



Electric motors

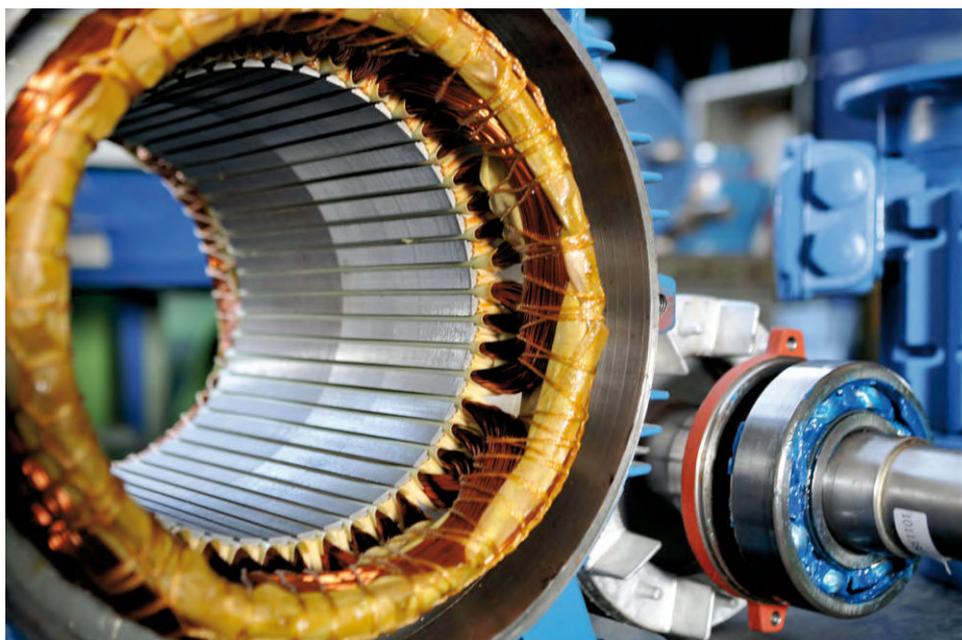
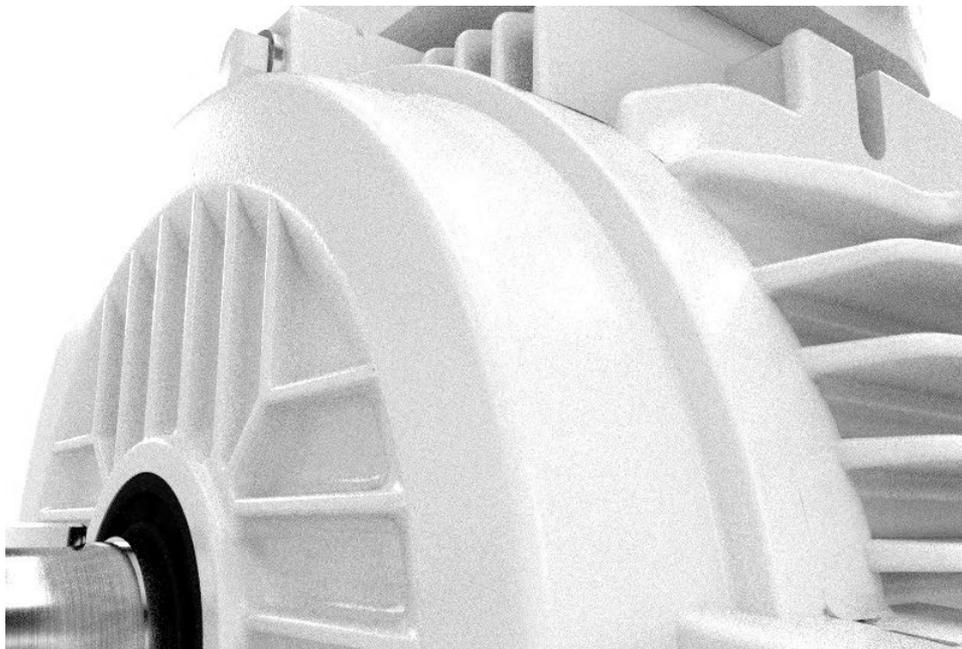
ALZ, LCZ Series

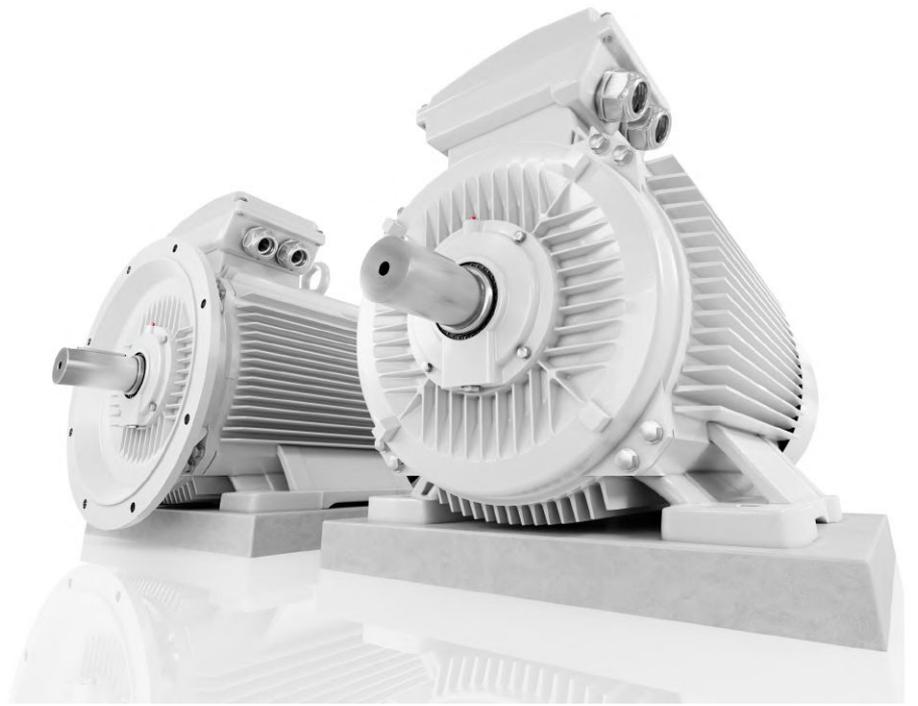
Special progressive higher power electric motors

Technical catalogue



Low-voltage induction electric motors





ALZ and **LCZ** motors
for all types of industry



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.

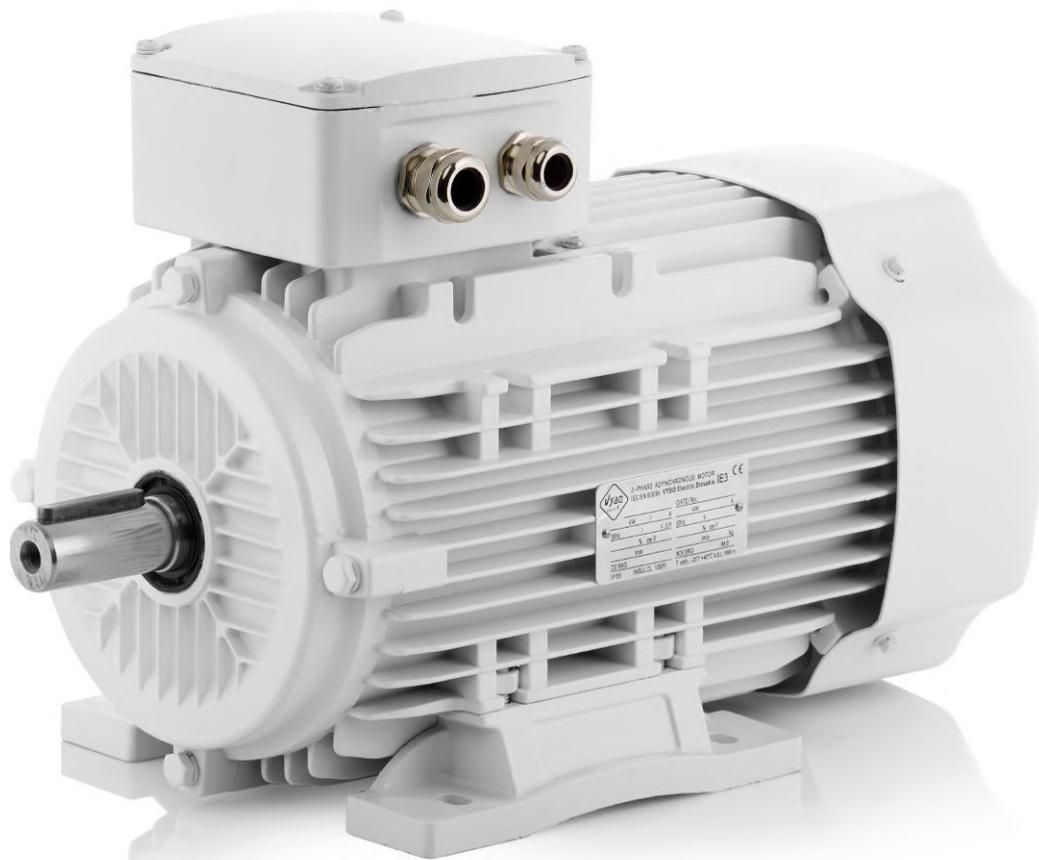
The certificate is held in Slovakia as STN ISO 45001:2019 and is under the title Management systems of safety and health protection at work. Requirements with guidance for use. It replaces the STN OHSAS 18001 standard.



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.





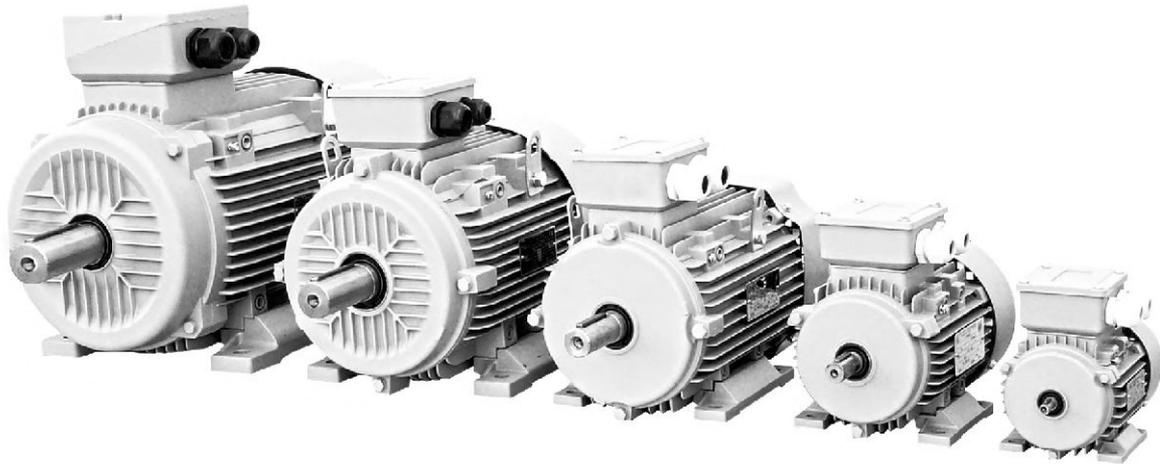
ALZ Series

Special electric motors with higher power in an aluminum frame



ALZ SERIES

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

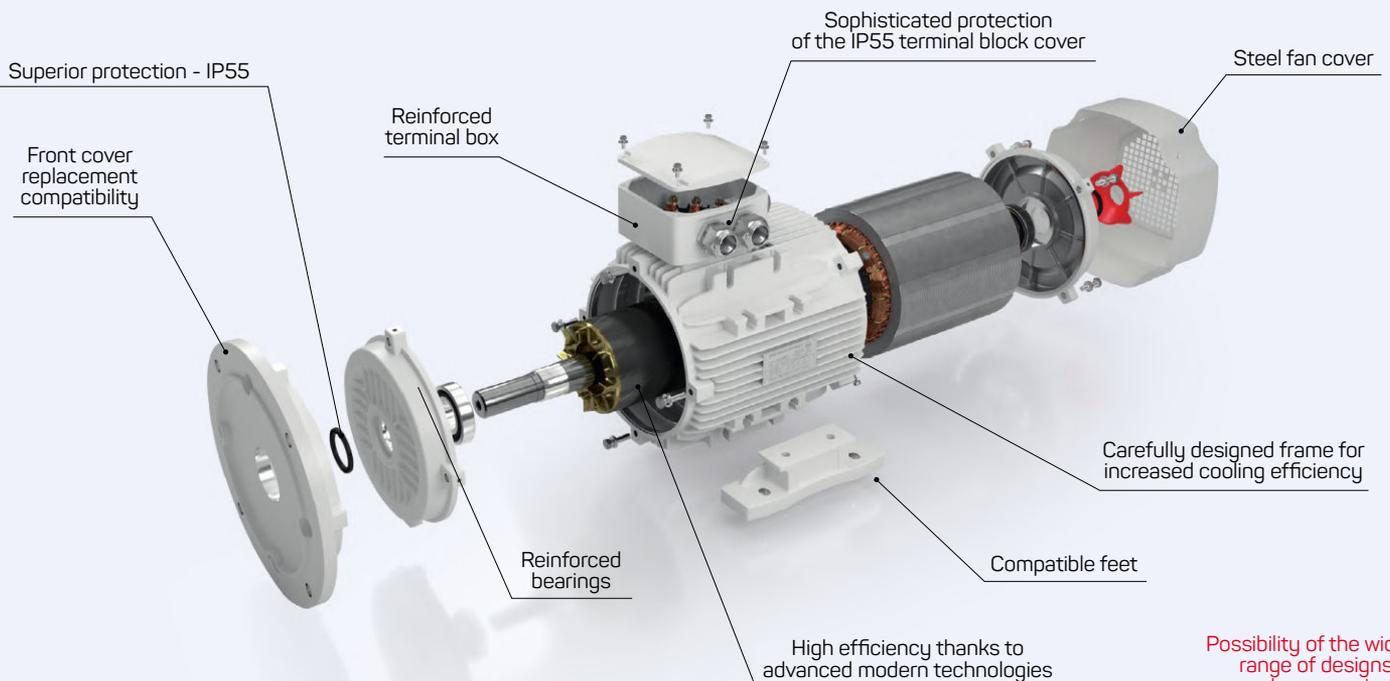


Kinetics ALZ Class

Types: 1ALZ, 2ALZ, 3ALZ, 4ALZ
Power from 0,12 to 22 kW
Efficiency classes IE1, IE2, IE3, IE4
Reinforced terminal box

