VEM MOTOR

Three-phase motors for marine use

Contents

Product description

The design and approval regulations of the classification societies must be observed at all stages of the design, manufacturing and testing of motors for marine use. The granting of a TYPE APPROVAL CERTIFICATE by the given classification society is a prerequisite for permission to manufacture the products to be supplied. When applying for such approval, the manufacturer must demonstrate the suitability of the product by way of test, verification and material certificates. Testing, approval, certification and delivery are subject to the applicable test and approval regulations and supervised either by the internal quality management department or an inspector appointed by the classification society. Motors are designed according to the planned place of installation:

Operation on deck

Motors for “operation on deck” are offered as type series K10W or K11W for sizes 112–180, and KPO or KPEO for sizes 56–100. They are designed without an external fan and meet the specifications for degree of protection IP 56. As the motors possess no external fan, and cooling is thus only by way of heat radiation, the outputs in continuous operation are reduced by approx. 30 to 40 % compared to the basic series. The relevant electrical data can be supplied upon request. Alternatively, details are also to be found in the electronic catalogue VEMeKAT.

Operation under deck

Motors for “operation under deck” are designed with a degree of protection matched to the intended place of installation:
– IP 55 for general use, e.g. in engine rooms.
– IP 56 for use in rooms where water splashing or gushes are to be expected.

Standards and regulations

Motors for marine use are manufactured to comply with the requirements of the classification societies

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

The classification societies divide main and auxiliary machines for on-board use into “essential services” and “non-essential services”. This assignment is important regarding the scope of prescribed spare parts and the question as to whether certain motors are to be subject to approval and supervision procedures.

Drives for essential services

Manufacturing in accordance with the relevant classification rules. A type approval certificate is the basic requirement up to a limit output specified by the individual classification society. For higher outputs, individual approval is required. Some classification societies also demand the supervision of construction from a certain output.
Type 3.1 inspection certificate in accordance with EN 10204
Type 3.2 inspection certificate in accordance with EN 10204 only for certain classification societies and from a specified limit output.

Drives for non-essential services

Manufacturing in accordance with the relevant classification rules. A type approval certificate is not required and individual approval procedures only apply for motors with certification.
Type 3.1 inspection certificate in accordance with EN 10204 only for motors with certification.

Technical data

Output data can be found in the motor selection tables.
If a marine application requires compliance with additional regulations, e.g. gas or dust explosion protection, a corresponding motor series must be chosen.

Dimensions and types of construction

The mounting dimensions correspond to those of the basic version of series KPR/K10R or KPER/K11R, WE.R and W4.R.

Motors are available in construction types IM B3, IM B35, IM V1 and IM B5, subject to the restrictions which apply for the basic version.

Rated voltages and frequencies

Motors are available in the basic version for the following operating voltages and frequencies:
380 V, 50 Hz
400 V, 50 Hz
440 V, 60 Hz
460 V, 60 Hz

Deviating voltages and frequencies can be supplied upon request. Motors operating outside the output, voltage and/or speed ranges indicated in this special catalogue are similarly available upon request.

Overload

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

ABS	No special requirements
BV	160% rated torque for 15 s
GL	160% rated torque for 15 s. The breakdown torque must not be reached.
RS	200% rated torque for 15 s. The breakdown torque must not be reached.
LRS	as BV
DNV, DNV-GL	160% rated torque for 15 s at rated frequency and rated voltage
IEC/EN 60034	150% rated current at rated voltage for 2 min.

The rated current is specified in the selection tables for the rated voltages 380 and 400 V as well as 440, 460 and 480 V.

Approval, construction supervision and certificates

VEM motors GmbH has obtained TYPE APPROVAL CERTIFICATES from the following classification societies:
Bureau Veritas
China Classification Society
Det Norske Veritas
Germanischer Lloyd
DNV-GL
Lloyd's Register of Shipping
Russian Maritime Register of Shipping.

Copies of the certificates can be found on the company website at http://www.vem-group.com under the section "Downloads", sub-section "Classifications", topic "Marine motors". The original documents are made available as PDF files. They are covered by the revision service and are thus always up to date. Motors for marine use in compliance with the requirements of further classification societies, for example ABS, RINA, Polski Rejestr Statkow and others, can be supplied upon request.
Certificates issued by Det Norske Veritas and Germanischer Lloyd remain valid until their specified date of expiry. Thereafter, the new DNV GL regulations apply.

Below, we have gathered a brief overview of the specific design and approval regulations of the individual classification societies:

Motors with protection against seawater according to "Bureau Veritas"
http://www.veristar.com

Coolant temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	95 K
Individual approval for essential drives	> 100 kW
Construction supervision for essential drives	-
Approval mark stamped on the motor housing.	
Rating plate	Marking in English and French; coolant temperature 45 °C or separately agreed coolant temperature; marking "MV acc. to BV".

DNV GL – Business Assurance, Essen
Motors with protection against seawater according to "Germanischer Lloyd" *)
http://www.gl-group.com/infoServices/rules/pdfs/glrp-e.pdf

Coolant temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	100 K
Bearing temperature for antifriction bearings	75K
Individual approval for essential drives	≥ 50 kW for essential services
Construction supervision for essential drives	-
Rating plate	Marking in German and English; coolant temperature 45 °C or separately agreed coolant temperature; marking "SS nach GL".

VEM motors GmbH Wernigerode is entitled to perform testing according to the rules of Germanischer Lloyd under its own responsibility. All certificates issued on this basis are verified by Germanischer Lloyd and confirmed by signature before final approval.

DNV GL – Business Assurance, Essen
Motors with protection against seawater according to "Det Norske Veritas" *)
http://exchange.dnv.com/servicedocuments/dnv/dnvrulesforclassificationofships

Coolant temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	100 K
Shaft steel	S355J2G3 with type 3.1 manufacturer's certificate from a DNV approved manufacturer
Individual approval for essential drives	< 100 kW with manufacturer's certificate; from 100 kW to < 300 kW DNV approval for shaft manufacturer and manufacturer's certificate; 300 kW DNV approval
Construction supervision for essential drives	-
Rating plate	Marking in English and French; coolant temperature 45 °C or separately agreed coolant temperature, marking „MV acc. to DNV"

Following text in the type 3.1 manufacturer's certificate: "DNV Rules for Ships, HSLC & MOU, TAC E-6737"

***) to be replaced by**

DNV GL Rules for Classification of Ships dated 28th October 2015
http://exchange.dnv.com/servicedocuments/dnvgl/dnvglrulesforclassification

Coolant temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	100 K
Shaft steel	S355J2G3 with type 3.1 manufacturer's certificate from a DNV approved manufacturer
Individual approval for essential drives:	<100 kW with manufacturer's certificate; > 100 kW to <300 kW DNV approval for shaft manufacturer and manufacturer's certificate; approval required from 300 kW
Construction supervision for essential drives:	-
Rating plate	Marking in English and French; coolant temperature 45 °C or separately agreed coolant temperature; marking "MV acc. to DNV GL".

Following text in the type 3.1 manufacturer's certificate: "DNV GL Rules for Ships"

Motors with protection against seawater according to “Lloyd’s Register of Shipping”
http://www.lr.org/code/home.htm

Coolant temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	95 K
Shaft steel	from a manufacturer approved by LROS
Individual approval for essential drives	≥ 100 kW
Construction supervision for essential drives	≥ 100 kW
Rating plate	Marking in English and French; coolant temperature 45 °C or separately agreed coolant temperature; marking “MV acc. to LROS”.

Motors with protection against seawater according to “Russian Maritime Register of Shipping”
http://www.rs-head.spb.ru

Ambient temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	105 K
Individual approval for essential drives	> 55 kW
Construction supervision for essential drives	-

The Russian Maritime Register of Shipping has authorised the quality management department of VEM motors GmbH Wernigerode to perform motor approval inspections on the basis of the Agreement on Supervision No. 99.204.272 and the existing type approval certificate. The inspection certificates must be submitted to the Russian Maritime Register of Shipping for confirmation.

Rating plate	Marking in English and Russian; coolant temperature 45 °C or separately agreed coolant temperature; marking “MV acc. to RS”.

Motors with protection against seawater according to “China Classification Society”
http://www.ccs.org.cn

Coolant temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	105 K for motors ≥ 600 W and for self-ventilated motors (IC 410); 100 K for motors above 600 W
Shaft steel	CCS approval required for propulsion motors and drives (where the shaft is part of the drive)
Individual approval for essential drives	> 50 kW for essential services
Construction supervision for essential drives	-
Rating plate	Marking in English and French; coolant temperature 45 °C or separately agreed coolant temperature; marking “MV acc. to CCS”.

Motors with protection against seawater according to “American Bureau of Shipping”
http://www.eagle.org

Coolant temperature	50 °C for engine rooms 45 °C for all other places of installation
Thermal class	155 [F]
Temperature-rise limit of the winding	95 K
Individual approval for essential drives	≥ 100 kW
Construction supervision for essential drives	≥ 100 kW
Rating plate	Marking in German and English; Ambient temperature 45 °C or separately agreed coolant temperature; marking “MV acc. to ABS”

Verification has been granted for the drawings of motors up to an output of > 100 kW; in case of higher outputs, separate drawing verification is required for the individual motor. The following information is required for drawing verification and must be provided by the customer when placing the order:

– Contracted shipyard, name, address
– ABS construction no. or name of the vessel
– Drive purpose of the motor

Motors with protection against seawater according to “Polski Rejestr Statkow”
http://www.prs.pl
Individual approval through **“Germanischer Lloyd”** where appropriate

Ambient temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	95 K
Individual approval for essential drives	≥ 50
Construction supervision for essential drives	-
Rating plate	Marking in German and English; Ambient temperature 45 °C or separately agreed coolant temperature; marking “MV acc. to PRS”.

