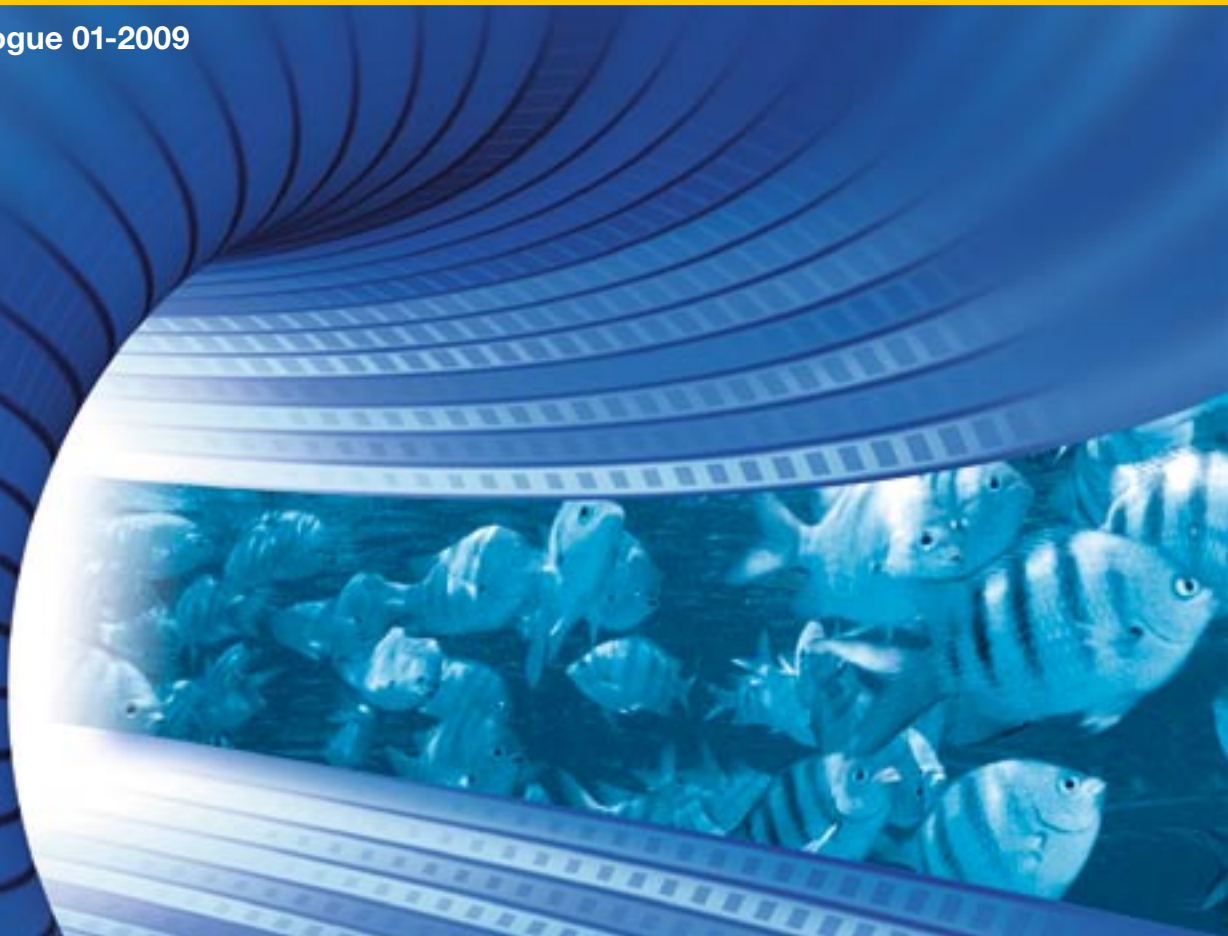


# Low voltage asynchronous motors Marine motors

Special catalogue 01-2009







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The products featured in this catalogue can also be found in the interactive electronic catalogue V 6.0. Additional information about the company and the products of the VEM Group are available via internet: [www.vem-group.com](http://www.vem-group.com).

The electronic catalogue can assist you in selecting and configuring VEM products. You can choose to print out data sheets and requests and the programme can display scaled and dimensioned drawings that can be downloaded in different 2D and 3D-data files. In addition to general information about the VEM group, you have access to catalogues, spare parts lists and operation and maintenance manuals of the individual product types.

## Innovative drives made in Germany

Electric machines made by VEM have millions of applications around the globe. VEM stands for high-quality products such as large and special-purpose machines, standard motors and customized drives which have given reliable service in a variety of industries. Systems of all types use our motors, generators and drives for a wide range of voltages. They have stood the test for decades even under extreme conditions – whether in the dust and heat of mill trains, chemical plants with explosion hazards, or in the moist, salty air aboard ships.

Our quality assurance for the low voltage motor production is certified and monitored by Germanischer Lloyd Certification GmbH, Hamburg pursuant to DIN EN ISO 9001:2000, and by IBExU Institut für Sicherheitstechnik GmbH, notified body no. 0637 pursuant to Article 10(1) of RL 94/9/EC

## Marine motors in world-wide applications

VEM has many years of experience in production of marine motors and holds approvals of all important ship classification societies. Thanks to our high performance calculation and engineering design departments the electric motors are designed completely in accordance with the individual requirements of the clients. In this process we work in close cooperation with partners from research and development. This cooperation results in products that rank among the most advanced in the market and set the pace for the next generation of motors.

The robust grey cast iron motors designed for sea-water protection are meant for operation on seagoing vessels as power unit for ancillary aggregates. When engineering these motors we have especially taken into account the special climatic and mechanic loads of these application ranges. The motors operate safe and reliable as drives for ventilators, pumps, capstans, rotating and hoisting gear on passenger and container vessels, but also on luxury yachts.

## Quality products from VEM

When buying our quality products you can be sure that we have consequently implemented challenging aspects like energy saving and environmentally sound production processes. That means we develop cost-effective drive solutions for all sorts of marine applications individually adapted to your requirements. Our flexibility, the availability of the products and our high delivery reliability assist you at your world-wide investment projects.

Electric drives of all types are used throughout industry, and their properties are very often a key factor in making production efficient. The VEM range of three-phase asynchronous motors for low voltages meets customer requirements for versatility, better operating data, environmental acceptability and maximum reliability. More particularly, the following features are available:

- energy conservation as a result of high motor efficiencies
- universal applications, less storage with IP 55 protective system fitted in series (degrees up to IP 66 on request)
- improved service life, reliability and thermal overload capacity from series production in thermal class 155 (F) with thermal reserve (thermal class 180 (H) available as a special design)



- optional arrangement of connection box left/top/right
- environmentally acceptable with low-noise ventilation system
- availability to East European standards
- alternative availability of conventional IEC/DIN series and an advanced line of products based on IEC 60072 for mounting dimensions and sizes
- facilities for mounting components such as pulse generators, tachometers, brakes, speed monitors and external ventilation units to deal with today's (automatic) control tasks as required by customers.

## Working with customers worldwide

Wherever clients require electric machines, we are partners in supporting and accompanying their projects, whether they are in Europe, the Middle East, Asia or the Americas. After all, proximity to customers and customer care are dear to us. You can use the know-how of VEM subsidiaries in Finland, Britain, Austria, Sweden and Singapore, and a dense distribution and service network with agencies in over 40 countries.

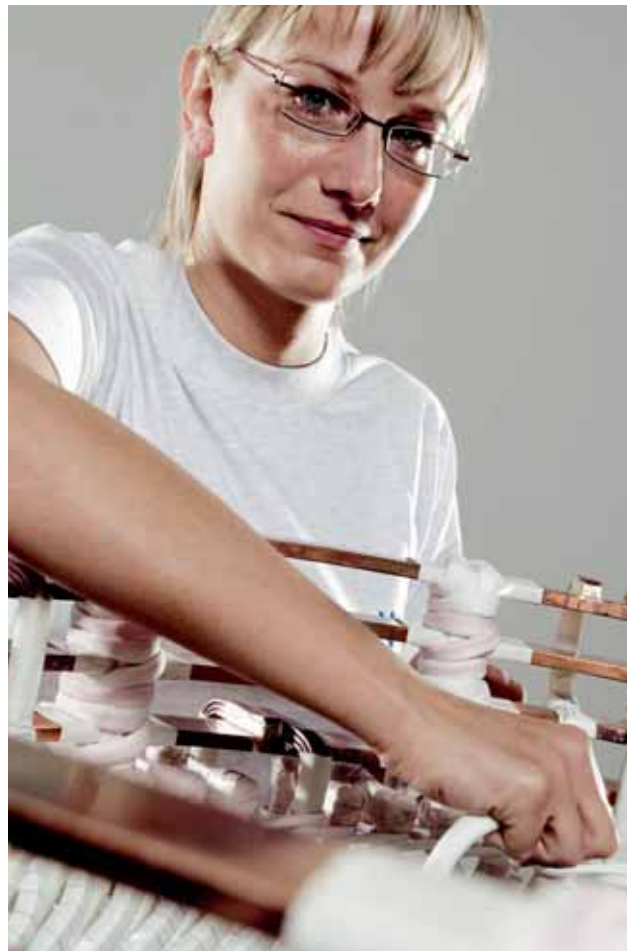
## Range of low-voltage motors

Squirrel-cage and slip-ring motors in mechanical/electrical modifications:

- Three-phase motors for use aboard ships, squirrel-cage type 0.09 – 490 kW
- Three-phase motors to IEC/DIN, squirrel-cage type 0.06 – 500 kW
- Three-phase motors, squirrel-cage type 2.2 – 315 kW
- Three-phase brake motors 0.12 – 500 kW
- Three-phase motors, forced-ventilated, 0.25 – 500 kW
- Three-phase motors, water-cooled, 37 – 355 kW
- Three-phase roller table motors, 0.6 – 160 kW
- Explosion-proof three-phase motors, in types of protection:
  - Increased safety 0.12 – 315 kW
  - Flameproof enclosure 0.12 – 630 kW
  - Non-sparking 0.06 – 500 kW
  - for use in "Zone 21" 0.06 – 500 kW
  - for use in "Zone 22" 0.06 – 500 kW
- Variable-speed three-phase drives 0.75 – 430 kW
- Compact three-phase drives 0.55 – 22 kW
- Energy saving motors "EFF1" CEMEP 1.1 – 90 kW
- Energy saving motors "High Efficiency" EPAAct 1.0 – 500 HP
- Enhanced-efficiency motors to IEC/DIN, squirrel-cage type 0.06 – 500 kW
- Motors for use in mechanical smoke and heat exhaust ventilators, 0.12 – 500 kW
- Three-phase asynchronous generators 2.2 – 500 kVA
- Built-in motors 0.06 – 355 kW
- Single-phase motors 0.06 – 2.2 kW
- Permanent synchronous motors 500 – 13,500 Nm

Please note:

Our policy is one of constant product improvement. Designs, technical data and illustrations are subject to change and not binding until confirmed in writing by the supplier's works.





## Application

Motors in sea-water design have to be equipped at a high technical level, because they are subject to special environmental and operational conditions. The requirements for reliability are high and they are also subject to special regulations. Motors in sea-water design are used as drives for ancillary units on board of ships and they comply with the special climatic and mechanic loads of these application ranges.

To ensure a high-quality engineering and technological design for new developments, reconstructions and repairs of ships the working procedures at the wharf and at the supplier factories are monitored by audits and approvals from the classification societies.

The design and approval regulations of the classification societies must be observed at design, production and testing of the motors. An existing TYPE APPROVAL CERTIFICATE from the classification society is the pre-requisite for permission to manufacture the goods to be delivered. When applying for it the manufacturer has to document by test, verification and material certificate that his product is qualified. The test, approval, certification and delivery are done according to the corresponding rules and approval regulations, whereas the internal

quality management or some inspector from the classification society is present. The motors are designed according to their planned location:

### Operation on deck

Motors for "operation on deck" are designed for type of protection IP 56 without outer fan in the model series K10W or K11W and in the sizes 112 to 180. As the motors are designed without outer fan so that the cooling is done only by radiation of heat, the output of the motors decreases for continuous operation by 30 to 40% compared to the basic series. For details on electrical data please see the main catalogue "Low voltage asynchronous motors, IEC motors with squirrel-cage rotor", chapter "Non-ventilated motors" or ask the manufacturer.

### Operation below deck

Motors for "operation below deck" are designed according to the required application

- type of protection IP 55 for general use, for example in engine rooms.
- type of protection IP 56 for use in rooms with danger of splash water or gushing water.

## Standards and regulations

The motors in marine design can be manufactured and supplied according to the rules of the following classification societies

ABS	American Bureau of Shipping, USA
BV	Bureau Veritas, France
CCS	China Classification Society, China
DNV	Det Norske Veritas, Norway
GL	Germanischer Lloyd, Germany
LRS	Lloyds Register of Shipping, Great Britain
PRS	Polski Rejestr Statkow, Poland
RINA	REGISTRO ITALIANO NAVALE, Italy
RS	Register of Shipping, Russia

The main and ancillary motors on board are divided into "essential services" and "non-essential services" by the classification societies. This classification is important for questions concerning required spare parts and if a type approval and a manufacturing audit is mandatory for special motors.

### Drives for essential services

Design according to the rules of the corresponding classification society. Based on a type approval certificate up to a limit output that depends on the classification society. For outputs above the limit an individual approval is required. In addition some classification societies ask for a production survey for motors with a specific limit output. Inspection certificate 3.1 according to EN 10204 Inspection certificate 3.2 according to EN 10204 only for specific limit output for some classification societies.

### Drives for non-essential services

Design according to the rules of the corresponding classification society. A type approval certificate is not required and an individual approval is only done for motors with certificate. Inspection certificate 3.1 according to EN 10204 only for motors with certificate.

## Technical data

The performance characteristics can be taken from the lists for motor selection data.

For more important hints for selection of three-phase asynchronous motors please refer to the VEM main catalogue "Low voltage asynchronous motors, IEC motors with squirrel-cage rotor".

If the operation on board of ship is only permitted under observance of additional regulations like gas or dust explosion protection, please use the corresponding motor series.

## Dimensions and types of construction

The mounting and assembly dimensions comply with the values for the basic design of type series KPR/K10R or KPER/K11R.

The motors are available in types of construction IM B3, IM B35, IM V1 and IM B5 with observance of all restrictions that are valid for the basic design.

## Rated voltages and frequencies

The following operating voltages and frequencies are available for the basic design:

380 V, 50 Hz  
440 V, 60 Hz

Voltages and frequencies deviating from the above mentioned values on request. Motors operating in other power, voltage or frequency ranges not mentioned in this special catalogues available on request.

## Overload

The motors comply with the following requirements of the named classification societies:

ABS no special requirements  
BV 160% rated torque for 15 s  
GL, RS 160% rated torque for 15 s.  
The breakdown torque must not be reached.  
LRS see BV

NV 160% rated torque for 15 s at rated frequency and rated voltage  
DIN EN 60034 1.5x rated current at rated voltage for 2 min

The rated current is given in the data selection tables for rated voltages 380 and 440 V.

## Approval, design inspection, certificates

VEM motors GmbH has obtained the TYPE APPROVAL CERTIFICATES for the motor types KPR 56 to 112  
KPER 63 to 132T  
K10R 112 to K10R 315  
K11R 132 to K11R 315  
from the following classification societies

Bureau Veritas  
China Classification Society  
Det Norske Veritas  
Germanischer Lloyd  
Lloyd's Register of Shipping  
Russian Maritime Register of Shipping.

For copies of the certificates please refer to the internet <http://www.vem-group.com> in the heading Infocenter, field classifications/certificates, subject marine motors. The scanned original documents can be downloaded as pdf-files. They are subject to our revision service and therefore always updated.

Motors for marine applications according to other classification societies available on request, for example: ABS, RINA, Polski Rejestr Statkow and other.

Below please find a short overview of the specific design and approval requirements of the classification societies:

Motors in sea-water protection acc. to "Bureau Veritas"

<http://www.veristar.com>

Ambient temperature	45 °C
Thermal class	155 [F]
Limit temperature of the winding	95 K
Individual approval for essential drives	> 100 kW
Production survey for essential drives	-
Certification mark is stamped on the housing.	
Name plate	

marking English/French  
ambient temperature 45 °C or other  
separately agreed ambient temperature  
designation "MV acc. to BV"





**Motors in sea-water protection acc. to "Germanischer Lloyd"**

<http://www.gl-group.com>

Ambient temperature	45 °C
Thermal class	155 [F]
Limit temperature of the winding	100 K
Bearing temperature for anti-friction bearing with special grease	75K
Individual approval for essential drives	≥ 50 kW for essential services
Production survey for essential drives	-
Name plate	marking German/English ambient temperature 45 °C or other separately agreed ambient temperature designation "SS nach GL"



VEM motors GmbH Wernigerode has the right to conduct self dependent tests according to the rules of the German Lloyd. In any case the certificates issued on this base will be checked and signed by the German Lloyd before approval.