Axial heights: 63 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

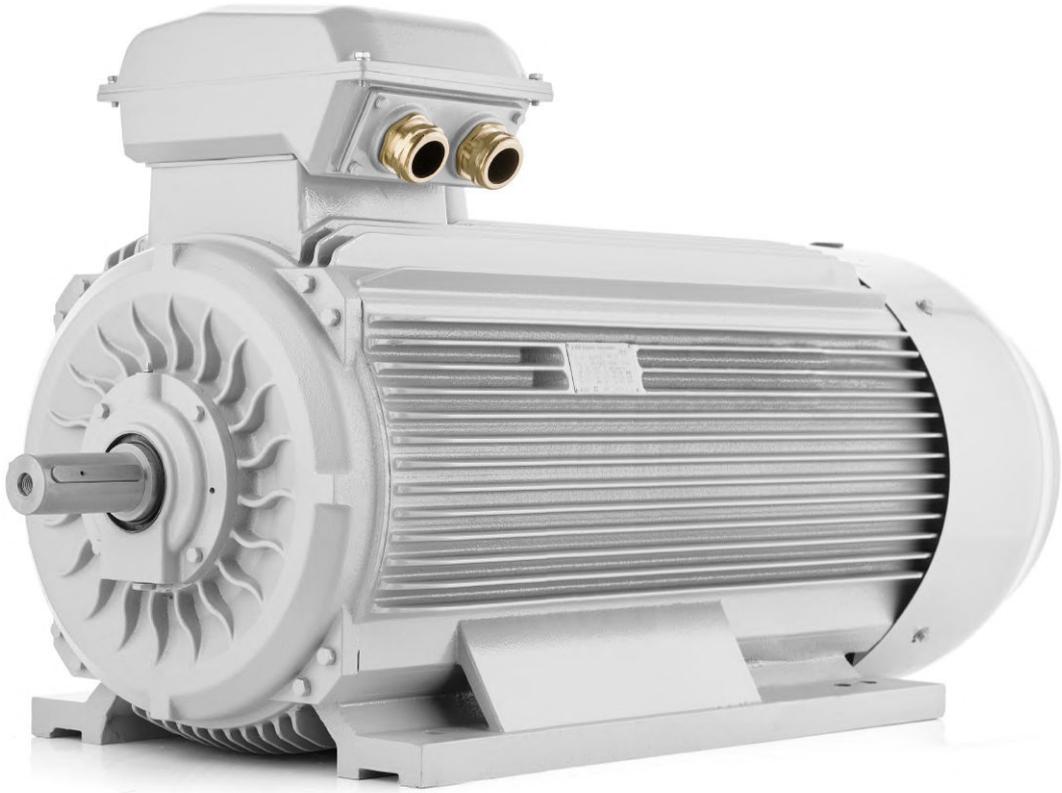


Possibility of the widest range of designs and accessories

ALZ SERIES

Power:	0.06 - 22 kW
Speed:	3000 / 1500 / 1000 / 750 rpm
Frame size:	63 - 160
Voltage:	230/400 V, 400/690 V, 500 V
Frequency:	50 / 60 Hz
Protection class:	IP55
Efficiency class:	IE1 (Standard efficiency), IE2 (High efficiency), IE3 (Premium efficiency), IE4 (Super premium ef.)
Insulation class:	F/B
Color:	RAL 7030 (stone grey)
Mounting:	IM B3, IM B35, IM B5, IM B14, IM B34
Cooling type:	IC 411 cooling (TENV), IC 416 cooling (TEFV)
Temperature:	-20 °C to +40 °C
Installation height:	1000 m above sea level
Frame material:	aluminium
Direction of rotation:	right/left





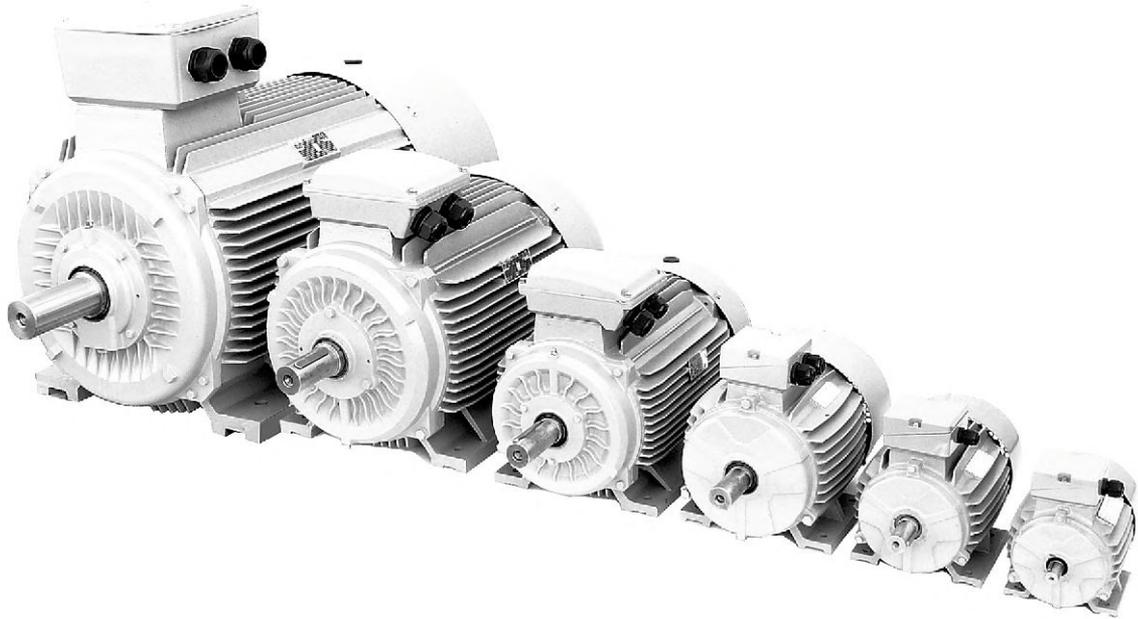
LCZ Series

Special electric motors with higher power in a cast iron frame



LCZ SERIES

Electric motors in LCZ version - performance in robustness



Kinetics LCZ Class

Cast iron frame
Top motors with high overload capacity
Heavy industrial processes
Full range of optional accessories
Power from 30 kW to 1800 kW
Efficiency classes IE1, IE2, IE3, IE4

Axial heights: 1LC, 2LC, 3LC - 180 to 355 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

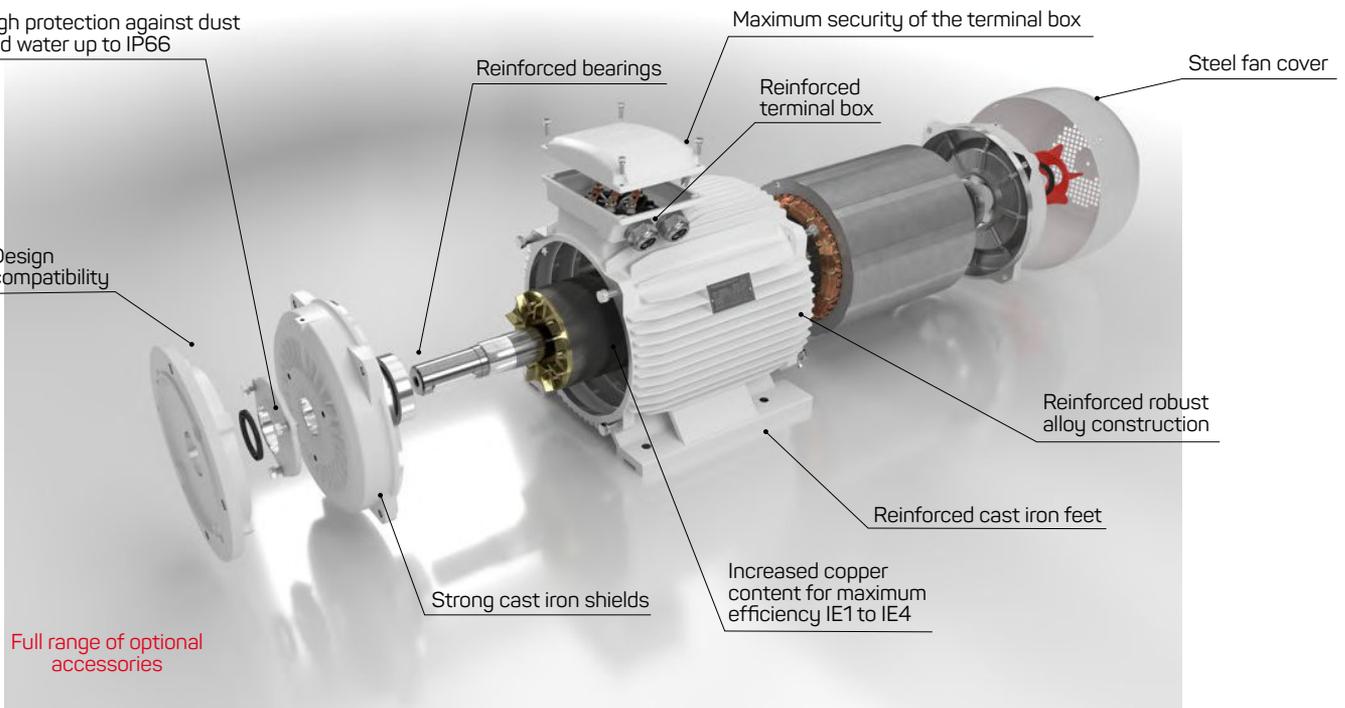
Steel fan cover

Reinforced robust alloy construction

Reinforced cast iron feet

Strong cast iron shields

Increased copper content for maximum efficiency IE1 to IE4



LCZ SERIES

Power:	22 - 500 kW
Speed:	3000 / 1500 / 1000 / 750 rpm
Frame size:	160 - 355
Voltage:	230/400 V, 400/690 V, 500 V
Frequency:	50 / 60 Hz
Protection class:	IP55
Efficiency class:	IE1 (Standard efficiency), IE2 (High efficiency), IE3 (Premium efficiency), IE4 (Super premium ef.)
Insulation class:	F/B
Color:	RAL 7030 (stone gray)
Mounting:	IM B3, IM B35, IM B5, IM B14, IM B34
Cooling type:	IC 411 cooling (TENV), IC 416 cooling (TEFV)
Temperature:	-20 °C to +40 °C
Installation height:	1000 m above sea level
Frame material:	cast iron
Direction of rotation:	right/left



Bearing size

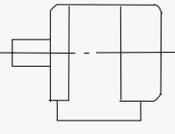
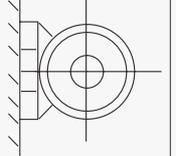
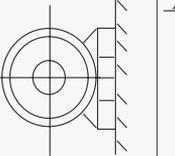
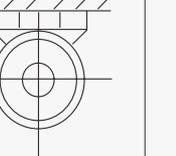
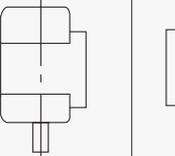
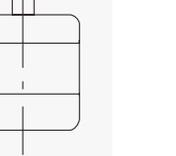
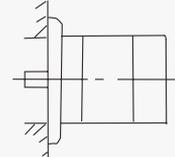
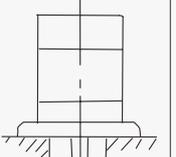
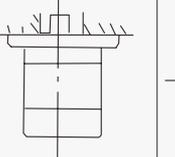
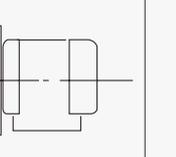
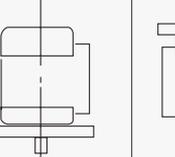
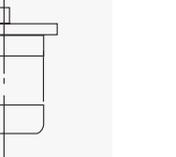
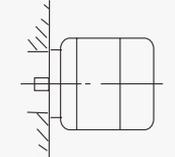
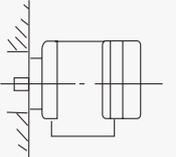
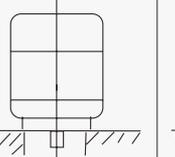
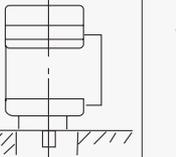
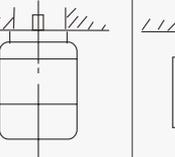
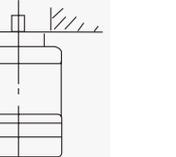
Frame size	Poles	Drive end	Non drive END
		International type	
80	2-4	62042 RZ	62042RZ
90	2-6	62052 RZ	62052 RZ
100	2-6	62062 RZ	62062 RZ
112	2-6	63062 RZ	63062 RZ
132	2-6	63082 RZ	63082 RZ
160	2-6	63092 ZC3	63092ZC3
180	2-6	6311C3	6311C3
200	2-6	6312C3	6312C3
225	2-6	6313C3	63 3C3
250	2-6	6314C3	6314C3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

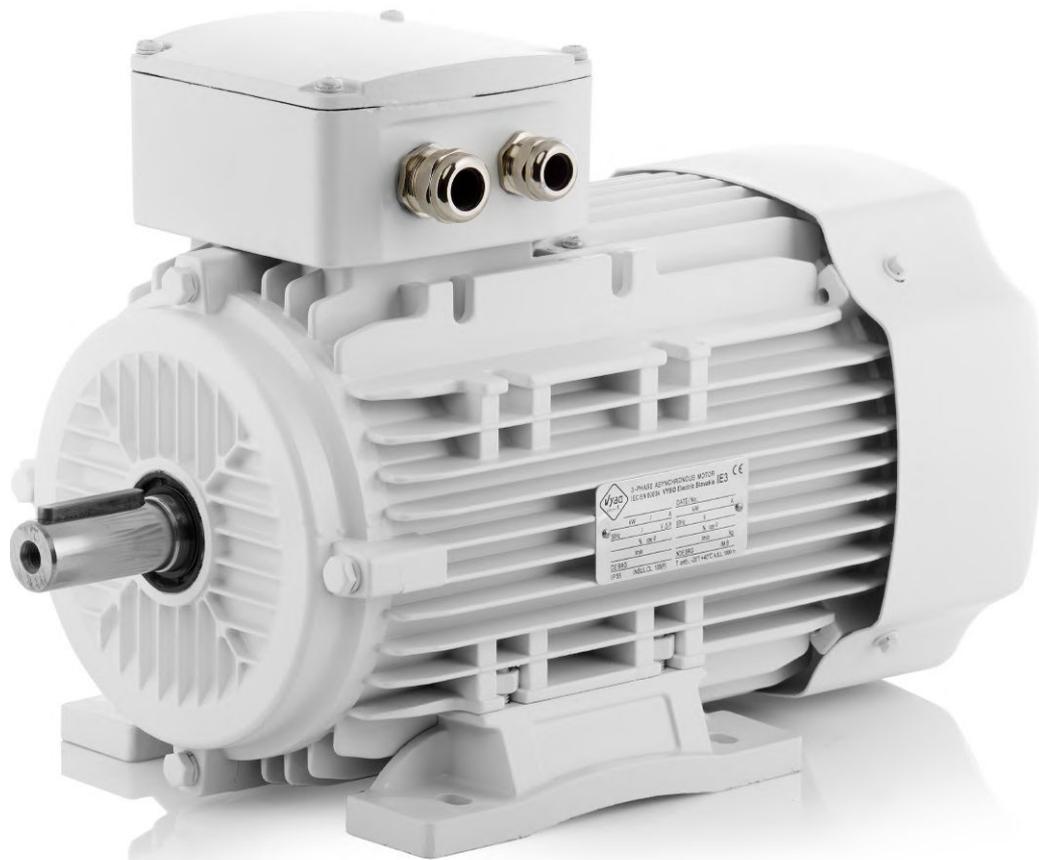
Classified number	Frame size	Max. F. Amps	Entry hole size
1	H80	2,6	2xM20x1,5
2	H90-100	6,8	2xM25x1,5
3	H112-132	15,4	2xM32x1,5
4	H160-180	42,5	2xM40x1,5
5	H200-225	84,2	2xM50x1,5
6	H250-280	166,6	2xM63x1,5
7	H315	358	2xM63x1,5
8	H355	546	2xM63x1,5