Motors with protection against seawater according to “REGISTRO ITALIANO NAVALE”
http://www.rina.org
Individual approval through **“Germanischer Lloyd”** where appropriate

Ambient temperature	45 °C
Thermal class	155 [F]
Temperature-rise limit of the winding	95 K
Individual approval for essential drives	≥ 50 kW
Construction supervision for essential drives	-
Rating plate	Marking in German and English; Ambient temperature 45 °C or separately agreed coolant temperature; marking “MV acc. to RINA”.

Overview of technical data

The most important technical data are summarised in the following table. Further information can be taken from the catalogue section Introduction, chapter 1.

Product group	Squirrel-cage rotor, IEC/EN
Classification societies	DNV*), GL*), DNV GL, BV, LRS, RS, RINA, CCS, ABS, PRS
Rated output	0.06 to 500 kW (IE1, IE2 and IE3 versions with 2, 4, 6 and 8 poles)
Sizes	56 to 355
Housing material	Grey cast iron
Rated torque	0.4 to 5800 Nm
Efficiency classification/ efficiency determination	IEC/EN 60034-30-1 / IEC/EN 60034-2-1, ≤ 1 kW direct measurement, > 1 kW residual loss method
Method of connection	Single-speed motors are designed in star-delta configuration as standard.
Stator winding insulation	Thermal class 155, optional 155 [F(B)], 180 to IEC/EN 60034-1
Degree of protection	IP 55 to IEC/EN 60034-5
Type of cooling	IC 411, IC 416, IC 71W (IC 31W) to IEC/EN 60034-6
Coolant temperature/ installation altitude	Standard -20 °C to +40 °C, Altitude 1000 m above sea level
Rated voltage	Standard voltages to EN 60038 50 Hz: 230 V, 400 V, 500 V, 690 V 60 Hz: 275 V, 460 V, 480 V, 600 V Voltage ranges A and B to IEC/EN 60034-1 (Prior consultation necessary regarding 230 V, 50 Hz and 275 V, 60 Hz for motors from size 315)
Duty types	S1, continuous duty, Short-time duty S2, 10/30/60 min Duty type S3/S6, 25/40/60 % c.d.f.
Types of construction	IM B3, IM B35, IM B5 and derived types to IEC/EN 60034-7
Paint finish	Normal finish “Moderate”, colour RAL 7031, blue-grey Special finish “Worldwide”, colour RAL 7031, blue-grey
Vibration severity grade	Grade “A” as standard for machines with no special vibration requirements
Shaft ends	to DIN 748 (IEC 60072), balanced with half-key
Limit speeds	Please refer to the section of “Limit speeds“ in catalogue section “Motors for converter-fed operation”, Chapter 4.
Bearing design	Please refer to the tables of “Bearing design data“ in catalogue section „Standand motors“, Chapter 2.
Motor mass	Please refer to the technical selection lists.
Terminal boxes	Please refer to the section “Terminal boxes”.
Documentation	An operating and maintenance manual, a terminal plan and a safety data sheet are supplied with each motor.
Tolerances	Please refer to the section “Tolerances” in catalogue section “Introduction“, Chapter 1.
Options	Please refer to the section “Overview of modifications” in catalogue section “Introduction“, Chapter 1.

*) to be replaced by DNV GL Rules for Classification of Ships dated 28th October 2015

Motor selection data

Three-phase motors with squirrel-cage rotor for marine use, Premium Efficiency IE3

