,5
90S	177	152	24	M8X19	50	8	2-M25X1,5	2-PG16	353	115	95	140	M8	3	130	110	160	M8	3,5
90L	177	152	24	M8X19	50	8	2-M25X1,5	2-PG16	373	115	95	140	M8	3	130	110	160	M8	3,5
100L	197	160	28	M10X22	60	8	2-M32X1,5	2-PG16	433	130	110	160	M8	3,5	165	130	200	M10	3,5
112M	218	181	28	M10X22	60	8	2-M32X1,5	2-PG16	461	130	110	160	M8	3,5	165	130	200	M10	3,5
132S	258	212	38	M12X28	80	10	2-M32X1,5	2-PG16	499	165	130	200	M10	3,5	215	180	250	M12	4
132M	258	212	38	M12X28	80	10	2-M32X1,5	2-PG16	521	165	130	200	M10	3,5	215	180	250	M12	4
160M	314	255	42	M16X36	110	12	2-M40X1,5	2-PG16	632	215	180	250	M12	4	265	230	300	M16	5
160L	314	255	42	M16X36	110	12	2-M40X1,5	2-PG16	677	215	180	250	M12	4	265	230	300	M16	5

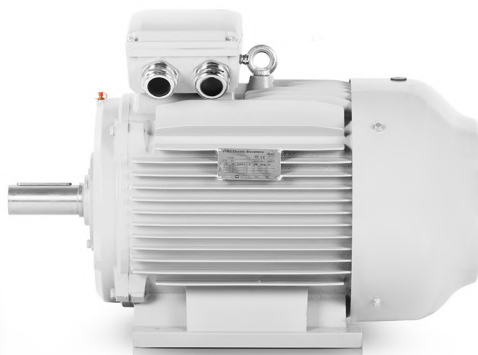
## 3AL-80-132





## 3LC Series

Electric motors for standard and heavy duty in a cast iron frame



SOLUTIONS FOR INDUSTRY





# Technical data 3LC

NO.	Frame reference and size	Rated power kW	Full load current at rated voltage Amps (A)			Full load speed in revolutions per minute r/min	Direct on line starting torque ratio		Direct on line pull out torque ratio	Direct on line starting current ratio	Efficiency $\eta$ (%)	Power factor ( $\cos\phi$ )	Noise LwdB (A)	Weight kg	Rotor inertia kg*m <sup>2</sup>
			380V	400V	415V		LRT RLT	BDT RLT							
<b>2 poles electric motors</b>															
1	3LC-80M1-2	0,75	1,72	1,64	1,58	2890	2,3	2,3	7	80,7	0,82	62	23	0,00109	
2	3LC-80M2-2	1,1	2,43	2,31	2,23	2890	2,2	2,3	7,3	82,7	0,83	62	24	0,00142	
3	3LC-90S-2	1,5	3,22	3,06	2,95	2890	2,2	2,3	7,6	84,2	0,84	67	26	0,00217	
4	3LC-90L-2	2,2	4,58	4,35	4,19	2890	2,2	2,3	7,6	85,9	0,85	67	31	0,00283	
5	3LC-100L-2	3	6,02	5,71	5,51	2895	2,2	2,3	7,8	87,1	0,87	74	39	0,00457	
6	3LC-112 M-2	4	7,84	7,45	7,18	2910	2,2	2,3	8,3	88,1	0,88	77	61	0,00631	
7	3LC-132S1-2	5,5	10,65	10,11	9,75	2940	2	2,3	8,3	89,2	0,88	79	73	0,01392	
8	3LC-132S2-2	7,5	14,37	13,65	13,16	2940	2	2,3	7,9	90,1	0,88	79	79	0,01643	
9	3LC-160M1-2	11	20,59	19,56	18,85	2950	2	2,3	8,1	91,2	0,89	81	126	0,054	
10	3LC-160M2-2	15	27,86	26,47	25,51	2950	2	2,3	8,1	91,9	0,89	81	136	0,0618	
11	3LC-160L-2	18,5	34,18	32,47	31,30	2950	2	2,3	8,2	92,4	0,89	81	161	0,0716	
12	3LC-180M-2	22	40,52	38,49	37,1	2960	2	2,3	8,2	92,7	0,89	83	202	0,0892	
13	3LC-200L1-2	30	54,89	52,15	50,26	2970	2	2,3	7,6	93,3	0,89	84	259	0,18	
14	3LC-200L2-2	37	67,41	64,04	61,73	2970	2	2,3	7,6	93,7	0,89	84	276	0,19	
15	3LC-225M-2	45	80,82	76,78	74	2970	2	2,3	7,7	94	0,9	86	359	0,3335	
16	3LC-250M-2	55	98,46	93,54	90,16	2980	2	2,3	7,7	94,3	0,9	89	394	0,4638	
17	3LC-280S-2	75	133,70	127,02	122,43	2980	1,8	2,3	7,1	94,7	0,9	91	537	1,0889	
18	3LC-280M-2	90	159,94	151,94	146,45	2980	1,8	2,3	7,1	95	0,9	91	583	1,1487	
19	3LC-315S-2	110	195,07	185,31	178,61	2980	1,8	2,3	7,1	95,2	0,9	92	861	1,495	
20	3LC-315M-2	132	233,59	221,91	213,89	2980	1,8	2,3	7,14	95,4	0,9	92	948	2,111	
21	3LC-315L1-2	160	279,44	265,47	255,87	2980	1,8	2,3	7,2	95,6	0,91	92	1020	2,394	
22	3LC-315L2-2	200	348,57	331,14	319,17	2980	1,8	2,3	7,2	95,8	0,91	92	1112	2,654	
23	3LC-355M-2	250	435,71	413,93	398,97	2980	1,6	2,2	7,2	95,8	0,91	100	1650	3,345	
24	3LC-355L-2	315	549	521,55	502,70	2980	1,6	2,2	7,2	95,8	0,91	100	1843	3,903	