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					





1ALZ Series

Special electric motors with higher power in an aluminium frame



Technical data 1ALZ

NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage			Efficiency(%)			Power factor (cos ϕ_p)	Noise Lwdb (A)	Frame weight (kg)
				400V / 690V		IE1	100%	75%	50%			
2 poles electric motors												
1	1ALZ-63M-2	0,37	2755	0,96	0,55	69	71	71	68,5	0,81	61	5
2	1ALZ-71M-2	0,75	2845	1,8	1,05	72,1	76,2	75,7	72,3	0,83	64	6,8
3	1ALZ-80M-2	1,5	2850	3,3	1,9	77,2	80,4	80,2	77,3	0,84	67	14
4	1ALZ-90L-2	3	2860	6,1	3,5	81,5	83,4	83,4	81,3	0,87	72	19
5	1ALZ-100L-2	4	2880	7,9	4,6	83,1	85,5	85,5	83,5	0,88	76	22,5
6	1ALZ-112M-2	5,5	2900	10,7	6,2	84,7	85,7	84,5	81,5	0,88	77	33
7	1ALZ-112M-2	6,3	2900	12,2	7,1	84,7	85,8	84,7	81,8	0,88	77	36
8	1ALZ-112M-2	7,5	2900	14,3	8,3	86	87	86,9	85,3	0,88	77	38
9	1ALZ-132M-2	9,2	2900	17,5	10,2	86	87	86,9	85,3	0,88	80	54
10	1ALZ-132M-2	11	2930	20,4	11,8	87,6	88,4	87,4	85,3	0,89	80	58

4 poles electric motors

NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage			Efficiency(%)			Power factor (cos ϕ_p)	Noise Lwdb (A)	Frame weight (kg)
				400V / 690V		IE1	100%	75%	50%			
1	1ALZ-63M-4	0,25	1345	0,75	0,43	65	67,3	69,3	60,1	0,74	52	5
2	1ALZ-71M-4	0,55	1380	1,5	0,85	71	72,8	72,6	69	0,76	55	6,8
3	1ALZ-80M-4	1,1	1390	2,7	1,6	75	74,4	77,8	75	0,77	58	12
4	1ALZ-90L-4	2,2	1420	4,9	2,9	79,7	82,5	83	81	0,81	61	17
5	1ALZ-100L-4	4	1435	8,5	4,9	83,1	85	84,8	82,7	0,82	64	25
6	1ALZ-112M-4	5,5	1440	11,3	6,5	84,7	86,7	86,8	85,6	0,83	65	33,5
7	1ALZ-132M-4	11	1460	21,6	12,5	87,6	89,2	89,2	87,8	0,84	71	62

6 poles electric motors

NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage			Efficiency(%)			Power factor (cos ϕ_p)	Noise Lwdb (A)	Frame weight (kg)
				400V / 690V		IE1	100%	75%	50%			
1	1ALZ-63M1-6	0,09	840	0,44	0,25	47	48	48,5	45,8	0,63	52	4,5
2	1ALZ-63M2-6	0,12	840	0,57	0,33	48	49	49,6	46,9	0,63	52	4,7
3	1ALZ-80M3-6	0,75	905	2,1	1,2	70	74,4	73,9	70,6	0,72	54	12
4	1ALZ-90L-6	1,5	920	3,8	2,2	75,2	77,6	77,6	74,8	0,75	57	15
5	1ALZ-100L-6	2,2	935	5,4	3,1	77,7	79,9	79,9	76,7	0,76	61	28
6	1ALZ-112M-6	3	960	7,1	4,1	79,7	84,5	84,6	82	0,76	65	32,5
7	1ALZ-132M-6	7,5	970	16,6	9,6	84,7	87	87	85,5	0,77	69	62

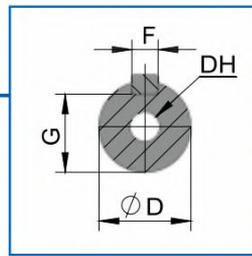
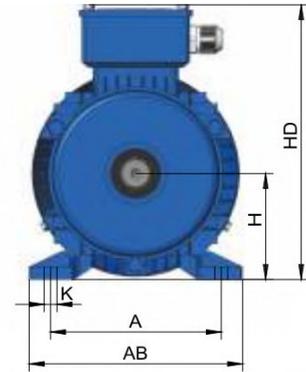
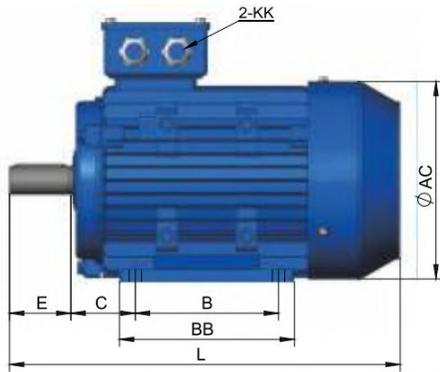
8 poles electric motors

NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage			Efficiency(%)			Power factor (cos ϕ_p)	Noise Lwdb (A)	Frame weight (kg)
				400V / 690V		IE1	100%	75%	50%			
1	1ALZ-112M-8	2,2	710	5,7	3,3	79	81,9	82,2	79,7	0,71	61	32
2	1ALZ-100L3-8	1,5	700	4,2	2,4	74	77,2	77,3	74,5	0,7	59	26,5
3	1ALZ-132M-8	4	720	9,8	5,7	81	86	85,5	84,1	0,73	64	52
4	1ALZ-132M-8	5,5	720	12,9	7,5	83	86,6	87,3	86,3	0,74	64	57

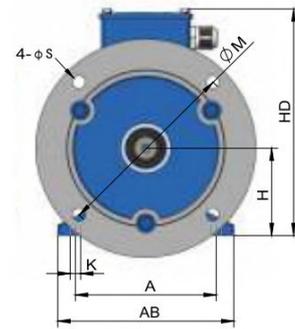
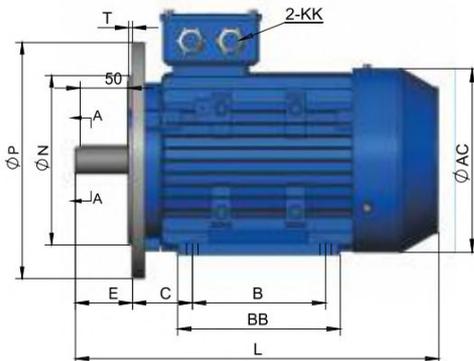


Installation and overall dimensions

IM B3 1ALZ56-160



IM B5/IM B35 1ALZ56-160

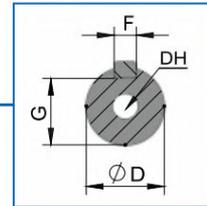
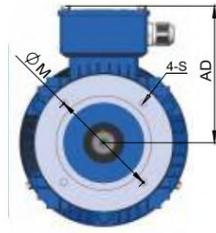
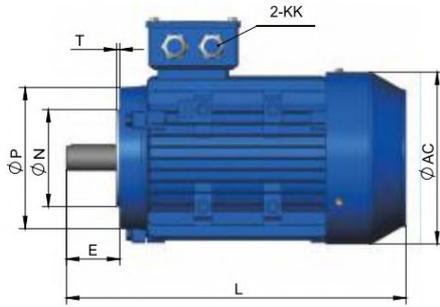


Frame size	Installation dimensions																Overall dimensions									
	A	AA	AB	BB	HA	AC	AD	B	C	D	DH	E	F	G	H	K	KK Metric	PG	L	M	N	P	S	T		
1ALZ56	90	23	115	88	7	110	100	71	36	9	M4x12	20	3	7,2	56	5,8	M20x1,5	2-PG13,5	99	100	80	20	φ7	3		
1ALZ63	100	24	137	100	7	123	111	80	40	11	M4x12	23	4	8,5	63	7	M20x1,5	2-PG13,5	221	115	95	140	φ10	3		
1ALZ71	112	26	133	110	8	137	127	90	45	14	M5x12	30	5	11	71	7	M20x1,5	2-PG13,5	247	130	110	160	φ10	3,5		
1ALZ81	125	35	157	125	9	155	136	100	50	19	M6x16	40	6	15,5	80	10	M20x1,5	2-PG16	290	165	130	200	φ12	3,5		
1ALZ90S	140	37	175	125	10	175	144	100	56	24	M8x19	50	8	20	90	10	2-M25x1,5	2-PG16	315	165	130	200	φ12	3,5		
1ALZ90L	140	37	175	150	10	175	144	125	56	24	M8x19	50	8	20,0	90	10,0	2-V25x1,5	2-PG16	340	165	130	200	φ12	3,5		
1ALZ100L	160	40	200	172	11	195	460	140	63	28	M10x22	60	8	24,0	100	12,0	2-V32x1,5	2-PG24	382	245	180	250	φ14,5	4,0		
1ALZ112M	190	41	226	181	12	220	183	140	70	28	M10x22	60	8	24,0	112	12,0	2-M32x1,5	2-PG21	400	215	180	250	φ14,5	4,0		
1ALZ132S	216	51	260	186	14,5	258	198	140	89	38	M12x28	80	10	33,0	132	12,0	2-M32x1,5	2-PG21	469	265	230	300	φ14,5	4,0		
1ALZ132M	216	51	260	224	14,5	258	198	178	89	38	M12x28	80	10	33,0	132	12,0	2-M32x1,5	2-PG21	508	265	230	300	φ14,5	4,0		
1ALZ160M	254	60	314	260	18	315	255	210	108	42	M16x36	110	12	37,0	160	15,0	M40x1,5	2-PG29	613	300	250	350	φ18,5	5,0		
1ALZ160L	254	60	314	304	18	315	255	254	108	42	M16x36	110	12	37,0	160	15,0	M40x1,5	2-PG29	658	300	250	350	φ18,5	5,0		

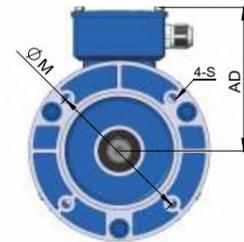
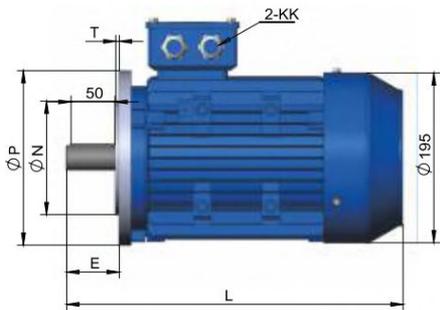


Installation and overall dimensions

IM B14A 1ALZ56-160

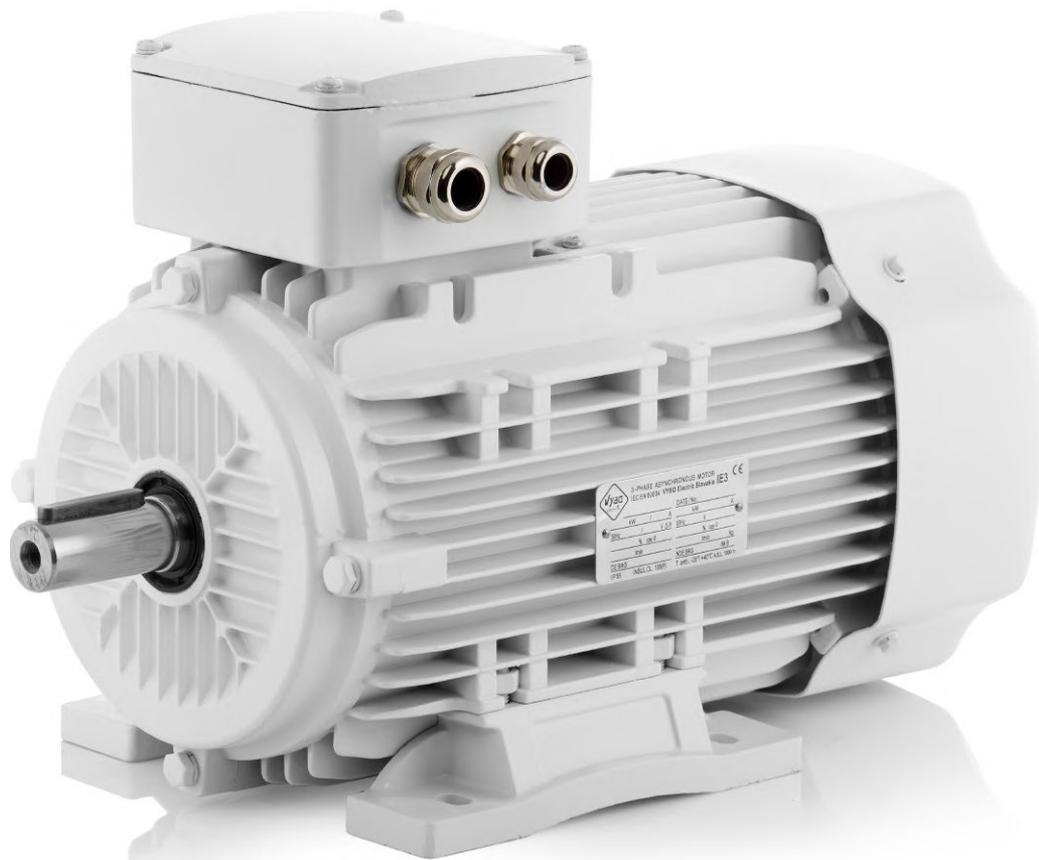


IM B14B 1ALZ56-160



Frame size	AC	AD	D	DH	E	F	G	KK		L	B14A					B14B				
								Metric	PG		M	N	P	S	T	M	N	P	S	T
1ALZ56	110	100	9	M4x12	20	3	7,2	2-M20x1,5	2-PG13,5	199	65	50	80	M5	2,5	85	70	105	M6	2,5
1ALZ63	123	109	11	M4x12	23	4	9	2-M20x1,5	2-PG13,5	221	75	60	90	M5	2,5	100	80	120	M6	2,5
1ALZ71	137	127	14	M5x12	30	5	11	2-M20x1,5	2-PG13,5	247	85	70	105	M6	2,5	115	95	140	M8	3
1ALZ80	155	134	19	M6x16	40	6	16	2-M25x1,5	2-PG16	290	100	80	120	M6	3,0	130	110	160	M8	3,5
1ALZ90S	175	140	24	M8x19	50	8	20	2-M25x1,5	2-PG16	315	115	95	140	M8	3	130	110	160	M8	3,5
1ALZ90L	175	140	24	M8x 9	50	8	20	2-M25x1,5	2-PG16	340	5	95	140	M8	3	130	110	160	M8	3,5
1ALZ100L	195	160	28	M10x22	60	8	24	2-M32x1,5	2-PG21	382	130	0	160	M8	3,5	165	130	200	M10	3,5
1ALZ112M	220	178	28	M10x22	60	8	24	2-M32x1,5	2-PG21	400	130	110	160	M8	3,5	165	130	200	M10	3,5
1ALZ132S	258	206	38	M12x28	80	10	33	2-M32x1,5	2-PG21	469	165	130	200	M10	3,5	215	180	250	M12	4,0
1ALZ132M	258	206	38	M12x28	80	10	33	2-M32x1,5	2-PG21	508	165	130	200	M10	3,5	215	180	250	M12	4,0
1ALZ160M	315	255	42	M16x36	110	12	37	2-M40x1,5	2-PG29	613	215	180	250	M12	4	265	230	300	M16	5
1ALZ160L	315	255	42	M16x36	110	12	37	2-M40x1,5	2-PG29	658	215	180	250	M12	4,0	265	230	300	M16	5,0