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data																Design point 400 V, 50 Hz
Type GL DNV-GL RS (KP.. only)	Type DNV, RS, LR BV, ABS, CCS	P_B kW	M_B Nm	n_B rpm	η_B (EN 60034-2-1) 100 %	 75 %	 50 %	$\cos\varphi_B$ -	I_B 400 V A	I_A/I_B -	M_A/M_B -	M_S/M_B -	M_K/M_B -	J kgm^2	m kg
Synchronous 3000 rpm – 2-pole version																
IE3-KPR 56 G2	KPR 56 G2 IE3	0.12	0.4	2830	IE3- 60.8	59.4	55.9	0.77	0.31	4.5	2.1	2.1	2.3	0.00013	4.5
IE3-KPR 63 K2	KPR 63 K2 IE3	0.18	0.61	2840	IE3- 65.9	64.6	59.8	0.84	0.44	5.5	2.5	2.4	2.9	0.00025	6.3
IE3-KPR 63 G2	KPR 63 G2 IE3	0.25	0.85	2825	IE3- 69.7	70.1	67.1	0.83	0.55	4.9	2.4	2.2	2.7	0.00025	6.3
IE3-KPR 71 K2	KPR 71 K2 IE3	0.37	1.24	2860	IE3- 73.8	71.7	70.3	0.87	0.78	7.1	2.9	2.7	3.1	0.00057	10.0
IE3-KPR 71 G2	KPR 71 G2 IE3	0.55	1.83	2870	IE3- 77.8	77.4	74.5	0.86	1.14	7.4	3.0	2.7	3.3.	0.00072	11.2
IE3-KPR 80 K2	KPR 80 K2 IE3	0.75	2.49	2875	IE3- 80.7	82.7	80.7	0.89	1.48	7.7	2.2	2.1	2.7	0.00132	15.0
IE3-KPR 80 G2	KPR 80 G2 IE3	1.1	3.64	2885	IE3- 82.7	82.1	81.3	0.89	2.15	7.8	2.5	2.3	2.8	0.0017	18.0
IE3-KPR 90 S2	KPR 90 S2 IE3	1.5	4.92	2910	IE3- 84.2	86.6	84.5	0.86	2.9	9.1	3.0	2.7	3.7	0.00275	23.5
IE3-KPR 90 L2	KPR 90 L2 IE3	2.2	7.23	2905	IE3- 85.9	87.7	86.0	0.89	4.05	8.6	2.7	2.3	3.7	0.00333	29.0
IE3-KPR 100 L2	KPR 100 L2 IE3	3.0	9.74	2940	IE3- 87.1	86.4	83.5	0.8	6.2	10.1	3.3	2.9	4.8	0.0055	38.0
IE3-KPER 112 M2	KPER 112 M2 IE3	4.0	13.0	2930	IE3- 88.1	89.3	88.1	0.85	7.6	9.0	2.7	2.4	3.7	0.0068	46.0
IE3-KPR 112 M2	KPR 112 M2 IE3	4.0	13.0	2930	IE3- 89.2	89.2	87.9	0.87	7.4	6.9	1.5	1.2	2.9	0.011	60.0
IE3-KPER 132 S2	KPER 132 S2 IE3	5.5	17.9	2935	IE3- 89.2	87.5	85.1	0.80	11.2	9.1	2.8	2.2	4	0.011	65.0
IE3-W41R 132 SX2	K11R 132 SX2 IE3	7.5	24.0	2925	IE3- 90.1	89.4	87.9	0.87	14.0	8.0	2.5	2.1	3.3	0.0168	75
IE3-W41R 160 M2	K11R 160 M2 IE3	11	36.0	2950	IE3- 91.4	91.7	90.5	0.90	19.5	8.0	2.2	1.8	3.2	0.0575	125
IE3-W41R 160 MX2	K11R 160 MX2 IE3	15	49.0	2950	IE3- 91.9	92.0	91.3	0.91	26.0	7.9	2.2	1.7	3.1	0.0675	145
IE3-W41R 160 L2	K11R 160 L2 IE3	18.5	60.0	2960	IE3- 92.4	92.5	91.4	0.90	32.0	9.2	2.6	2.1	3.6	0.078	160
IE3-W41R 180 M2C	K11R 180 M2C IE3	22	71	2975	IE3- 92.7	92.6	91.5	0.91	37.5	8.9	1.9	1.4	3.3	0.1717	214
IE3-W41R 200 L2	K11R 200 L2 IE3	30	97	2965	IE3- 93.3	92.2	90.6	0.88	52.5	8.6	2.1	1.6	3.3	0.36	305
IE3-W41R 200 LX2C	K11R 200 LX2C IE3	37	119	2980	IE3- 93.7	92.9	91.7	0.89	64.0	8.7	1.7	1.3	3.2	0.4757	310
IE3-W41R 225 M2	K11R 225 M2 IE3	45	145	2960	IE3- 94.0	93.7	93.0	0.89	77.5	8.8	2.3	1.9	3.2	0.375	375
IE3-W41R 250 M2	K11R 250 M2 IE3	55	177	2970	IE3- 94.6	94.4	93.6	0.91	92	8.9	2.2	1.9	3.2	0.65	510
IE3-W41R 280 S2	K11R 280 S2 IE3	75	241	2967	IE3- 94.7	94.5	93.9	0.89	128	8.1	1.9	1.9	2.8	0.65	500
IE3-W41R 280 M2	K11R 280 M2 IE3	90	289	2970	IE3- 95	94.5	94	0.90	152	8.4	2.2		3.1	0.675	545
IE3-W41R 315 S2	K11R 315 S2 IE3	110	354	2970	IE3- 95.2	94.5	93.5	0.89	187	10.0	1.9	1.7	3.0	1.21	750
IE3-W41R 315 M2	K11R 315 M2 IE3	132	423	2980	IE3- 95.4	95.0	94.5	0.89	224	10.0	2.0	1.8	3.0	1.44	815
IE3-W41R 315 MX2	K11R 315 MX2 IE3	160	513	2980	IE3- 95.7	95.7	95.0	0.9	268	8.5	2.3	1.7	2.6	2.37	1095
IE3-W41R 315 MY2	K11R 315 MY2 IE3	200	641	2980	IE3- 95.8	95.9	95.5	0.91	331	8.3	2.6	1.6	2.4	2.82	1200
IE3-W41R 315 L2	K11R 315 L2 IE3	250	800	2985	IE3- 95.8	96.0	95.9	0.93	405	9.0	2.3	1.2	2.3	3.66	1460
IE3-W41R 315 LX2	K11R 315 LX2 IE3	315	1008	2985	IE3- 95.8	95.8	95.8	0.92	516	8.5	2.8	1.6	2.5	4.43	1700
IE3-W41R 355 M2	K22R 355 M2 IE3	355	1136	2985	IE3- 96.0	96.0	96.0	0.92	580	7.7	1.9	1.5	3.8	4.20	2000
Synchronous 1500 rpm – 4-pole version															
IE3-KPER 63 K4	KPER 63 K4 IE3	0.12	0.84	1365	IE3- 64.8	64.5	59.7	0.72	0.35	3.2	1.9	1.8	2.2	0.00024	5.2
IE3-KPR 63 G4	KPR 63 G4 IE3	0.18	1.21	1415	IE3- 69.9	67.2	61.2	0.67	0.57	4.4	1.8	1.8	2.7	0.0005	7.1
IE3-KPR 71 K4	KPR 71 K4 IE3	0.25	1.67	1430	IE3- 73.5	73.1	69.6	0.71	0.66	5.6	2.5	2.3	2.9	0.00087	9.9
IE3-KPR 71 G4	KPR 71 G4 IE3	0.37	2.5	1430	IE3- 77.3	78.2	73.1	0.69	0.98	6.2	2.8	2.6	3.2	0.00107	11.0
IE3-KPR 80 K4	KPR 80 K4 IE3	0.55	3.67	1430	IE3- 80.8	81.0	80.1	0.80	1.25	6.0	2.4	2.3	2.7	0.00207	14.5
IE3-KPR 80 GX4	KPR 80 GX4 IE3	0.75	5	1440	IE3- 82.5	82.3	79.6	0.74	1.75	7.1	3.4	3.3	4.2	0.0028	17.5
IE3-KPR 90 S4	KPR 90 S4 IE3	1.1	7.24	1450	IE3- 84.1	83.5	80.0	0.74	2.55	8.0	3.6	3.5	4.2	0.0045	28.0
IE3-KPR 90 LX4	KPR 90 LX4 IE3	1.5	9.85	1455	IE3- 85.3	84.5	81.7	0.73	3.45	9.5	4.5	3.8	4.9	0.0058	31.0
IE3-KPR 100 L4	KPR 100 L4 IE3	2.2	14.49	1450	IE3- 86.7	87.0	85.1	0.81	4.55	8.2	2.9	2.7	3.8	0.011	45.0
IE3-KPR 100 LZ4	KPR 100 LZ4 IE3	3.0	19.7	1455	IE3- 87.7	87.6	86.1	0.77	6.4	8.6	3.2	3.1	4.1	0.013	50.0
IE3-KPR 112 M4	KPR 112 M4 IE3	4.0	26.1	1465	IE3- 88.6	88.3	86.2	0.83	7.9	10.2	3.2	2.9	5	0.02	65.0
IE3-W41R 132 S4	K11R 132 S4 IE3	5.5	35	1480	IE3- 91.0	90.2	87.8	0.73	12.0	9.9	3.4	2.8	5.4	0.035	90
IE3-W41R 132 M4	K11R 132 M4 IE3	7.5	49	1475	IE3- 91.3	91.3	90.1	0.83	14.5	8.6	2.4	2.0	3.9	0.043	100
IE3-W41R 160 M4	K11R 160 M4 IE3	11	71	1475	IE3- 91.4	91.5	90.5	0.83	21.0	7.5	2.5	2.0	3.2	0.078	125
IE3-W41R 160 L4C	K11R 160 L4C IE3	15	96	1490	IE3- 92.8	92.5	91.0	0.83	28.0	10.5	2.8	2.4	3.9	0.1567	175
IE3-W41R 180 M4	K11R 180 M4 IE3	18.5	120	1475	IE3- 92.7	92.9	92.0	0.84	34.5	6.9	1.9	1.7	3.0	0.168	210
IE3-W41R 180 L4	K11R 180 L4 IE3	22	142	1480	IE3- 93.0	93.0	92.1	0.84	40.5	7.6	2.2	2.0	3.2	0.203	240
IE3-W41R 200 L4C	K11R 200 L4C IE3	30	193	1485	IE3- 93.6	92.4	92.4	0.85	54.5	7.0	1.6	1.4	2.6	0.411	327
IE3-W41R 225 S4C	K11R 225 S4C IE3	37	237	1490	IE3- 93.9	93.8	93.2	0.85	67.0	7.4	1.9	1.4	2.7	0.4675	367
IE3-W41R 225 M4	K11R 225 M4 IE3	45	290	1482	IE3- 94.2	94.3	94.0	0.82	84	8.1	2.6	2.1	2.6	0.619	450
IE3-W41R 250 M4	K11R 250 M4 IE3	55	354	1485	IE3- 94.7	94.8	94.4	0.83	101	8.1	2.1	1.8	2.5	0.95	550
IE3-W41R 280 S4	K11R 280 S4 IE3	75	482	1485	IE3- 95.0	94.6	94.2	0.83	137	8.2	2.1	1.8	2.5	1.1	617
IE3-W41R 280 M4	K11R 280 M4 IE3	90	578	1487	IE3- 95.2	94.7	94.0	0.83	164	9.2	2.1	1.9	2.7	1.96	785
IE3-W41R 315 S4	K11R 315 S4 IE3	110	706	1487	IE3- 95.4	95.0	94.3	0.82	203	9.5	1.9	1.7	2.7	1.96	760
IE3-W41R 315 M4	K11R 315 M4 IE3	132	849	1485	IE3- 95.6	95.4	95.0	0.83	240	9.0	2.2	1.9	2.7	2.27	850
IE3-W41R 315 MX4	K11R 315 MX4 IE3	160	1026	1490	IE3- 95.8	95.8	95.0	0.84	287	9.5	2.1	2.0	3.2	4.01	1120
IE3-W41R 315 MY4	K11R 315 MY4 IE3	200	1282	1490	IE3- 96.0	95.8	95.5	0.87	346	9.5	2.1	1.7	2.7	4.82	1250
IE3-W41R 315 L4	K11R 315 L4 IE3	250	1602	1490	IE3- 96.2	96.2	96.0	0.87	431	9.4	2.2	1.8	2.7	5.93	1450
IE3-W41R 315 LX4	K11R 315 LX4 IE3	315	2019	1490	IE3- 96.0	96.0	96.0	0.87	544	9.5	2.3	1.7	2.9	6.82	1630
IE3-W41R 355 M 4	K22R 355 M 4 IE3	355	2271	1493	IE3- 96.2	96.2	95.5	0.87	612	8.1	1.3	1.0	2.7	7.90	2150

Three-phase motors with squirrel-cage rotor for marine use, Premium Efficiency IE3