# Technical data 3LC

NO.	Frame reference and size	Rated power	Full load current at rated voltage			Full load speed in revolutions per minute	Direct on line starting torque ratio	Direct on line pull out torque ratio	Direct on line starting current ratio	Efficiency	Power factor	Noise	Weight	Rotor inertia
			LRT	BDT	LRA									
		Power	Amps (A)			Speed	LRT	BDT	LRA	$\eta$	Power factor	Noise	Weight	
		kW	380V	400V	415V	r/min	RLT	RLT	RLA	(%)	(cos $\phi$ )	LwdB (A)	kg	kg*m <sup>2</sup>
<b>4 poles electric motors</b>														
1	3LC-80M-4	0,75	1,75	1,64	1,69	1430	2,3	2,3	6,6	82,50	0,75	56	25	0,00270
2	3LC-90S-4	1,1	2,48	2,31	2,39	1440	2,3	2,3	6,8	84,10	0,76	59	26	0,00327
3	3LC-90L-4	1,5	3,30	3,06	3,18	1440	2,3	2,3	7	85,30	0,77	59	29	0,00414
4	3LC-100L1-4	2,2	4,52	4,35	4,36	1455	2,3	2,3	7,6	86,70	0,81	64	40	0,00837
5	3LC-100L2-4	3	6,02	5,71	5,80	1455	2,3	2,3	7,6	87,70	0,82	64	45	0,01012
6	3LC-112M-4	4	7,95	7,45	7,66	1460	2,2	2,3	7,8	88,60	0,82	65	61	0,01392
7	3LC-132-4	5,5	10,68	10,11	10,29	1470	2	2,3	7,9	89,60	0,83	71	84	0,03100
8	3LC-132M-4	7,5	14,26	13,65	13,74	1470	2	2,3	7,5	90,40	0,84	71	94	0,03982
9	3LC-160M-4	11	20,44	19,56	19,70	1470	2	2,3	7,7	91,40	0,85	73	136	0,0852
10	3LC-160L-4	15	27,34	26,47	26,35	1470	2,2	2,3	7,8	92,10	0,86	73	160	0,1116
11	3LC-180M-4	18,5	33,53	32,47	32,32	1475	2	2,3	7,8	92,60	0,86	76	195	0,1679
12	3LC-180L-4	22	39,70	38,49	38,27	1480	2	2,3	7,8	93,00	0,86	76	220	0,2065
13	3LC-200L-4	30	53,79	52,15	51,85	1485	2	2,3	7,8	93,60	0,86	76	278	0,3147
14	3LC-225S-4	37	66,13	64,04	63,74	1485	2	2,3	7,4	93,90	0,86	78	343	0,5224
15	3LC-225M-4	45	80,18	76,78	77,28	1485	2	2,3	7,4	94,20	0,86	78	373	0,6118
16	3LC-250M-4	55	97,58	93,54	94,05	1485	2	2,3	7,4	94,60	0,86	79	433	0,8294
17	3LC-280S-4	75	129,49	127,02	124,81	1485	2	2,3	6,9	95,00	0,88	80	600	2,1199
18	3LC-280M-4	90	155,07	151,94	149,46	1485	2	2,3	6,9	95,20	0,88	80	683	2,5634
19	3LC-315S-4	110	187,00	185,31	180,24	1485	2	2,2	7	95,40	0,89	88	922	3,6260
20	3LC-315M-4	132	223,93	221,91	215,84	1485	2	2,2	7	95,60	0,89	88	1020	4,2100
21	3LC-315L1-4	160	270,87	265,47	261,08	1485	2	2,2	7,1	95,80	0,89	88	1120	4,6050
22	3LC-315L2-4	200	334,12	331,14	322,05	1485	2	2,2	7,1	96,00	0,90	88	1194	5,2740
23	3LC-355M-4	250	417,66	413,93	402,56	1490	2	2,2	7,1	96,00	0,90	95	1630	7,2480
24	3LC-355L-4	315	526,25	521,55	507,23	1490	2	2,2	7,1	96,00	0,90	95	1780	9,1430