**Motors in sea-water protection acc. to "Det Norske Veritas"**

<http://www.dnv.com>

Ambient temperature	45 °C
Thermal class	155 [F]
Limit temperature of the winding	100 K
Shaft steel	S355J2G3 with manufacturer's certificate 3.1 of manufacturers that are approved by DNV
Individual approval for essential drives	< 100 kW with manufacturer's certificate from 100 kW to < 300 kW DNV approval of shaft manufacturer and with manufacturer's certificate from 300 kW DNV approval
Production survey for essential drives	-
Name plate	marking English/French ambient temperature 45 °C or other separately agreed ambient temperature designation "MV acc. to DNV"



The factory certificate 3.1 includes the following text:  
"DNV Rules for Ships, HSLC & MOU, TAC E-6737"

**Motors in sea-water protection acc. to "Lloyd's Register of Shipping"**

<http://www.lr.org/code/home.htm>

Ambient temperature	45 °C
Thermal class	155 [F]
Limit temperature of the winding	95 K
Shaft steel	manufacturers that are approved by LROS
Individual approval for essential drives	≥ 100 kW
Production survey for essential drives	≥ 100 kW
Name plate	marking English/French ambient temperature 45 °C or other separately agreed ambient temperature designation "MV acc. to LROS"



**Motors in sea-water protection acc. to "Russian Maritime Register of Shipping"**

<http://www.rs-head.spb.ru>

Ambient temperature	45 °C
Thermal class	155 [F]
Limit temperature of the winding	105 K
Individual approval for essential drives	> 55 kW
Production survey for essential drives	-
Name plate	marking English/Russian ambient temperature 45 °C or other separately agreed ambient temperature designation "MV acc. to RS"



The Russian Maritime Register of Shipping has authorized the quality management of VEM motors GmbH to inspect the motors based on the Agreement on Supervision No. 99.204.272 and the existing type approval certificate. The inspection documents have to be submitted for approval to the Russian Maritime Register of Shipping.

**Motors in sea-water protection acc. to "China Classification Society"**

<http://www.ccs.org.cn>

Ambient temperature	45 °C
Thermal class	155 [F]
Limit temperature of the winding	105 K for motors $\geq$ 600 W and for motors with self-ventilation (IC410) 100 K for motors above 600 W
Shaft steel	for motors for propulsion and drives has to be approved by CCS (if the shaft is part of the main drive)
Individual approval for essential drives	> 50 kW for essential services
Production survey for essential drives	-
Name plate	marking English/French ambient temperature 45 °C or other separately agreed ambient temperature designation "MV acc. to CCS"



**Motors in sea-water protection acc. to "American Bureau of Shipping"**

<http://www.eagle.org>

Ambient temperature	50 °C for engine rooms 45 °C for all other locations
Thermal class	155 [F]
Limit temperature of the winding	95 K
Individual approval for essential drives	$\geq$ 100 kW
Production survey for essential drives	$\geq$ 100 kW
Name plate	marking German/English ambient temperature 45 °C or other separately agreed ambient temperature designation "MV acc. to ABS"



Verification of technical drawings for motors with output up to > 100 kW has been issued; for motors with outputs above that value an individual verification of technical drawings is required. The following information is essential for drawing verification and has to be submitted by the customer when placing the order:

- the wharf executing the contract, name, address
- ABS construction no. or name of the ship
- drive requirements of the motor

**Motors in sea-water protection acc. to "Polski Rejestr Statkow"**

<http://www.prs.pl>

When required individual approval through "German Lloyd"	
Ambient temperature	45 °C
Thermal class	155 [F]
Limit temperature of the winding	95 K
Individual approval for essential drives	$\geq$ 50
Production survey for essential drives	-
Name plate	marking German/English ambient temperature 45 °C or other separately agreed ambient temperature designation "MV acc. to PRS"



**Motors in sea-water protection acc. to "REGISTRO ITALIANO NAVALE"**

<http://www.rina.org>

When required individual approval through "German Lloyd"	
Ambient temperature	45 °C
Thermal class	155 [F]
Limit temperature of the winding	95 K
Individual approval for essential drives	$\geq$ 50
Production survey for essential drives	-
Name plate	marking German/English ambient temperature 45 °C or other separately agreed ambient temperature designation "MV acc. to RINA"



**Fits: Shaft ends**

Shaft ends	up to Ø 48	k6
	as of Ø 55	m6
Mating components		H7

**Tolerances – Electrical parameters**

The following tolerances are permitted as specified in DIN EN 60034-1:

Efficiency (when determined indirectly)	- 0.15 (1- $\eta$ ) for $P_N \leq 150$ kW - 0.1 (1- $\eta$ ) for $P_N > 150$ kW
Power factor	$\frac{1-\cos\varphi}{6}$ at least 0.02 at most 0.07
Slip (at standard load in warmed-up state)	$\pm 20\%$ for $P_N \geq 1$ kW $\pm 30\%$ for $P_N < 1$ kW
Starting current (in the planned starting connection)	+ 20% without lower limit
Starting torque	- 15% and + 25%
Pull-up torque	- 15%
Pull-out torque	- 10% (after application of this tolerance $M_K/M$ still at least 1.6)
Moment of inertia	$\pm 10\%$
Noise level (Measurement area – sound intensity level)	+ 3 dB (A)

Taking necessary manufacturing tolerances and deviations in materials in the case of the raw materials used into account, these tolerances are permitted for three-phase asynchronous motors. The following remarks are given in the standard:

1. A guarantee of all or any of the values as specified in the table is not mandatory. Guaranteed values to which the permissible deviations should apply must be specified expressly in tenders. The permissible deviations must comply with the table.

2. Attention is drawn to the differences in the interpretation of the concept of a “guarantee”. In some countries, there is a differentiation between typical and declared values.

3. If a permissible deviation only applies in one direction, the value will not be limited in the other direction

**Tolerances – Mechanical parameters**

Letter codes acc. to DIN EN 50347	Meaning of the dimension	Fit or tolerance
B [a]	Spacing of feet fixing holes in axial direction	$\pm 1$ mm
P [a <sub>1</sub> ]	Diameter or width across corners of flange	- 1 mm
A [b]	Spacing of feet fixing holes across axial direction	$\pm 1$ mm
N [b <sub>1</sub> ]	Diameter of centring flange	up to diameter 230 mm j6 from diameter 250 mm h6
D, DA [d, d <sub>1</sub> ]	Diameter of the cylindrical shaft end	up to diameter 48 mm k6 from diameter 55 mm m6
M [e <sub>1</sub> ]	Pitch circle diameter of the mounting flange	$\pm 0.8$ mm
AB [f], AC [g]	Largest width of the motor (without terminal boxes)	+ 2%
H [h]	Shaft height (lowest edge of foot to centre of shaft end)	up to 250 -0.5 mm above 250 -1 mm
L, LC [k, k <sub>1</sub> ]	Total length of the motor	+ 1%
HD [p]	Total height of the motor (lowest edge of foot)	+ 2%
K, K' [s, s <sub>1</sub> ]	Diameter of the mounting holes of the foot or flange	+ 3%
GA, GC [t, t <sub>1</sub> ]	Lowest edge of shaft end to the upper edge of the key	+ 0.2 mm
F, FA [u, u <sub>1</sub> ]	Width of the key	h9
C, CA [w <sub>1</sub> , w <sub>2</sub> ]	Distance from the centre of the first foot mounting hole to the shaft shoulder or flange face	$\pm 3$ mm
	Distance from the shaft shoulder to the flange face in the case of fixed bearing on D-end	$\pm 0.5$ mm
	Distance from the shaft shoulder to the flange face	$\pm 3$ mm
m	Motor mass	- 5 bis + 10%



## General technical data

The most important technical data is summarized in the following table.  
Detailed information can be found in the catalogue part "Technical explanations".

<b>Product line</b>	Motor with squirrel-cage rotor, IEC/DIN
<b>Rated output</b>	0.09 kW to 450 kW (50 Hz) or 490 kW (60 Hz)
<b>Sizes</b>	56 to 355
<b>Material of housing</b>	Grey cast iron
<b>Rated torque</b>	0.60 Nm to 3,040 Nm
<b>Types of circuit</b>	Motors with one speed are designed with $\Delta$ /Y-circuit as standard. Pole changing motors have a circuit depending on the combination of pole numbers, see select lists in the main catalogue "Low voltage asynchronous motors".
<b>Insulation of stator winding</b>	Thermal class 155 [F], as option 155 [F(B)], 180 [H] according to EN 60034-1 (IEC 60034-1)
<b>Type of protection</b>	IP 55 according to EN 60034-5 (IEC 60034-5), as option IP 56 and higher
<b>Type of cooling</b>	IC 411 according to EN 60034-6 (IEC 60034-6)
<b>Coolant temperature/ altitude of site</b>	In correspondence with classification society rules -20 °C to 45 °C or 50 °C, altitude of site 1000 m above sea level
<b>Rated voltage</b>	Rated voltage range A according to EN 60034-1 (IEC 60034-1), standard voltage according to EN 60038 50 Hz, 380 V; 60 Hz, 440 V
<b>Types of construction</b>	IM B3, IM B35, IM B5 and derived types of construction according to EN 60034-7
<b>Colour system</b>	Special colour system "world wide", colour shade RAL 7031, blue-grey
<b>Vibration grade</b>	As standard grade "A" for motors without special vibration requirements
<b>Shaft end</b>	According to DIN 748 (IEC 60072), balancing "with half key"
<b>Sound pressure level</b>	According to DIN EN ISO 1680, tolerance +3dB. Data see technical explanations in the main catalogue "Low voltage asynchronous motors".
<b>Limit speeds</b>	Please refer to paragraph about limit speeds in the technical explanations in the main catalogue "LV Asynchronous motors".
<b>Bearing design</b>	Please refer to paragraph about bearings in the technical explanations in the main catalogue "LV Asynchronous motors".
<b>Motor weights</b>	Please refer to the technical selection lists.
<b>Terminal box</b>	Please refer to paragraph about terminal boxes in the technical explanations in the main catalogue "LV Asynchronous motors".
<b>Documentation</b>	An operation and maintenance manual, a connection diagram and a safety data sheet is attached to each motor.
<b>Tolerances</b>	Please refer to paragraph about tolerances in the technical explanations.
<b>Options</b>	Please refer to paragraph about modifications in the technical explanations in the main catalogue "LV Asynchronous motors".

# Three-phase motors with squirrel-cage rotor, marine version

with surface ventilation, mode of operation S1, continuous duty  
thermal class 155, degree of protection IP 55

Motor selection data

Design point 380 V, 50 Hz

Type	P <sub>B</sub> GL RRS	P <sub>B</sub> BV DNL LR ABS CCS	M <sub>B</sub>	n <sub>B</sub>	η <sub>B</sub>	cos φ <sub>B</sub>	I <sub>B</sub> 380 V	I <sub>A</sub> /I <sub>B</sub>	M <sub>A</sub> /M <sub>B</sub>	M <sub>C</sub> /M <sub>B</sub>	M <sub>K</sub> /M <sub>B</sub>	J	m
	kW	kW	Nm	rpm	%	-	A	-	-	-	-	kgm <sup>2</sup>	kg
Synchronous speed 3000 rpm – 2-pole version													
KPER 63 K2	0.18	0.18	0.62	2765	68	0.79	0.51	4.1	1.7	1.7	2.0	0.00013	4.9
KPER 63 G2	0.25	0.25	0.86	2775	67	0.79	0.72	4.2	2.0	2.0	2.2	0.00015	5.2
KPER 71 K2	0.37	0.37	1.29	2745	71.5	0.85	0.93	4.2	1.9	1.9	2.1	0.00025	6.7
KPER 71 G2	0.55	0.55	1.77	2730	73.5	0.86	1.33	5.0	1.9	1.9	2.3	0.00032	7.6
KPER 80 K2	0.75	0.75	2.56	2795	77.5	0.85	1.74	5.6	2.2	2.2	2.3	0.00057	10.7
KPER 80 G2	1.1	1.1	3.74	2810	77	0.84	2.59	5.6	2.2	2.1	2.4	0.00072	11.5
KPER 90 S2	1.5	1.5	5.06	2810	80	0.88	3.25	6.7	2.3	2.3	2.6	0.00132	16
KPER 90 L2	2.2	2.2	7.42	2830	82	0.88	4.65	7.0	2.6	2.1	2.6	0.0017	19
KPER 100 L2	3	3	10.1	2840	82.5	0.87	6.35	6.4	2.2	2.1	2.5	0.00275	25
KPER 112 M2	4	4	13.2	2885	85.5	0.85	8.5	6.7	2.0	1.9	2.6	0.0045	32
KPER 112 MX2	5.5	5.5	18.3	2875	85.5	0.87	11.2	7.0	2.2	2.0	2.7	0.0055	38
K11R 132 S2	5.5	5.5	18.4	2860	85.7	0.86	11.5	5.5	1.8	1.6	2.2	0.0081	52
K11R 132 SX2	7.5	-	24.7	2900	87	0.86	15	6.6	1.8	1.3	2.5	0.011	57
K11R 132 LX2	-	7.1	23.3	2905	87	0.86	14.5	6.8	1.9	1.4	2.6	0.011	57
K11R 160 M2	11	11	36.2	2900	88.5	0.90	21	7.0	2.4	2.0	2.4	0.0258	81
K11R 160 MX2	15	15	48.9	2930	89.4	0.90	28.5	7.1	2.2	1.7	2.9	0.0575	118
K11R 160 L2	18.5	18.5	60.5	2920	90.5	0.92	34	7.2	2.1	1.6	2.6	0.0675	134
K11R 180 M2	22	22	71.6	2935	91.8	0.92	39.5	6.8	1.7	1.4	2.6	0.105	165
K11R 200 L2	30	30	97.5	2940	92.8	0.92	53.5	7.3	2.0	1.6	2.9	0.128	195
K11R 200 LX2	37	37	120	2940	93	0.90	67	7.0	1.8	1.3	2.4	0.193	255
K11R 225 M2	45	45	146	2940	93.7	0.91	80	7.5	1.8	1.4	2.7	0.22	290
K11R 250 M2	55	55	178	2955	93.7	0.91	98	7.5	2.0	1.5	2.6	0.375	360
K11R 280 S2	75	75	241	2970	94.6	0.92	131	7.5	2.0	1.6	2.6	0.65	490
K11R 280 M2	90	90	289	2970	94.7	0.91	159	8.5	2.2	1.8	2.8	0.675	510
K11R 315 S2	110	110	353	2975	95.4	0.91	193	8.5	1.5	1.3	2.5	1.21	720
K11R 315 M2	132	132	424	2975	95.4	0.91	231	8.5	2.0	1.8	2.7	1.44	800
K11R 315 MX2	160	160	514	2975	96	0.93	272	8.5	2.0	1.6	2.6	1.76	980
K11R 315 MY2	200	200	643	2970	96	0.92	344	8.2	2.6	2.0	2.6	2.82	1170
K11R 315 L2	250	250	803	2973	96.1	0.93	425	7.3	2.1	1.4	2.0	3.66	1460
K11R 315 LX2	280	280	902	2965	96.7	0.92	478	8.2	2.6	1.6	2.2	4.43	1630
K22R 355 M2	315	315	1008	2985	data on request							4.2	2000
K22R 355 MX2	355	355	1136	2985	data on request							5.5	2200
K22R 355 LY2	400	400	1280	2985	data on request							7.1	2400
K22R 355 L2	450	450	1440	2985	data on request							7.1	2400

Synchronous speed 1500 rpm – 4-pole version

KPER 63 K4	0.12	0.12	0.8	1360	57.5	0.70	0.45	3.1	1.7	1.6	2.0	0.00019	4.8
KPER 63 G4	0.18	0.18	1.3	1340	63	0.70	0.62	3.2	1.8	1.8	2.1	0.00024	5.2
KPER 71 K4	0.25	0.25	1.7	1370	64.5	0.76	0.77	3.5	1.6	1.6	1.9	0.0004	6.8
KPER 71 G4	0.37	0.37	2.6	1345	68	0.78	1.06	3.6	1.8	1.8	2.0	0.0005	7.8
KPER 80 K4	0.55	0.55	3.8	1390	70.5	0.74	1.6	4.2	2.0	1.9	2.1	0.00087	10.6
KPER 80 G4	0.75	0.75	5.2	1380	71.5	0.74	2.15	4.4	2.1	2.0	2.2	0.00107	11.7
KPER 90 S4	1.1	1.1	7.5	1400	75.5	0.83	2.65	5.0	2.1	2.0	2.2	0.00207	15.5
KPER 90 L4	1.5	1.5	10.3	1390	77.5	0.84	3.5	5.2	2.3	2.2	2.4	0.0026	18
KPER 100 L4	2.2	2.2	14.9	1395	82	0.81	5.05	5.6	2.2	2.0	2.3	0.004	23.5
KPER 100 LX4	3	3	20.1	1420	82	0.82	6.75	6.1	2.3	2.0	2.6	0.00725	30
KPER 112 M4	4	4	26.8	1425	83	0.81	9	6.7	2.4	2.3	2.8	0.009	37
K11R 132 S4	5.5	5.5	36.5	1440	85.7	0.89	11	6.5	1.9	1.7	3.0	0.015	50
K11R 132 M4	7.5	7.5	49.4	1450	87	0.84	15.5	6.0	2.0	1.7	2.9	0.028	70
K11R 160 M4	11	11	72.4	1450	88.4	0.85	22	6.8	2.2	1.9	3.3	0.035	92
K11R 160 L4	15	15	97.8	1465	89.4	0.86	29.5	7.3	2.5	2.0	3.0	0.078	120
K11R 180 M4	18.5	-	121	1460	90	0.86	36.5	6.8	2.5	2.0	2.9	0.09	136
K11R 180 M4	-	17.5	115	1460	90	0.86	34.5	7.2	2.6	2.1	3.1	0.09	136
K11R 180 L4	22	22	143	1465	90.5	0.84	44	6.5	2.0	1.8	2.6	0.138	170
K11R 200 L4	30	-	195	1465	91.5	0.85	58.5	7.0	2.0	1.7	2.4	0.168	220
K11R 200 L4	-	30	195	1465	91.5	0.85	58.5	7.0	2.0	1.7	2.4	0.168	220
K11R 225 S4	37	37	240	1470	92.5	0.86	70.5	7.0	2.0	1.7	2.5	0.275	270
K11R 225 M4	45	-	292	1470	93	0.86	85.5	7.0	2.0	1.7	2.5	0.313	300
K11R 225 M4	-	43	279	1470	93	0.86	81.5	7.3	2.1	1.8	2.6	0.313	300
K11R 250 M4	55	-	356	1475	93.5	0.86	104	7.0	2.2	1.7	2.3	0.525	375
K11R 250 M4	-	55	356	1475	93.5	0.86	104	7.0	2.2	1.7	2.3	0.525	375
K11R 280 S4	75	75	483	1480	94.1	0.86	141	7.0	2.0	1.7	2.2	0.95	520
K11R 280 M4	90	90	580	1480	94.6	0.86	168	7.0	2.1	1.6	2.2	1.1	580
K11R 315 S4	110	110	707	1485	95.1	0.86	204	7.5	1.8	1.6	2.2	1.96	740
K11R 315 M4	132	132	849	1485	95.1	0.86	245	7.0	1.8	1.5	2.2	2.27	840
K11R 315 MX4	160	160	1032	1480	95	0.87	294	7.0	1.8	1.5	2.0	2.73	1000
K11R 315 MY4	200	200	1286	1485	96	0.88	360	7.5	2.0	1.8	2.4	4.82	1200
K11R 315 L4	250	250	1608	1485	96.1	0.90	439	8.0	2.0	1.6	2.3	5.93	1450
K11R 315 LX4	280	280	1795	1490	96.5	0.88	501	8.6	1.9	1.5	2.5	6.82	1630
K22R 355 M4	315	315	2016	1492	data on request							7.9	2150
K22R 355 MX4	355	355	2267	1495	data on request							9.5	2400
K22R 355 LY4	400	400	2555	1495	data on request							10	2500