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data															Design point 400 V, 50 Hz	
Type GL DNV-GL RS (KP.. only)	Type DNV, RS, LR BV, ABS, CCS	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 400 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 1000 rpm – 6-pole version															
IE3-KPR 63 G6	KPR 63 G6 IE3	0.12	1.23	930	IE3- 57.7	60.0	54.0	0.56	0.53	2.8	1.9	1.8	2.1	0.00045	6.7
IE3-KPR 71 K6	KPR 71 K6 IE3	0.18	1.85	930	IE3- 63.9	62.9	57.5	0.68	0.57	3.4	2.0	2.0	2.2	0.0013	11.0
IE3-KPR 71 G6	KPR 71 G6 IE3	0.25	2.55	935	IE3- 68.6	66.9	62.2	0.67	0.75	3.9	2.3	2.3	2.5	0.00175	12.5
IE3-KPR 80 K6	KPR 80 K6 IE3	0.37	3.72	950	IE3- 73.5	72.9	69.2	0.70	1.03	4.0	1.9	1.9	2.4	0.00325	15.0
IE3-KPR 80 G6	KPR 80 G6 IE3	0.55	5.53	950	IE3- 77.2	75.9	72.4	0.69	1.50	4.1	2.1	2.1	2.5	0.00425	18.0
IE3-KPR 90 S6	KPR 90 S6 IE3	0.75	7.54	950	IE3- 78.9	79.7	77.5	0.73	1.87	5.3	2.4	2.2	2.9	0.0072	30.0
IE3-KPR 90 L6	KPR 90 L6 IE3	1.1	11.0	955	IE3- 81.0	81.0	78.5	0.71	2.75	5.4	2.5	2.4	2.8	0.0072	30.0
IE3-KPR 100 LX6	KPR 100 LX6 IE3	1.5	15.0	955	IE3- 82.5	83.5	81.5	0.76	3.45	5.9	2.3	2.2	2.8	0.0139	36.0
IE3-KPER 112 MV6	KPER 112 MV6 IE3	2.2	22.0	955	IE3- 84.3	83.6	80.9	0.74	5.15	5.7	2.4	2.3	2.9	0.0155	48.0
IE3-KPER 132 S6	KPER 132 S6 IE3	3.0	30.0	97	IE3- 85.6	85.3	82.5	0.74	6.8	7.2	2.8	2.7	4	0.029	70.0
IE3-W41R 132 M6	K11R 132 M6 IE3	4	40.0	965	IE3- 86.8	87.0	86.0	0.80	8.3	4.8	1.7	1.4	2.4	0.043	75
IE3-W41R 132 MX6	K11R 132 MX6 IE3	5.5	54.0	970	IE3- 88.6	88.6	87.2	0.80	11.0	6.0	2.1	1.7	3.0	0.053	105
IE3-W41R 160 M6	K11R 160 M6 IE3	7.5	73.0	980	IE3- 90.2	90.0	88.3	0.83	14.5	6.4	2.4	2.0	3.0	0.145	145
IE3-W41R 160 L6C	K11R 160 L6C IE3	11	107.0	985	IE3- 91.4	91.2	89.8	0.85	20.5	6.8	2.2	2	2.8	0.166	168
IE3-W41R 180 L6C	K11R 180 L6C IE3	15	145.0	985	IE3- 91.2	91.3	90.2	0.87	27.5	6.8	2	1.7	2.7	0.3396	214
IE3-W41R 200 L6	K11R 200 L6 IE3	18.5	180.0	980	IE3- 91.8	91.7	90.5	0.87	33.5	7.2	2.3	2	3	0.514	310
IE3-W41R 200 LX6C	K11R 200 LX6C IE3	22	213.0	985	IE3- 92.2	91.5	90	0.87	39.5	7.6	2.1	1.7	2.9	0.6476	321
IE3-W41R 225 M6	K11R 225 M6 IE3	30	291	984	IE3- 92.9	92.2	91.0	0.84	55.5	7.2	2.7	2.2	2.9	0.92	400
IE3-W41R 250 M6	K11R 250 M6 IE3	37	359	985	IE3- 93.3	93.2	92.3	0.86	66.5	7.1	2.8	2.0	2.7	1.48	545
IE3-W41R 280 S6	K11R 280 S6 IE3	45	434	990	IE3- 93.7	93.5	91.5	0.86	80.5	8.5	2.1	1.8	2.8	2.63	695
IE3-W41R 280 M6	K11R 280 M6 IE3	55	531	990	IE3- 94.2	94.1	93.1	0.85	99	9.0	2.2	1.9	3.1	3.33	815
IE3-W41R 315 S6	K11R 315 S6 IE3	75	723	990	IE3- 94.6	94.0	93.5	0.86	133	8.2	1.8	1.4	2.3	5.55	1060
IE3-W41R 315 M6	K11R 315 M6 IE3	90	868	990	IE3- 94.9	94.0	93.0	0.86	159	8.5	2.2	1.7	2.8	6	1100
IE3-W41R 315 MX6	K11R 315 MX6 IE3	110	1061	990	IE3- 95.1	95.0	94.5	0.86	194	8.5	2.5	1.7	2.7	6.67	1210
IE3-W41R 315 L6	K11R 315 L6 IE3	132	1267	995	IE3- 95.4	95.0	94.5	0.87	230	9.0	2.8	2.0	3.2	8.6	1550
IE3-W41R 355 M6	K22R 355 M6 IE3	160	1536	995	IE3- 95.6	95.0	94.6	0.82	295	8.0	2.1	0.0	2.7	8.2	1850
IE3-W42R 355 MX6	K22R 355 MX6 IE3	200	1919	995	IE3- 95.8	95.5	95.0	0.83	363	9.0	1.9	1.7	2.7	12.10	2200
IE3-W41R 355 L6	K22R 355 L 6 IE3	250	2395	997	IE3- 95.8	95.5	95.0	0.84	448	8.8	2.2	1.5	2.8	14.00	2400
IE3-W41R 355 LX6	K22R 355 LX6 IE3	315	3023	995	IE3- 95.8	95.7	95.3	0.84	565	7.5	1.6	1.1	2.3	14.00	2400
Synchronous 750 rpm – 8-pole version															
IE3-KPR 71 G8	KPR 71 G8 IE3	0.12	1.67	685	IE3- 50.7	48.8	43.0	0.64	0.48	2.6	1.7	1.7	2.0	0.0013	9.9
IE3-KPER 80 K8	KPER 80 K8 IE3	0.18	2.53	680	IE3- 58.7	56.3	49.8	0.61	0.73	2.6	1.6	1.6	2.0	0.00175	12.0
IE3-KPR 80 G8	KPR 80 G8 IE3	0.25	3.39	705	IE3- 64.1	64.3	58.4	0.59	0.93	3.0	1.4	1.4	2.1	0.003	14.0
IE3-KPR 90 S8	KPR 90 S8 IE3	0.37	4.98	710	IE3- 69.3	69.0	64.4	0.63	1.20	3.6	2.1	2.1	2.3	0.00625	25.0
IE3-KPR 90 L8	KPR 90 L8 IE3	0.55	7.5	700	IE3- 73.0	70.6	66.3	0.64	1.72	3.6	1.8	1.8	2.3	0.0072	26.0
IE3-KPR 100 L8	KPR 100 L8 IE3	0.75	10.0	715	IE3- 75.0	75.9	71.3	0.63	2.25	4.4	2.5	2.5	2.8	0.0123	33.5
IE3-KPR 100 LX8	KPR 100 LX8 IE3	1.1	14.8	710	IE3- 77.7	77.5	73.7	0.63	3.2	4.2	1.9	1.8	2.5	0.0139	36.0
IE3-KPER 112 MZ8	KPER 112 MZ8 IE3	1.5	20.3	705	IE3- 79.7	78.8	75.8	0.66	4.2	4.7	2.7	2.7	3.2	0.018	50.0
IE3-KPER 132 S8	KPER 132 S8 IE3	2.2	29.0	720	IE3- 80.5									0.043	70.0
IE3-W41R 132 M8	K11R 132 M8 IE3	3	40	720	IE3- 83.5	83.5	81.4	0.72	7.0	3.9	1.6	1.4	2.1	0.043	74
IE3-W41R 160 M8	K11R 160 M8 IE3	4	51	735	IE3- 87.0	86.7	83.8	0.71	9.4	5.4	2.5	2.2	2.9	0.113	119
IE3-W41R 160 MX8	K11R 160 MX8 IE3	5.5	72	730	IE3- 87.5	87.5	85.6	0.73	12.5	4.7	1.9	1.7	2.5	0.145	143
IE3-W41R 160 L8	K11R 160 L8 IE3	7.5	98	730	IE3- 87.9	87.6	85.6	0.73	17.0	5.1	2.1	1.8	2.7	0.166	155
IE3-W41R 180 L8	K11R 180 L8 IE3	11	143	733	IE3- 89.3	89.0	87.1	0.75	23.5	5.4	2.1	1.9	2.8	0.228	175
IE3-W41R 200 L8	K11R 200 L8 IE3	15	196	730	IE3- 89.6	90.0	89.0	0.80	30.0	5.3	1.8	1.7	2.5	0.324	235
IE3-W41R 225 S8	K11R 225 S8 IE3	18.5			IE3- 90.1									0.514	310
IE3-W41R 225 M8	K11R 225 M8 IE3	22	286	735	IE3- 91.5	91.6	90.6	0.79	44	5.7	2.3	2.0	2.5	0.825	360
IE3-W41R 250 M8	K11R 250 M8 IE3	30	391	732	IE3- 91.3	91.9	91.4	0.81	58.5	5.4	2.0	1.8	2.3	0.92	420
IE3-W41R 280 S8	K11R 280 S8 IE3	37	479	738	IE3- 92.0	92.0	90.8	0.78	74.5	5.9	2.3	1.8	2.4	1.55	555
IE3-W41R 280 M8	K11R 280 M8 IE3	45	581	740	IE3- 93.0	93.0	92.4	0.78	89.5	6.5	1.7	1.5	2.4	2.63	700
IE3-W41R 315 S8	K11R 315 S8 IE3	55	708	742	IE3- 93.3	93.3	92.4	0.78	109	7.0	1.9	1.7	2.5	3.33	805
IE3-W41R 315 M8	K11R 315 M8 IE3	75	965	742	IE3- 93.8	94.2	93.8	0.81	142	7.0	1.9	1.7	2.3	5.55	1120
IE3-W41R 315 MX8	K11R 315 MX8 IE3	90	1157	743	IE3- 94.3	94.4	93.6	0.80	172	7.9	2.4	2.0	2.7	6	1185
IE3-W41R 315 MY8	K11R 315 MY8 IE3	110	1419	740	IE3- 93.8	94.0	93.8	0.82	206	6.5	1.9	1.5	2.1	6.76	1250
IE3-W41R 315 L8	K11R 315 L8 IE3	132	1703	740	IE3- 94.2	94.2	93.5	0.80	253	8.0	2.4	1.9	2.7	8.71	1450
IE3-W41R 355 MY8	K22R 355 MY8 IE3	160	2051	745	IE3- 94.3	94.3	94.0	0.82	299	6.6	1.2	1.0	2.6	9.3	1700
IE3-W41R 355 M8	K22R 355 M8 IE3	200	2564	745	IE3- 94.7	94.9	94.2	0.81	376	7.0	1.0	1.0	2.7	9.5	1890
IE3-W41R 355 LY8	K22R 355 LY8 IE3	230												15.8	2400

Three-phase motors with squirrel-cage rotor for marine use, Premium Efficiency IE3