# Technical data 3LC

NO.	Frame reference and size	Rated power		Full load current at rated voltage			Full load speed in revolutions per minute	Direct on line starting torque ratio	Direct on line pull out torque ratio	Direct on line starting current ratio	Efficiency $\eta$ (%)	Power factor (cos $\Phi$ )	Noise LwdB (A)	Weight kg	Rotor inertia kg*m <sup>2</sup>
		Power kW	380V	Amps (A) 400V	415V	Speed r/min		LRT RLT	BDT RLT	LRA RLA					
<b>6 poles electric motors</b>															
1	3LC-80M 1-6	0,37	1,1	1	1	880	1,9	2	4,7	73,5	0,7	54	17,5	0,00181	
2	3LC-80M2-6	0,55	1,5	1,4	1,4	880	1,9	2,1	4,7	77,2	0,72	54	18,5	0,00215	
3	3LC-90S-6	0,75	2	1,9	1,9	905	2	2,1	6	78,9	0,71	57	25,5	0,00414	
4	3LC-90L-6	1,1	2,8	2,7	2,6	905	2	2,1	6	81	0,73	57	31	0,00576	
5	3LC-100L-6	1,5	3,8	3,6	3,5	920	2	2,1	6,5	82,5	0,73	61	39	0,01164	
6	3LC-112M-6	2,2	5,4	5,1	4,9	935	2	2,1	6,6	84,3	0,74	65	49	0,01643	
7	3LC-132S-6	3	7,2	6,8	6,6	960	2	2,1	6,8	85,6	0,74	69	65	0,03459	
8	3LC-132M1-6	4	9,5	9	8,7	960	2	2,1	6,8	86,8	0,74	69	74	0,04286	
9	3LC-132M2-6	5,5	12,7	12	11,6	960	2	2,1	7	88	0,75	69	81,5	0,05374	
10	3LC-160M-6	7,5	16,2	15,4	14,8	970	2	2,1	7	89,1	0,79	73	124	0,10643	
11	3LC-160L-6	11	23,1	22	21,2	970	2	2,1	7,2	90,3	0,8	73	160	0,14027	
12	3LC-180L-6	15	30,9	29,3	28,2	970	2	2,1	7,3	91,2	0,81	73	211	0,25043	
13	3LC-200L1-6	18,5	37,8	36	34,7	980	2	2,1	7,3	91,7	0,81	73	260	0,36989	
14	3LC-200L2-6	22	44,8	42,5	41	980	2	2,1	7,4	92,2	0,81	74	282	0,42070	
15	3LC-225M-6	30	59,1	56,2	54,1	980	2	2,1	6,9	92,9	0,83	76	392	0,62360	
16	3LC-250M-6	37	71,7	68,1	65,7	980	2	2,1	7,1	93,3	0,84	78	416	0,96853	
17	3LC-280S-6	45	85,8	81,6	78,6	980	2	2	7,3	93,7	0,85	78	522	1,91187	
18	3LC-280M-6	55	103,3	98,1	94,6	980	2	2	7,3	94,1	0,86	83	585	2,341	
19	3LC-315S-6	75	143,4	136,2	131,3	985	2	2	6,6	94,6	0,84	83	791	4,58265	
20	3LC-315M-6	90	169,5	161	155,2	985	2	2	6,7	94,9	0,85	83	901	5,32970	
21	3LC-315L1-6	110	206,8	196,4	189,3	985	2	2	6,7	95,1	0,85	83	1009	6,07675	
22	3LC-315L2-6	132	244,5	232,2	223,8	985	1,8	2	6,8	95,4	0,86	85	1102	6,82380	
23	3LC-355M1-6	160	295,7	280,9	270,7	990	1,8	2	6,8	95,6	0,86	85	1492	10,59250	
24	3LC-355M2-6	200	364,60	346,40	333,80	990	1,6	2	6,8	95,80	0,87	85	1630	11,59600	