## Three-phase motors with squirrel-cage rotor, marine version

with surface ventilation, mode of operation S1, continuous duty

thermal class 155, degree of protection IP 55

Motor selection data

Design point 440 V, 60 Hz

Type	P <sub>B</sub> GL RRS	P <sub>B</sub> BV DNU LR ABS CCS	M <sub>B</sub>	n <sub>B</sub>	η <sub>B</sub>	cos φ <sub>B</sub>	I <sub>B</sub> 440 V	I <sub>A</sub> /I <sub>B</sub>	M <sub>A</sub> /M <sub>B</sub>	M <sub>C</sub> /M <sub>B</sub>	M <sub>K</sub> /M <sub>B</sub>	J	m	
	kW	kW	Nm	rpm	%	-	A	-	-	-	-	kgm <sup>2</sup>	kg	
<b>Synchronous speed 3600 rpm – 2-pole version</b>														
KPER 63 K2	0.21	0.21	0.6	3370	70	0.80	0.49	4.4	2.0	1.8	2.3	0.00013	4.9	
KPER 63 G2	0.3	0.3	0.85	3390	74	0.76	0.7	4.3	2.0	2.0	2.3	0.00015	5.2	
KPER 71 K2	0.44	0.44	1.25	3350	74	0.85	0.92	4.4	1.9	1.7	2.0	0.00025	6.7	
KPER 71 G2	0.65	0.65	1.84	3300	75	0.87	1.31	5.3	1.9	1.9	2.3	0.00032	7.6	
KPER 80 K2	0.9	0.9	2.53	3400	80	0.85	1.74	5.6	2.1	2.0	2.2	0.00057	10.7	
KPER 80 G2	1.3	1.3	3.65	3400	79	0.85	2.54	5.8	2.0	2.0	2.3	0.00072	11.5	
KPER 90 S2	1.8	1.8	5	3440	81	0.89	3.25	6.2	2.1	1.8	2.2	0.00132	16	
KPER 90 L2	2.6	2.6	7.26	3420	82	0.88	4.75	7.3	2.4	1.9	2.4	0.0017	19	
KPER 100 L2	3.6	3.6	10	3430	85	0.88	6.3	6.3	2.0	1.9	2.3	0.00275	25	
KPER 112 M2	4.8	4.8	13.2	3470	84.5	0.86	8.65	7.0	1.8	1.7	2.4	0.0045	32	
KPER 112 MX2	6.6	6.6	18.2	3460	85	0.89	11.5	8.0	2.0	1.8	2.5	0.0055	38	
K11R 132 S2	6.6	6.6	18.4	3430	85.7	0.85	12	5.5	1.7	1.5	2.2	0.0081	52	
K11R 132 SX2	9	-	24.7	3480	87	0.86	16	6.6	1.8	1.3	2.4	0.011	57	
K11R 132 SX2	-	8.1	22.2	3485	87	0.86	14	7.3	1.9	1.6	2.6	0.011	57	
K11R 160 M2	13	13	35.7	3480	88	0.90	21.5	7.0	2.4	1.9	3.0	0.0258	81	
K11R 160 MX2	18	18	48.7	3530	89.6	0.90	29.5	7.1	2.2	1.7	2.9	0.0575	118	
K11R 160 L2	22	22	59.8	3515	90	0.92	35	6.5	1.9	1.4	2.6	0.0675	134	
K11R 180 M2	26	26	70.4	3525	91.8	0.92	40.5	6.3	1.5	1.3	2.3	0.105	165	
K11R 200 L2	36	36	97.3	3535	92.5	0.92	55.5	6.9	2.0	1.5	2.7	0.128	195	
K11R 200 LX2	44	44	119	3535	93	0.91	68	6.5	1.6	1.2	2.3	0.193	255	
K11R 225 M2	54	54	146	3530	93.5	0.90	84	7.0	1.7	1.3	2.5	0.22	290	
K11R 250 M2	66	66	178	3545	93.5	0.90	103	6.8	1.8	1.4	2.3	0.375	360	
K11R 280 S2	90	90	241	3565	94	0.92	137	6.8	1.8	1.4	2.4	0.65	490	
K11R 280 M2	105	105	281	3565	94.5	0.91	160	7.6	2.0	1.6	2.6	0.675	510	
K11R 315 S2	132	132	318	3970	95	0.91	200	7.5	1.3	1.2	2.3	1.21	720	
K11R 315 M2	158	158	423	3570	95.4	0.91	239	7.7	1.8	1.6	2.3	1.44	800	
K11R 315 MX2	190	190	508	3570	96	0.92	282	7.6	1.8	1.5	2.4	1.76	980	
K11R 315 MY2	225	225	602	3568	95.8	0.91	339	8.0	2.6	2.0	2.6	2.82	1170	
K11R 315 L2	280	280	749	3570	96	0.92	416	6.6	1.9	1.3	1.8	3.66	1460	
K11R 315 LX2	310	310	827	3580	96.7	0.91	462	8.8	2.9	1.7	2.4	4.43	1630	
K22R 355 M2	340	340	906	3585	data on request								4.2	2000
K22R 355 MX2	390	390	1039	3585	data on request								5.5	2200
K22R 355 LY2	440	440	1172	3585	data on request								7.1	2400
K22R 355 L2	490	490	1305	3585	data on request								7.1	2400

### Synchronous speed 1800 rpm – 4-pole version

KPER 63 K4	0.14	0.14	0.81	1660	61	0.70	0.43	3.2	1.7	1.7	2.1	0.00019	4.8	
KPER 63 G4	0.21	0.21	1.21	1660	65	0.68	0.62	3.3	1.9	1.9	2.2	0.00024	5.2	
KPER 71 K4	0.3	0.3	1.73	1660	67	0.76	0.77	3.7	1.6	1.6	1.8	0.0004	6.8	
KPER 71 G4	0.44	0.44	2.53	1660	71	0.77	1.06	3.9	1.8	1.8	2.0	0.0005	7.8	
KPER 80 K4	0.65	0.65	3.67	1690	74	0.75	1.54	4.5	2.0	1.7	2.1	0.00087	10.6	
KPER 80 G4	0.9	0.9	5.1	1685	76	0.76	2.05	4.8	1.9	1.8	2.0	0.00107	11.7	
KPER 90 S4	1.3	1.3	7.3	1700	78	0.83	2.65	5.2	1.9	1.8	2.2	0.00207	15.5	
KPER 90 L4	1.8	1.8	10.2	1690	80	0.84	3.5	5.2	2.1	2.0	2.2	0.0026	18	
KPER 100 L4	2.6	2.6	14.6	1705	82	0.80	5.2	5.8	2.1	2	2.2	0.004	23.5	
KPER 100 LX4	3.6	3.6	20.1	1715	82	0.83	6.95	6.2	2.1	1.8	2.4	0.00725	30	
KPER 112 M4	4.8	4.8	26.6	1720	85	0.83	9	6.6	2.3	2.1	2.8	0.009	37	
K11R 132 S4	6.6	6.6	36.4	1730	84	0.90	11.5	6.1	1.6	1.5	2.7	0.015	50	
K11R 132 M4	9	9	49.3	1745	86	0.85	16	5.6	1.8	1.5	2.6	0.028	70	
K11R 160 M4	13	13	70.9	1750	88	0.86	22.5	6.5	2.0	1.7	3.0	0.035	92	
K11R 160 L4	18	18	97.7	1760	89	0.87	30.5	7.0	2.3	1.8	2.7	0.078	120	
K11R 180 M4	22	-	120	1755	89.5	0.87	37	6.3	2.3	1.8	2.6	0.09	136	
K11R 180 M4	-	20	109	1755	89.5	0.87	33.5	7.0	2.5	2.0	2.9	0.09	136	
K11R 180 L4	26	26	141	1765	90.5	0.85	44.5	6.1	1.8	1.6	2.4	0.138	170	
K11R 200 L4	36	-	195	1765	92	0.86	59.5	6.6	1.8	1.6	2.2	0.168	220	
K11R 200 L4	-	34	184	1765	92	0.86	56.5	6.9	1.9	1.7	2.3	0.168	220	
K11R 225 S4	44	44	238	1765	92.5	0.86	72.5	6.6	1.8	1.5	2.3	0.275	270	
K11R 225 M4	54	-	291	1770	92	0.86	89.5	6.5	1.8	1.5	2.3	0.313	300	
K11R 225 M4	-	49.5	267	1770	92	0.86	82	7.1	2.0	1.6	2.5	0.313	300	
K11R 250 M4	66	-	356	1770	92.5	0.86	109	6.5	2.0	1.5	2.0	0.525	375	
K11R 250 M4	-	63	340	1770	92.5	0.86	104	6.8	2.1	1.6	2.1	0.525	375	
K11R 280 S4	90	90	484	1777	94	0.85	148	6.5	1.8	1.6	1.9	0.95	520	
K11R 280 M4	105	105	564	1777	94.4	0.86	170	6.5	1.9	1.4	1.9	1.1	580	
K11R 315 S4	132	132	708	1780	95	0.85	214	7.3	1.6	1.4	2.0	1.96	740	
K11R 315 M4	158	158	849	1777	95	0.85	257	6.6	1.6	1.3	2.0	2.27	840	
K11R 315 MX4	190	190	1022	1775	94.5	0.86	307	6.6	1.6	1.4	1.8	2.73	1000	
K11R 315 MY4	225	225	1204	1785	96	0.88	349	7.4	1.9	1.8	2.3	4.82	1200	
K11R 315 L4	280	280	1498	1785	96.1	0.88	434	7.4	1.9	1.5	2.2	5.93	1450	
K11R 315 LX4	310	310	1654	1790	96.8	0.88	478	8.8	1.9	1.6	2.5	6.82	1630	
K22R 355 M4	340	340	1814	1790	data on request								7.9	2150
K22R 355 MX4	390	390	2081	1790	data on request								9.5	2400
K22R 355 LY4	440	440	2348	1790	data on request								10	2500

### Three-phase motors with squirrel-cage rotor, marine version

with surface ventilation, mode of operation S1, continuous duty  
 thermal class 155, degree of protection IP 55

Motor selection data Design point 380 V, 50 Hz

Type	P <sub>B</sub> GL RRS	P <sub>B</sub> BV DNV LR ABS CCS	M <sub>B</sub>	n <sub>B</sub>	η <sub>B</sub>	cos φ <sub>B</sub>	I <sub>B</sub> 380 V	I <sub>A</sub> /I <sub>B</sub>	M <sub>A</sub> /M <sub>B</sub>	M <sub>C</sub> /M <sub>B</sub>	M <sub>K</sub> /M <sub>B</sub>	J	m
	kW	kW	Nm	rpm	%	-	A	-	-	-	-	kgm <sup>2</sup>	kg
<b>Synchronous speed 1000 rpm – 6-pole version</b>													
KPER 63 K6	0.09	0.09	0.98	880	51.5	0.59	0.45	2.4	1.9	1.9	2.2	0.00024	4.9
KPER 63 G6	0.12	0.12	1.32	865	52	0.62	0.57	2.4	1.8	1.8	2.0	0.00027	5.7
KPER 71 K6	0.18	0.18	1.87	920	61	0.55	0.82	2.8	1.5	1.5	1.8	0.00045	7.4
KPER 71 G6	0.25	0.25	2.65	900	61	0.58	1.07	2.8	1.8	1.8	2.0	0.0006	8.3
KPER 80 K6	0.37	0.37	3.9	905	66	0.69	1.23	3.3	1.8	1.8	1.8	0.0013	11
KPER 80 G6	0.55	0.55	5.87	895	67	0.72	1.74	3.5	2.0	2.0	2.2	0.00175	12.5
KPER 90 S6	0.75	0.75	7.7	930	71	0.69	2.32	4.4	2.1	2.1	2.4	0.00325	16
KPER 90 L6	1.1	1.1	11.4	925	73	0.73	3.15	4.5	2.0	2.0	2.2	0.00425	19
KPER 100 L6	1.5	1.5	15.3	935	76.5	0.75	4	4.5	1.9	1.8	2.2	0.00625	24
KPER 112 M6	2.2	2.2	22.4	940	80	0.78	5.35	5.1	2.0	1.9	2.5	0.01225	33.5
K11R 132 S6	3	3	30	955	78.5	0.82	7.1	5.7	1.8	1.6	2.7	0.018	46
K11R 132 M6	4	4	40	955	80	0.80	9.5	6.0	2.2	2.0	3.1	0.023	53
K11R 132 MX6	5.5	5.5	55	955	83	0.83	12	5.0	1.8	1.5	2.3	0.043	70
K11R 160 M6	7.5	7.5	74.6	960	85	0.82	16.5	5.5	2.0	1.6	2.5	0.053	86
K11R 160 L6	11	11	109	965	85.2	0.86	23	5.0	2.0	1.7	2.3	0.113	114
K11R 180 L6	14	-	139	965	86	0.83	30	6.0	2.4	2.1	2.7	0.145	136
K11R 180 L6	-	13.5	134	965	86	0.83	28.5	6.3	2.5	2.2	2.8	0.145	136
K11R 200 L6	18.5	18.5	182	970	88.1	0.87	36.5	5.5	2.0	1.7	2.4	0.228	175
K11R 200 LX6	22	22	217	970	88.8	0.87	43.5	6.2	2.2	1.8	2.6	0.268	200
K11R 225 M6	30	30	294	973	90.4	0.89	56.5	6.5	2.2	1.7	2.5	0.443	265
K11R 250 M6	37	37	362	975	91	0.89	69.5	6.5	2.2	1.7	2.3	0.825	360
K11R 280 S6	45	45	438	980	92	0.87	85.5	6.0	2.0	1.5	2.0	1.28	465
K11R 280 M6	55	55	536	980	92.5	0.88	103	6.5	2.3	1.7	2.4	1.48	520
K11R 315 S6	75	75	727	985	93.7	0.87	140	7.0	2.0	1.6	2.4	2.63	690
K11R 315 M6	90	90	868	990	94.4	0.88	165	7.0	2.0	1.7	2.4	3.33	800
K11R 315 MX6	110	110	1061	990	94	0.88	202	7.5	2.2	1.7	2.6	3.6	880
K11R 315 MY6	132	132	1273	990	95	0.88	240	7.5	2.0	1.7	2.4	6	1050
K11R 315 L6	160	160	1551	985	95.3	0.89	287	7.5	2.3	1.9	2.4	6.67	1250
K11R 315 LX6	200	200	1929	990	95	0.87	368	8.3	2.2	2.0	2.7	8.6	1460
K22R 355 M6	220	220	2114	994	data on request							8.2	1650
K22R 355 MX6	250	250	2412	990	data on request							12.1	2200
K22R 355 LY6	315	315	3038	990	data on request							14	2400