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data															Design point 460 V, 60 Hz	
Type	Type	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 460 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
GL	DNV, RS, LR														
DNV-GL	BV, ABS, CCS														
RS (KP.. only)		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 3600 rpm – 2-pole version															
IE3-KPR 56 G2	KPR 56 G2 IE3	0.14	0.39	3410	IE3- 71.4	62.0	66.5	0.82	0.3	5.2	2.0	2.0	2.3	0.00013	4.5
IE3-KPR 63 K2	KPR 63 K2 IE3	0.21	0.58	3430	IE3- 65.6	***)	***)	0.83	0.44	5.5	2.6	2.5	3.1	0.00025	6.3
IE3-KPR 63 G2	KPR 63 G2 IE3	0.3	0.84	3410	IE3- 69.5	70.0	67.8	0.84	0.58	5.3	2.3	2.2	2.8	0.00025	6.3
IE3-KPR 71 K2	KPR 71 K2 IE3	0.44	1.21	3460	IE3- 73.4	83.9	82.4	0.86	0.78	7.3	3.0	2.8	3.2	0.00057	10.0
IE3-KPR 71 G2	KPR 71 G2 IE3	0.65	1.79	3465	IE3- 77.0	82.4	82.0	0.87	1.13	7.8	2.8	2.5	2.9	0.00072	11.2
IE3-KPR 80 K2	KPR 80 K2 IE3	0.75	2.05	3500	IE3- 83.0	83.5	80.6	0.87	1.30	8.5	2.5	2.1	3.0	0.00132	15.0
IE3-KPR 80 G2	KPR 80 G2 IE3	1.1	3.01	3490	IE3- 84.0	85.1	81.9	0.87	1.88	9.2	3.0	2.7	3.3	0.0017	18.0
IE3-KPR 90 S2	KPR 90 S2 IE3	1.5	4.90	3510	IE3- 85.5	87.3	84.3	0.88	2.9	8.1	2.1	2.0	3.1	0.00275	23.5
IE3-KPR 90 L2	KPR 90 L2 IE3	2.2	5.98	3515	IE3- 86.5	87.4	85.6	0.88	3.60	7.2	2.1	1.8	2.7	0.00333	29.0
IE3-KPR 100 L2	KPR 100 L2 IE3	3.6	9.71	3540	IE3- 88.5	88.0	85.7	0.82	6.20	9.8	2.8	2.3	4.4	0.0055	38.0
IE3-KPER 112 M2	KPER 112 M2 IE3	4.8	13.02	3520	IE3- 89.5	89.3	87.5	0.86	7.8	8.7	2.4	2.2	3.5	0.0068	46.0
IE3-KPR 112 M2	KPR 112 M2 IE3	4.5	12.16	3535	IE3- 88.5	88.3	86.3	0.88	7.3	6.7	1.5	1.2	2.9	0.011	60.0
IE3-KPER 132 S2	KPER 132 S2 IE3	6.4	17.00	3525	IE3- 89.5	88.5	86.0	0.85	10.4	7.2	1.8	1.3	3.3	0.011	65.0
IE3-W41R 132 SX2	K11R 132 SX2 IE3	9	24	3520	IE3- 90.5	89.5	87.8	0.89	14	7.1	2.3	1.9	3.1	0.0168	75
IE3-W41R 160 M2	K11R 160 M2 IE3	13.2	36	3540	IE3- 91	90	87.9	0.91	20	7.3	2	1.6	2	0.0575	125
IE3-W41R 160 MX2	K11R 160 MX2 IE3	18	48	3545	IE3- 92	92.3	91.2	0.92	26.5	7.4	2	1.6	2.9	0.0675	145
IE3-W41R 160 L2	K11R 160 L2 IE3	22	59	3550	IE3- 92	91.9	90.7	0.91	33	8.5	2.4	1.9	3.3	0.078	160
IE3-W41R 180 M2C	K11R 180 M2C IE3	26	70	3570	IE3- 92.4	92.0	90.7	0.92	38.5	8.2	1.8	1.3	3.0	0.1717	214
IE3-W41R 200 L2	K11R 200 L2 IE3	33	88	3565	IE3- 92.4	91.0	88.6	0.88	51.0	8.5	2.1	1.6	3.2	0.36	305
IE3-W41R 200 LX2C	K11R 200 LX2C IE3	40	107	3575	IE3- 93	91.7	89.5	0.89	60.5	8.8	1.8	1.3	3.2	0.4757	310
IE3-W41R 225 M2	K11R 225 M2 IE3	54	145	3553	IE3- 93.6	93.3	92.6	0.89	81.5	8.1	2.1	1.7	2.9	0.375	375
IE3-W41R 250 M2	K11R 250 M2 IE3	66	177	3568	IE3- 94.1	93.5	92.3	0.92	95.5	8.2	2	1.8	2.9	0.65	510
IE3-W41R 280 S2	K11R 280 S2 IE3	82	220	3566	IE3- 94.5	94	92.5	0.90	121	8.1	2	1.8	3	0.65	500
IE3-W41R 280 M2	K11R 280 M2 IE3													0.675	545
IE3-W41R 315 S2	K11R 315 S2 IE3	110	294	3570	IE3- 95.0	94.0	92.5	0.89	163	10	2	1.8	3.2	1.21	750
IE3-W41R 315 M2	K11R 315 M2 IE3	145	387	3580	IE3- 95.4	95.0	94.5	0.89	214	10	2	1.8	3	1.44	815
IE3-W41R 315 MX2	K11R 315 MX2 IE3	165	440	3585	IE3- 95.4	95	94	0.89	244	9	2.5	1.8	2.8	2.37	1095
IE3-W41R 315 MY2	K11R 315 MY2 IE3	220	587	3580	IE3- 95.8	95.3	94.5	0.91	317	8.5	2.8	1.7	2.7	2.82	1200
IE3-W41R 315 L2	K11R 315 L2 IE3													3.66	1460
IE3-W41R 315 LX2	K11R 315 LX2 IE3	340	906	3585	IE3- 95.8	95.8	95.5	0.92	484	9.1	2.9	1.6	2.5	4.43	1700
IE3-W41R 355 M2	K22R 355 M2 IE3													4.20	2000
Synchronous 1800 rpm – 4-pole version															
IE3-KPER 63 K4	KPER 63 K4 IE3	0.14	0.81	1660	IE3- 66.0	65.5	61.1	0.71	0.37	3.6	1.9	1.9	2.3	0.00024	5.2
IE3-KPR 63 G4	KPR 63 G4 IE3	0.21	1.16	1725	IE3- 69.5	68.8	62.9	0.66	0.56	4.8	2.6	2.6	2.9	0.0005	7.1
IE3-KPR 71 K4	KPR 71 K4 IE3	0.3	1.66	1725	IE3- 73.4	76.5	72.8	0.74	0.66	5.2	2.1	2.0	2.7	0.00087	9.9
IE3-KPR 71 G4	KPR 71 G4 IE3	0.44	2.44	1725	IE3- 78.2	77.8	74.3	0.72	0.96	6.1	2.5	2.4	3.2	0.00107	11.0
IE3-KPR 80 K4	KPR 80 K4 IE3	0.65	3.60	1725	IE3- 83.5	82.8	79.0	0.81	1.24	6.2	2.2	2.1	2.6	0.00207	14.5
IE3-KPR 80 GX4	KPR 80 GX4 IE3	0.75	4.94	1740	IE3- 83.5	83.3	80.5	0.79	1.77	7.4	3.3	3.2	4.2	0.0026	17.0
IE3-KPR 90 S4	KPR 90 S4 IE3	1.1												0.0045	28.0
IE3-KPR 90 LX4	KPR 90 LX4 IE3	1.5	9.82	1750	IE3- 86.5	85.3	82.1	0.77	3.4	8.8	3.8	3.4	4.7	0.0058	31.0
IE3-KPR 100 L4	KPR 100 L4 IE3	2.2												0.011	45.0
IE3-KPR 100 LZ4	KPR 100 LZ4 IE3	3.0	19.60	1750	IE3- 89.5	89.0	87.6	0.79	6.45	8.1	2.6	2.5	3.6	0.013	50.0
IE3-KPR 112 M4	KPR 112 M4 IE3	4.5	24.00	1765	IE3- 90.3	90.2	90.2	0.84	7.4	9.3	2.8	2.4	4.5	0.02	65.0
IE3-W41R 132 S4	K11R 132 S4 IE3	6.6	35	1780	IE3- 91.8	91	88.9	0.77	11.7	9.6	3.1	2.6	5	0.035	90
IE3-W41R 132 M4	K11R 132 M4 IE3	9	49	1765	IE3- 91.8	91.7	90.6	0.85	14.5	8	2.3	1.9	3.6	0.043	100
IE3-W41R 160 M4	K11R 160 M4 IE3	12.5	67	1775	IE3- 92.4	91.8	90.6	0.80	21.5	7.4	2.4	2	3.1	0.078	125
IE3-W41R 160 L4C	K11R 160 L4C IE3	18	96	1785	IE3- 93.6	92.8	91.3	0.85	28.5	9.9	2.6	2.2	3.6	0.1567	175
IE3-W41R 180 M4	K11R 180 M4 IE3	22	118	1775	IE3- 93.6	93.0	92.3	0.84	35.0	6.5	1.8	1.9	2.8	0.168	210
IE3-W41R 180 L4	K11R 180 L4 IE3	25	134	1775	IE3- 93.6	92.8	91.8	0.85	39.5	7.5	2.1	1.9	3.1	0.203	240
IE3-W41R 200 L4C	K11R 200 L4C IE3	30	160	1790	IE3- 94.1	92.8	91.0	0.84	47.5	7.7	1.7	1.5	2.8	0.411	327
IE3-W41R 225 S4C	K11R 225 S4C IE3	40	214	1785	IE3- 94.5	93.7	92.5	0.85	62.5	7.5	1.9	1.4	2.7	0.4675	367
IE3-W41R 225 M4	K11R 225 M4 IE3	49	263	1782	IE3- 95	94	91.5	0.83	79	8.7	2.7	2.2	2.7	0.619	450
IE3-W41R 250 M4	K11R 250 M4 IE3	55	294	1785	IE3- 95.4	94.9	93.5	0.83	87	8.9	2.3	2	2.7	0.95	550
IE3-W41R 280 S4	K11R 280 S4 IE3	90	482	1783	IE3- 95.4	94.6	94	0.84	141	7.9	2	1.7	2.3	1.1	617
IE3-W41R 280 M4	K11R 280 M4 IE3	90	480	1790	IE3- 95	95.4	93.2	0.82	144	10	2	1.9	2.9	1.96	785
IE3-W41R 315 S4	K11R 315 S4 IE3	125	668	1788	IE3- 95.8	95.2	94.3	0.83	197	9.2	2.1	2	2.7	1.96	760
IE3-W41R 315 M4	K11R 315 M4 IE3	129	689	1787	IE3- 95.8	95.3	94.7	0.83	204	10	2.3	2.1	2.9	2.27	850
IE3-W41R 315 MX4	K11R 315 MX4 IE3	175	934	1790	IE3- 96.2	96	95	0.84	272	9.5	2.1	2	3.2	4.01	1120
IE3-W41R 315 MY4	K11R 315 MY4 IE3	225	1200	1790	IE3- 96.2	96	95.5	0.85	345	10.5	2.6	1.9	3.1	4.82	1250
IE3-W41R 315 L4	K11R 315 L4 IE3	280	1494	1790	IE3- 96.2	96.1	95.7	0.87	420	9.3	2.2	1.8	2.7	5.93	1450
IE3-W41R 315 LX4	K11R 315 LX4 IE3	315	1680	1790	IE3- 96.2	96.2	95.5	0.87	472	10.5	2.6	1.9	3.2	6.82	1630
IE3-W41R 355 M 4	K22R 355M 4 IE3	375	2001	1790	IE3- 96.2	95.8	95	0.87	647	9.1	1.3	1	3.2	7.90	2150