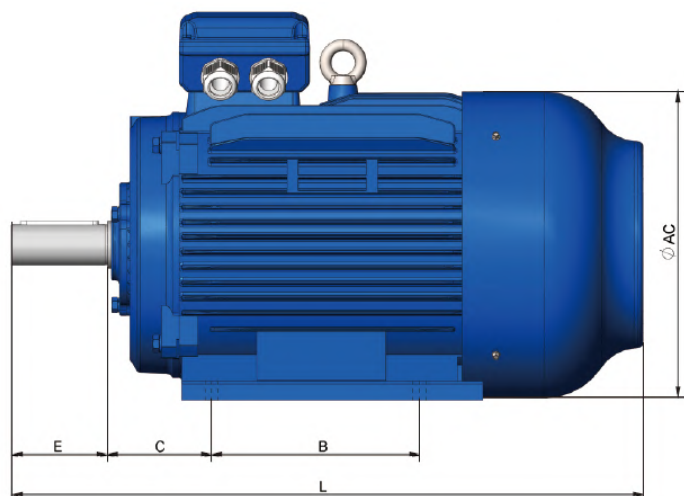


# Technical data 3LC

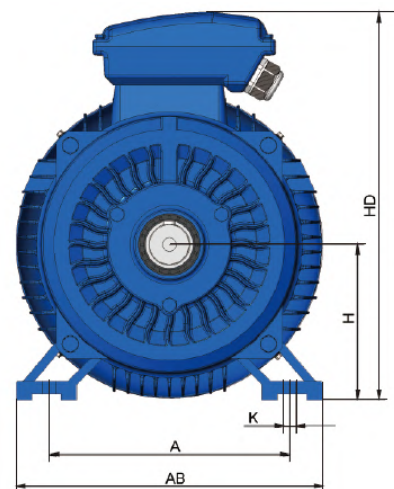
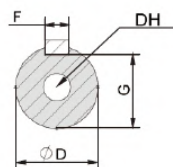
NO.	Type	Full load current at rated voltage			Full load speed in revolutions per minute	Direct on line starting torque ratio	Direct on line pull out torque ratio	Direct on line starting current ratio	Efficiency	Power factor	Noise	Weight	Rotor inertia	
		Rated power	Amps (A)											
		Power	Amps (A)			Speed	LRT	BDT	LRA	$\eta$	Power factor	Noise	Weight	
		kW	380V	400V	415V	r/min	RLT	RLT	RLA	(%)	(cos $\Phi$ )	LwdB (A)	kg	kg·m <sup>2</sup>
<b>8 poles electric motors</b>														
1	3LC-80M1-8	0,18	0,8	0,7	0,7	646	1,8	1,9	3,3	58,7	0,61	52	17,25	0,00283
2	3LC-80M2-8	0,25	1	0,9	0,9	645	1,8	1,9	3,3	64,1	0,61	52	18,5	0,00339
3	3LC-90S-8	0,37	1,3	1,3	1,2	675	1,8	1,9	4	69,3	0,61	56	23	0,00576
4	3LC-90L-8	0,55	1,9	1,8	1,7	680	1,8	2	4	73	0,61	56	26,5	0,00735
5	3LC-100L1-8	0,75	2,3	2,2	2,1	680	1,8	2	4	75	0,67	59	33,5	0,01017
6	3LC-100L2-8	1,1	3,1	3	2,9	680	1,8	2	5	77,7	0,69	59	35,6	0,01243
7	3LC-112M-8	1,5	4,1	3,9	3,7	690	1,8	2	5	79,7	0,7	61	47,5	0,02769
8	3LC-132S-8	2,2	5,7	5,5	5,3	710	1,8	2	6	81,9	0,71	64	70,5	0,03548
9	3LC-132M-8	3	7,5	7,1	6,8	710	1,8	2	6	83,5	0,73	64	85	0,04464
10	3LC-160M1-8	4	9,8	9,3	9	720	1,9	2	6	84,8	0,73	68	120	0,08509
11	3LC-160M2-8	5,5	13	12,4	12	720	1,9	2	6	86,2	0,74	68	134	0,1052
12	3LC-160L-8	7,5	17,4	16,5	15,9	720	1,9	2	6	87,3	0,75	68	160	0,1424
13	3LC-180L-8	11	25,2	23,9	23	730	2	2	6,5	88,6	0,75	70	212	0,2294
14	3LC-200L-8	15	33,5	31,8	30,6	730	2	2	6,6	89,6	0,76	73	271,5	0,3831
15	3LC-225S-8	18,5	41	39	37,6	730	1,9	2	6,6	90,1	0,76	73	315	0,5548
16	3LC-225M-8	22	47,3	44,9	43,3	730	1,9	2	6,6	90,6	0,78	73	334	0,6181
17	3LC-250M-8	30	63,2	60	57,9	735	1,9	2	6,5	91,3	0,79	75	426	0,9424
18	3LC-280S-8	37	77,5	73,6	71	740	1,9	2	6,6	91,8	0,79	76	561	1,8645
19	3LC-280M-8	45	93,9	89,2	86	740	1,9	2	6,6	92,2	0,79	76	648	2,1809
20	3LC-315S-8	55	111,5	106	102,1	735	1,8	2	6,6	92,5	0,81	82	980	5,4127
21	3LC-315M-8	75	151,1	143,6	138,4	735	1,8	2	6,2	93,1	0,81	82	1073	6,3054
22	3LC-315L1-8	90	178,5	169,6	163,5	735	1,8	2	6,4	93,4	0,82	82	1182	7,1981
23	3LC-315L2-8	110	217,5	206,6	199,2	735	1,8	2	6,4	93,7	0,82	82	1285	8,1699
24	3LC-355M1-8	132	260,2	247,2	238,3	740	1,8	2	6,4	94	0,82	90	2300	8,927
25	3LC-355M2-8	160	314,4	298,7	287,9	740	1,8	2	6,4	94,3	0,82	90	2473	11,639
26	3LC-355L-8	200	387	367,7	354,4	740	1,8	2	6,4	94,6	0,83	90	2588	13,899



# Mouting data for 3LC



80-355



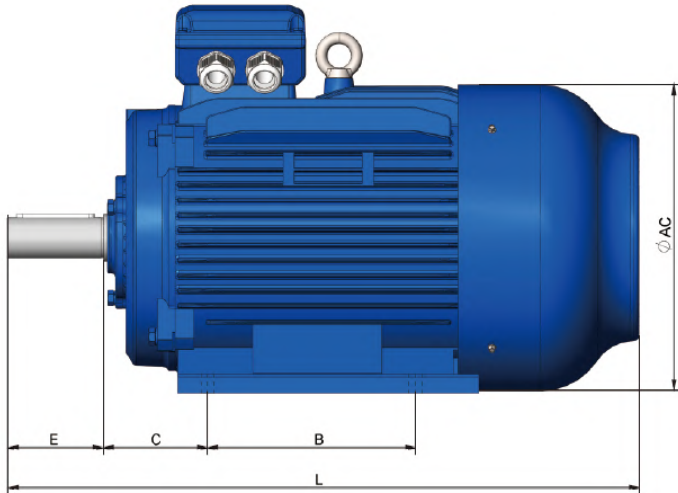
80-355

## Frame with feet and end-shield without flange (IM B3)

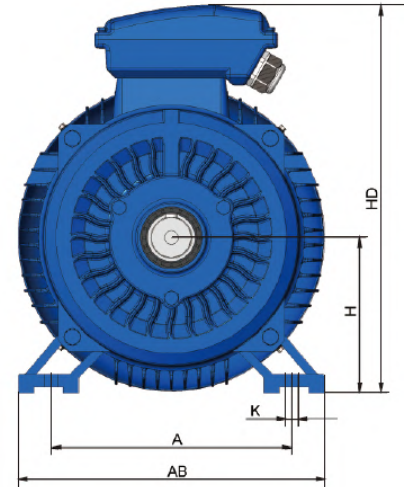
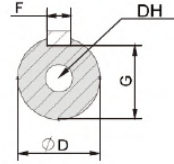
Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	AB	AC	AD	HD	L	DH*
80M	2 4 6	125	62,5	100	50	19	40	6	15,5	80	10	165	158	140	220	300	M6X16
90S	2 4 6	140	70	100	56	24	50	8	20	90	10	180	177	160	255	350	M8X19
90L	2 4 6	140	70	125	56	24	50	8	20	90	10	180	177	160	255	385	M8X19
100L	2 4 6	160	80	140	63	28	60	8	24	100	12	205	198	172	270	400	M10X22
112M	2 4 6	190	95	140	70	28	60	8	24	112	12	226	235	193	300	425	M10X22
132S	2 4 6	216	108	140	89	38	80	10	33	132	12	262	293	225	349	502	M12X28
132M	2 4 6	216	108	178	89	38	80	10	33	132	12	262	293	225	349	533	M12X28
160M	2 4 6	254	127	210	108	42	110	12	37	160	15	320	315	255	420	660	M16X36
160L	2 4 6	254	127	254	108	42	110	12	37	160	15	320	315	255	420	730	M16X36
180M	2 4 6	279	139,5	241	121	48	110	14	42,5	180	15	355	355	280	455	740	M16X36
180L	2 4 6	279	139,5	279	121	48	110	14	42,5	180	15	355	355	280	455	810	M16X36
200L	2 4 6	318	159	305	133	55	110	16	49	200	19	395	397	305	505	852	M20X42
225S	4	356	178	286	149	60	140	18	53	225	19	435	445	335	560	874	M20X42