<b>Synchronous speed 750 rpm – 8-pole version</b>													
KPER 71 K8	0.09	0.09	1.3	665	44.4	0.54	0.57	2.1	1.7	1.7	1.9	0.0005	6.6
KPER 71 G8	0.12	0.12	1.74	660	47.6	0.55	0.7	2.3	1.6	1.6	2.0	0.0006	8.1
KPER 80 K8	0.18	0.18	2.55	675	56.5	0.64	0.76	2.7	1.8	1.8	2.0	0.0013	10.5
KPER 80 G8	0.25	0.25	3.49	685	60.1	0.59	1.07	3.0	2.1	2.1	2.3	0.00175	12
KPER 90 S8	0.37	0.37	5.08	695	61.5	0.59	1.56	2.9	1.7	1.7	1.9	0.003	15
KPER 90 L8	0.55	0.55	7.61	690	64.5	0.62	2.07	3.1	1.7	1.7	2.0	0.00375	18
KPER 100 L8	0.75	0.75	10.2	700	65.5	0.62	2.8	3.2	1.8	1.8	2.1	0.00625	23
KPER 100 LX8	1.1	1.1	15.1	695	73	0.69	3.3	3.9	1.8	1.8	2.2	0.009	28
KPER 112 M8	1.5	1.5	20.6	695	74.5	0.73	4.2	4.1	2.0	1.9	2.3	0.01225	33.5
K11R 132 S8	2.2	2.2	29.8	705	75.5	0.76	5.8	4.5	1.7	1.6	2.3	0.018	46
K11R 132 M8	3	3	40.6	705	78	0.75	7.8	4.5	1.7	1.6	2.3	0.023	53
K11R 160 M8	4	4	53.8	710	79.3	0.78	9.8	4.0	1.6	1.3	1.9	0.043	70
K11R 160 MX8	5.5	5.5	74	710	81.4	0.78	13	4.5	1.7	1.6	2.1	0.053	86
K11R 160 L8	7.5	7.5	98.8	725	83	0.78	17.5	4.5	1.8	1.6	2.1	0.113	114
K11R 180 L8	11	-	146	720	85	0.78	25	4.5	2.0	1.7	2.1	0.145	136
K11R 180 L8	-	10.5	139	720	85	0.78	24	4.7	2.1	1.8	2.2	0.145	136
K11R 200 L8	15	15	198	725	86.5	0.79	33.5	5.0	2.0	1.7	2.3	0.228	175
-	18.5	-	244	725	87.5	0.80	40	5.0	1.9	1.7	2.2	0.268	-
-	-	17.5	231	725	87.5	0.80	38	5.3	2.0	1.8	2.3	0.268	-
K11R 225 S8	18.5	-	244	725	89.2	0.83	38	5.5	2.0	1.6	2.2	0.44	265
K11R 225 S8	-	17.5	231	725	89.2	0.83	36	5.8	2.1	1.7	2.3	0.44	265
K11R 225 M8	22	22	290	725	89.2	0.84	44.5	5.0	1.8	1.5	2.2	0.44	265
K11R 250 M8	30	30	393	730	90.2	0.79	64	5.5	2.2	1.8	2.2	0.825	360
K11R 280 S8	37	37	481	735	91	0.80	77	5.5	2.0	1.5	2.0	1.35	465
K11R 280 M8	45	45	585	735	91.5	0.77	97	6.0	2.3	1.8	2.4	1.55	520
K11R 315 S8	55	55	710	740	93.1	0.80	112	6.5	1.8	1.6	2.3	2.63	690
K11R 315 M8	75	75	968	740	93.3	0.81	151	6.0	2.0	1.6	2.3	3.33	800
K11R 315 MX8	90	90	1161	740	93.5	0.81	181	6.0	1.9	1.6	2.2	3.6	880
K11R 315 MY8	110	110	1420	740	94.6	0.81	218	6.5	2.1	1.8	2.4	6	1050
K11R 315 L8	132	132	1703	740	95	0.83	254	6.3	2.0	1.7	2.1	6.76	1250
K11R 315 LX8	160	160	2065	740	95.2	0.79	323	7.2	2.2	1.9	2.5	8.71	1430
K22R 355 M8	180	180	2307	745	data on request							9.5	1600
K22R 355 MX8	200	200	2564	745	data on request							13.4	2200
K22R 355 LY8	250	250	3205	745	data on request							15.8	2400



### Three-phase motors with squirrel-cage rotor, marine version

with surface ventilation, mode of operation S1, continuous duty  
thermal class 155, degree of protection IP 55

Motor selection data

Design point 440 V, 60 Hz

Type	P <sub>B</sub> GL RRS	P <sub>B</sub> BV DNV LR ABS CCS	M <sub>B</sub>	n <sub>B</sub>	η <sub>B</sub>	cos j <sub>B</sub>	I <sub>B</sub> 440 V	I <sub>A</sub> /I <sub>B</sub>	M <sub>A</sub> /M <sub>B</sub>	M <sub>C</sub> /M <sub>B</sub>	M <sub>K</sub> /M <sub>B</sub>	J	m
	kW	kW	Nm	rpm	%	-	A	-	-	-	-	kgm <sup>2</sup>	kg
<b>Synchronous speed 1200 rpm – 6-pole version</b>													
KPER 63 K6	0.105	0.105	0.92	1085	53	0.58	0.45	2.7	1.9	1.9	2.2	0.00024	4.9
KPER 63 G6	0.14	0.14	1.24	1080	56	0.57	0.58	2.5	1.9	1.9	2.1	0.00027	5.7
KPER 71 K6	0.21	0.21	1.79	1120	65	0.53	0.8	3.2	1.4	1.4	1.7	0.00045	7.4
KPER 71 G6	0.3	0.3	2.6	1100	64	0.58	1.06	3.2	1.6	1.6	1.8	0.0006	8.3
KPER 80 K6	0.44	0.44	3.79	1110	67	0.74	1.17	3.6	1.7	1.6	1.7	0.0013	11
KPER 80 G6	0.65	0.65	5.59	1110	71	0.71	1.7	3.8	1.9	1.8	2.0	0.00175	12.5
KPER 90 S6	0.9	0.9	7.61	1130	73	0.68	2.4	4.7	1.9	1.9	2.2	0.00325	16
KPER 90 L6	1.3	1.3	11.1	1120	75	0.70	3.25	4.5	1.8	1.8	2.0	0.00425	19
KPER 100 L6	1.8	1.8	15.2	1130	79	0.75	4	4.8	1.7	1.6	2.0	0.00625	24
KPER 112 M6	2.6	2.6	21.8	1140	81	0.81	5.2	5.8	1.8	1.7	2.3	0.01225	33.5
K11R 132 S6	3.6	3.6	29.8	1155	80	0.80	7.4	5.5	1.7	1.4	2.4	0.018	46
K11R 132 M6	4.8	4.8	39.8	1152	81	0.79	9.8	5.8	2.0	1.8	2.7	0.023	53
K11R 132 MX6	6.6	6.6	55	1145	83	0.82	12.5	4.8	1.6	1.3	2.0	0.043	70
K11R 160 M6	9	9	75	1145	85	0.82	17	5.2	1.8	1.4	2.2	0.053	86
K11R 160 L6	13	13	107	1155	85.5	0.86	23	4.6	1.8	1.5	2.0	0.113	114
K11R 180 L6	16	-	131	1165	87	0.83	29	5.8	2.2	1.9	2.6	0.145	136
K11R 180 L6	-	15.5	127	1165	87	0.83	28	6.0	2.3	2.0	2.7	0.145	136
K11R 200 L6	21	21	172	1168	88.4	0.87	36	5.5	1.9	1.6	2.3	0.228	175
K11R 200 LX6	26	26	212	1170	89.3	0.87	44	5.9	1.9	1.6	2.5	0.268	200
K11R 225 M6	34	34	278	1170	90.3	0.88	56	5.9	1.8	1.5	2.4	0.443	265
K11R 250 M6	42	42	342	1172	91.5	0.88	68.5	5.8	2.0	1.6	2.1	0.825	360
K11R 280 S6	54	54	437	1180	92	0.87	88.5	5.5	1.8	1.4	1.8	1.28	465
K11R 280 M6	66	66	534	1180	92.5	0.88	106	6.5	2.2	1.7	2.2	1.48	520
K11R 315 S6	90	90	727	1182	93.5	0.87	145	6.5	1.8	1.4	2.2	2.63	690
K11R 315 M6	108	108	870	1185	94.5	0.87	172	6.5	1.8	1.5	2.1	3.33	800
K11R 315 MX6	132	132	1063	1185	94	0.88	209	7.0	2.0	1.6	2.4	3.6	880
K11R 315 MY6	158	158	1268	1190	95	0.88	248	7.0	1.9	1.6	2.3	6	1050
K11R 315 L6	190	190	1531	1185	95.2	0.89	294	7.0	2.2	1.8	2.3	6.67	1250
K11R 315 LX6	230	230	1854	1185	95.2	0.89	356	7.7	2.0	1.8	2.5	8.6	1460
K22R 355 M6	240	240	1926	1190	data on request							8.2	1650
K22R 355 MX6	270	270	2167	1190	data on request							12.1	2200
K22R 355 LY6	340	340	2729	1190	data on request							14	2400

**Synchronous speed 900 rpm – 8-pole version**

KPER 71 K8	0.105	0.105	1.22	820	50	0.54	0.51	2.3	1.6	1.6	1.7	0.0005	6.6
KPER 71 G8	0.14	0.14	1.64	815	51	0.53	0.68	2.5	1.5	1.5	1.8	0.0006	8.1
KPER 80 K8	0.21	0.21	2.42	830	60	0.62	0.74	2.8	1.6	1.6	1.8	0.0013	10.5
KPER 80 G8	0.3	0.3	3.43	835	62	0.60	1.06	3.1	1.9	1.9	2.1	0.00175	12
KPER 90 S8	0.44	0.44	4.94	850	65	0.57	1.56	3.6	1.6	1.6	1.7	0.003	15
KPER 90 L8	0.65	0.65	7.39	840	70	0.60	2.03	3.7	1.7	1.7	1.8	0.00375	18
KPER 100 L8	0.9	0.9	10.1	850	69	0.63	2.7	3.7	1.6	1.6	1.9	0.00625	23
KPER 100 LX8	1.3	1.3	14.6	850	76	0.69	3.25	4.2	1.6	1.6	2.0	0.009	28
KPER 112 M8	1.8	1.8	20.5	840	78	0.73	4.15	4.2	1.8	1.7	2.1	0.01225	33.5
K11R 132 S8	2.6	2.6	29.1	855	76.5	0.74	6	4.3	1.6	1.5	2.2	0.018	46
K11R 132 M8	3.6	3.6	40.4	850	78	0.76	8	4.2	1.5	1.4	2.1	0.023	53
K11R 160 M8	4.8	4.8	53.9	850	79.5	0.75	10.5	3.8	1.4	1.1	1.7	0.043	70
K11R 160 MX8	6.6	6.6	73.3	860	82.3	0.77	13.5	4.1	1.5	1.4	2.0	0.053	86
K11R 160 L8	9	9	98.8	870	83.5	0.79	18	4.0	1.6	1.4	1.9	0.113	114
K11R 180 L8	13	-	144	865	86	0.78	25.5	4.1	1.8	1.6	2.0	0.145	136
K11R 180 L8	-	12	132	865	86	0.78	23.5	4.4	2.0	1.7	2.2	0.145	136
K11R 200 L8	18	18	196	875	87.4	0.79	34	4.7	1.8	1.5	2.0	0.228	175
-	21	-	232	865	87.5	0.82	38.5	4.0	1.8	1.6	2.0	0.268	200
-	-	20	221	865	87.5	0.82	36.5	4.2	1.9	1.7	2.1	0.268	200
K11R 225 S8	22	-	240	875	89	0.81	40	5.0	1.8	1.4	2.0	0.44	265
K11R 225 S8	-	20	218	875	89	0.81	36.5	5.5	2.0	1.5	2.2	0.44	265
K11R 225 M8	26	26	285	870	89.5	0.84	45.5	4.7	1.6	1.4	2.0	0.44	265
K11R 250 M8	36	36	391	880	90.5	0.78	67	5.1	2.0	1.6	2.0	0.825	360
K11R 280 S8	44	44	476	882	90.5	0.80	79.5	4.9	1.9	1.4	1.9	1.35	465
K11R 280 M8	54	54	583	884	91.5	0.78	99.5	5.5	2.1	1.6	2.1	1.55	520
K11R 315 S8	66	66	709	889	93.3	0.80	116	6.1	1.6	1.5	2.0	2.63	690
K11R 315 M8	90	90	978	879	93	0.81	157	5.7	1.8	1.4	2.0	3.33	800
K11R 315 MX8	108	108	1168	883	93.5	0.81	187	5.4	1.6	1.4	1.8	3.6	880
K11R 315 MY8	132	132	1420	888	94.5	0.81	226	6.3	1.9	1.7	2.3	6	1050
K11R 315 L8	158	158	1695	890	94.8	0.82	267	6.0	1.9	1.6	2.0	6.76	1250
K11R 315 LX8	190	190	2039	890	95.3	0.80	327	6.8	2.0	1.7	2.3	8.71	1430
K22R 355 M8	200	200	2146	890	data on request							9.5	1600
K22R 355 MX8	220	220	2361	890	data on request							13.4	2200
K22R 355 LY8	270	270	2897	890	data on request							15.8	2400



## Notes to dimensions

Dimensional designations according to EN 50 347 and IEC 60 072

Flange sizes in the dimensional tables are given in accordance to DIN 42948.

All dimensional data in mm

VEM motors GmbH reserves the right to change technical data without preceding information. Dimensional data in catalogues can lose their validity. Binding dimensional data can be requested from the VEM sales organisations.

## Flange dimensions

### Flanges with threadholes

Flange type acc. to EN 50 347	Flange type acc. to DIN 42948	LA c <sub>1</sub>	M e <sub>1</sub>	N b <sub>1</sub>	P a <sub>1</sub>	S s <sub>1</sub>	T f <sub>1</sub>
FT 65	C 80	6.5	65	50	80	M5	2.5
FT 75	C 90	8	75	60	90	M5	2.5
FT 85	C 105	8.5	85	70	105	M6	2.5
FT 100	C 120	8	100	80	120	M6	3
FT 115	C 140	10	115	95	140	M8	3
FT 130	C 160	10	130	110	160	M8	3.5
FT 165	C 200	12	165	130	200	M10	3.5
FT 215	C 250	12	215	180	250	M12	4

### Flanges with through holes

Flange type acc. to EN 50 347	Flange type acc. to DIN 42948	LA c <sub>1</sub>	M e <sub>1</sub>	N b <sub>1</sub>	P a <sub>1</sub>	S s <sub>1</sub>	T f <sub>1</sub>
FF 100	A 120	9	100	80	120	7	3
FF 115	A 140	9	115	95	140	9	3
FF 130	A 160	9	130	110	160	9	3.5
FF 165	A 200	10	165	130	200	11	3.5
FF 215	A 250	11	215	180	250	14	4
FF 265	A 300	12	265	230	300	14	4
FF 300	A 350	13	300	250	350	18	5
FF 350	A 400	15	350	300	400	18	5
FF 400	A 450	16	400	350	450	18	5
FF 500	A 550	18	500	450	550	18	5
FF 600	A 660	22	600	550	660	22	6
FF 740	A 800	25	740	680	800	22	6

According to EN 50 347 the flanges FF have through holes and the flanges FT have threadholes.

The standard DIN 42948 for flanges A and C are still valid yet. If non-standard coordinations of flange types are required, see flange coordination tables of this catalogue.