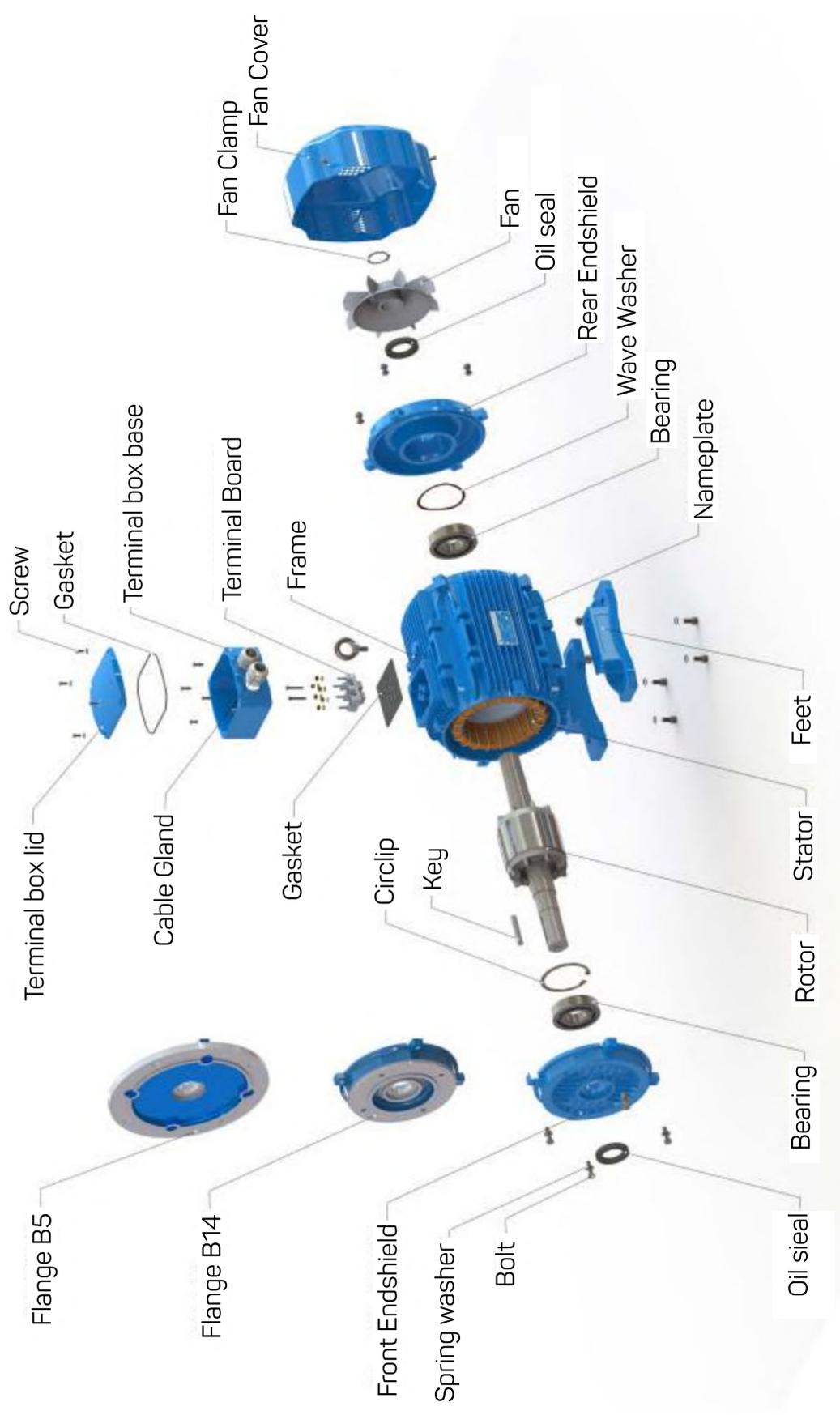




3ALZ Series

Special electric motors with higher power in an aluminium frame



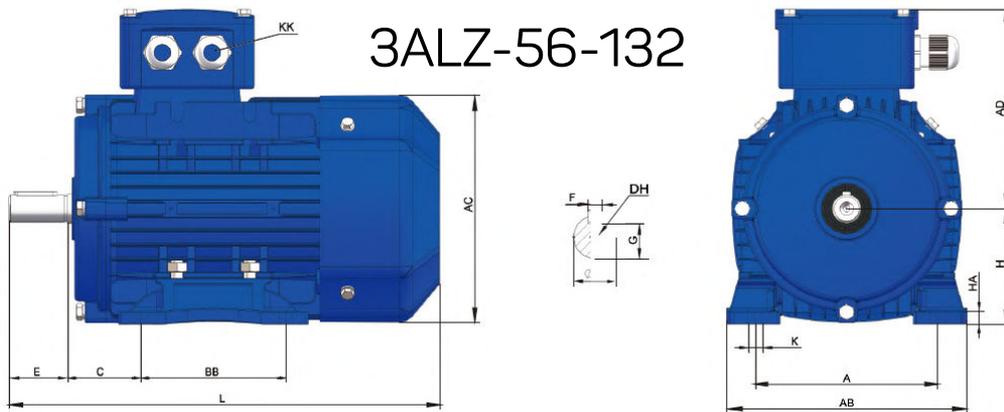
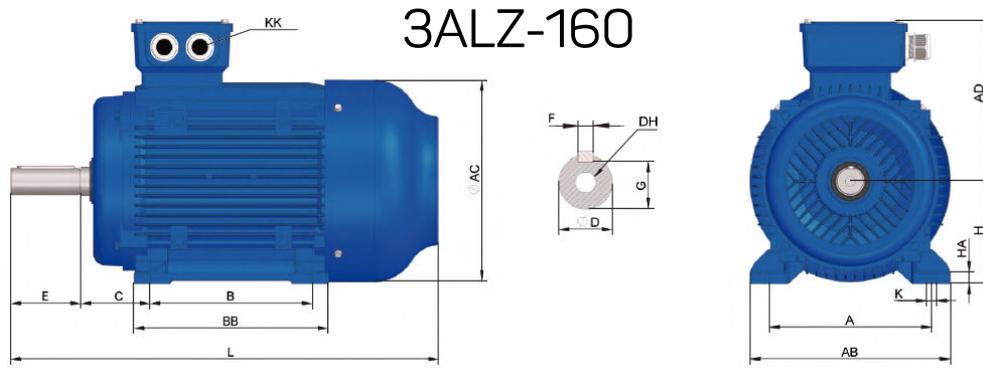


Technical data 3ALZ

NO.	Frame reference and size	Rated power	Full load speed	Full load current at rated voltage		Efficiency(%)		Power factor	Noise	Frame weight	Locked rotor current	No load current	Rated torque	Locked rotor torque	Breakdown torque
		(kW)		r/min	400V / 690V		IE3	100%							
2 poles electric motors															
1	3ALZ-63M-2	0,37	2740	0,89	0,52	IE3	73,8	0,81	57	5,5	5,18	0,81	1,29	2,84	
2	3ALZ-71M-2	0,75	2840	1,64	0,95	IE3	80,7	0,82	61	7	9,98	1,22	2,52	5,55	
3	3ALZ-80M-2	1,5	2840	3,06	1,77	IE3	84,2	0,84	62	12	20,51	1,83	5,04	11,10	
4	3ALZ-90L-2	3	2840	5,78	3,35	IE3	87,1	0,86	64	20	40,47	2,79	10,09	22,19	
5	3ALZ-100L-2	4	2880	7,45	4,32	IE3	88,1	0,88	66	22	52,13	2,98	13,26	29,18	
6	3ALZ-112M-2	5,5	2880	10,11	5,86	IE3	89,2	0,88	66	29	70,80	4,20	18,24	40,12	
7	3ALZ-112M-2	6,3	2880	11,53	6,69	IE3	89,6	0,88	67	32	80,73	4,52	20,89	45,96	
8	3ALZ-112M-2	7,5	2885	13,81	8,01	IE3	90,1	0,87	69	35	96,67	4,81	24,83	54,62	
9	3ALZ-132M-2	9,2	2900	16,81	9,75	IE3	90,8	0,87	72	45	117,67	5,31	30,30	66,65	
10	3ALZ-132M-2	11	2920	20,01	11,60	IE3	91,2	0,87	74	54	140,08	7,12	35,98	79,15	
4 poles electric motors															
1	3ALZ-63M-4	0,25	1330	0,66	0,38	IE3	73,5	0,74	52	5	3,45	0,47	1,80	3,95	4,13
2	3ALZ-71M-4	0,55	1385	1,31	0,76	IE3	80,8	0,75	55	7,3	7,47	0,86	3,79	8,34	8,72
3	3ALZ-80M-4	1,1	1390	2,45	1,42	IE3	84,1	0,77	57	11,6	15,20	2,13	7,56	16,63	17,38
4	3ALZ-80M3-4	1,5	1390	3,21	1,86	IE3	85,3	0,79	58	15	20,88	2,31	10,31	22,67	23,70
5	3ALZ-90L-4	2,2	1410	4,47	2,59	IE3	86,7	0,82	58	20	31,27	3,21	14,90	32,78	34,27
6	3ALZ-100L-4	4	1430	7,95	4,61	IE3	88,6	0,82	60	27	55,63	4,61	26,71	58,77	61,44
7	3ALZ-112M-4	5,5	1435	10,81	6,26	IE3	89,6	0,82	60	33	75,64	5,43	36,60	80,53	84,19
8	3ALZ-112M-4	6,3	1440	12,32	7,14	IE3	90	0,82	62	35	86,25	5,98	41,78	91,92	96,10
9	3ALZ-112L-4	7,5	1455	14,43	8,36	IE3	90,4	0,83	62	49	101,00	6,72	49,23	108,30	113,22
10	3ALZ-132M-4	9,2	1455	17,62	10,21	IE3	90,8	0,83	63	54	123,34	7,32	60,38	132,85	138,89
11	3ALZ-132M-4	11	1455	20,93	12,13	IE3	91,4	0,83	63	58	146,51	9,68	72,20	158,84	166,06
6 poles electric motors															
1	3ALZ-63M1-6	0,09	850	0,35	0,20	IE3	57	0,65	49	4,3	1,40	0,31	1,01	2,02	2,22
2	3ALZ-63M2-6	0,12	850	0,46	0,27	IE3	57,7	0,65	49	5	1,85	0,43	1,35	2,70	2,97
3	3ALZ-80M3-6	0,75	910	1,91	1,10	IE3	78,9	0,72	52	11	10,48	1,99	7,87	15,74	17,32
4	3ALZ-90L-6	1,5	910	3,50	2,03	IE3	82,5	0,75	55	15,5	22,74	2,98	15,74	31,48	34,63
5	3ALZ-100L-6	2,2	940	4,96	2,87	IE3	84,3	0,76	57	23	32,22	3,67	22,35	44,70	49,17
6	3ALZ-112M-6	3	955	6,57	3,81	IE3	85,6	0,77	57	28	42,70	4,67	30,00	60,00	66,00
7	3ALZ-132M-6	6,3	960	13,57	7,86	IE3	88,2	0,76	62	45	88,18	6,99	62,67	125,34	137,88
8	3ALZ-132M-6	7,5	960	15,78	9,15	IE3	89,1	0,77	63	68	102,56	9,76	74,61	149,22	164,14
8 poles electric motors															
1	3ALZ-112M-8	2,2	700	5,5	3,2	IE3	81,9	0,71	55	40	21,84	4,56	30,01	54,03	60,03
2	3ALZ-100L3-8	1,5	700	3,9	2,2	IE3	79,7	0,7	53	27	15,52	3,53	20,46	36,84	40,93
3	3ALZ-132M-8	4	720	9,7	5,6	IE3	84,8	0,7	59	62	58,36	6,67	53,06	95,50	106,11
4	3ALZ-132M-8	5,5	720	13,2	7,6	IE3	86,2	0,7	59	74	78,94	8,35	72,95	131,31	145,90