# Mounting data for 3LC



80-355



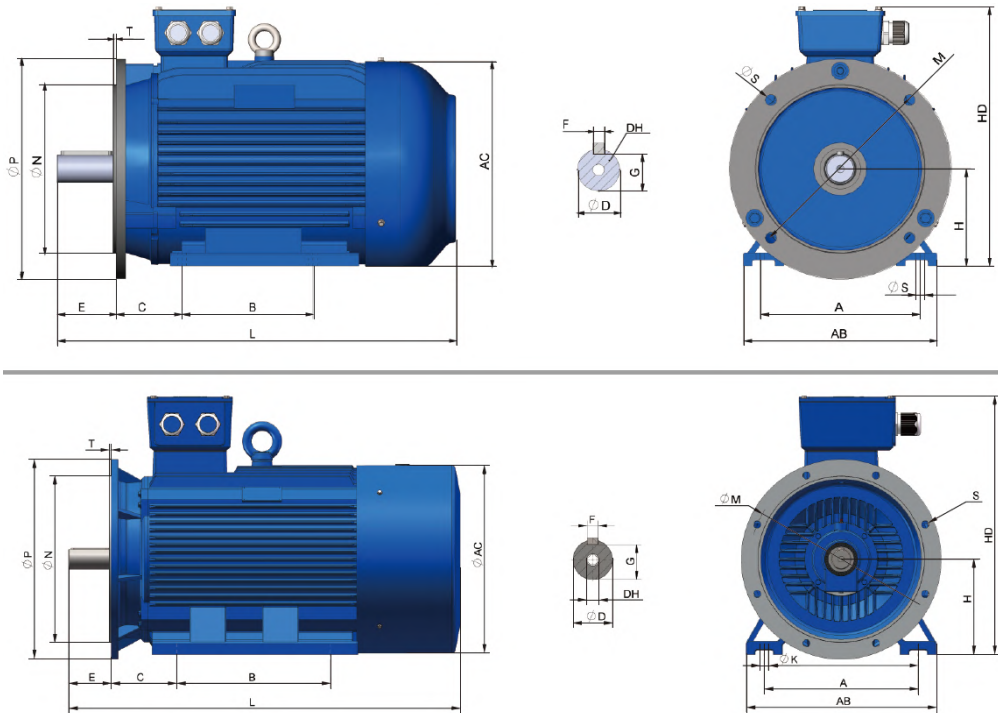
80-355

## Frame with feet and end-shield without flange (IM B3)

Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	AB	AC	AD	HD	L	DH*
225M	2	356	178	311	149	55	110	16	49	225	19	435	445	335	560	890	M20X42
	4 6	356	178	311	149	60	140	18	53	225	19	435	445	335	560	915	M20X42
250M	2	406	203	349	168	60	140	18	53	250	24	490	485	370	615	985	M20X42
	4 6	406	203	349	168	65	140	18	58	250	24	490	485	370	615	985	M20X42
280S	2	457	228,5	368	190	65	140	18	58	280	24	550	547	410	680	1045	M20X42
	4 6	457	228,5	368	190	75	140	20	67,5	280	24	550	547	410	680	1045	M20X42
280M	2	457	228,5	419	190	65	140	18	58	280	24	550	547	410	680	1095	M20X42
	4 6	457	228,5	419	190	75	140	20	67,5	280	24	550	547	410	680	1095	M20X42
315S	2	508	254	406	216	65	140	18	58	315	28	635	620	530	845	1185	M20X42
	4 6	508	254	406	216	80	170	22	71	315	28	635	620	530	845	1220	M20X42
315M	2	508	254	457	216	65	140	18	58	315	28	635	620	530	845	1290	M20X42
	4 6	508	254	457	216	80	170	22	71	315	28	635	620	530	845	1325	M20X42
315L	2	508	254	508	216	65	140	18	58	315	28	635	620	530	845	1290	M20X42
	4 6	508	254	508	216	80	170	22	71	315	28	635	620	530	845	1325	M20X42
355M	2	610	305	560	254	75	140	20	67,5	355	28	730	698	655	1010	1500	M20X42
	4 6	610	305	560	254	95	170	25	86	355	28	730	698	655	1010	1530	M20X42
355L	2	610	305	630	254	75	140	20	67,5	355	28	730	698	655	1010	1500	M20X42
	4 6	610	305	630	254	95	170	25	86	355	28	730	698	655	1010	1530	M20X42