***) upon request

Three-phase motors with squirrel-cage rotor for marine use, Premium Efficiency IE3

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data															Design point 460 V, 60 Hz
Type GL DNV-GL RS (KP.. only)	Type DNV, RS, LR BV, ABS, CCS	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 460 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 1200 rpm – 6-pole version															
IE3-KPR 63 G6	KPR 63 G6 IE3	0.14	1.18	1130	IE3- 64.0	62.1	56.2	0.54	0.5	3.1	1.8	1.8	2.2	0.00045	6.7
IE3-KPR 71 K6	KPR 71 K6 IE3	0.21	1.78	1125	IE3- 67.5	***)	***)	0.68	0.55	3.6	2.1	2.0	2.3	0.0013	11.0
IE3-KPR 71 G6	KPR 71 G6 IE3	0.3	2.55	1125	IE3- 71.4	***)	***)	0.70	0.73	4.4	2.4	2.4	2.7	0.00175	12.5
IE3-KPR 80 K6	KPR 80 K6 IE3	0.44	3.67	1145	IE3- 75.3	74.8	71.2	0.70	1.03	4.1	1.8	1.8	2.3	0.00325	15.0
IE3-KPR 80 G6	KPR 80 G6 IE3	0.45	3.67	1170	IE3- 75.3	75.0	69.4	0.58	1.25	5.1	3.0	3.0	3.6	0.00425	18.0
IE3-KPR 90 S6	KPR 90 S6 IE3	0.9	7.47	1150	IE3- 82.5	82.9	80.9	0.73	1.88	5.3	2.2	2.0	2.7	0.0072	30.0
IE3-KPR 90 L6	KPR 90 L6 IE3	0.92	7.51	1170	IE3- 82.3	80.02	74.53	0.62	2.26	6.8	3.5	3.0	4.2	0.0072	30.0
IE3-KPR 100 LX6	KPR 100 LX6 IE3	0.92	7.45	1180	IE3- 82.8	80	79.7	0.57	2.45	7.7	3.6	3.6	5.1	0.0139	36.0
IE3-KPER 112 MV6	KPER 112 MV6 IE3														
IE3-KPER 132 S6	KPER 132 S6 IE3														
IE3-W41R 132 M6	K11R 132 M6 IE3	4.5	37	1170	IE3- 89.5	88.7	87.6	0.80	7.9	4.8	1.7	1.5	2.4	0.043	75
IE3-W41R 132 MX6	K11R 132 MX6 IE3	5.7	46	1175	IE3- 91	89.8	87.5	0.79	10	6.5	2.2	1.9	3.2	0.053	105
IE3-W41R 160 M6	K11R 160 M6 IE3	9	73	1175	IE3- 91.3	90.6	89	0.85	14.6	6	2.2	1.9	2.8	0.145	145
IE3-W41R 160 L6C	K11R 160 L6C IE3	13	105	1185	IE3- 91.7	91.4	90	0.86	20.5	6.5	2.1	1.9	2.6	0.166	168
IE3-W41R 180 L6C	K11R 180 L6C IE3	18.5	149	1185	IE3- 93	91.9	90.5	0.85	29.5	6.2	1.8	1.5	2.5	0.3396	214
IE3-W41R 200 L6	K11R 200 L6 IE3	22	178	1180	IE3- 93	91.7	90.5	0.87	34	6.7	2.1	1.8	2.8	0.514	310
IE3-W41R 200 LX6C	K11R 200 LX6C IE3	22	177	1190	IE3- 93	91.4	89.4	0.87	34	6.5	2.4	1.9	3.2	0.6476	321
IE3-W41R 225 M6	K11R 225 M6 IE3				IE3-									0.92	400
IE3-W41R 250 M6	K11R 250 M6 IE3	40	322	1185	IE3- 94.1	93.3	92	0.86	62	7.2	2.9	2	2.8	1.48	545
IE3-W41R 280 S6	K11R 280 S6 IE3	45	362	1188	IE3-									2.63	695
IE3-W41R 280 M6	K11R 280 M6 IE3	55	440	1195	IE3- 94.5	94	92.5	0.85	86	9.5	2.5	2.2	3.4	3.33	815
IE3-W41R 315 S6	K11R 315 S6 IE3	85	683	1188	IE3-									5.55	1060
IE3-W41R 315 M6	K11R 315 M6 IE3	99	796	1188	IE3-									6	1100
IE3-W41R 315 MX6	K11R 315 MX6 IE3	120	965	1188	IE3-									6.67	1210
IE3-W41R 315 L6	K11R 315 L6 IE3	132	1055	1195	IE3- 95.8	95.3	94.4	0.84	206	9.5	3	2.2	3.5	8.6	1550
IE3-W41R 355 M6	K22R 355 M6 IE3	175	1400	1194	IE3-									8.2	1850
IE3-W42R 355 MX6	K22R 355 MX6 IE3	200	1600	1194	IE3-									12.10	2200
IE3-W41R 355 L6	K22R 355 L 6 IE3													14.00	2400
IE3-W41R 355 LX6	K22R 355 LX6 IE3	350		1196	IE3- 95.8	95.5	95.3	0.85	539	8	1.8	1.3	2.4	14.00	2400
Synchronous 900 rpm – 8-pole version															
IE3-KPR 71 G8	KPR 71 G8 IE3	0.14	1.59	840	IE3- 59.5	59.1	52.7	0.61	0.47	2.8	1.8	1.8	2.1	0.0013	9.9
IE3-KPER 80 K8	KPER 80 K8 IE3	0.21	2.39	840	IE3- 64.0	59.0	51.1	0.55	0.77	2.9	1.9	1.9	2.4	0.00175	12.0
IE3-KPR 80 G8	KPR 80 G8 IE3	0.3	3.33	860	IE3- 68.0	65.8	59.8	0.55	0.98	3.1	1.3	1.3	2.2	0.003	14.0
IE3-KPR 90 S8	KPR 90 S8 IE3	0.44	4.91	855	IE3- 72.0	69.3	64.8	0.63	1.22	3.2	1.6	1.6	1.9	0.00625	25.0
IE3-KPR 90 L8	KPR 90 L8 IE3	-	-	-	- -	-	-	-	-	-	-	-	-	0.0072	26.0
IE3-KPR 100 L8	KPR 100 L8 IE3	0.9	9.95	865	IE3- 75.5	78.8	75.5	0.66	2.12	4.8	2.3	2.3	2.8	0.01225	33.5
IE3-KPR 100 LX8	KPR 100 LX8 IE3	1.25	13.90	860	IE3- 78.5	79.8	76.3	0.63	3.1	4.2	1.7	1.5	2.4	0.0139	36.0
IE3-KPER 112 MZ8	KPER 112 MZ8 IE3	1.25												0.0155	46.0
IE3-KPER 132 S8	KPER 132 S8 IE3													0.043	70.0
IE3-W41R 132 M8	K11R 132 M8 IE3	3												0.043	74
IE3-W41R 160 M8	K11R 160 M8 IE3	4.8	51	885	IE3- 88.4	87.9	85.4	0.72	9.5	5.1	2.3	2.0	2.6	0.113	119
IE3-W41R 160 MX8	K11R 160 MX8 IE3	5.5												0.145	143
IE3-W41R 160 L8	K11R 160 L8 IE3	7.5												0.166	155
IE3-W41R 180 L8	K11R 180 L8 IE3	11												0.228	175
IE3-W41R 200 L8	K11R 200 L8 IE3	18	196	878	IE3- 90.3	90.7	89.7	0.80	31.5	4.9	1.7	1.6	2.3	0.324	235
IE3-W41R 225 S8	K11R 225 S8 IE3	18.5												0.514	310
IE3-W41R 225 M8	K11R 225 M8 IE3	22												0.825	360
IE3-W41R 250 M8	K11R 250 M8 IE3	30												0.92	420
IE3-W41R 280 S8	K11R 280 S8 IE3	37												1.55	555
IE3-W41R 280 M8	K11R 280 M8 IE3	54	579	890	IE3- 93.6	93.0	92.4	0.79	91.5	6.0	1.5	1.3	2.1	2.63	700
IE3-W41R 315 S8	K11R 315 S8 IE3	55												3.33	805
IE3-W41R 315 M8	K11R 315 M8 IE3	75												5.55	1120
IE3-W41R 315 MX8	K11R 315 MX8 IE3	108	1152	895	IE3- 94.8	94.7	94.7	0.78	183	8.0	1.6	1.6	2.6	6	1185
IE3-W41R 315 MY8	K11R 315 MY8 IE3	120	1288	890	IE3- 94.2	94.2	94.2	0.82	195	6.6	1.8	1.6	2.2	6.76	1250
IE3-W41R 315 L8	K11R 315 L8 IE3	110												8.71	1450
IE3-W41R 355 MY8	K22R 355 MY8 IE3	132												9.3	1700
IE3-W41R 355 M8	K22R 355 M8 IE3	160												9.5	1890
IE3-W41R 355 LY8	K22R 355 LY8 IE3	200												15.8	2400