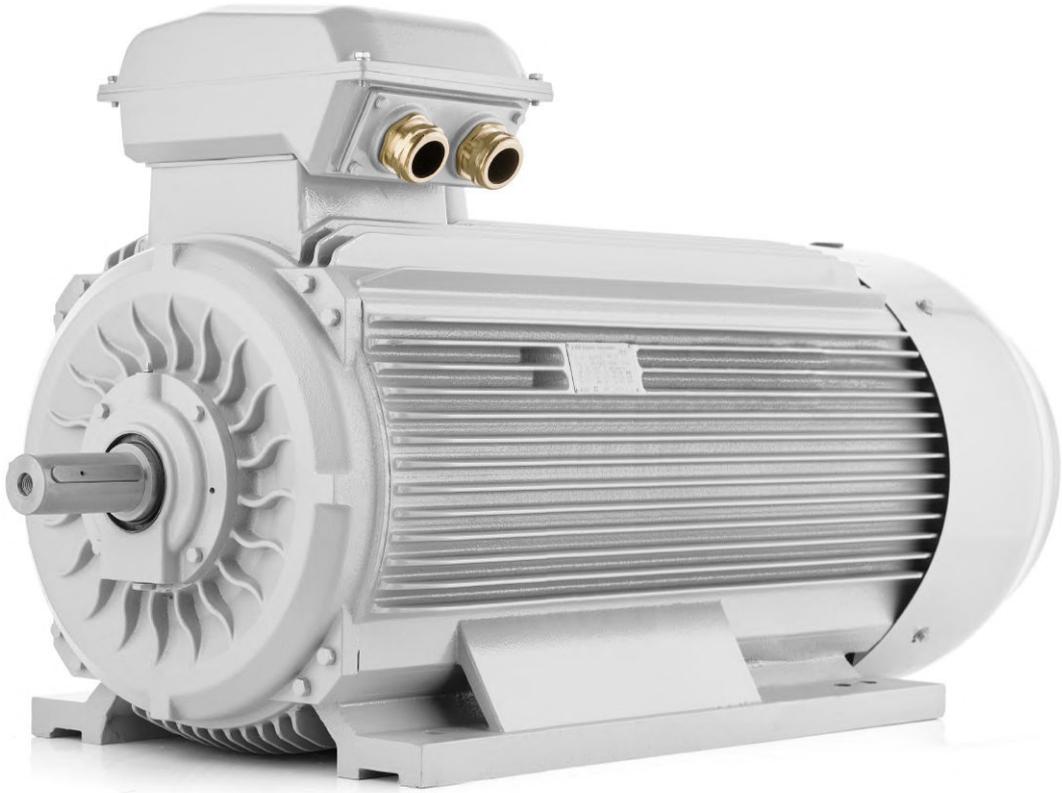
Mounting data for 3ALZ



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





1LCZ Series

Special electric motors with higher power in a cast iron frame



SOLUTIONS FOR INDUSTRY

Technical data 1LCZ

NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage		Efficiency(%)				Power factor (cos _φ)	Noise Lwdb (A)	Frame weight (kg)
				400V / 690V		IE1	100%	75%	50%			
2 poles electric motors												
1	1LCZ-80M-2	1,5	2850	3,3	1,9	77,2	80,4	80,2	77,3	0,84	67	16
2	1LCZ-90L-2	3	2860	6,1	3,5	81,5	83,4	83,4	81,3	0,87	72	21
3	1LCZ-100L-2	4	2880	7,9	4,6	83,1	85,5	85,5	83,5	0,88	76	34
4	1LCZ-112M-2	5,5	2900	10,7	6,2	84,7	85,7	84,5	81,5	0,88	77	46
5	1LCZ-112M-2	6,3	2900	12,2	7,1	84,7	85,8	84,7	81,8	0,88	77	49
6	1LCZ-112M-2	7,5	2900	14,3	8,3	86	87	86,9	85,3	0,88	77	54
7	1LCZ-132M-2	9,2	2900	17,5	10,2	86	87	86,9	85,3	0,88	80	70
8	1LCZ-132M-2	11	2930	20,4	11,8	87,6	88,4	87,4	85,3	0,89	80	74
9	1LCZ-160L-2	22	2940	39,2	22,8	89,9	90,5	89,9	87,7	0,9	86	138
10	1LCZ-180L-2	30	2950	53,0	30,8	90,7	91,4	90,3	87,7	0,9	89	206
11	1LCZ-200L-2	45	2960	78,7	45,6	91,7	92,5	90,9	88,4	0,9	92	262
12	1LCZ-225M-2	55	2970	95,8	55,5	92,1	93	91,9	89,2	0,9	92	324
13	1LCZ-250M-2	75	2975	128	74,4	92,7	93,6	93,1	81,5	0,91	93	440
14	1LCZ-250M-2	90	2975	154	89,0	93	94,1	93,1	92,1	0,91	93	468
15	1LCZ-280M-2	110	2975	187	108	93,3	94,4	93,9	92,4	0,91	94	569
16	1LCZ-280M-2	132	2975	224	130	93,5	94,8	94,3	92,8	0,91	94	650

4 poles electric motors

NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage		Efficiency(%)				Power factor (cos _φ)	Noise Lwdb (A)	Frame weight (kg)
				400V / 690V		IE1	100%	75%	50%			
1	1LCZ-80M-4	1,1	1390	2,7	1,6	75	74,4	77,8	75	0,77	58	14
2	1LCZ-90L-4	2,2	1420	4,9	2,9	79,7	82,5	83	81	0,81	61	26
3	1LCZ-100L-4	4	1435	8,5	4,9	83,1	85	84,8	82,7	0,82	64	35
4	1LCZ-112M-4	5,5	1440	11,3	6,5	84,7	86,7	86,8	85,6	0,83	65	47
5	1LCZ-132M-4	11	1460	21,6	12,5	87,6	89,2	89,2	87,8	0,84	71	83
6	1LCZ-160L-4	18,5	1470	34,8	20,2	89,3	90,7	90,6	89,2	0,86	75	147
7	1LCZ-180L-4	30	1470	55,5	32,2	90,7	92,6	92,4	91,6	0,86	76	200
8	1LCZ-200L-4	37	1475	67,3	39,0	91,2	92,8	92,7	91,5	0,87	79	262
9	1LCZ-200L-4	45	1475	81,4	47,2	91,7	93,4	93,3	92,5	0,87	79	292
10	1LCZ-225M-4	55	1480	99,1	57,4	92,1	94	94,2	93,6	0,87	81	340
11	1LCZ-250M-4	75	1480	133	76,9	92,7	94	93,5	92	0,88	83	447
12	1LCZ-250M-4	90	1480	159	92,0	93	94	93,5	91,8	0,88	83	488
13	1LCZ-280M-4	110	1480	193	112	93,3	94,4	93,5	91,4	0,88	86	648
14	1LCZ-280M-4	132	1480	232	134	93,5	94,8	94,8	93,3	0,88	86	726



Technical data 1LCZ

6 poles electric motors

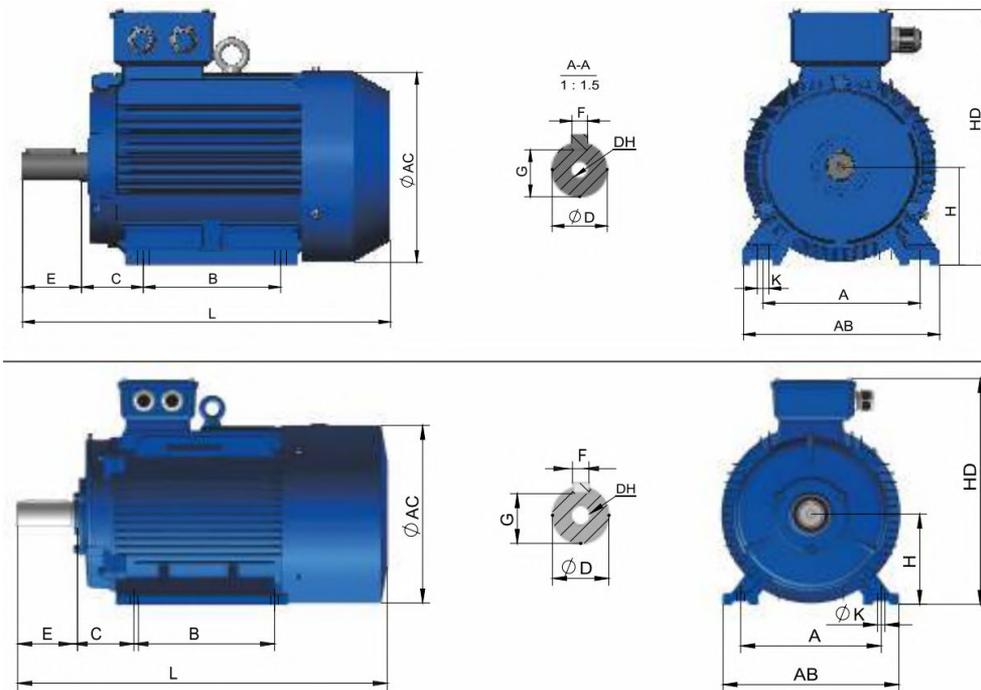
NO.	Frame reference and size	Rated power	Full load speed	Full load current at rated voltage		Efficiency(%)			Power factor	Noise	Frame weight	
		(kW)	r/min	400V / 690V		IE1	100%	75%	50%	(cos _φ)	Lwdb (A)	(kg)
1	1LCZ-80M3-6	0,75	905	2,1	1,2	70	74,4	73,9	70,6	0,72	54	17
2	1LCZ-90L-6	1,5	920	3,8	2,2	75,2	77,6	77,6	74,8	0,75	57	24
3	1LCZ-100L-6	2,2	935	5,4	3,1	77,7	79,9	79,9	76,7	0,76	61	35
4	1LCZ-112M-6	3	960	7,1	4,1	79,7	84,5	84,6	82	0,76	65	45
5	1LCZ-132M-6	7,5	970	16,6	9,6	84,7	87	87	85,5	0,77	69	86
6	1LCZ-160L-6	15	970	30,5	17,7	87,7	89,1	89,1	87,8	0,81	73	151
7	1LCZ-180L-6	18,5	980	37,2	21,6	88,6	90	90,2	88,9	0,81	73	178
8	1LCZ-200L-6	30	980	57,2	33,1	90,2	91,8	91,5	90,2	0,84	76	268
9	1LCZ-225M-6	37	980	68,4	39,6	90,8	92,8	92,8	91,8	0,86	76	326
10	1LCZ-250M-6	45	980	82,6	47,9	91,4	93	92,5	91,5	0,86	78	400
11	1LCZ-250M-6	55	980	100	58,2	91,9	93	92,5	91,5	0,86	78	441
12	1LCZ-280M-6	75	985	136	78,8	92,6	94	93,5	92	0,86	80	685
13	1LCZ-280M-6	90	985	163	94,3	92,9	94	93,5	92	0,86	80	726

8 poles electric motors

NO.	Frame reference and size	Rated power	Full load speed	Full load current at rated voltage		Efficiency(%)			Power factor	Noise	Frame weight	
		(kW)	r/min	400V / 690V		IE1	100%	75%	50%	(cos _φ)	Lwdb (A)	(kg)
1	1LCZ-112M-8	2,2	710	5,7	3,3	79	81,9	82,2	79,7	0,71	61	47
2	1LCZ-100L3-8	1,5	700	4,2	2,4	74	77,2	77,3	74,5	0,7	59	32,5
3	1LCZ-132M-8	4	720	9,8	5,7	81	86	85,5	84,1	0,73	64	77
4	1LCZ-132M-8	5,5	720	12,9	7,5	83	86,6	87,3	86,3	0,74	64	82
5	1LCZ-160L-8	11	730	24,2	14,0	87,5	87,8	87,9	86,4	0,75	68	156
6	1LCZ-180L-8	15	730	32,4	18,8	88	88,2	88,7	87,9	0,76	70	194
7	1LCZ-200L-8	18,5	730	39,0	22,6	90	91,3	91,5	90,6	0,76	73	232
8	1LCZ-200L-8	22	730	45,0	26,1	90,5	90	90,7	90,1	0,78	73	266
9	1LCZ-225M-8	30	730	60,2	34,9	91	92,4	92,3	91,3	0,79	73	336
10	1LCZ-250M-8	37	730	73,9	42,8	91,5	94,5	92,4	91,1	0,79	75	429
11	1LCZ-250M-8	45	740	89,4	51,8	92	92,6	92,6	91,5	0,79	75	458
12	1LCZ-280M-8	55	740	106	61,2	92,8	93	93	91,5	0,81	76	680
13	1LCZ-280M-8	75	740	143	82,9	93,5	93,5	93,5	92	0,81	76	726



Installation data for 1LCZ

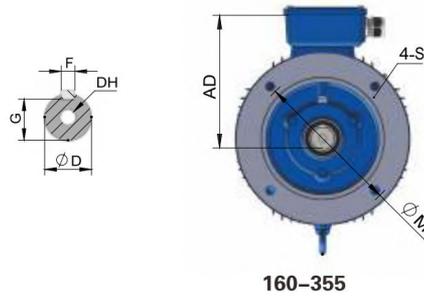
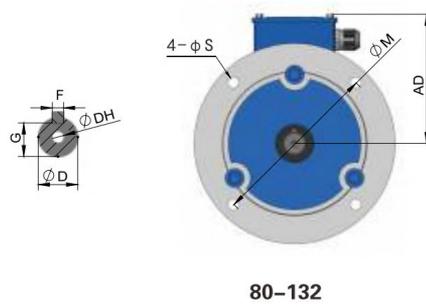
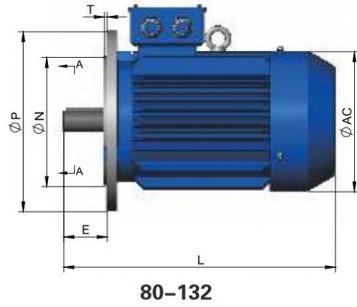


Frame with feet and end-shield without flange (IM B3)

Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	AB	AC	AD	HD	L	DH*
80M	2 4 6 8	125	62,5	100	50	19	40	6	15,5	80	10	165	155	145	220	295	M6X16
90S	2 4 6 8	140	70	100	56	24	50	8	20	90	10	180	175	155	250	320	M8X19
90L	2 4 6 8	140	70	125	56	24	50	8	20	90	10	180	175	155	250	345	M8X19
100L	2 4 6 8	160	80	140	63	28	60	8	24	100	12	205	196	180	270	385	M10X22
112M	2 4 6 8	190	95	140	70	28	60	8	24	112	12	230	220	190	300	400	M10X22
132S	2 4 6 8	216	108	140	89	38	80	10	33	132	12	270	259	210	345	470	M12X28
132M	2 4 6 8	216	108	178	89	38	80	10	33	132	12	270	259	210	345	510	M12X28
160M	2 4 6 8	254	127	210	108	42	110	12	37	160	15	320	315	255	420	615	M16X36
160L	2 4 6 8	254	127	254	108	42	110	12	37	160	15	320	315	255	420	660	M16X36
180M	2 4 6 8	279	139,5	241	121	48	110	14	42,5	180	15	355	355	280	455	700	M16X36
100L	2 4 6 8	279	139,5	279	121	48	110	14	42,5	180	15	355	355	280	455	740	M16X36
200L	2 4 6 8	318	159	305	133	55	110	16	49	200	19	395	397	305	505	770	M20X42
225S	4 8	356	178	286	149	60	140	18	53	225	19	435	445	335	560	815	M20X42
225M	2	356	178	311	149	55	110	16	49	225	19	435	445	335	560	820	M20X42
	4 6 8	356	178	311	149	60	140	18	53	225	19	435	445	335	560	845	M20X42
250M	2	406	203	349	168	60	140	18	53	250	24	490	485	370	615	920	M20X42
	4 6 8	406	203	349	168	65	140	18	58	250	24	490	485	370	615	920	M20X42
280S	2	457	228,5	368	190	65	140	18	58	280	24	550	547	410	680	995	M20X42
	4 6 8	457	228,5	368	190	75	140	20	67,5	280	24	550	547	410	680	995	M20X42