Tolerances for dimension N (b<sub>1</sub>) see respective dimensional tables  
LA (c<sub>1</sub>) length of engagement

## Flange versions

### Type of construction IM B5 / IM 3001

	K10R K11R	63	71	80	90	100	100LX	112	132	132	132M4, MX6	160	160	180M4, L6, 8	180	200L, LX6	200LX2	225	250	280	315S, M	315MX	315MY, L, LX	355M, MY, L	
	K10R KPR	56	63	71	80	90	100	100	100	112	132	132	160	160	180	180	200	200	225	250	280	315S	315M	315M	
D in mm		88	100	115	131	145	164	164	164	185	216	216	266	266	300	300	335	335	378	428	488	488	530	624	
P a <sub>1</sub>	120 <sup>1)</sup>	120 <sup>1)</sup>	120 <sup>1)</sup>	120 <sup>1)</sup>	120 <sup>1)</sup>																				
N b <sub>1</sub>	80	80	80	80	80																				
M e <sub>1</sub>	100	100	100	100	100																				
S s <sub>1</sub>	7	7	7	7	7																				
P a <sub>1</sub>	140	140 <sup>1)</sup>	140 <sup>1)</sup>																						
N b <sub>1</sub>	95	95	95																						
M e <sub>1</sub>	115	115	115																						
S s <sub>1</sub>	9	9	9																						
P a <sub>1</sub>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>																
N b <sub>1</sub>	110	110	110	110	110	110	110	110	110																
M e <sub>1</sub>	130	130	130	130	130	130	130	130	130																
S s <sub>1</sub>	9	9	9	9	9	9	9	9	9																
P a <sub>1</sub>			200	200	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>																
N b <sub>1</sub>			130	130	130	130	130	130	130																
M e <sub>1</sub>			165	165	165	165	165	165	165																
S s <sub>1</sub>			11	11	11	11	11	11	11																
P a <sub>1</sub>			250*	250*	250	250	250 <sup>1)</sup>	250 <sup>1)</sup>	250 <sup>1)</sup>																
N b <sub>1</sub>			180	180	180	180	180	180	180																
M e <sub>1</sub>			215	215	215	215	215	215	215																
S s <sub>1</sub>			14	14	14	14	14	14	14																
P a <sub>1</sub>			300 <sup>1)</sup>	300 <sup>1)</sup>	300 <sup>1)</sup>	300 <sup>1)</sup>	300 <sup>1)</sup>	300	300	300	300 <sup>2)</sup>	300 <sup>3)</sup>													
N b <sub>1</sub>			230	230	230	230	230	230	230	230	230	230													
M e <sub>1</sub>			265	265	265	265	265	265	265	265	265	265													
S s <sub>1</sub>			14	14	14	14	14	14	14	14	14	14													
P a <sub>1</sub>								350	350	350	350	350	350												
N b <sub>1</sub>								250	250	250	250	250	250												
M e <sub>1</sub>								300	300	300	300	300	300												
S s <sub>1</sub>								18	18	18	18	18	18												
P a <sub>1</sub>										400 <sup>4)</sup>	400 <sup>4)</sup>	400	400												
N b <sub>1</sub>										300	300	300	300												
M e <sub>1</sub>										350	350	350	350												
S s <sub>1</sub>										18	18	18	18												
P a <sub>1</sub>												450	450												
N b <sub>1</sub>												350	350												
M e <sub>1</sub>												400	400												
S s <sub>1</sub>												18	18												
P a <sub>1</sub>																									
N b <sub>1</sub>																									
M e <sub>1</sub>																									
S s <sub>1</sub>																									
P a <sub>1</sub>																									800
N b <sub>1</sub>																									680
M e <sub>1</sub>																									740
S s <sub>1</sub>																									22

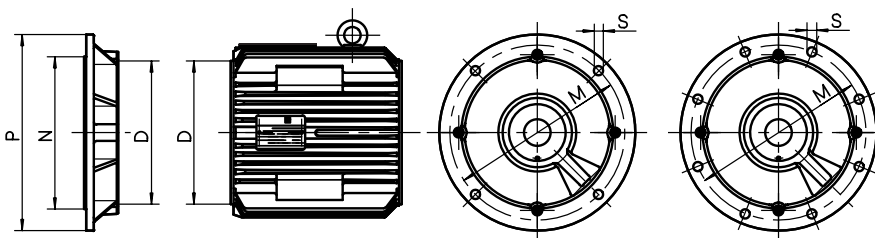
<sup>1)</sup> protruding flange

<sup>2)</sup> Customer's flange fixing only by studs  
<sup>3)</sup> for shaft end diameter 42 mm: customer's flange fixing only by studs

<sup>4)</sup> KPR flange (with corners)  
<sup>6)</sup> for shaft end diameter 50 mm

<sup>5)</sup> not for high radial loads  
 cylindrical roller bearing NU 2220  
 not usable

### Flange versions IM B5



## Flange versions

### Type of construction IM 2202

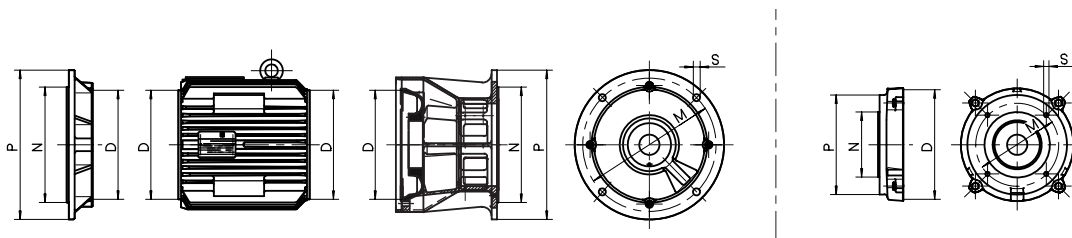
KPER K11R	63	71	80	90	100	100LX	112	132	132	132M4, MX6	160	160	180M4, L6, 8	180	200L, LX6	200LX2	225	250	280	315S, M	315MX	315MY, L, LX	355M, MY, L	
K10R KPR	56	63	71	80	90	100	100	100	112	132	132	160	160	180	180	200	200	225	250	280	280	315S	315M	
D in mm	88	100	115	131	145	164	164	164	185	216	216	266	266	300	300	335	335	378	428	488	488	530	624	
P a <sub>1</sub>												350	350	350	350									
N b <sub>1</sub>												250	250	250	250									
M e <sub>1</sub>												300	300	300	300									
S s <sub>1</sub>												18	18	18	18									
P a <sub>1</sub>														400	400	400	400							
N b <sub>1</sub>														300	300	300	300							
M e <sub>1</sub>														350	350	350	350							
S s <sub>1</sub>														18	18	18	18							
P a <sub>1</sub>																450	450							
N b <sub>1</sub>																350	350							
M e <sub>1</sub>																400	400							
S s <sub>1</sub>																18	18							
P a <sub>1</sub>																		550	550					
N b <sub>1</sub>																		450	450					
M e <sub>1</sub>																		500	500					
S s <sub>1</sub>																		18	18					
P a <sub>1</sub>																				660	660			
N b <sub>1</sub>																				550	550			
M e <sub>1</sub>																				600	600			
S s <sub>1</sub>																				22	22			

## Flange versions

### Type of construction IM B14 K, G

KPER K11R	63	71	80	90	100	100LX	112	132	132	132M4, MX6	160	160	180M4, L6, 8	180	200L, LX6	200LX2	225	250	280	315S, M	315MX	315MY, L, LX	355M, MY, L
K10R KPR	56	63	71	80	90	100	100	100	112	132	132	160	160	180	180	200	200	225	250	280	280	315S	315M
D in mm	88	100	115	131	145	164	164	164	185	216	216	266	266	300	300	335	335	378	428	488	488	530	624
P a <sub>1</sub>	80	90	105																				
N b <sub>1</sub>	50	60	70																				
M e <sub>1</sub>	65	75	85																				
S s <sub>1</sub>	M5	M5	M6																				
P a <sub>1</sub>	90	105	120	120	140																		
N b <sub>1</sub>	60	70	80	80	95																		
M e <sub>1</sub>	75	85	100	100	115																		
S s <sub>1</sub>	M5	M6	M6	M6	M8																		
P a <sub>1</sub>	105 <sup>1)</sup>	120	140 <sup>1)</sup>	140	160	160	160	160	160														
N b <sub>1</sub>	70	80	95	95	110	110	110	110	110														
M e <sub>1</sub>	85	100	115	115	130	130	130	130	130														
S s <sub>1</sub>	M6	M6	M8	M8	M8	M8	M8	M8	M8														
P a <sub>1</sub>	120	140	160	160	200	200	200	200	200	250	250	300	300										
N b <sub>1</sub>	80	95	110	110	130	130	130	130	130	180	180	230	230										
M e <sub>1</sub>	100	115	130	130	165	165	165	165	165	215	215	265	265										
S s <sub>1</sub>	M6	M8	M8	M8	M10	M10	M10	M10	M10	M12	M12	M12	M12										

### Flange versions IM 2202 and IM B14





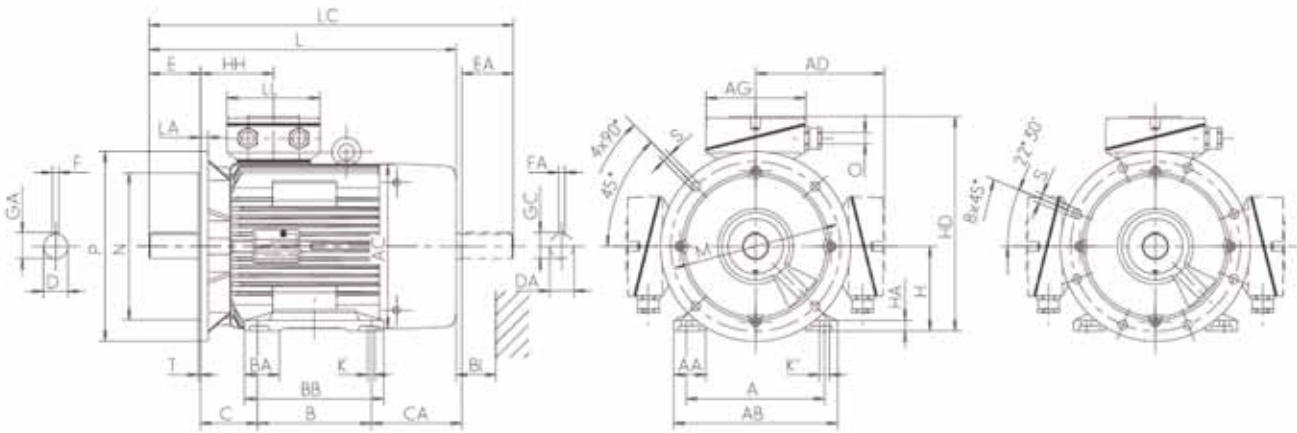
### Three-phase motors with squirrel-cage rotor, marine version

Size 63 to 280

with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM B35 [IM 2001]

Flange dimensions see page 20/21



Type designation	GA t	GC t1	H h	HA c	HD p	HD**) p	HH A	K s	K' s'	L k	LC k1	KK Type	AG	LL	O	Hole pattern	Bl. Bl
KPER 63K2,4,6	12.5	12.5	63	10	161	a.A.	58	8	8	179	205	KA 05	92	92	M20x1.5	4L	14
KPER 63G2,4,6	12.5	12.5	63	10	161	a.A.	58	8	8	179	205	KA 05	92	92	M20x1.5	4L	14
KPER 71K2,4,6,8	16	16	71	11	175	a.A.	61	8	8	206	239	KA 05	92	92	M20x1.5	4L	14
KPER 71G2,4,6,8	16	16	71	11	175	a.A.	61	8	8	206	239	KA 05	92	92	M20x1.5	4L	14
KPER 80K2,4,6,8	21.5	21.5	80	12	191	a.A.	67	10	10	249	293	KA 05	92	92	M20x1.5	4L	16
KPER 80G2,4,6,8	21.5	21.5	80	12	191	a.A.	67	10	10	249	293	KA 05	92	92	M20x1.5	4L	16
KPER 90S2,4,6,8	27	24.5	90	14	210	a.A.	70	10	10	275	330	KA 05	92	92	M25x1.5	4L	16
KPER 90L2,4,6,8	27	24.5	90	14	210	a.A.	70	10	10	297	352	KA 05	92	92	M25x1.5	4L	16
KPER 100L2,4,6,8	31	27	100	15	227	a.A.	75	12	12	331	386	KA 05	92	92	M25x1.5	4L	18
KPER 100LX4,8	31	31	100	11	237	a.A.	77	12	12	357	425	KA 05	92	92	M25x1.5	4L	20
KPER 112M2	31	31	112	18	249	a.A.	77	12	12	357	425	KA 05	92	92	M25x1.5	4L	20
KPER 112M6,8	31	31	112	18	249	a.A.	77	12	12	391	459	KA 05	92	92	M25x1.5	4L	20
KPER 112MX2	31	31	112	18	249	a.A.	77	12	12	391	459	KA 05	92	92	M25x1.5	4L	20
KPER 112M4	31	31	112	18	249	a.A.	77	12	12	391	459	KA 05	92	92	M25x1.5	4L	20
K11R 132S2	41	35	132	16	310	257	108	12	12	459	542	KK 25 A	156	145	M30x2	4L	35
K11R 132SX2	41	35	132	16	310	257	108	12	12	479	562	KK 25 A	156	145	M30x2	4L	35
K11R 132S4,6,8	41	35	132	16	310	257	108	12	12	459	542	KK 25 A	156	145	M30x2	4L	35
K11R 132M4	41	41	132	16	331	279	114	12	12	481	565	KK 25 A	156	145	M30x2	4L	35
K11R 132MX6	41	41	132	16	331	279	114	12	12	481	565	KK 25 A	156	145	M30x2	4L	35
K11R 132M6,8	41	35	132	16	310	257	108	12	12	479	562	KK 25 A	156	145	M30x2	4L	35
K11R 160M2	45	41	160	18	374	307	114	15	15	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160M4,6,8	45	41	160	18	374	307	114	15	15	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160MX8	45	41	160	18	374	307	114	15	15	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160MX2	45	45	160	18	402	336	138	15	20	571	686	KK 63 A	193	167	M36x2	4L	35
K11R 160L2,4,6,8	45	45	160	18	402	336	138	15	20	609	724	KK 63 A	193	167	M36x2	4L	35
K11R 180M2	51.5	51.5	180	20	441	369	147	15	20	635	751	KK 63 A	193	167	M36x2	4L	35
K11R 180M4	51.5	45	180	20	422	356	138	15	20	609	724	KK 63 A	193	167	M36x2	4L	35
K11R 180L4	51.5	51.5	180	20	441	369	147	15	20	680	796	KK 63 A	193	167	M36x2	4L	35
K11R 180L6,8	51.5	45	180	20	422	369	138	15	20	609	724	KK 63 A	193	167	M36x2	4L	35
K11R 200L2,4,6,8	59	51.5	200	22	461	389	147	19	25	680	796	KK 63 A	193	167	M36x2	4L	35
K11R 200LX6	59	51.5	200	22	461	389	147	19	25	680	796	KK 63 A	193	167	M36x2	4L	35
K11R 200LX2	59	59	200	22	500	417	168	19	25	727	851	KK 100 A	213	207	M45x2	4L	35
K11R 225S4,8	64	59	225	25	525	442	168	19	25	757	881	KK 100 A	213	207	M45x2	8L	40
K11R 225M2	59	59	225	25	525	442	168	19	25	767	891	KK 100 A	213	207	M45x2	8L	40
K11R 225M4	64	59	225	25	525	442	168	19	25	797	921	KK 100 A	213	207	M45x2	8L	40
K11R 225M6,8	64	59	225	25	525	442	168	19	25	757	881	KK 100 A	213	207	M45x2	8L	40
K11R 250M2	64	59	250	28	608	484	177	24	30	862	977	KK 200 A	282	242	M56x2	8L	45
K11R 250M4,6,8	69	59	250	28	608	484	177	24	30	862	977	KK 200 A	282	242	M56x2	8L	45
K11R 280S2	69	69	280	32	666	546	206	24	30	924	1072	KK 200 A	282	242	M56x2	8L	50
K11R 280S4,6,8	79.5	69	280	32	666	546	206	24	30	924	1072	KK 200 A	282	242	M56x2	8L	50
K11R 280M2	69	69	280	32	666	546	206	24	30	970	1118	KK 200 A	282	242	M56x2	8L	50
K11R 280M4,6,8	79.5	69	280	32	666	546	206	24	30	970	1118	KK 200 A	282	242	M56x2	8L	50

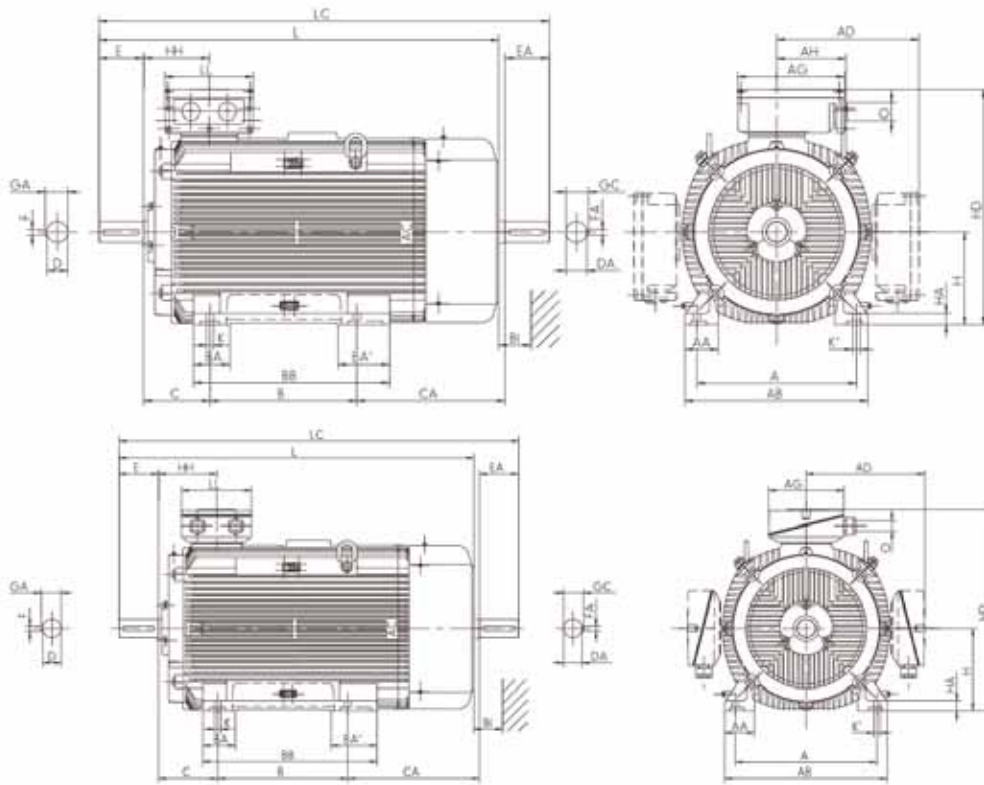
\*\* ) Terminal box left/right

### Three-phase motors with squirrel-cage rotor, marine version

Size 315

with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM B3 [IM 1001]