# Mounting data for 3LC



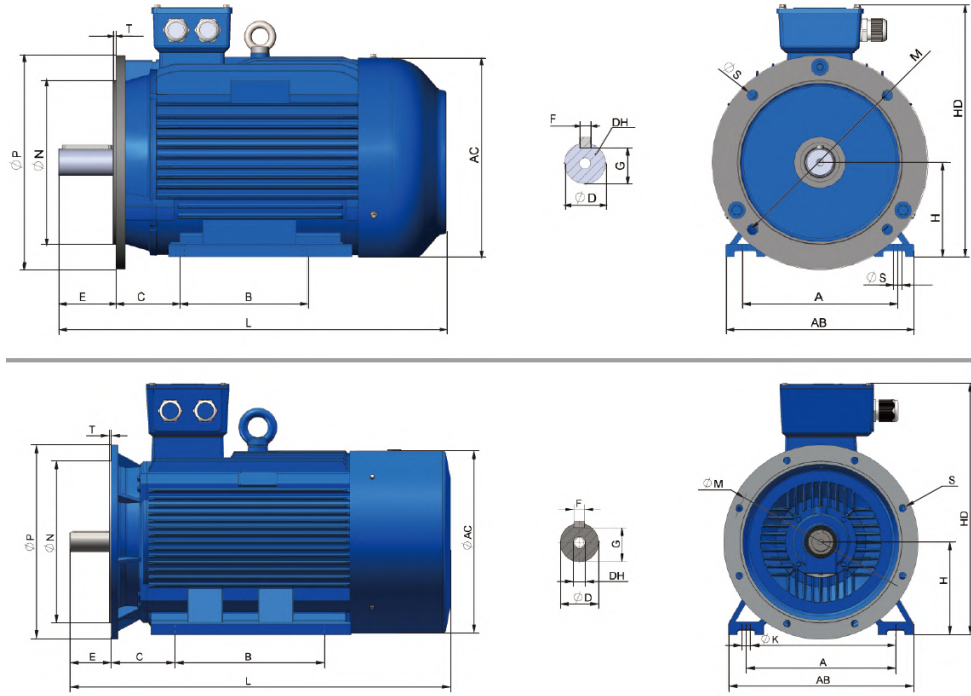
## Frame with feet and end-shield with flange (IM B35)

Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	M	N	P	S	T	Flange holes	AB	AC	AD	HD	L	DH
80M	2 4 6	125	62,5	100	50	19	40	6	15,5	80	10	165	130	200	12	3,5	4	165	158	140	220	300	M6X16
90S	2 4 6	140	70	100	56	24	50	8	20	90	10	165	130	200	12	3,5	4	180	177	160	255	350	M8X19
90L	2 4 6	140	70	125	56	24	50	8	20	90	10	165	130	200	12	3,5	4	180	177	160	255	385	M8X19
100L	2 4 6	160	80	140	63	28	60	8	24	100	12	215	180	250	15	4	4	205	198	172	270	400	M10X22
112M	2 4 6	190	95	140	70	28	60	8	24	112	12	215	180	250	15	4	4	226	235	193	300	425	M10X22
132S	2 4 6	216	108	140	89	38	80	10	33	132	12	265	230	300	15	4	4	262	293	225	349	502	M12X28
132M	2 4 6	216	108	178	89	38	80	10	33	132	12	265	230	300	15	4	4	262	293	225	349	533	M12X28
160M	2 4 6	254	127	210	108	42	110	12	37	160	15	300	250	350	19	5	4	320	315	255	420	660	M16X36
160L	2 4 6	254	127	254	108	42	110	12	37	160	15	300	250	350	19	5	4	320	315	255	420	730	M16X36
180M	2 4 6	279	139,5	241	121	48	110	14	42,5	180	15	300	250	350	19	5	4	355	355	280	455	740	M16X36
180L	2 4 6	279	139,5	279	121	48	110	14	42,5	180	15	300	250	350	19	5	4	355	355	280	455	810	M16X36
200L	2 4 6	318	159	305	133	55	110	16	49	200	19	350	300	400	19	5	4	395	397	305	505	852	M20X42
225S	4	356	178	286	149	60	140	18	53	225	19	400	350	450	19	5	8	435	445	335	560	874	M20X42