Installation data for 1LCZ

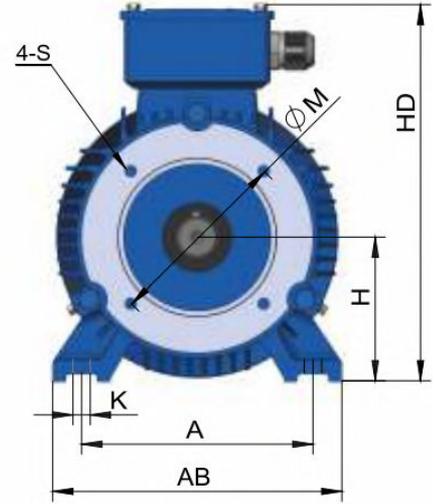
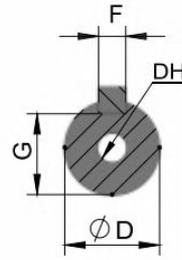
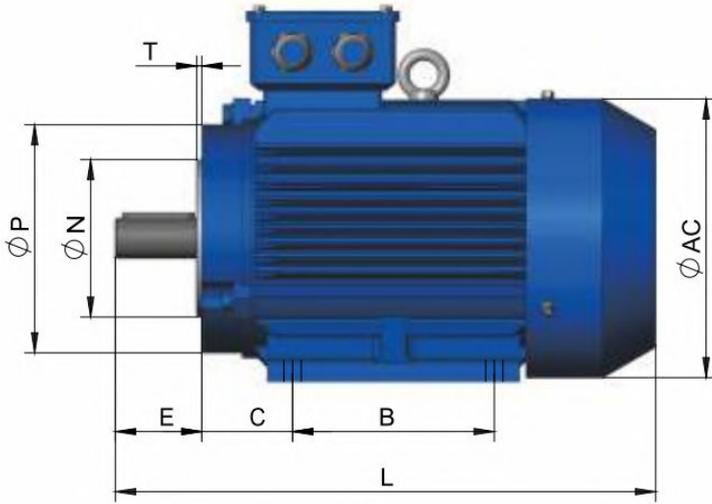


Frame without feet and end-shield with flange (IM B5)

Frame size	Poles	D	E	F	G	M	N	P	S	T	Flange holes	AC	AD	HF	L	DH*
80M	2 4 6 8	19	40	6	15,5	165	130	200	12	3,5	4	155	145	185	295	M6X16
90S	2 4 6 8	24	50	8	20	165	130	200	12	3,5	4	175	155	195	320	M8X19
90L	2 4 6 8	24	50	8	20	165	130	200	12	3,5	4	175	155	195	345	M8X19
100L	2 4 6 8	28	60	8	24	215	180	250	14,5	4	4	196	180	245	385	M10X22
112M	2 4 6 8	28	60	8	24	230	180	250	14,5	4	4	220	190	265	400	M10X22
132S	2 4 6 8	38	80	10	33	265	230	300	14,5	4	4	259	210	315	470	M12X28
132M	2 4 6 8	38	80	10	33	265	230	300	14,5	4	4	259	210	315	510	M12X28
160M	2 4 6 8	42	110	12	37	300	250	350	18,5	5	4	315	255	385	615	M16X36
160L	2 4 6 8	42	110	12	37	300	250	350	18,5	5	4	315	255	385	660	M16X36
180M	2 4 6 8	48	110	14	42,5	300	250	350	18,5	5	4	355	280	430	700	M16X36
180L	2 4 6 8	48	110	14	42,5	300	250	350	18,5	5	4	355	280	430	740	M16X36
200L	2 4 6 8	55	110	16	49	350	300	400	18,5	5	4	397	305	480	770	M20X42
225S	4 8	60	140	18	53	400	350	450	18,5	5	8	445	335	535	815	M20X42
225M	2	55	110	16	49	400	350	450	18,5	5	8	445	335	535	820	M20X42
	4 6 8	60	140	18	53	400	350	450	18,5	5	8	445	335	535	845	M20X42
250M	2	60	140	18	53	500	450	550	18,5	5	8	485	370	595	920	M20X42
	4 6 8	65	140	18	58	500	450	550	18,5	5	8	485	370	595	920	M20X42
280S	2	65	140	18	58	500	450	550	18,5	5	8	547	410	650	995	M20X42
	4 6 8	75	140	20	67,5	500	450	550	18,5	5	8	547	410	650	995	M20X42
280M	2	65	140	18	58	500	450	550	18,5	5	8	547	410	650	1045	M20X42
	4 6 8	75	140	20	67,5	500	450	550	18,5	5	8	547	410	650	1045	M20X42



Installation data for 1LCZ



80-132

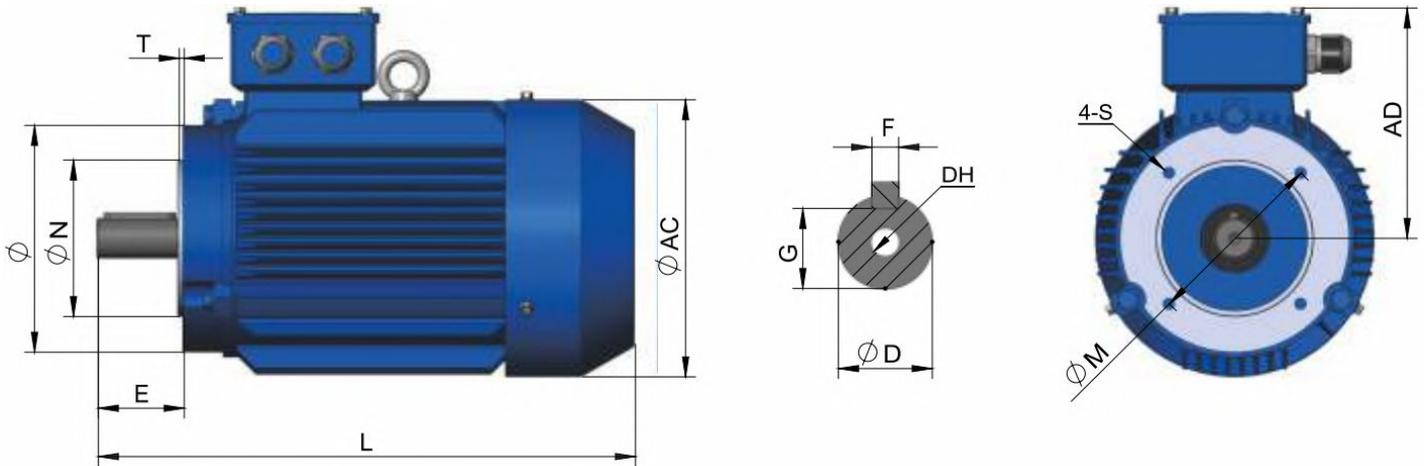
80-132

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

Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	M	N	P	R*	S	T	Flange holes	AB	AC	AD	HD	L
80	2 4 6 8	125	62,5	100	50	19	40	6	15,5	80	10	100	80	120	0	M6	3,0	4	165	155	145	214	295
90S	2 4 6 8	140	70	100	56	24	50	8	20	90	10	115	95	140	0	M8	3,0	4	180	175	155	250	320
90L	2 4 6 8	140	70	125	56	24	50	8	20	90	10	115	95	140	0	M8	3,0	4	180	175	155	250	345
100L	2 4 6 8	160	80	140	63	28	60	8	24	100	12	130	110	160	0	M8	3,5	4	205	196	180	270	385
112M	2 4 6 8	190	95	140	70	28	60	8	24	112	12	130	110	160	0	M8	4	4	230	220	190	300	400
132S	2 4 6 8	216	108	140	89	38	80	10	33	132	12	165	130	200	0	M10	4	4	270	259	210	345	470
132M	2 4 6 8	216	108	178	89	38	80	10	33	132	12	165	130	200	0	M10	4	4	270	259	210	345	510



Installation data for 1LCZ

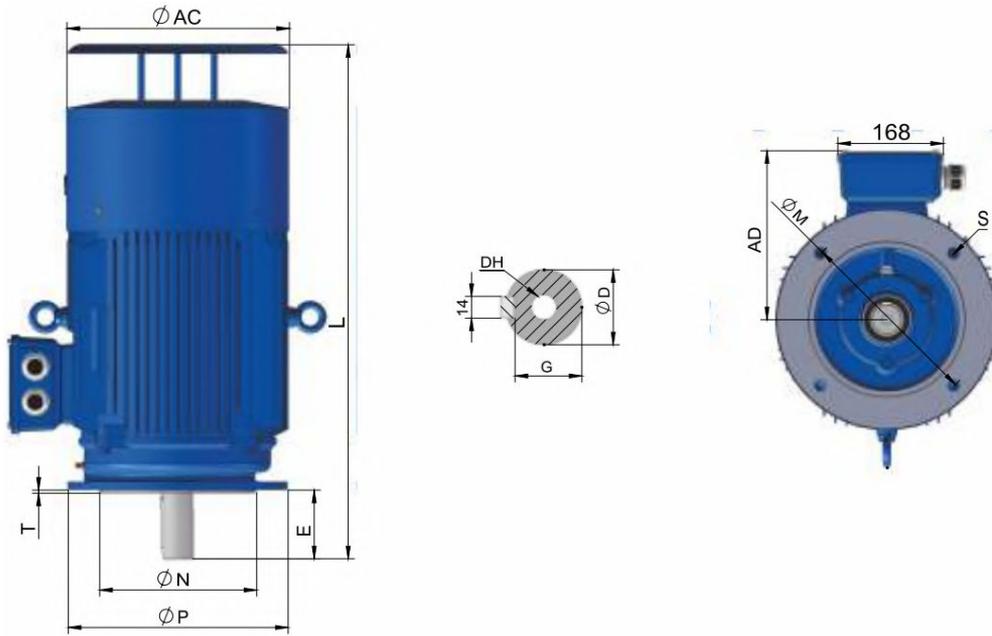


Frame with feet and end-shield with flange (IM B34)

Frame size	Poles	D	E	F	G	M	N	P	R*	S	T	Flange holes	AC	AD	HF	L
80	2 4 6 8	19	40	6	15,5	100	80	120	0	M6	3,0	4	155	145	185	295
90S	2 4 6 8	24	50	8	20	115	95	140	0	M8	3,0	4	175	155	195	320
90L	2 4 6 8	24	50	8	20	115	95	140	0	M8	3,0	4	175	155	195	345
100L	2 4 6 8	28	60	8	24	130	110	160	0	M8	3,5	4	196	180	245	385
112M	2 4 6 8	28	60	8	24	130	110	160	0	M8	3,5	4	220	190	265	400
132S	2 4 6 8	38	80	10	33	165	130	200	0	M10	3,5	4	259	210	315	470
132M	2 4 6 8	38	80	10	33	165	130	200	0	M10	3,5	4	259	210	315	510

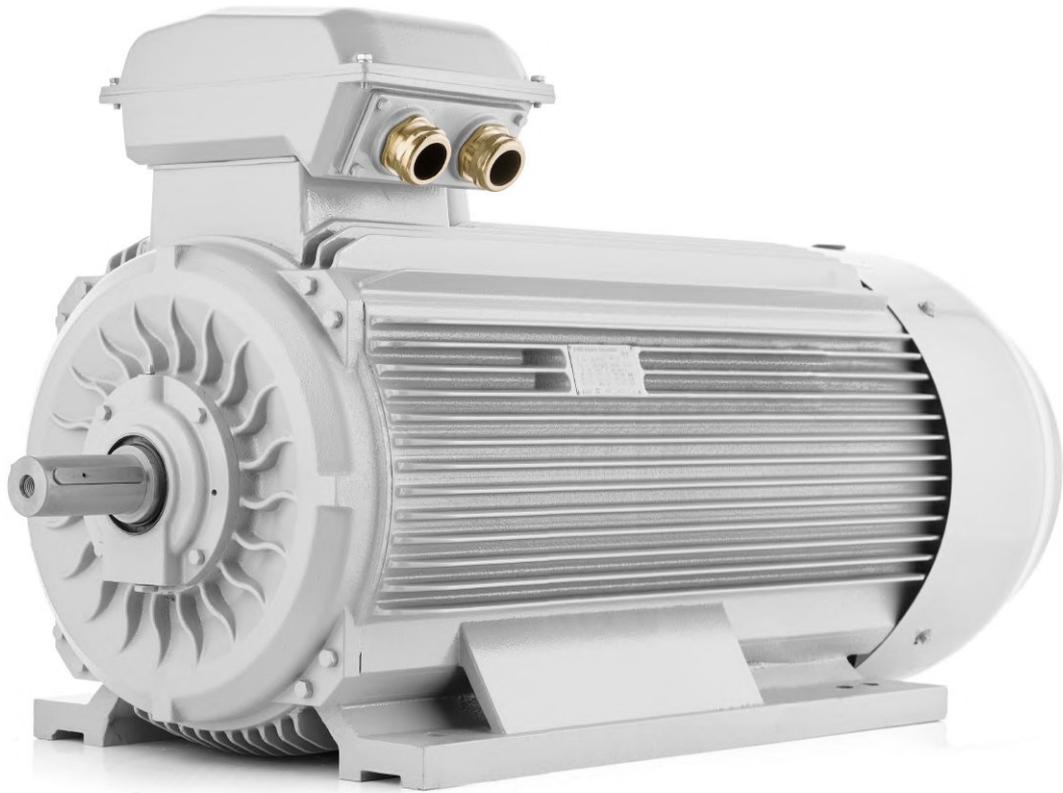


Frame without feet and end-shield with flange (IM V1)



Frame size	Poles	D	E	F	M	N	P	S	T	Flange holes	AC	AD	HF	L
160M	2 4 6 8	42	110	12	300	250	350	18,5	5	4	315	255	455	695
160L	2 4 6 8	42	110	12	300	250	350	18,5	5	4	315	255	455	740
180M	2 4 6 8	48	110	14	300	250	350	18,5	5	4	355	280	500	790
180L	2 4 6 8	48	110	14	300	250	350	18,5	5	4	355	280	T00	830
200L	2 4 6 8	55	110	16	350	300	400	18,5	5	4	397	305	550	860
225S	4 8	60	140	18	400	350	450	18,5	5	8	445	335	610	905
225M	2	55	110	16	400	350	450	18,5	5	8	445	335	610	910
	4 6 8	60	140	18	400	350	450	18,5	5	8	445	335	610	935
250M	2	60	140	18	500	450	550	18,5	5	8	485	370	650	1015
	4 6 8	65	140	18	T00	450	550	18,5	5	8	485	370	650	1015
280S	2	65	140	18	500	450	550	18,5	5	8	547	410	720	1110
	4 6 8	75	140	20	500	450	550	18,5	5	8	547	410	720	1110
280M	2	65	140	18	T00	450	550	18,5	5	8	547	410	720	1150
	4 6 8	75	140	20	500	450	550	18,5	5	8	547	410	900	1150