***) upon request

Three-phase motors with squirrel-cage rotor for marine use, High Efficiency IE2

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data																Design point 400 V, 50 Hz
Type GL DNV-GL RS (KP.. only)	Type DNV, RS, LR BV, ABS, CCS	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 400 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 3000 rpm – 2-pole version															
IE2-KPR 56 G2	KPR 56 G2 IE2	0.12	0.41	2810	IE2- 53.6	65.5	61.6	0.83	0.31	4.7	2.0	2.0	2.2	0.00015	4.8
IE2-KPR 63 K2	KPR 63 K2 IE2	0.18	0.61	2840	IE2- 60.4	68.6	63.5	0.84	0.44	5.5	2.5	2.4	2.9	0.00025	6.3
IE2-KPR 63 G2	KPR 63 G2 IE2	0.25	0.83	2860	IE2- 64.8	77.6	73.6	0.84	0.55	6.2	2.6	2.5	2.8	0.00032	7
IE2-KPR 71 K2	KPR 71 K2 IE2	0.37	1.24	2860	IE2- 69.5	74.2	72.7	0.87	0.78	7.1	2.9	2.7	3.1	0.00057	10
IE2-KPR 71 G2	KPR 71 G2 IE2	0.55	1.83	2870	IE2- 74.1	78.3	75.4	0.86	1.14	7.4	3.0	2.7	3.3	0.00072	11.2
IE2-KPR 80 K2	KPR 80 K2 IE2	0.75	2.49	2880	IE2- 77.4	83.6	81.6	0.88	1.48	7.7	2.2	2.1	2.7	0.00132	15
IE2-KPR 80 G2	KPR 80 G2 IE2	1.1	3.64	2885	IE2- 79.6	82.1	81.2	0.89	2.15	7.8	2.5	2.3	2.8	0.0017	18
IE2-KPR 90 S2	KPR 90 S2 IE2	1.5	4.92	2910	IE2- 81.3	85.5	82.9	0.87	2.9	9.0	2.8	2.4	3.4	0.00275	23.5
IE2-KPR 90 L2	KPR 90 L2 IE2	2.2	7.29	2880	IE2- 83.2	85.7	83.9	0.88	4.25	8.0	2.5	2.3	2.9	0.00275	23.5
IE2-KPR 100 L2	KPR 100 L2 IE2	3	9.78	2930	IE2- 84.6	86.2	83.5	0.76	6.55	8.5	2.6	2.4	3.8	0.0045	31
IE2-KPER 112 MX2	KPER 112 MX2 IE2	4	13.08	2920	IE2- 85.8	86.4	85.8	0.84	7.9	8.3	2.3	2.1	3.3	0.0055	38
IE2-KPER 112 MV2	KPER 112 MV2 IE2	5.5	18.11	2900	IE2- 87.0	88.7	88.8	0.88	10.3	7.8	2.0	1.9	2.7	0.0068	46
IE2-KPER 132 S2T	KPER 132 S2T IE2	5.5	18.1	2900	IE2- 87.0	88.7	88.8	0.88	10.3	7.8	2.0	1.9	2.7	0.0068	48
IE2-KPER 132 S2	KPER 132 S2 IE2	5.5	17.96	2935	IE2- 87.0	87.5	85.1	0.8	11.2	9.1	2.8	2.2	4.0	0.011	57
IE2-WE1R 132 SX2	K11R 132 SX2 E1 IE2	7.5	24.5	2925	IE2- 88.8	89.2	88.3	0.91	13.5	6.7	2.1	1.6	2.9	0.0168	75
IE2-WE1R 160 M2	K11R 160 M2 E1 IE2	11	35.6	2950	IE2- 90.3	90.3	89.1	0.9	19.5	7.7	2.3	1.7	3.1	0.0258	125
IE2-WE1R 160 MX2	K11R 160 MX2 E1 IE2	15	48.7	2940	IE2- 90.7	90.5	89.1	0.92	26	6.7	1.8	1.4	2.6	0.0675	140
IE2-WE1R 160 L2	K11R 160 L2 E1 IE2	18.5	60.2	2935	IE2- 91.0	91.4	91.4	0.91	32	7.2	2.0	1.5	2.8	0.0675	140
IE2-WE1R 180 M2	K11R 180 M2 E1 IE2	22	72	2935	IE2- 91.3	90.6	86.4	0.9	38.5	6.2	1.4	1.1	2.4	0.105	173
IE2-WE1R 200 L2	K11R 200 L2 E1 IE2	30	97	2945	IE2- 92.0	91.3	90.5	0.91	52	6.9	1.7	1.3	2.6	0.128	210
IE2-WE1R 200 LX2	K11R 200 LX2 E1 IE2	37	120	2940	IE2- 92.5	92.3	91.6	0.92	63	7.4	1.9	1.4	2.9	0.154	233
IE2-WE2R 200 LX2	K11R 200 LX2 E2 IE2	37	120	2955	IE2- 92.9	93.2	92.5	0.9	64	8.1	2.3	1.8	3.3	0.154	238
IE2-WE1R 225 M2	K11R 225 M2 E1 IE2	45	146	2950	IE2- 92.9	92.2	91.2	0.87	80.5	6.9	1.7	1.1	2.7	0.220	295
IE2-WE1R 250 M2	K11R 250 M2 E1 IE2	55	178	2955	IE2- 93.5	93.7	93.2	0.89	95.5	8.2	2.3	1.9	2.8	0.375	385
IE2-WE1R 280 S2	K11R 280 S2 E1 IE2	75	241	2970	IE2- 94.1	94.0	91.5	0.9	128	7.9	2.1	1.7	3.0	0.65	500
IE2-WE1R 280 M2	K11R 280 M2 E1 IE2	90	289	2970	IE2- 94.4	94.1	91.9	0.91	151	7.7	2.0	1.7	2.8	0.68	550
IE2-WE1R 315 S2	K11R 315 S2 E1 IE2	110	353	2975	IE2- 94.5	94.3	93.3	0.89	189	8.0	1.3	1.2	2.4	1.21	730
IE2-WE1R 315 M2	K11R 315 M2 E1 IE2	132	424	2975	IE2- 95.0	94.8	94.5	0.89	225	9.2	1.4	1.2	2.4	1.44	820
IE2-WE1R 315 MX2	K11R 315 MX2 E1 IE2	160	514	2973	IE2- 94.8	94.8	94.8	0.89	274	8.2	1.3	1.3	2.4	1.76	955
IE2-WE1R 315 MY2	K11R 315 MY2 E1 IE2	200	640	2983	IE2- 95.4	95.0	94.3	0.88	344	9.4	2.8	2.0	3.0	2.82	1200
IE2-WE1R 315 L2	K11R 315 L2 E1 IE2	250	800	2984	IE2- 95.4	95.4	95.4	0.92	411	9.0	2.3	1.2	2.3	3.66	1450
IE2-WE1R 315 LX2	K11R 315 LX2 E1 IE2	315	1008	2985	IE2- 95.4	95.4	95.0	0.92	518	8.5	2.8	1.6	2.5	4.43	1700
IE2-WE2R 355 M2	W22R 355 M2 E1 IE2	355	1136	2985	IE2- 95.5	95.5	95.5	0.92	583	7.7	1.3	1.0	2.6	4.20	2000
IE2-WE2R 355 MX2	W22R 355 MX2 E1 IE2	400	1278	2990	IE2- 95.5	95.5	95.5	0.91	664	9.4	1.8	1.0	3.0	4.50	2200
IE2-WE2R 355 LY2	W22R 355 LY2 E1 IE2	450	1440	2985	IE2- 95.5	95.5	95.5	0.92	739	7.0	1.3	0.9	2.4	7.10	2400
IE2-WE2R 355 L2	W22R 355 L2 E1 IE2	500	1597	2990	IE2- 95.5	95.5	95.5	0.92	821	8.5	1.5	1.2	2.5	7.10	2400