# Mounting data for 3LC

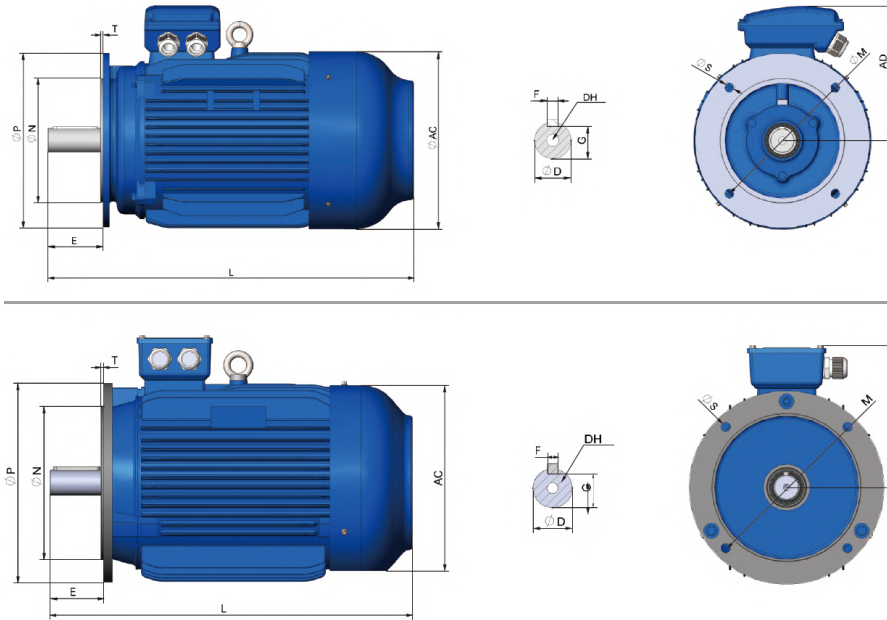


## Frame with feet and end-shield with flange (IM B35)

Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	M	N	P	S	T	Flange holes	AB	AC	AD	HD	L	DH
225S	4	356	178	286	149	60	140	18	53	225	19	400	350	450	19	5	8	435	445	335	560	874	M20X42
225M	2	356	178	311	149	55	110	16	49	225	19	400	350	450	19	5	8	435	445	335	560	890	M20X42
	4 6	356	178	311	149	60	140	18	53	225	19	400	350	450	19	5	8	435	445	335	560	915	M20X42
250M	2	406	203	349	168	60	140	18	53	250	24	500	450	550	19	5	8	490	485	370	615	985	M20X42
	4 6	406	203	349	168	65	140	18	58	250	24	500	450	550	19	5	8	490	485	370	615	985	M20X42
280S	2	457	228,5	368	190	65	140	18	58	280	24	500	450	550	19	5	8	550	547	410	680	1045	M20X42
	4 6	457	228,5	368	190	75	140	20	67,5	280	24	500	450	550	19	5	8	550	547	410	680	1045	M20X42
280M	2	457	228,5	419	190	65	140	18	58	280	24	500	450	550	19	5	8	550	547	410	680	1095	M20X42
	4 6	457	228,5	419	190	75	140	20	67,5	280	24	500	450	550	19	5	8	550	547	410	680	1095	M20X42
315S	2	508	254	406	216	65	140	18	58	315	28	600	550	660	24	6	8	635	620	530	845	1185	M20X42
	4 6	508	254	406	216	80	170	22	71	315	28	600	550	660	24	6	8	635	620	530	845	1220	M20X42
315M	2	508	254	457	216	65	140	18	58	315	28	600	550	660	24	6	8	635	620	530	845	1290	M20X42
	4 6	508	254	457	216	80	170	22	71	315	28	600	550	660	24	6	8	635	620	530	845	1325	M20X42
315L	2	508	254	508	216	65	140	18	58	315	28	600	550	660	24	6	8	635	620	530	845	1290	M20X42
	4 6	508	254	508	216	80	170	22	71	315	28	600	550	660	24	6	8	635	620	530	845	1325	M20X42
355M	2	610	305	560	254	75	140	20	67,5	355	28	740	680	800	24	6	8	730	698	655	1010	1500	M20X42
	4 6	610	305	560	254	95	170	25	86	355	28	740	680	800	24	6	8	730	698	655	1010	1530	M20X42
355L	2	610	305	630	254	75	140	20	67,5	355	28	740	680	800	24	6	8	730	698	655	1010	1500	M20X42
	4 6	610	305	630	254	95	170	25	86	355	28	740	680	800	24	6	8	730	698	655	1010	1530	M20X42



# Mounting data for 3LC

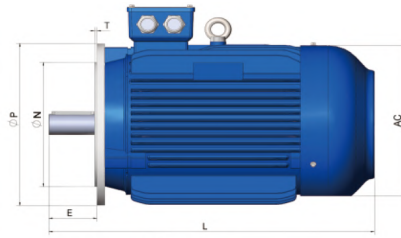


## Frame without feet and end-shield with flange (IM B5)

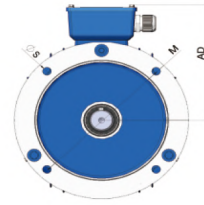
Frame size	Poles	D	E	F	G	M	N	P	S	T	Flange holes	AC	AD	HD	L	DH*
80M	2 4 6	19	40	6	15,5	165	130	200	12	3,5	4	158	140	240	300	M6X16
90S	2 4 6	24	50	8	20	165	130	200	12	3,5	4	177	160	260	350	M8X19
90L	2 4 6	24	50	8	20	165	130	200	12	3,5	4	177	160	260	385	M8X19
100L	2 4 6	28	60	8	24	215	180	250	15	4	4	198	172	300	425	M10X22
112M	2 4 6	28	60	8	24	215	180	250	15	4	4	235	193	315	502	M10X22
132S	2 4 6	38	80	10	33	265	230	300	15	4	4	293	225	349	533	M12X28
132M	2 4 6	38	80	10	33	265	230	300	15	4	4	293	225	349	660	M12X28
160M	2 4 6	42	110	12	37	300	250	350	19	5	4	315	255	385	730	M16X36
160L	2 4 6	42	110	12	37	300	250	350	19	5	4	315	255	385	740	M16X36
180M	2 4 6	48	110	14	42,5	300	250	350	19	5	4	355	280	430	810	M16X36
180L	2 4 6	48	110	14	42,5	300	250	350	19	5	4	355	280	430	852	M16X36
200L	2 4 6	55	110	16	49	350	300	400	19	5	4	397	305	480	874	M20X42
225S	4	60	140	18	53	400	350	450	19	5	8	445	335	535	890	M20X42
225M	2	55	110	16	49	400	350	450	19	5	8	445	335	535	915	M20X42
	4 6	60	140	18	53	400	350	450	19	5	8	445	335	535	985	M20X42
250M	2	60	140	18	53	500	450	550	19	5	8	485	370	595	985	M20X42
	4 6	65	140	18	58	500	450	550	19	5	8	485	370	595	1045	M20X42
280S	2	65	140	18	58	500	450	550	19	5	8	547	410	650	1045	M20X42
	4 6	75	140	20	67,5	500	450	550	19	5	8	547	410	650	1095	M20X42
280M	2	65	140	18	58	500	450	550	19	5	8	547	410	650	1095	M20X42
	4 6	75	140	20	67,5	500	450	550	19	5	8	547	410	650	400	M20X42