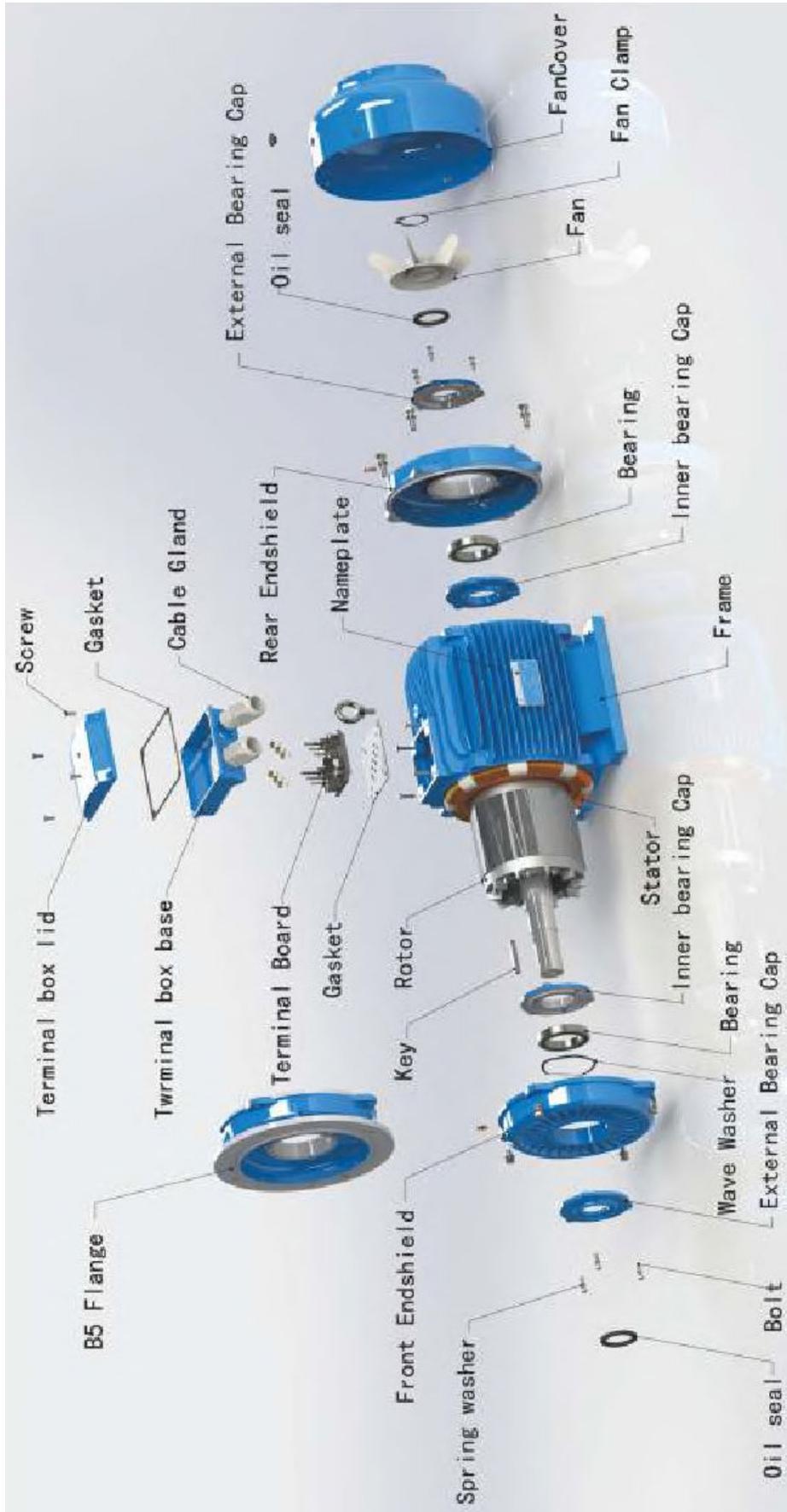


3LCZ Series

Special electric motors with higher power in a cast iron frame



SOLUTIONS FOR INDUSTRY



Technical data 3LCZ

NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage		Efficiency(%)		Power factor (cos ϕ)	Noise Lwdb (A)	Frame weight (kg)	Locked rotor current LRA/RLA	No load current A	Rated torque Nm	Locked rotor torque LRT/RLT	Breakdown torque BDT/RLT
				400V / 690V		IE3	100%								
2 poles electric motors															
1	3LCZ-160L-2	22	2935	38,49	22,31	IE3	92,7	0,89	78	145	269,43	12,36	71,58	157,49	
2	3LCZ-180L-2	30	2945	52,15	30,23	IE3	93,3	0,89	82	175	365,04	16,21	97,28	214,02	
3	3LCZ-200L-2	45	2955	78,52	45,52	IE3	94	0,88	84	242	549,66	23,42	145,43	319,95	
4	3LCZ-225M-2	55	2960	94,59	54,84	IE3	94,3	0,89	84	290	662,14	30,33	177,45	390,39	
5	3LCZ-250M-2	75	2970	128,44	74,46	IE3	94,7	0,89	84	395	899,11	37,41	241,16	530,56	
6	3LCZ-250M-2	90	2970	153,65	89,07	IE3	95	0,89	86	440	1075,52	40,13	289,39	636,67	
7	3LCZ-280M-2	110	2980	187,39	108,63	IE3	95,2	0,89	87	530	1311,76	51,32	352,52	775,54	
8	3LCZ-280M-2	132	2980	224,40	130,09	IE3	95,4	0,89	88	820	1570,82	56,82	423,02	930,64	
9	3LCZ-315L-2	185	2980	310,36	179,92	IE3	95,6	0,9	89	946	2172,51	67,52	592,87	1304,31	
10	3LCZ-315	250	2980	413,93	239,96	IE3	95,8	0,91	95	1200	2897,50	84,61	801,17	1762,58	
11	3LCZ-315	315	2980	521,55	302,35	IE3	95,8	0,91	95	1350	3650,85	95,77	1009,48	2220,86	
12	3LCZ-315	355	2980	581,39	337,04	IE3	95,8	0,92	95	1500	4069,73	128,92	1137,67	2502,87	
13	3LCZ-315	400	2980	655,09	379,76	IE3	95,8	0,92	95	1650	4585,61	139,61	1281,88	2820,13	
14	3LCZ-355M-2	220	2980	360,30	208,87	IE3	95,8	0,92	94	1450	2522,08	71,20	705,03	1551,07	
15	3LCZ-355L-2	280	2985	458,56	265,83	IE3	95,8	0,92	95	1540	3209,92	77,31	895,81	1970,79	
16	3LCZ-355L-2	355	2985	581,39	337,04	IE3	95,8	0,92	95	1800	4069,73	133,21	1135,76	2498,68	
17	3LCZ-355	400	2985	655,09	379,76	IE3	95,8	0,92	95	2100	4585,61	142,60	1279,73	2815,41	
18	3LCZ-355	450	2985	736,97	427,23	IE3	95,8	0,92	95	2150	5158,81	161,50	1439,70	3167,34	
19	3LCZ-355	500	2985	818,86	474,70	IE3	95,8	0,92	95	2250	5732,01	172,30	1599,66	3519,26	
4 poles electric motors															
NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage		Efficiency(%)		Power factor (cos ϕ)	Noise Lwdb (A)	Frame weight (kg)	Locked rotor current LRA/RLA	No load current A	Rated torque Nm	Locked rotor torque LRT/RLT	Breakdown torque BDT/RLT
				400V / 690V		IE3	100%								
1	3LCZ-160L-4	18,5	1460	33,93	19,67	IE3	92,6	0,85	67	135	237,48	15,22	121,01	266,22	278,32
2	3LCZ-180L-4	30	1465	54,43	31,55	IE3	93,6	0,85	72	185	380,99	22,26	195,56	430,24	449,80
3	3LCZ-200L-4	37	1475	66,13	38,34	IE3	93,9	0,86	75	235	462,94	25,03	239,56	527,03	550,99
4	3LCZ-200L-4	45	1475	79,26	45,95	IE3	94,2	0,87	76	260	554,79	29,96	291,36	640,98	670,12
5	3LCZ-225M-4	55	1475	97,58	56,57	IE3	94,6	0,86	77	320	683,07	36,21	356,10	783,42	819,03
6	3LCZ-250M-4	75	1475	134,06	77,72	IE3	95	0,85	78	400	938,45	45,32	485,59	1068,31	1116,86
7	3LCZ-250M-4	90	1475	156,85	90,93	IE3	95,2	0,87	80	440	1097,93	58,66	582,71	1281,97	1340,24
8	3LCZ-280M-4	110	1480	189,13	109,64	IE3	95,4	0,88	81	618	1323,89	61,3	709,80	1561,55	1632,53
9	3LCZ-280M-4	132	1480	226,48	131,29	IE3	95,6	0,88	82	680	1585,34	71,6	851,76	1873,86	1959,04
10	3LCZ-315L-4	185	1480	313,19	181,56	IE3	95,8	0,89	83	980	2192,33	90,33	1193,75	2626,25	2745,63
11	3LCZ-315	250	1480	417,66	242,12	IE3	96	0,9	95	1230	2923,59	102,3	1613,18	3548,99	3710,30
12	3LCZ-315	315	1480	526,25	305,07	IE3	96	0,9	95	1350	3683,72	121,6	2032,60	4471,72	4674,98
13	3LCZ-315	355	1480	586,55	340,03	IE3	96	0,91	95	1420	4105,88	126,8	2290,71	5039,56	5268,63
14	3LCZ-315	400	1480	660,91	383,13	IE3	96	0,91	95	1540	4626,34	155,6	2581,08	5678,38	5936,49
15	3LCZ-355M-4	220	1480	367,54	213,06	IE3	96	0,9	98	1370	2572,76	97,66	1419,59	3123,11	3265,07
16	3LCZ-355L-4	280	1480	467,77	271,17	IE3	96	0,9	94	1600	3274,42	199,7	1806,76	3974,86	4155,54
17	3LCZ-355L-4	355	1480	593,07	343,81	IE3	96	0,9	95	1730	4151,50	125,3	2290,71	5039,56	5268,63
18	3LCZ-355	400	1485	660,91	383,13	IE3	96	0,91	95	2000	4626,34	156,3	2572,39	5659,26	5916,50
19	3LCZ-355	450	1485	743,52	431,03	IE3	96	0,91	95	2200	5204,63	177,6	2893,94	6366,67	6656,06
20	3LCZ-355	500	1485	826,13	478,92	IE3	96	0,91	95	2300	5782,92	197,7	3215,49	7074,07	7395,62

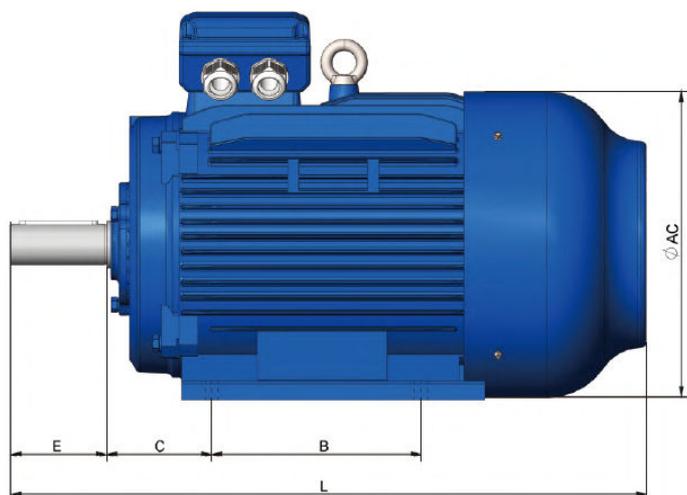


Technical data 3LCZ

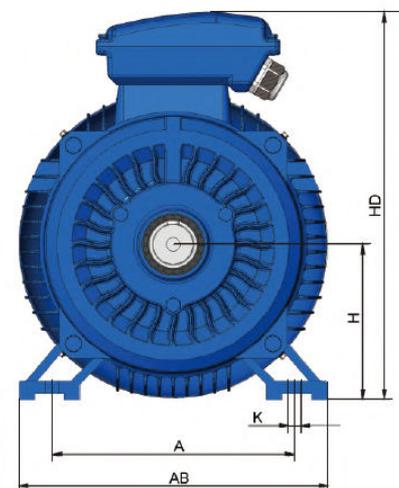
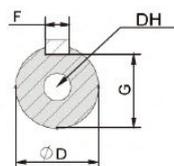
NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage		Efficiency(%)		Power factor (cos ϕ_p)	Noise Lwdb (A)	Frame weight (kg)	Locked rotor current LRA/RLA	No load current A	Rated torque Nm	Locked rotor torque LRT/RLT	Breakdown torque BDT/RLT
				400V / 690V		IE3	100%								
6 poles electric motors															
1	3LCZ-160M-6	9,2	960	19,00	11,02	IE3	89,6	0,78	64	114	123,51	11,31	91,52	183,04	201,35
2	3LCZ-160L-6	15	965	29,31	16,99	IE3	91,2	0,81	65	160	190,51	15,31	148,45	296,89	326,58
3	3LCZ-180L-6	18,5	980	35,95	20,84	IE3	91,7	0,81	68	188	233,68	18,22	180,28	360,56	396,62
4	3LCZ-200L-6	30	980	56,84	32,95	IE3	92,9	0,82	71	235	369,49	24,34	292,35	584,69	643,16
5	3LCZ-225M-6	37	980	68,14	39,50	IE3	93,3	0,84	73	290	442,94	27,3	360,56	721,12	793,23
6	3LCZ-250M-6	45	985	84,54	49,01	IE3	93,7	0,82	75	385	549,50	33,2	436,29	872,59	959,85
7	3LCZ-250M-6	55	985	102,88	59,64	IE3	94,1	0,82	76	460	668,75	38,5	533,25	1066,50	1173,15
8	3LCZ-280M-6	75	985	139,56	80,90	IE3	94,6	0,82	77	535	907,11	49,3	727,16	1454,31	1599,75
9	3LCZ-280M-6	90	985	164,93	95,61	IE3	94,9	0,83	78	618	1072,02	57,2	872,59	1745,18	1919,70
10	3LCZ-315L-6	160	990	274,52	159,14	IE3	95,6	0,88	90	1000	1784,37	85,3	1543,43	3086,87	3395,56
11	3LCZ-315	200	990	342,43	198,51	IE3	95,8	0,88	92	1250	2225,81	103,6	1929,29	3858,59	4244,44
12	3LCZ-315	250	990	428,04	248,14	IE3	95,8	0,88	94	1360	2782,26	125,3	2411,62	4823,23	5305,56
13	3LCZ-315	315	990	533,27	309,14	IE3	95,8	0,89	96	1450	3466,26	142,2	3038,64	6077,27	6685,00
14	3LCZ-355M-6	185	990	313,19	181,56	IE3	95,8	0,89	91	1490	2035,74	96,72	1784,60	3569,19	3926,11
15	3LCZ-355M-6	220	990	372,44	215,91	IE3	95,8	0,89	93	1580	2420,88	112,63	2122,22	4244,44	4668,89
16	3LCZ-355L-6	280	990	474,02	274,79	IE3	95,8	0,89	90	1680	3081,12	131,33	2701,01	5402,02	5942,22
17	3LCZ-355	315	990	533,27	309,14	IE3	95,8	0,89	94	2000	3466,26	171,42	3038,64	6077,27	6685,00
18	3LCZ-355	355	990	600,99	348,40	IE3	95,8	0,89	95	2100	3906,41	183,23	3424,49	6848,99	7533,89
19	3LCZ-355	400	990	677,17	392,56	IE3	95,8	0,89	95	2250	4401,59	204,1	3858,59	7717,17	8488,89
8 poles electric motors															
NO.	Frame reference and size	Rated power (kW)	Full load speed r/min	Full load current at rated voltage		Efficiency(%)		Power factor (cos ϕ_p)	Noise Lwdb (A)	Frame weight (kg)	Locked rotor current LRA/RLA	No load current A	Rated torque Nm	Locked rotor torque LRT/RLT	Breakdown torque BDT/RLT
				400V / 690V		IE3	100%								
1	3LCZ-160L-8	11	720	23,9	13,9	IE3	88,6	0,75	62	130	143,36	14,23	145,90	262,63	291,81
2	3LCZ-180L-8	15	725	31,8	18,4	IE3	89,6	0,76	65	194	190,77	18,53	197,59	355,66	395,17
3	3LCZ-200L-8	18,5	730	39,0	22,6	IE3	90,1	0,76	65	205	233,98	22,11	242,02	435,64	484,04
4	3LCZ-200L-8	22	730	46,1	26,7	IE3	90,6	0,76	66	256	276,71	24,36	287,81	518,05	575,62
5	3LCZ-225M-8	30	730	61,6	35,7	IE3	91,3	0,77	68	330	369,58	33,01	392,47	706,44	784,93
6	3LCZ-250M-8	37	735	77,6	45,0	IE3	91,8	0,75	69	390	465,42	37,13	480,75	865,35	961,50
7	3LCZ-250M-8	45	735	93,9	54,5	IE3	92,2	0,75	70	440	610,56	45,46	584,69	1052,45	1169,39
8	3LCZ-280M-8	55	740	114,4	66,3	IE3	92,5	0,75	71	588	743,82	48,11	709,80	1277,64	1419,59
9	3LCZ-280M-8	75	740	151,0	87,5	IE3	93,1	0,77	72	780	981,58	60,21	967,91	1742,23	1935,81
10	3LCZ-315L-8	132	740	253,4	146,9	IE3	94	0,8	76	1160	1646,88	104,6	1703,51	3066,32	3407,03
11	3LCZ-315	160	740	302,4	175,3	IE3	94,3	0,81	79	1300	1965,30	114,6	2064,86	3716,76	4129,73
12	3LCZ-315	200	740	372,1	215,7	IE3	94,6	0,82	82	1380	2418,97	142,3	2581,08	4645,95	5162,16
13	3LCZ-315	250	740	465,2	269,7	IE3	94,6	0,82	85	1450	3023,71	157,31	3226,35	5807,43	6452,70
14	3LCZ-315	315	740	586,1	339,8	IE3	94,6	0,82	90	1600	3809,88	****	4065,20	7317,36	8130,41
15	3LCZ-355L-8	185	740	344,2	199,6	IE3	94,6	0,82	82	1580	2237,55	160,22	2387,50	4297,50	4775,00
16	3LCZ-355L-8	220	740	409,4	237,3	IE3	94,6	0,82	84	1700	2660,87	176,32	2839,19	5110,54	5678,38
17	3LCZ-355L-8	250	740	465,2	269,7	IE3	94,6	0,82	85	1800	3023,71	195,74	3226,35	5807,43	6452,70
18	3LCZ-355	315	740	586,1	339,8	IE3	94,6	0,82	85	1900	3809,88	211,62	4065,20	7317,36	8130,41
19	3LCZ-355	355	740	660,6	382,9	IE3	94,6	0,82	85	2000	4293,67	236,23	4581,42	8246,55	9162,84