Type designation	Flange size	A b	AA n	AB f	AC g	AD g1	B a	BA m	BA' m1	BB e	C w1	CA w2	D d	DA d1	DB*)	E l	EA l1	F u	FA u1
K11R 315S2	FF 600	508	126	590	550	416	406	120	-	503	216	316	65	65	M20	140	140	18	18
K11R 315S4,6,8	FF 600	508	126	590	550	416	406	120	-	503	216	316	80	70	M20	170	140	22	20
K11R 315M2	FF 600	508	126	590	550	416	457	120	-	554	216	320	65	65	M20	140	140	18	18
K11R 315M4,6,8	FF 600	508	126	590	550	416	457	120	-	554	216	320	80	70	M20	170	140	22	20
K11R 315MX2	FF 600	508	126	590	550	416	457	120	150	554	216	400	65	65	M20	140	140	18	18
K11R 315MX4	FF 600	508	126	590	550	416	457	120	150	554	216	400	80	70	M20	170	140	22	20
K11R 315MX6,8	FF 600	508	126	590	550	416	457	120	150	554	216	320	80	70	M20	170	140	22	20
K11R 315MX10,12	FF 600	508	126	590	550	416	457	120	150	554	216	320	80	70	M20	170	140	22	20
K11R 315MY2	FF 600	508	110	590	610	498	457	120	-	573	216	495	65	65	M20	140	140	18	18
K11R 315MY4,6,8	FF 600	508	110	590	610	498	457	120	-	573	216	495	80	70	M20	170	140	22	20
K11R 315L2	FF 600	508	110	590	610	498	508	120	-	624	216	539	65	65	M20	140	140	18	18
K11R 315L4,6,8	FF 600	508	110	590	610	498	508	120	-	624	216	564	80	70	M20	170	140	22	20
K11R 315LX2	FF 600	508	110	590	610	481	508	120	-	624	216	684	65	65	M20	140	140	18	18
K11R 315LX4	FF 600	508	110	590	610	481	508	120	-	624	216	689	80	70	M20	170	140	22	20
K11R 315LX6,8	FF 600	508	110	590	610	498	508	120	-	624	216	564	80	70	M20	170	140	22	20

\*) Centre holes acc. to DIN 332-DS



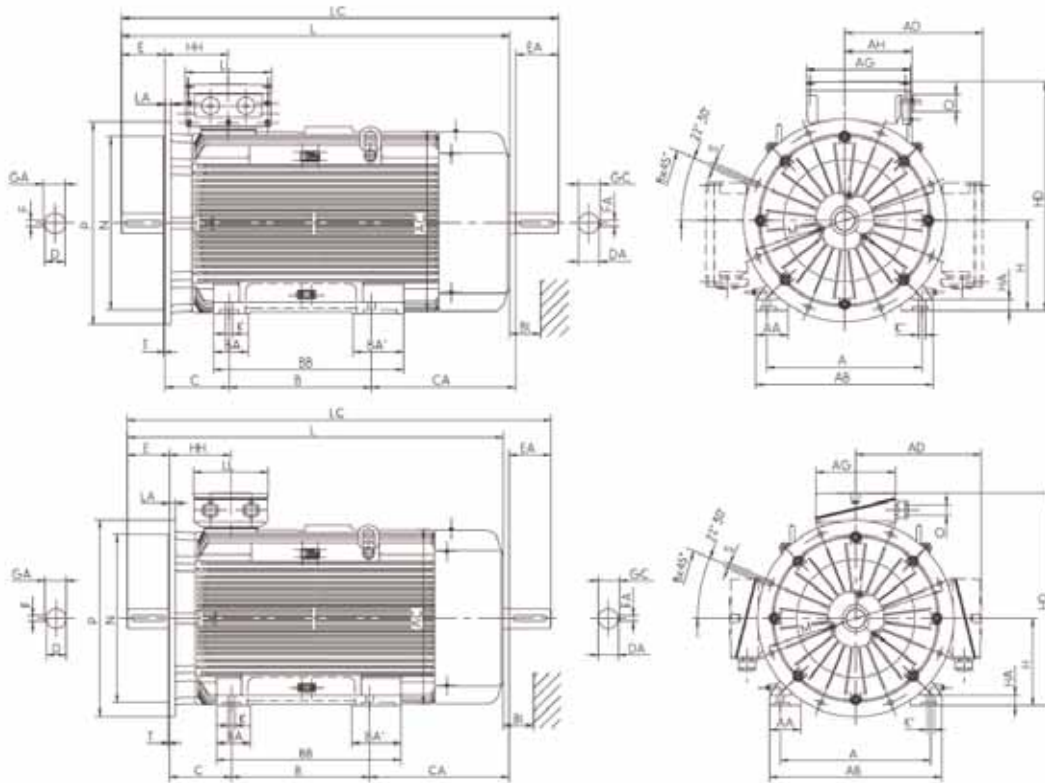
## Three-phase motors with squirrel-cage rotor, marine version

Size 315

with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM B35 [IM 2001]

Flange dimensions see page 20/21



Type designation	GA t	GC t1	H h	HA c	HD p	HD** p	HH A	K s	K' s'	L k	LC k1	KK Type -	AG x	LL z	AH -	O r	BI BI
K11R 315S2	69	69	315	44	731	595	211	28	35	1050	1218	KK 200 A	282	242	-	M56x2	55
K11R 315S4,6,8	85	74.5	315	44	731	595	211	28	35	1080	1248	KK 200 A	282	242	-	M56x2	55
K11R 315M2	69	69	315	44	731	595	211	28	35	1105	1273	KK 200 A	282	242	-	M56x2	55
K11R 315M4,6,8	85	74.5	315	44	731	595	211	28	35	1135	1303	KK 200 A	282	242	-	M56x2	55
K11R 315MX2	69	69	315	44	731	595	211	28	35	1185	1353	KK 200 A	282	242	-	M56x2	55
K11R 315MX4	85	74.5	315	44	731	595	211	28	35	1210	1383	KK 200 A	282	242	-	M56x2	55
K11R 315MX6,8	85	74.5	315	44	731	595	211	28	35	1135	1303	KK 200 A	282	242	-	M56x2	55
K11R 315MX10,12	85	74.5	315	44	731	595	211	28	35	1135	1303	KK 200 A	282	242	-	M56x2	55
K11R 315MY2	69	69	315	44	774	628	230	28	35	1270	1448	KK 400 B	315	294	265	M72x2	55
K11R 315MY4,6,8	85	74.5	315	44	774	628	230	28	35	1300	1478	KK 400 B	315	294	265	M72x2	55
K11R 315L2	69	69	315	44	774	628	230	28	35	1390	1543	KK 400 B	315	294	265	M72x2	55
K11R 315L4,6,8	85	74.5	315	44	774	628	230	28	35	1420	1598	KK 400 B	315	294	265	M72x2	55
K11R 315LX2	69	69	315	44	796	628	230	28	35	1510	1688	KK 400 B	315	294	265	M72x2	55
K11R 315LX4	85	74.5	315	44	796	628	230	28	35	1540	1723	KK 400 B	315	294	265	M72x2	55
K11R 315LX6,8	85	74.5	315	44	796	628	230	28	35	1420	1598	KK 400 B	315	294	265	M72x2	55

\*\*\*) Terminal box right/left

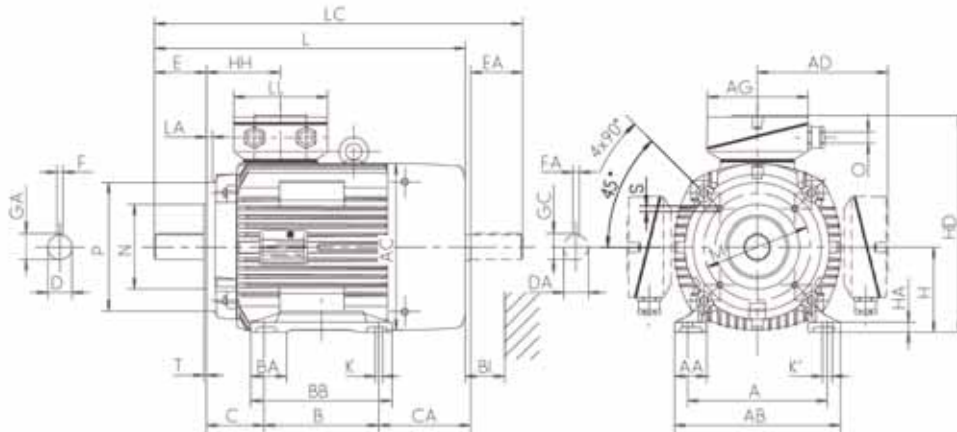
### Three-phase motors with squirrel-cage rotor, marine version

Size 63 to 180

with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM B34 [IM 2101]

Flange dimensions see page 20/21



Type designation	Flange sizes		A b	AA n	AB f	AC g	AD g1	B a	BA m	BB e	C w1	CA w2	D d	DA d1	DB*)	E l	EA l1	F u	FA u1
	small	big																	
KPER 63K2,4,6	FT 75	FT 100	100	28	128	109	-	80	-	100	40	39	11	11	M4	23	23	4	4
KPER 63G2,4,6	FT 75	FT 100	100	28	128	109	-	80	-	100	40	39	11	11	M4	23	23	4	4
KPER 71K2,4,6,8	FT 85	FT 115	112	32	138	124	-	90	-	116	45	43.5	14	14	M5	30	30	5	5
KPER 71G2,4,6,8	FT 85	FT 115	112	32	138	124	-	90	-	116	45	43.5	14	14	M5	30	30	5	5
KPER 80K2,4,6,8	FT 100	FT 130	125	38	168	139	-	100	-	125	50	63	19	19	M6	40	40	6	6
KPER 80G2,4,6,8	FT 100	FT 130	125	38	168	139	-	100	-	125	50	63	19	19	M6	40	40	6	6
KPER 90S2,4,6,8	FT 115	FT 130	140	40	178	157	-	100	-	130	56	74	24	22	M8	50	50	8	6
KPER 90L2,4,6,8	FT 115	FT 130	140	40	178	157	-	125	-	155	56	71	24	22	M8	50	50	8	6
KPER 100L2,4,6,8	FT 130	FT 165	160	45	192	177	-	140	-	175	63	73	28	24	M10	60	50	8	8
KPER 100LX4,8	FT 130	FT 165	160	32	188	196	-	140	-	171	63	102	28	28	M10	60	60	8	8
KPER 112M2	FT 130	FT 165	190	50	224	196	-	140	-	180	70	95	28	28	M10	60	60	8	8
KPER 112M6,8	FT 130	FT 165	190	50	224	196	-	140	-	180	70	95	28	28	M10	60	60	8	8
KPER 112MX2	FT 130	FT 165	190	50	224	196	-	140	-	180	70	129	28	28	M10	60	60	8	8
KPER 112M4	FT 130	FT 165	190	50	224	196	-	140	-	180	70	129	28	28	M10	60	60	8	8
K11R 132S2	FT 130	FT 165	216	50	256	217	178	140	55	180	89	153	38	32	M12	80	80	10	10
K11R 132SX2	FT 130	FT 165	216	50	256	217	178	140	55	180	89	173	38	32	M12	80	80	10	10
K11R 132S4,6,8	FT 130	FT 165	216	50	256	217	178	140	55	180	89	153	38	32	M12	80	80	10	10
K11R 132M4	FT 165	FT 215	216	50	256	258	199	178	55	218	89	138	38	38	M12	80	80	10	10
K11R 132MX6	FT 165	FT 215	216	50	256	258	199	178	55	218	89	138	38	38	M12	80	80	10	10
K11R 132M6,8	FT 130	FT 165	216	50	256	217	178	178	55	218	89	135	38	32	M12	80	80	10	10
K11R 160M2	FT 165	FT 215	254	55	296	258	214	210	60	257	108	135	42	38	M16	110	80	12	10
K11R 160M4,6,8	FT 165	FT 215	254	55	296	258	214	210	60	257	108	135	42	38	M16	110	80	12	10
K11R 160MX8	FT 165	FT 215	254	55	296	258	199	210	60	257	108	135	42	38	M16	110	80	12	10
K11R 160MX2	FT 215	FT 265	254	55	296	313	242	210	60	257	108	148	42	42	M16	110	110	12	12
K11R 160L2,4,6,8	FT 215	FT 265	254	55	296	313	242	254	60	301	108	142	42	42	M16	110	110	12	12
K11R 180M4	FT 265	-	279	62	328	313	242	241	65	288	121	142	48	42	M16	110	110	14	12
K11R 180L6,8	FT 265	-	279	62	328	313	242	279	65	326	121	104	48	42	M16	110	110	14	12

\*) Centre holes acc. to DIN 332-DS

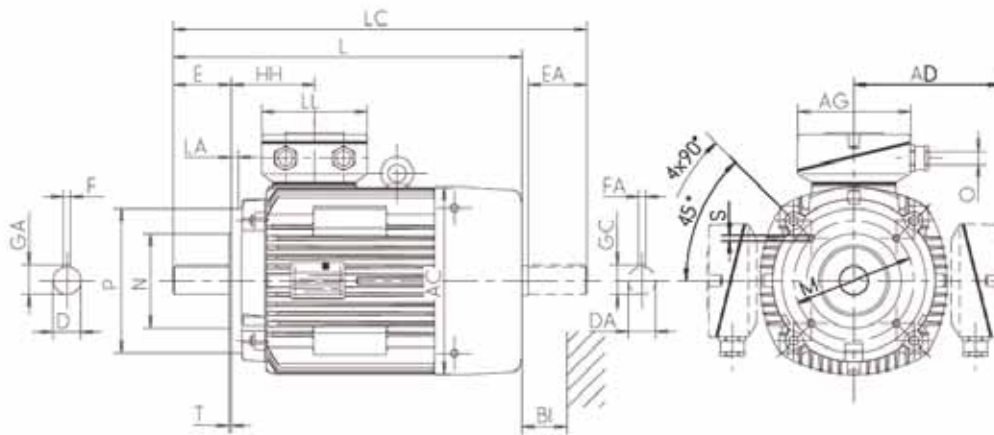
## Three-phase motors with squirrel-cage rotor, marine version

Size 63 to 180

with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM B14 [IM 3601]

Flange dimensions see page 20/21



Type designation	GA t	GC t1	H h	HA c	HD p	HD**) p	HH A	K s	K' s'	L k	LC k1	KK Type -	AG x	LL z	O r	Hole pattern	Bl. Bl.
KPER 63K2,4,6	12.5	12.5	63	10	168	a.A.	58	8	8	179	205	KA 05	92	92	M20x1.5	4L	14
KPER 63G2,4,6	12.5	12.5	63	10	168	a.A.	58	8	8	179	205	KA 05	92	92	M20x1.5	4L	14
KPER 71K2,4,6,8	16	16	71	11	184	a.A.	61	8	8	206	239	KA 05	92	92	M20x1.5	4L	14
KPER 71G2,4,6,8	16	16	71	11	184	a.A.	61	8	8	206	239	KA 05	92	92	M20x1.5	4L	14
KPER 80K2,4,6,8	21.5	21.5	80	12	211	a.A.	67	10	10	249	293	KA 05	92	92	M20x1.5	4L	16
KPER 80G2,4,6,8	21.5	21.5	80	12	211	a.A.	67	10	10	249	293	KA 05	92	92	M20x1.5	4L	16
KPER 90S2,4,6,8	27	24.5	90	14	220	a.A.	70	10	10	275	330	KA 05	92	92	M25x1.5	4L	16
KPER 90L2,4,6,8	27	24.5	90	14	220	a.A.	70	10	10	297	352	KA 05	92	92	M25x1.5	4L	16
KPER 100L2,4,6,8	31	27	100	15	252	a.A.	75	12	12	331	386	KA 05	92	92	M25x1.5	4L	18
KPER 100LX4,8	31	31	100	11	262	a.A.	77	12	12	357	425	KA 05	92	92	M25x1.5	4L	20
KPER 112M2	31	31	112	18	262	a.A.	77	12	12	357	425	KA 05	92	92	M25x1.5	4L	20
KPER 112M6,8	31	31	112	18	262	a.A.	77	12	12	391	459	KA 05	92	92	M25x1.5	4L	20
KPER 112MX2	31	31	112	18	262	a.A.	77	12	12	391	459	KA 05	92	92	M25x1.5	4L	20
KPER 112M4	31	31	112	18	262	a.A.	77	12	12	391	459	KA 05	92	92	M25x1.5	4L	20
K11R 132S2	41	35	132	16	328	275	108	12	12	459	542	KK 25 A	156	145	M30x2	4L	35
K11R 132SX2	41	35	132	16	328	275	108	12	12	479	562	KK 25 A	156	145	M30x2	4L	35
K11R 132S4,6,8	41	35	132	16	328	275	108	12	12	459	542	KK 25 A	156	145	M30x2	4L	35
K11R 132M4	41	41	132	16	349	297	114	12	12	481	565	KK 25 A	156	145	M30x2	4L	35
K11R 132MX6	41	41	132	16	349	297	114	12	12	481	565	KK 25 A	156	145	M30x2	4L	35
K11R 132M6,8	41	35	132	16	328	275	108	12	12	479	562	KK 25 A	156	145	M30x2	4L	35
K11R 160M2	45	41	160	18	389	322	114	15	15	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160M4,6,8	45	41	160	18	389	322	114	15	15	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160MX8	45	41	160	18	389	322	114	15	15	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160MX2	45	45	160	18	417	351	138	15	20	571	686	KK 63 A	193	167	M36x2	4L	35
K11R 160L2,4,6,8	45	45	160	18	417	351	138	15	20	609	724	KK 63 A	193	167	M36x2	4L	35
K11R 180M4	51.5	45	180	20	417	351	138	15	20	609	724	KK 63 A	193	167	M36x2	4L	35
K11R 180L6,8	51.5	45	180	20	417	364	138	15	20	609	724	KK 63 A	193	167	M36x2	4L	35