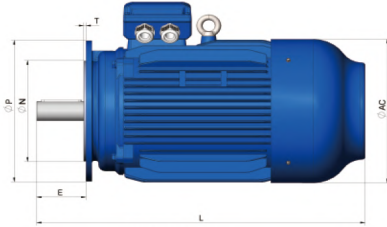
# Mounting data for 3LC



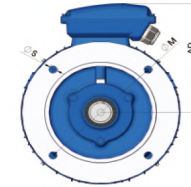
**80-132**



**80-132**



**160-280**



**160-280**

## Frame without feet and end-shield with flange (IM V1)

Frame size	Poles	D	E	F	M	N	P	S	T	Flange holes	AC	AD	HF	L
160M	246	42	110	12	300	250	350	19	5	4	315	255	455	765
160L	246	42	110	12	300	250	350	19	5	4	315	255	455	810
180M	246	48	110	14	300	250	350	19	5	4	355	280	500	870
180L	246	48	110	14	300	250	350	19	5	4	355	280	500	900
200L	246	55	110	16	350	300	400	19	5	4	397	305	550	940
225S	4	60	140	18	400	350	450	19	5	8	445	335	610	965
225M	2	55	110	16	400	350	450	19	5	8	445	335	610	985
	46	60	140	18	400	350	450	19	5	8	445	335	610	1100
250M	2	60	140	18	500	450	550	19	5	8	485	370	650	1080
	46	65	140	18	500	450	550	19	5	8	485	370	650	1080
280S	2	65	140	18	500	450	550	19	5	8	547	410	720	1160
	46	75	140	20	500	450	550	19	5	8	547	410	720	1160
280M	2	65	140	18	500	450	550	19	5	8	547	410	720	1200
	46	75	140	20	500	450	550	19	5	8	547	410	900	1200
315S	2	65	140	18	600	550	660	24	6	8	620	530	900	1280
	46	80	170	22	600	550	660	24	6	8	620	530	900	1510
315M	2	65	140	18	600	550	660	24	6	8	620	530	900	1310
	46	80	170	22	600	550	660	24	6	8	620	530	900	1430
315L	2	65	140	18	600	550	660	24	6	8	620	530	900	1310
	46	80	170	22	600	550	660	24	6	8	620	530	900	1430
355M	2	75	140	20	740	680	800	24	6	8	698	655	1010	1640
	46	95	170	25	740	680	800	24	6	8	698	655	1010	1670
355L	2	75	140	20	740	680	800	24	6	8	698	655	1010	1640
	46	95	170	25	740	680	800	24	6	8	698	655	1010	1670





## Address

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Radlinského 18 | e-mail: mv@vyboelectric.eu  
052 01 Spišská Nová Ves  
Slovenská republika

[www.vyboelectric.com](http://www.vyboelectric.com)



SOLUTIONS FOR INDUSTRY



BUREAU VERITAS  
Certification



**VYBO Electric a.s.**  
Radlinského 18, 052 01 Spišská Nová Ves  
Slovak Republic

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

**ISO 14001: 2015**

Scope of certification

**MANUFACTURE AND SALE OF ELECTRIC MOTORS. SALES AND DEVELOPMENT OF VARIABLE FREQUENCY DRIVES.**

Original cycle start date: 18.05.2022  
Expiry date of previous cycle: N/A  
Certification Audit date: 31.03.2022  
Certification cycle start date: 18.05.2022

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 17.05.2025

Certificate No. SK-U22 055E Version: 1 Issue date: 18.05.2022

Certification body address: 5<sup>th</sup> Floor, 66 Prescot Street, London E1 8HQ, United Kingdom  
Local office: Plynárenská 7/B, BRATISLAVA 821 09, Slovak Republic



Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation. To check this certificate validity please call: +421 2 5341 4165

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Bureau Veritas Certification

**Certificate**

Awarded to

**VYBO Electric a.s.**  
Radlinského 18, 052 01 Spišská Nová Ves  
Slovak Republic

BUREAU VERITAS CERTIFICATION (Z) s.r.o. certifies that the Management System of the above organisation has been assessed and found to be in accordance with the requirements of the management system standard detailed below

Standard

**ISO 45001:2018**

Scope of supply

**MANUFACTURE AND SALE OF ELECTRIC MOTORS. SALES AND DEVELOPMENT OF VARIABLE FREQUENCY DRIVES.**

Original Approval Date: 18-05-2022  
Expiry date of previous cycle: N/A  
Certification Cycle Start Date: 18-05-2022  
Certification Cycle End Date: 17-05-2025  
Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: 17-05-2025

To check this certificate validity please call: +420 210 098 215

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

Version 1 Issue Date: 18-05-2022  
Certificate Number: CZF - 2200117

ISSUING OFFICE ADDRESS: BUREAU VERITAS CERTIFICATION CZ s.r.o., Olbrachtova 1, 143 02 Praha 4, Czech Republic

11

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT



**CERTIFICATE**

**TÜV SÜD Slovakia s.r.o.**  
Certification Body for Management Systems  
Accredited by SNAS  
Certificate on accreditation No. Q-011  
certifies that



**VYBO Electric a.s.**  
Radlinského 18  
SK – 052 01 Spišská Nová Ves  
IČO: 45 537 143

has established and applies  
a Quality Management System for

**Manufacture and sale of electric motors.  
Sales and development of variable frequency drives.**

An audit was performed, Report No. 2264/40/22/Q/AS/C  
Proof has been furnished that the requirements  
according to

**STN EN ISO 9001:2016**

are fulfilled. The certificate is valid from 2022-04-14 until 2025-04-13  
Certificate Registration No. Q 2264-1

Bratislava, 2022-04-14

TÜV SÜD Slovakia s.r.o.  
Certification Body for Management Systems  
Member of Group TÜV SÜD  
Jaskóvka 6, 821 03 Bratislava

F-Q-019/26

Certificate SK22/3701

The management system of

**VYBO Electric a.s.**  
Radlinského 18  
052 01 Spišská Nová Ves, Slovakia

has been assessed and certified as meeting the requirements of

**EN ISO 50001:2018**

For the following activities

**Production & sales of electric motors.  
Sales & development of variable frequency drives.**

Further clarifications regarding the scope of this certificate and the applicability of EN ISO 50001:2018 requirements may be obtained by consulting the organisation.

This certificate is valid from 7 April 2022 until 6 April 2025  
and remains valid subject to satisfactory surveillance audits.  
Recertification audit due a minimum of 60 days  
before the expiration date.  
Issue 1. Certified with SGS since 7 April 2022

Authorised by

Ing. Róbert Bodnár  
Director

SGS Slovakia spol. s r. o.  
Kysucká 14, 040 11 Košice, Slovakia  
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