Mouting data for 3LCZ



80-355



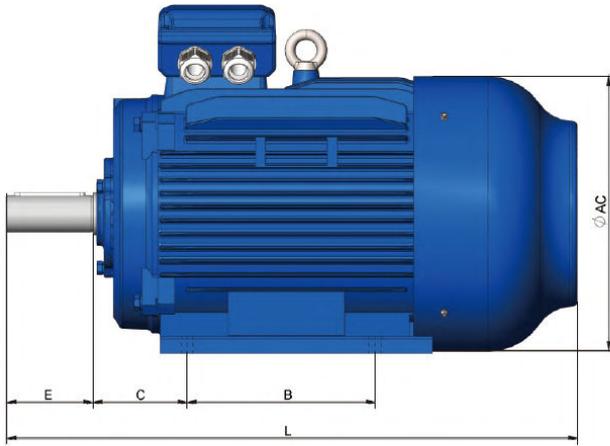
80-355

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

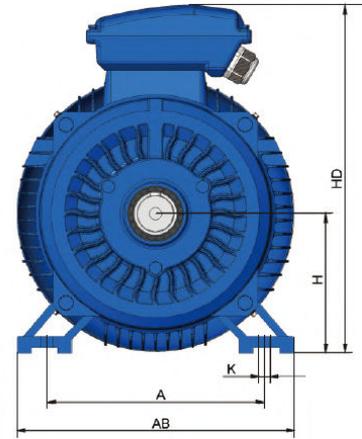
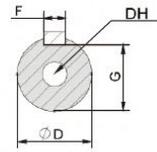
Frame size	Poles	A	A/2	B	C	D	E	F	G	H	K	AB	AC	AD	HD	L	DH*
80M	2 4 6	125	62,5	100	50	19	40	6	15,5	80	10	165	158	140	220	300	M6X16
90S	2 4 6	140	70	100	56	24	50	8	20	90	10	180	177	160	255	350	M8X19
90L	2 4 6	140	70	125	56	24	50	8	20	90	10	180	177	160	255	385	M8X19
100L	2 4 6	160	80	140	63	28	60	8	24	100	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 3LCZ



80-355



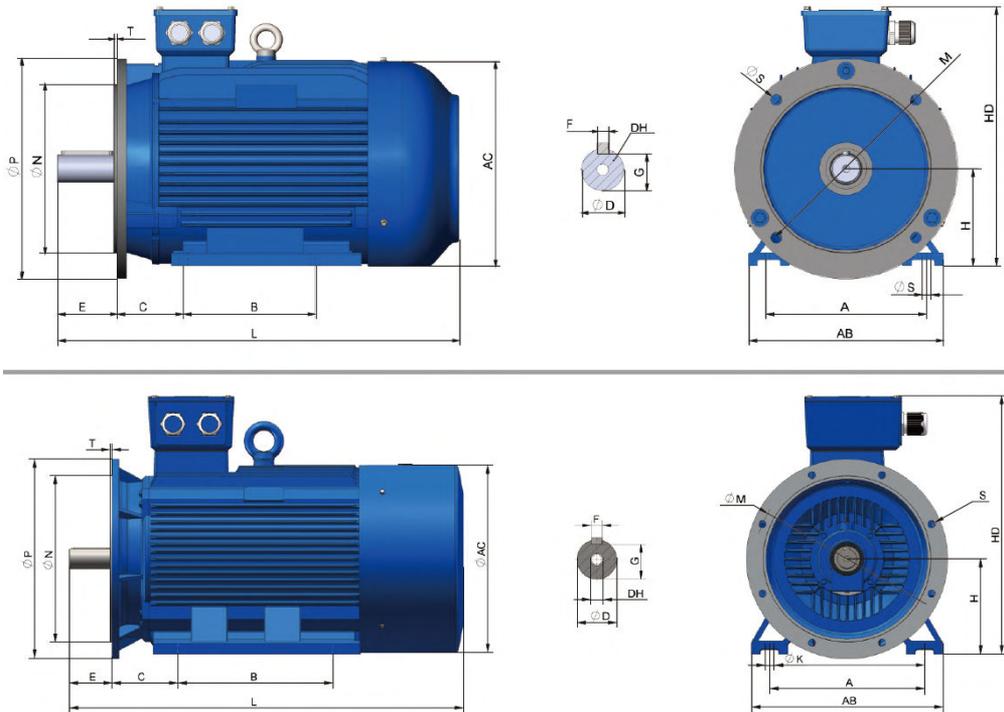
80-355

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
315LX	2	508	254	508	216	65	140	18	58	315	28	635	620	530	845	1544	M20X42
	4 6	508	254	508	216	80	170	22	71	315	28	635	620	530	845	1544	M20X42
355LX1	2	610	305	630	254	75	140	20	67,5	355	28	730	698	655	1010	1630	M20X42
	4 6	610	305	630	254	95	170	25	86	355	28	730	698	655	1010	1670	M20X42
355LX2	2	610	305	630	254	75	140	20	67,5	355	28	730	698	655	1010	1820	M20X42
	4 6	610	305	630	254	95	170	25	86	355	28	730	698	655	1010	1860	M20X42



Mounting data for 3LCZ

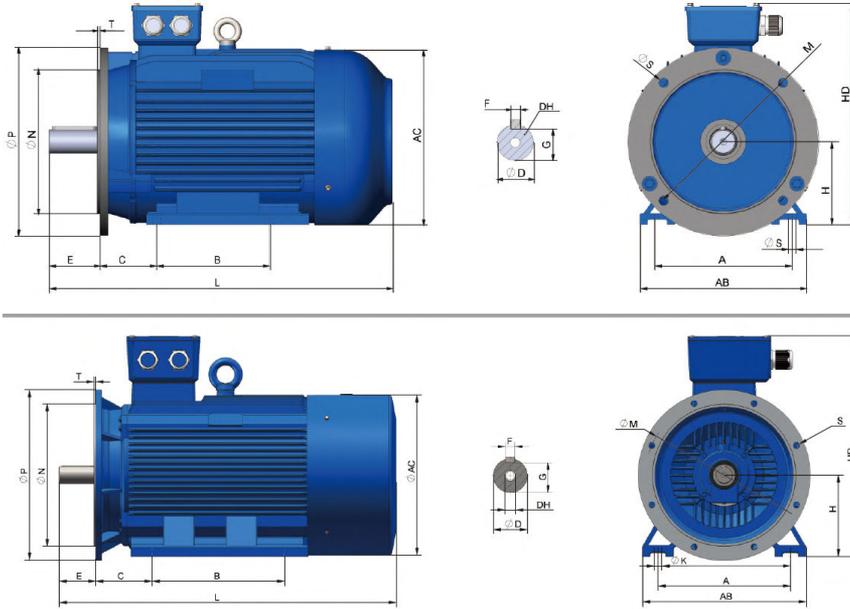


Frame with feet and end-shield with flange (IM B35)

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 3LCZ

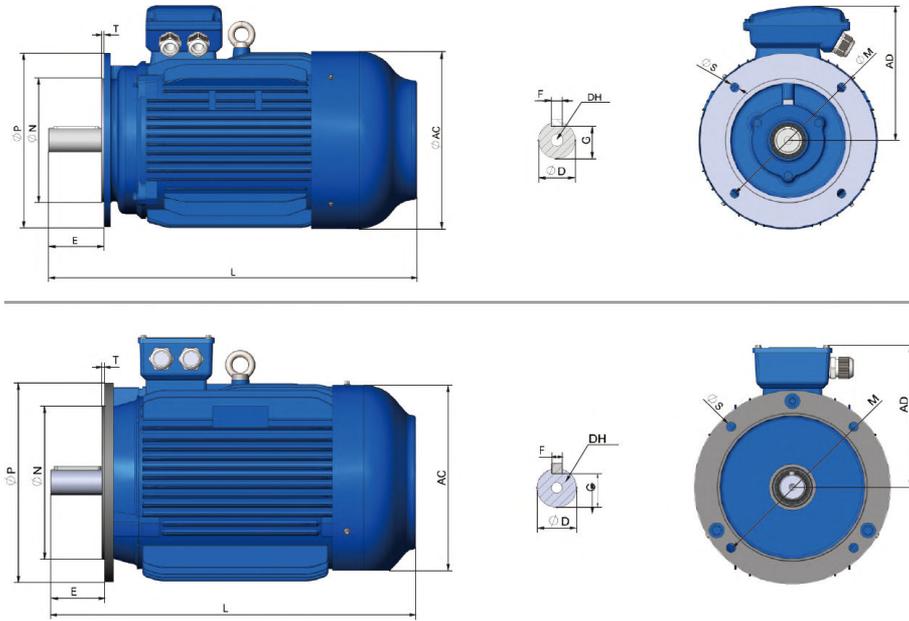


Frame with feet and end-shield with flange (IM B35)

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
315LX	2	508	254	508	216	65	140	18	58	315	28	600	550	660	24	6	8	635	620	530	845	1544	M20X42
	4 6	508	254	508	216	80	170	22	71	315	28	600	550	660	24	6	8	635	620	530	845	1544	M20X42
355LX1	2	610	305	630	254	75	140	20	67,5	355	28	740	680	800	24	6	8	730	698	655	1010	1630	M20X42
	4 6	610	305	630	254	95	170	25	86	355	28	740	680	800	24	6	8	730	698	655	1010	1670	M20X42
355LX2	2	610	305	630	254	75	140	20	67,5	355	28	740	680	800	24	6	8	730	698	655	1010	1830	M20X42
	4 6	610	305	630	254	95	170	25	86	355	28	740	680	800	24	6	8	730	698	655	1010	1860	M20X42



Mounting data for 3LCZ

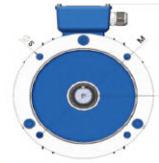
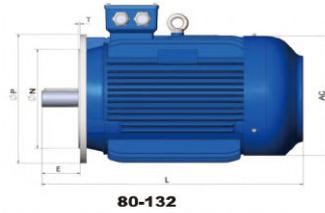


Frame without feet and end-shield with flange (IM B5)

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 3LCZ



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	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	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	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	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	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	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	620	530	900	1430
315LX	2	65	140	18	600	550	660	24	6	8	620	530	900	1544
		46	80	170	22	600	550	660	24	6	620	530	900	1544
355M	2	75	140	20	740	680	800	24	6	8	698	655	1010	1640
		46	95	170	25	740	680	800	24	6	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	698	655	1010	1670
355LX1	2	75	140	20	740	680	800	24	6	8	698	655	1010	1630
		46	95	170	25	740	680	800	24	6	698	655	1010	1670
355LX2	2	75	140	20	740	680	800	24	6	8	698	655	1010	1830
		46	95	170	25	740	680	800	24	6	698	655	1010	1860





Address

VYBO ELECTRIC a. s. | tel: +421 944 105 361
Radlinského 18 | e-mail: mv@vyboelectric.eu
052 01 Spišská Nová Ves
Slovenská republika

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: 5th Floor, 86 Prescott Street, London E1 8HG, United Kingdom
Local office: Plynárska 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 2341 4165

Page 1 of 1



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: +420 210 090 215

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 - 2206117

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

1/1

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFIKAT ◆ 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
ICO: 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
Jaskovka 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.
Klyučská 14, 040 11 Košice, Slovakia
t +421 55 783 61 11, f +421 55 783 61 20, www.sgs.com

Page 1 of 1



This document is issued by the Company subject to its General Conditions of Certification. Services accessible at www.sgs.com and conditions. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. The authenticity of this document may be verified at <http://www.sgs.com/certificates/certificate>. Any unauthorised alteration, forgery or falsification of the content or appearance of this document is unlawful and offences may be prosecuted to the fullest extent of the law.