\*\*) Terminal box left/right

### Three-phase motors with squirrel-cage rotor, marine version

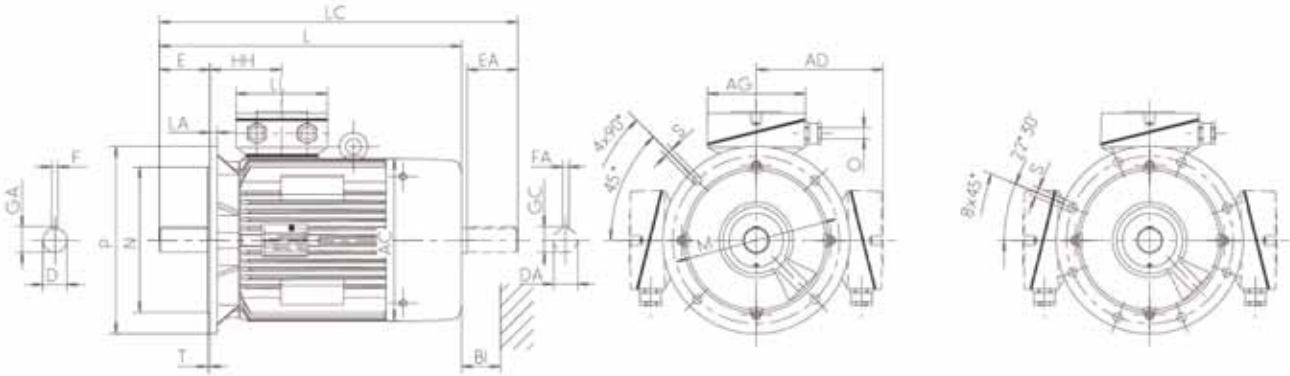
Size 63 to 280

with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM B5 [IM 3001]

Type of construction IM V1 [IM 3011]

Flange dimensions see page 20/21



Type designation	Flange size	AC g	AD g1	D d	DA d1	DB*)	E l	EA l1	F u	FA u1	GA t	GC t1	H h	HH A	L k	LC k1	KK Type	AG	LL	O	Hole pattern	Bl. Bl
KPER 63K2,4,6	FF 115	109	-	11	11	M4	23	23	4	4	12.5	12.5	63	58	179	205	KA 05	92	92	M20x1.5	4L	14
KPER 63G2,4,6	FF 115	109	-	11	11	M4	23	23	4	4	12.5	12.5	63	58	179	205	KA 05	92	92	M20x1.5	4L	14
KPER 71K2,4,6,8	FF 130	124	-	14	14	M5	30	30	5	5	16	16	71	61	206	239	KA 05	92	92	M20x1.5	4L	14
KPER 71G2,4,6,8	FF 130	124	-	14	14	M5	30	30	5	5	16	16	71	61	206	239	KA 05	92	92	M20x1.5	4L	14
KPER 80K2,4,6,8	FF 165	139	-	19	19	M6	40	40	6	6	21.5	21.5	80	67	249	293	KA 05	92	92	M20x1.5	4L	16
KPER 80G2,4,6,8	FF 165	139	-	19	19	M6	40	40	6	6	21.5	21.5	80	67	249	293	KA 05	92	92	M20x1.5	4L	16
KPER 90S2,4,6,8	FF 165	157	-	24	22	M8	50	50	8	6	27	24.5	90	70	275	330	KA 05	92	92	M25x1.5	4L	16
KPER 90L2,4,6,8	FF 165	157	-	24	22	M8	50	50	8	6	27	24.5	90	70	297	352	KA 05	92	92	M25x1.5	4L	16
KPER 100L2,4,6,8	FF 215	177	-	28	24	M10	60	50	8	8	31	27	100	75	331	386	KA 05	92	92	M25x1.5	4L	18
KPER 100LX4,8	FF 215	196	-	28	28	M10	60	60	8	8	31	31	100	77	357	425	KA 05	92	92	M25x1.5	4L	20
KPER 112M2	FF 215	196	-	28	28	M10	60	60	8	8	31	31	112	77	357	425	KA 05	92	92	M25x1.5	4L	20
KPER 112M6,8	FF 215	196	-	28	28	M10	60	60	8	8	31	31	112	77	391	459	KA 05	92	92	M25x1.5	4L	20
KPER 112MX2	FF 215	196	-	28	28	M10	60	60	8	8	31	31	112	77	391	459	KA 05	92	92	M25x1.5	4L	20
KPER 112M4	FF 215	196	-	28	28	M10	60	60	8	8	31	31	112	77	391	459	KA 05	92	92	M25x1.5	4L	20
K11R 132S2	FF 265	217	178	38	32	M12	80	80	10	10	41	35	132	108	459	542	KK 25 A	156	145	M30x2	4L	35
K11R 132SX2	FF 265	217	178	38	32	M12	80	80	10	10	41	35	132	108	479	562	KK 25 A	156	145	M30x2	4L	35
K11R 132S4,6,8	FF 265	217	178	38	32	M12	80	80	10	10	41	35	132	108	459	542	KK 25 A	156	145	M30x2	4L	35
K11R 132M4	FF 265	258	199	38	38	M12	80	80	10	10	41	41	132	114	481	565	KK 25 A	156	145	M30x2	4L	35
K11R 132MX6	FF 265	258	199	38	38	M12	80	80	10	10	41	41	132	114	481	565	KK 25 A	156	145	M30x2	4L	35
K11R 132M6,8	FF 265	217	178	38	32	M12	80	80	10	10	41	35	132	108	479	562	KK 25 A	156	145	M30x2	4L	35
K11R 160M2	FF 300	258	214	42	38	M16	110	80	12	10	45	41	160	114	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160M4,6,8	FF 300	258	214	42	38	M16	110	80	12	10	45	41	160	114	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160MX8	FF 300	258	199	42	38	M16	110	80	12	10	45	41	160	114	559	643	KK 63 A	193	167	M36x2	4L	35
K11R 160MX2	FF 300	313	242	42	42	M16	110	110	12	12	45	45	160	138	571	686	KK 63 A	193	167	M36x2	4L	35
K11R 160L2,4,6,8	FF 300	313	242	42	42	M16	110	110	12	12	45	45	160	138	609	724	KK 63 A	193	167	M36x2	4L	35
K11R 180M2	FF 300	351	261	48	48	M16	110	110	14	14	51.5	51.5	180	147	635	751	KK 63 A	193	167	M36x2	4L	35
K11R 180M4	FF 300	313	242	48	42	M16	110	110	14	12	51.5	45	180	138	609	724	KK 63 A	193	167	M36x2	4L	35
K11R 180L4	FF 300	351	261	48	48	M16	110	110	14	14	51.5	51.5	180	147	680	796	KK 63 A	193	167	M36x2	4L	35
K11R 180L6,8	FF 300	313	242	48	42	M16	110	110	14	12	51.5	45	180	138	609	724	KK 63 A	193	167	M36x2	4L	35
K11R 200L2,4,6,8	FF 350	351	261	55	48	M20	110	110	16	14	59	51.5	200	147	680	796	KK 63 A	193	167	M36x2	4L	35
K11R 200LX6	FF 350	351	261	55	48	M20	110	110	16	14	59	51.5	200	147	680	796	KK 63 A	193	167	M36x2	4L	35
K11R 200LX2	FF 350	390	300	55	55	M20	110	110	16	16	59	59	200	168	727	851	KK 100 A	213	207	M45x2	4L	35
K11R 225S4,8	FF 400	390	300	60	55	M20	140	110	18	16	64	59	225	168	757	881	KK 100 A	213	207	M45x2	8L	40
K11R 225M2	FF 400	390	300	55	55	M20	110	110	16	16	59	59	225	168	767	891	KK 100 A	213	207	M45x2	8L	40
K11R 225M4	FF 400	390	300	60	55	M20	140	110	18	16	64	59	225	168	797	921	KK 100 A	213	207	M45x2	8L	40
K11R 225M6,8	FF 400	390	300	60	55	M20	140	110	18	16	64	59	225	168	757	881	KK 100 A	213	207	M45x2	8L	40
K11R 250M2	FF 500	440	358	60	55	M20	140	110	18	16	64	59	250	177	862	977	KK 200 A	282	242	M56x2	8L	45
K11R 250M4,6,8	FF 500	440	358	65	55	M20	140	110	18	16	69	59	250	177	862	977	KK 200 A	282	242	M56x2	8L	45
K11R 280S2	FF 500	490	386	65	65	M20	140	140	18	18	69	69	280	206	924	1072	KK 200 A	282	242	M56x2	8L	50
K11R 280S4,6,8	FF 500	490	386	75	65	M20	140	140	20	18	79.5	69	280	206	924	1072	KK 200 A	282	242	M56x2	8L	50
K11R 280M2	FF 500	490	386	65	65	M20	140	140	18	18	69	69	280	206	970	1118	KK 200 A	282	242	M56x2	8L	50
K11R 280M4,6,8	FF 500	490	386	75	65	M20	140	140	20	18	79.5	69	280	206	970	1118	KK 200 A	282	242	M56x2	8L	50

\*) Centre holes acc. to DIN 332-DS

\*\*) Terminal box left/right

### Three-phase motors with squirrel-cage rotor, marine version

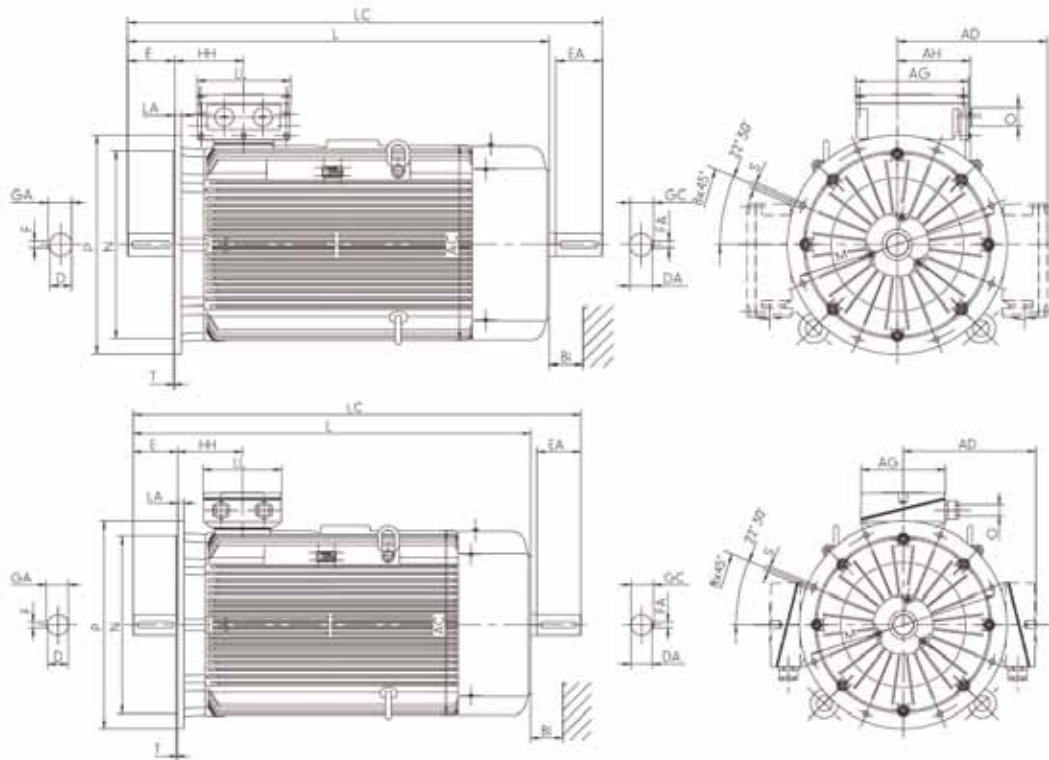
Size 315

with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM B5 [IM 3001] up to size 315 MY

Type of construction IM V1 [IM 3011]

Flange dimensions see page 20/21



Type designation	Flange size	AC g	AD g1	D d	DA d1	DB*)	E l	EA l1	F u	FA u1	GA t	GC t1	H h	HH A	L k	LC k1	KK Type	AG x	LL z	AH -	O r	BI. BI
K11R 315S2	FF 600	550	416	65	65	M20	140	140	18	18	69	69	315	211	1050	1218	KK 200 A	282	242	-	M56x2	55
K11R 315S4,6,8	FF 600	550	416	80	70	M20	170	140	22	20	85	74.5	315	211	1080	1248	KK 200 A	282	242	-	M56x2	55
K11R 315M2	FF 600	550	416	65	65	M20	140	140	18	18	69	69	315	211	1105	1273	KK 200 A	282	242	-	M56x2	55
K11R 315M4,6,8	FF 600	550	416	80	70	M20	170	140	22	20	85	74.5	315	211	1135	1303	KK 200 A	282	242	-	M56x2	55
K11R 315MX2	FF 600	550	416	65	65	M20	140	140	18	18	69	69	315	211	1185	1353	KK 200 A	282	242	-	M56x2	55
K11R 315MX4	FF 600	550	416	80	70	M20	170	140	22	20	85	74.5	315	211	1215	1383	KK 200 A	282	242	-	M56x2	55
K11R 315MX6,8	FF 600	550	416	80	70	M20	170	140	22	20	85	74.5	315	211	1135	1303	KK 200 A	282	242	-	M56x2	55
K11R 315MX10,12	FF 600	550	416	80	70	M20	170	140	22	20	85	74.5	315	211	1135	1303	KK 200 A	282	242	-	M56x2	55
K11R 315MY2	FF 600	610	498	65	65	M20	140	140	18	18	69	69	315	230	1270	1448	KK 400 B	315	294	265	M72x2	55
K11R 315MY4,6,8	FF 600	610	498	80	70	M20	170	140	22	20	85	74.5	315	230	1300	1478	KK 400 B	315	294	265	M72x2	55
K11R 315L2	FF 600	610	498	65	65	M20	140	140	18	18	69	69	315	230	1390	1543	KK 400 B	315	294	265	M72x2	55
K11R 315L4,6,8	FF 600	610	498	80	70	M20	170	140	22	20	85	74.5	315	230	1420	1598	KK 400 B	315	294	265	M72x2	55
K11R 315LX2	FF 600	610	481	65	65	M20	140	140	18	18	69	69	315	230	1510	1688	KK 400 B	315	294	265	M72x2	55
K11R 315LX4	FF 600	610	481	80	70	M20	170	140	22	20	85	74.5	315	230	1540	1723	KK 400 B	315	294	265	M72x2	55
K11R 315LX6,8	FF 600	610	498	80	70	M20	170	140	22	20	85	74.5	315	230	1420	1598	KK 400 B	315	294	265	M72x2	55

\*) Centre holes acc. to DIN 332-DS

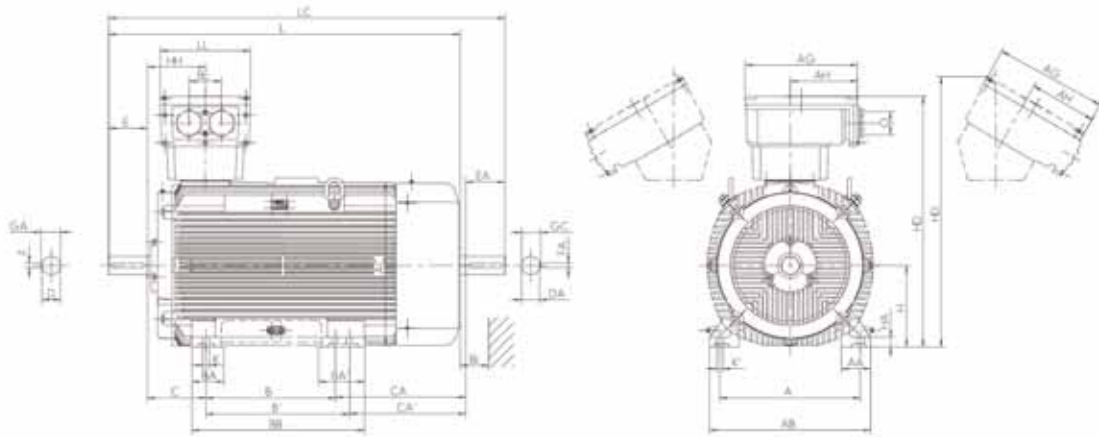
\*\*) Terminal box right/left

### Three-phase motors with squirrel-cage rotor, marine version

Size 355

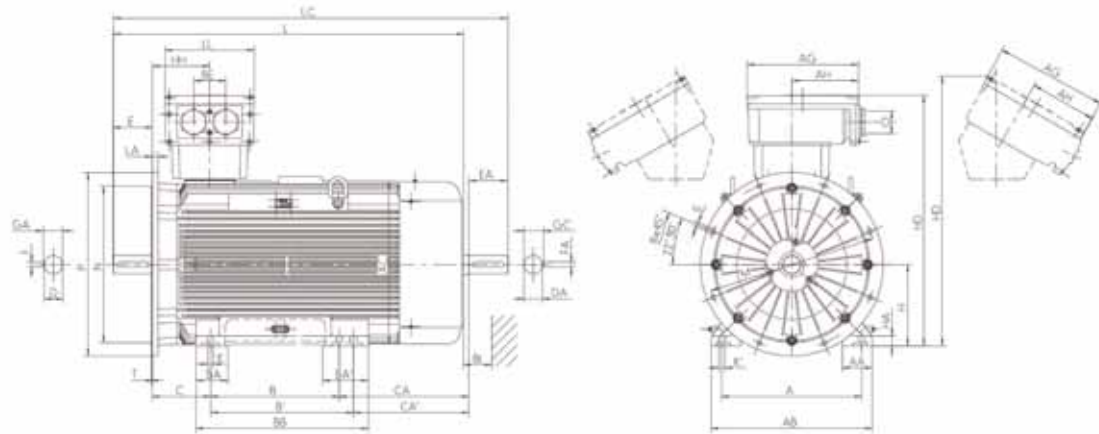
with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM B3 [IM 1001]



Type of construction IM B35 [IM 2001]

Flange dimensions see page 20/21



Type designation	Flange size	A	AA	AB	AC	B	BA	BA'	BB	C	CA	D	DA	DB*)	E	EA	F	FA
		b	n	f	g	a	m	m1	e	w1	w2	d	d1		l	l1	u	u1
K22R 355MY2,M2	FF 740	610	130	700	715	560	140	200	750	254	561	80	80	M20	170	170	22	22
K22R 355MY4,6,8	FF 740	610	130	700	715	560	140	200	750	254	561	100	80	M24	210	170	28	22
K22R 355M4	FF 740	610	130	700	715	560	140	200	750	254	561	100	80	M24	210	170	28	22
K22R 355M6,8	FF 740	610	130	700	715	560	140	200	750	254	561	100	80	M24	210	170	28	22
K22R 355MX6,8	FF 740	610	130	700	715	560	140	200	750	254	681	100	80	M24	210	170	28	22
K22R 355MX2	FF 740	610	130	700	715	560	140	200	750	254	681	80	80	M20	170	170	22	22
K22R 355LY2,L2	FF 740	610	130	700	715	630	140	200	750	254	611	80	80	M20	170	170	22	22
K22R 355MX4	FF 740	610	130	700	715	560	140	200	750	254	681	100	80	M24	210	170	28	22
K22R 355LY4,6,8,L4	FF 740	610	130	700	715	630	140	200	750	254	611	100	80	M24	210	170	28	22

Type designation	GA	GC	H	HA	HD	HD**)	HH	K	K'	L	LC	KK Type	AG	LL	AH	BE	O	Bl.
	t	t1	h	c	p	p	A	s	s'	k	k1		x	z	-	-	r	Bl.
K22R 355MY2,M2	85	85	355	44	1091	1172	250	28	35	1530	1715	KK 630 A	496	390	301	140	M72x2	60
K22R 355MY4,6,8	106	85	355	44	1091	1172	250	28	35	1570	1755	KK 630 A	496	390	301	140	M72x2	60
K22R 355M4	106	85	355	44	1091	1172	250	28	35	1570	1755	KK 630 A	496	390	301	140	M72x2	60
K22R 355M6,8	106	85	355	44	1091	1172	250	28	35	1570	1755	KK 630 A	496	390	301	140	M72x2	60
K22R 355MX6,8	106	85	355	44	1091	1172	327	28	35	1690	1875	KK 630 A	496	390	301	140	M72x2	60
K22R 355MX2	85	85	355	44	1083	1174	327	28	35	1650	1835	KK 1000 A	615	474	385	200	M72x2	60
K22R 355LY2,L2	85	85	355	44	1083	1174	327	28	35	1650	1835	KK 1000 A	615	474	385	200	M72x2	60
K22R 355MX4	106	85	355	44	1083	1174	327	28	35	1690	1875	KK 1000 A	615	474	385	200	M72x2	60
K22R 355LY4,6,8,L4	106	85	355	44	1083	1174	327	28	35	1690	1875	KK 1000 A	615	474	385	200	M72x2	60

\*) Centre holes acc. to DIN 332-DS

\*\*) Terminal box tilted left/right

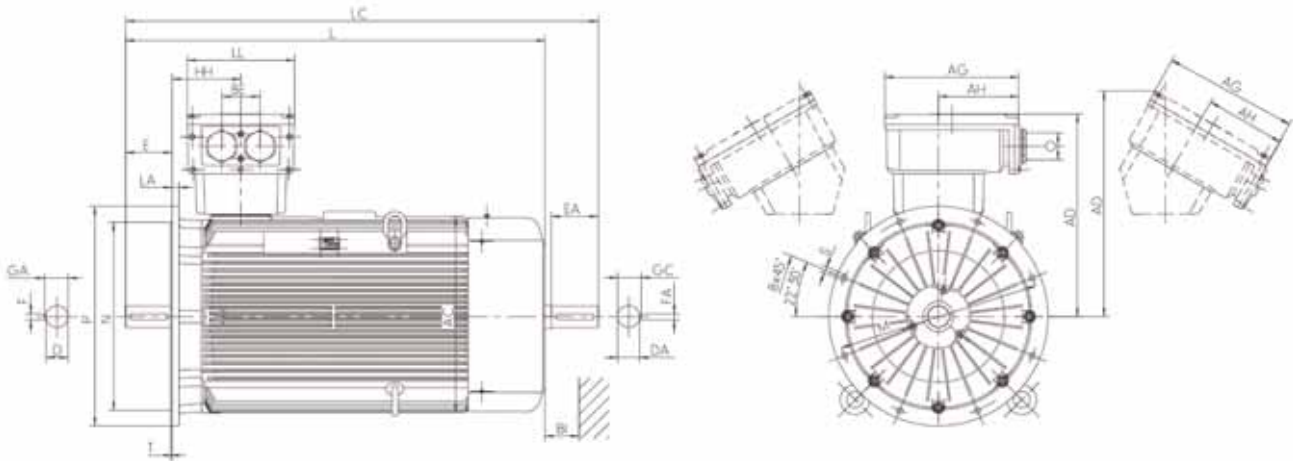
## Three-phase motors with squirrel-cage rotor, marine version

Size 355

with surface ventilation, cooling method IC 411, degree of protection IP 55

Type of construction IM V1 [IM 3011]

Flange dimensions see page 20/21



Type designation	Flange size	AC g	AD g1	AD** g1	D d	DA d1	DB*)	E l	EA l1	F u	FA u1	GA t	GC t1	H h	HH A	L k	LC k1	KK Type	AG x	LL z	AH -	BE -	O r	Bl. Bl
K22R 355MY2,M2	FF 740	715	736	817	80	80	M20	170	170	22	22	85	85	355	250	1530	1715	KK 630 A	496	390	301	140	M72x2	60
K22R 355MY4,6,8	FF 740	715	736	817	100	80	M24	210	170	28	22	106	85	355	250	1570	1755	KK 630 A	496	390	301	140	M72x2	60
K22R 355M4	FF 740	715	736	817	100	80	M24	210	170	28	22	106	85	355	250	1570	1755	KK 630 A	496	390	301	140	M72x2	60
K22R 355M6,8	FF 740	715	736	817	100	80	M24	210	170	28	22	106	85	355	250	1570	1755	KK 630 A	496	390	301	140	M72x2	60
K22R 355MX6,8	FF 740	715	736	817	100	80	M24	210	170	28	22	106	85	355	327	1690	1875	KK 630 A	496	390	301	140	M72x2	60
K22R 355MX2	FF 740	715	728	819	80	80	M20	170	170	22	22	85	85	355	327	1650	1835	KK 1000 A	615	474	385	200	M72x2	60
K22R 355LY2,L2	FF 740	715	728	819	80	80	M20	170	170	22	22	85	85	355	327	1650	1835	KK 1000 A	615	474	385	200	M72x2	60
K22R 355MX4	FF 740	715	728	819	100	80	M24	210	170	28	22	106	85	355	327	1690	1875	KK 1000 A	615	474	385	200	M72x2	60
K22R 355LY4,6,8,L4	FF 740	715	728	819	100	80	M24	210	170	28	22	106	85	355	327	1690	1875	KK 1000 A	615	474	385	200	M72x2	60

\*) Centre holes acc. to DIN 332-DS

\*\*) Terminal box tilted left/right





## General information

### Responsibility for the delivery of spare motors and spare parts

Spare parts available up to 5 years after phase-out of a series. After more than 5 years, VEM gives technical information about the whole motor and components respectively and supplies, if requested, spare parts (if still available) or technical documents for manufacturing of spare parts.

### Data for spare part order

Ordering spare parts, the following data must be specified:

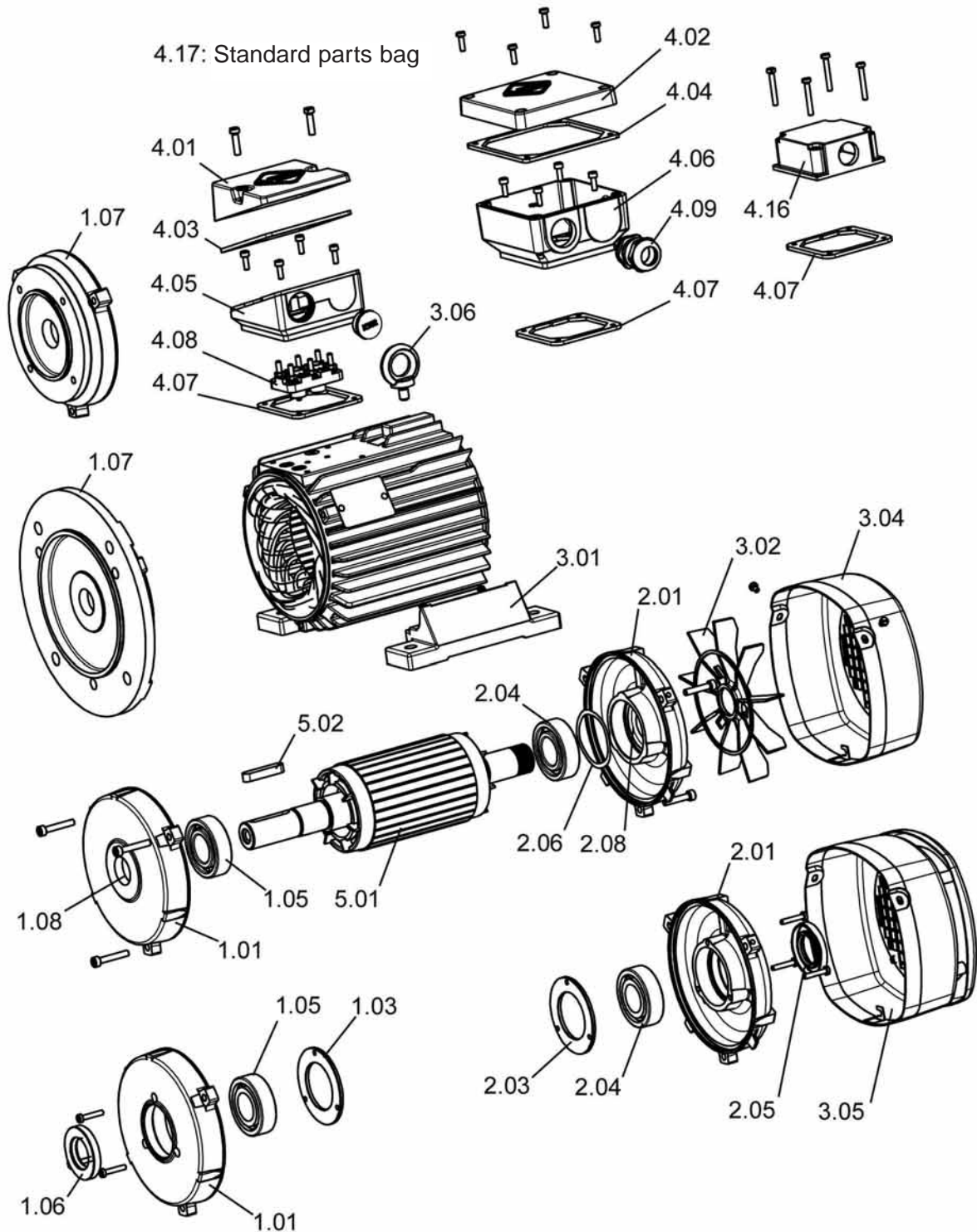
- Motor designation and motor number (factory number)
- Designation of the spare part
- Year of manufacturing

## Spare parts summary

Item No.	Designation
1.01	End shield D-end
1.02	Bearing cover, D-end, external
1.03	Bearing cover, D-end, internal
1.04	Disc spring/wave washer, D-end, not for roller bearings
1.05	Antifriction bearing D-end
1.06	V-type rotary seal D-end
1.07	Flange end shield
1.08	Felt ring D-end
2.01	End shield N-end
2.02	Bearing cover, N-end, external
2.03	Bearing cover, N-end, internal
2.04	Antifriction bearing N-end
2.05	V-type rotary seal N-end
2.06	Disc spring N-end (or D-end)
2.08	Felt ring N-end
3.01	1 pair of motor feet
3.02	Fan
3.03	Fan cover, plastics
3.04	Fan cover, sheet steel
3.05	Fan cover with canopy
3.06	Lifting eye bolt
4.01/4.02	Terminal box cover
4.03/4.04	Terminal box cover gasket
4.05/4.06	Terminal box base
4.07	Terminal box base cover
4.08	Terminal plate
4.09	Cable gland
4.10	Screw plug
4.11	Cable gland for thermal winding protection
4.12	Terminal for thermal winding protection
4.13	Clamp
4.14	Sealing components
4.15	Adapter plate
4.16	Flat terminal plate
4.17	Standard parts bag
5.01	Rotor complete
5.02	Key
6.01	Grease thrower ring, D-end
6.02	Grease thrower ring, N-end
6.03	Labyrinth gland, D- and N-end
6.04	Guide disc, D-end
6.05	Guide disc, N-end

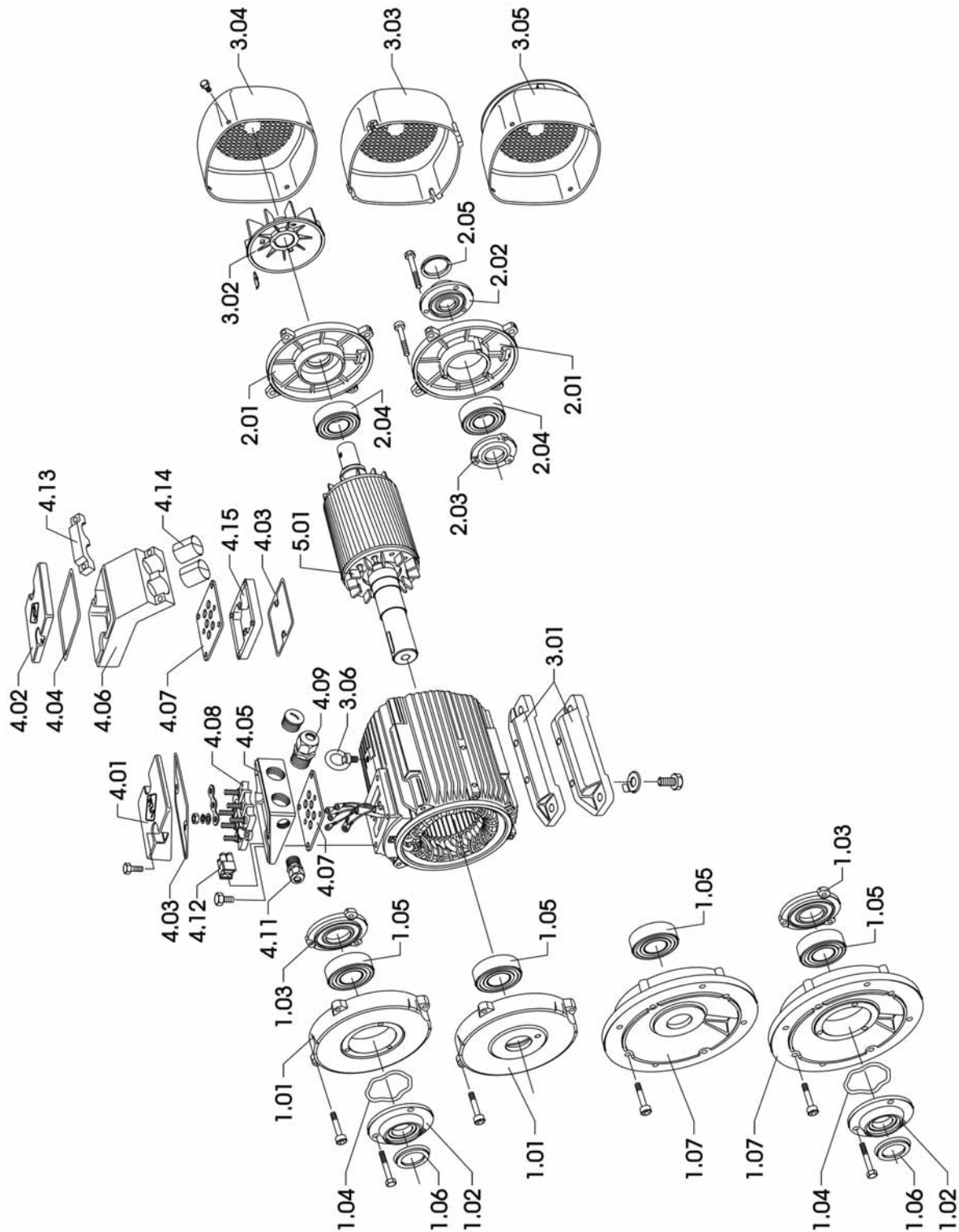
## Three-phase asynchronous motor with squirrel-cage rotor, basic version KPER 63 – 112

(Example, delivered version may differ in details)



## Three-phase asynchronous motor with squirrel-cage rotor, basic version K1.R 112 – 315 and K22R 355

(Example, delivered version may differ in details)



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