Three-phase motors with squirrel-cage rotor for marine use, High Efficiency IE2

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data															Design point 400 V, 50 Hz	
Type GL DNV-GL RS (KP.. only)	Type DNV, RS, LR BV, ABS, CCS	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 400 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 1500 rpm – 4-pole version																
IE2-KPR 63 K4	KPR 63 K4 IE2	0.12	0.82	1400	IE2- 59.1	69.1	63.9	0.71	0.35	3.8	2	1.9	2.3	0.0004	6.3
IE2-KPR 63 G4	KPR 63 G4 IE2	0.18	1.21	1425	IE2- 64.7	66.6	60.7	0.64	0.57	4.4	1.8	1.8	2.7	0.0005	7.1
IE2-KPR 71 K4	KPR 71 K4 IE2	0.25	1.67	1430	IE2- 68.5	76.6	73	0.71	0.66	5.6	2.5	2.3	2.9	0.00087	9.9
IE2-KPR 71 G4	KPR 71 G4 IE2	0.37	2.47	1430	IE2- 72.7	78.2	73.1	0.69	0.98	6.2	2.8	2.6	3.2	0.00107	11
IE2-KPR 80 K4	KPR 80 K4 IE2	0.55	3.67	1430	IE2- 77.1	79.6	78.7	0.8	1.25	6	2.4	2.3	2.7	0.00207	14.5
IE2-KPR 80 G4	KPR 80 G4 IE2	0.75	5.01	1430	IE2- 79.6	81.4	79.6	0.81	1.65	7.0	2.9	2.8	3.2	0.0026	17
IE2-KPR 90 S4	KPR 90 S4 IE2	1.1	7.32	1435	IE2- 81.4	82.3	80.4	0.8	2.42	6.8	2.4	2.2	2.9	0.004	23
IE2-KPR 90 L4	KPR 90 L4 IE2	1.5	9.91	1445	IE2- 82.8	83.2	80.7	0.77	3.35	7.2	3.2	3.0	3.5	0.0045	28
IE2-KPR 100 L4	KPR 100 L4 IE2	2.2	14.4	1455	IE2- 84.3	85.2	81.7	0.77	4.8	9.3	3.2	3.0	3.6	0.009	36
IE2-KPR 100 LX4	KPR 100 LX4 IE2	3	19.7	1455	IE2- 85.5	86.3	84.5	0.77	6.5	9.0	3.3	3.1	3.9	0.011	45
IE2-KPER 112 MZ4	KPER 112 MZ4 IE2	4	26.4	1445	IE2- 86.6	87.0	85.0	0.8	8.3	8.2	2.8	2.6	3.6	0.013	50
IE2-KPR 112 M4	KPR 112 M4 IE2	4.00	26.2	1460	IE2- 86.6	87.9	86.2	0.86	7.6	8.7	2.6	2.4	4.1	0.017	56
IE2-KPER 132 S4	KPER 132 S4 IE2	5.50	35.9	1465	IE2- 87.7	87.2	84.8	0.79	11.3	9.3	3	2.8	4.9	0.02	64
IE2-WE1R 132 S4	K11R 132 S4 E1 IE2	5.5	35.7	1470	IE2- 89.8	89.9	88.4	0.87	10	7.4	2.3	1.9	3.4	0.035	87
IE2-WE1R 132 M4	K11R 132 M4 E1 IE2	7.5	48.7	1470	IE2- 89.9	90.0	88.5	0.82	14.5	8.5	2.6	2.1	4.0	0.035	88
IE2-WE1R 160 M4	K11R 160 M4 E1 IE2	11	71	1475	IE2- 90.6	90.3	88.5	0.82	21.5	8.1	3.1	2.4	3.4	0.078	122
IE2-WE2R 160 M4	K11R 160 M4 E2 IE2	11	71	1470	IE2- 90.3	90.3	88.9	0.78	22.5	7.8	2.4	2.1	3.9	0.043	105
IE2-WE1R 160 L4	K11R 160 L4 E1 IE2	15	97	1480	IE2- 92.0	92.0	90.6	0.84	28	9.1	3.0	2.5	3.9	0.115	160
IE2-WE2R 160 L4	K11R 160 L4 E2 IE2	15	97	1480	IE2- 92.0	92.0	90.6	0.84	28	9.1	3.0	2.5	3.9	0.115	161
IE2-WE1R 180 M4	K11R 180 M4 E1 IE2	18.5	120	1475	IE2- 91.5	91.5	90.4	0.86	34	6.8	1.8	1.5	2.7	0.168	207
IE2-WE2R 180 M4	K11R 180 M4 E2 IE2	18.5	120	1470	IE2- 91.2	90.6	89.3	0.78	37.5	6.4	2.0	1.6	2.8	0.138	176
IE2-WE1R 180 L4	K11R 180 L4 E1 IE2	22	142	1475	IE2- 91.6	91.4	89.9	0.83	42	7.3	2.1	1.7	3.0	0.168	215
IE2-WE1R 200 L4	K11R 200 L4 E1 IE2	30	194	1480	IE2- 92.3	91.3	88.2	0.80	58.5	7.3	2.1	1.7	2.9	0.275	277
IE2-WE1R 225 S4	K11R 225 S4 E1 IE2	37	240	1475	IE2- 92.7	91.8	90.7	0.84	68.5	7.4	2.2	1.7	2.7	0.313	313
IE2-WE1R 225 M4	K11R 225 M4 E1 IE2	45	290	1483	IE2- 93.1	93.0	91.1	0.84	83	7.9	2.3	1.9	2.4	0.525	390
IE2-WE2R 225 M4	K11R 225 M4 E2 IE2	45	291	1475	IE2- 93.1	92.9	92.1	0.80	87	7.6	2.6	1.9	3.1	0.356	346
IE2-WE1R 250 M4	K11R 250 M4 E1 IE2	55	354	1485	IE2- 94.0	94.1	92.5	0.84	101	8.0	2.0	1.7	2.3	0.95	535
IE2-WE2R 250 M4	K11R 250 M4 E2 IE2	55	356	1477	IE2- 93.9	93.8	93.7	0.82	103	7.5	2.4	1.9	2.4	0.62	435
IE2-WE1R 280 S4	K11R 280 S4 E1 IE2	75	482	1485	IE2- 94.2	94.4	92.1	0.84	137	7.2	1.8	1.6	2.1	0.95	550
IE2-WE1R 280 M4	K11R 280 M4 E1 IE2	90	580	1483	IE2- 94.3	94.5	94.0	0.84	164	7.6	1.8	1.6	2.3	1.10	610
IE2-WE1R 315 S4	K11R 315 S4 E1 IE2	110	707	1485	IE2- 94.8	94.8	94.0	0.82	204	8.5	1.8	1.5	2.7	1.96	760
IE2-WE1R 315 M4	K11R 315 M4 E1 IE2	132	849	1484	IE2- 95.0	95.0	94.5	0.83	242	8.2	1.8	1.6	2.3	2.27	850
IE2-WE1R 315 MX4	K11R 315 MX4 E1 IE2	160	1031	1482	IE2- 95.0	95.0	94.5	0.84	289	7.4	1.6	1.4	2.2	2.73	975
IE2-WE1R 315 MY4	K11R 315 MY4 E1 IE2	200	1282	1490	IE2- 95.1	95.1	94.5	0.87	349	8.5	1.8	1.6	2.5	4.82	1270
IE2-WE1R 315 L4	K11R 315 L4 E1 IE2	250	1602	1490	IE2- 95.4	95.4	95.3	0.88	430	9.0	2.2	1.5	2.7	5.93	1450
IE2-WE1R 315 LX4	K11R 315 LX4 E1 IE2	315	2019	1490	IE2- 95.4	95.4	95.0	0.88	542	9.0	2.4	1.6	2.6	6.82	1630
IE2-WE2R 355 M4	W22R 355 M4 E1 IE2	355	2271	1493	IE2- 95.5	95.5	95.0	0.87	617	8.0	1.3	1.0	2.7	7.90	2150
IE2-WE2R 355 MX4	W22R 355 MX4 E1 IE2	400	2557	1494	IE2- 95.5	95.5	95.5	0.88	687	8.5	1.3	1.0	3.0	9.50	2400
IE2-WE2R 355 LY4	W22R 355 LY4 E1 IE2	450	2873	1496	IE2- 95.5	95.5	95.5	0.86	791	8.5	1.4	0.8	2.9	10.00	2500
IE2-WE2R 355 L4	W22R 355 L4 E1 IE2	500	3198	1493	IE2- 95.5	95.5	95.5	0.84	900	8.0	1.2	0.9	3.0	10.00	2500

Three-phase motors with squirrel-cage rotor for marine use, High Efficiency IE2

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data															Design point 400 V, 50 Hz
Type	Type	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
GL	DNV, RS, LR								400 V						
DNV-GL	BV, ABS, CCS														
RS (KP.. only)		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 1000 rpm – 6-pole version															
IE2-KPR 71 K6	KPR 71 K6 IE2	0.18	1.85	930	IE2- 56.6	65.0	59.4	0.68	0.57	3.4	2.0	2.0	2.2	0.0013	11
IE2-KPR 71 G6	KPR 71 G6 IE2	0.25	2.55	935	IE2- 61.6	69.9	65.0	0.67	0.75	3.9	2.3	2.3	2.5	0.00175	12.5
IE2-KPR 80 K6	KPR 80 K6 IE2	0.37	3.72	950	IE2- 67.6	73.5	69.7	0.70	1.03	4.0	1.9	1.9	2.4	0.00325	15
IE2-KPR 80 G6	KPR 80 G6 IE2	0.55	5.53	950	IE2- 73.1	75.9	72.4	0.69	1.50	4.1	2.1	2.1	2.5	0.00425	18
IE2-KPR 90 S6	KPR 90 S6 IE2	0.75	7.5	955	IE2- 75.9	78.3	75.1	0.71	1.95	4.9	2.4	2.3	2.6	0.00625	24
IE2-KPR 90 L6	KPR 90 L6 IE2	1.1	11	955	IE2- 78.1	82.0	79.3	0.71	2.75	5.4	2.5	2.4	2.8	0.0072	30
IE2-KPR 100 LX6	KPR 100 LX6 IE2	1.5	15	955	IE2- 79.8	83.5	81.5	0.76	3.45	5.9	2.3	2.2	2.8	0.0139	36
IE2-KPER 112 MV6	KPER 112 MV6 IE2	2.2	22	955	IE2- 81.8	82.5	79.8	0.75	5.15	5.7	2.4	2.3	2.9	0.0155	48
IE2-KPER 112 MZ6	KPER 112 MZ6 IE2	3	30	955	IE2- 83.3	83.1	80.5	0.75	6.85	6.5	2.8	2.7	3.5	0.043	50
IE2-KPER 132 SX6T	KPER 132 SX6T IE2	3	30.0	955	IE2- 83.3	83.1	80.5	0.73	7.1	7.0	3.2	3.1	4.0	0.0165	52
IE2-KPER 132 S6	KPER 132 S6 IE2	3	29.7	965	IE2- 84.9	84.4	82.0	0.77	6.7	6.8	2.5	2.4	3.7	0.023	55
IE2-KPER 132 M6	KPER 132 M6 IE2	4	39.6	965	IE2- 84.6	85.5	83.6	0.78	8.8	6.8	2.4	2.4	3.6	0.029	66
IE2-WE1R 132 M6	K11R 132 M6 E1 IE2	4	39.6	965	IE2- 85.5	85.5	83.8	0.79	8.5	5.1	1.8	1.6	2.4	0.043	76
IE2-WE1R 132 MX6	K11R 132 MX6 E1 IE2	5.5	54	970	IE2- 86.1	85.5	82.4	0.77	12	5.7	2.2	1.7	2.7	0.053	85
IE2-WE1R 160 M6	K11R 160 M6 E1 IE2	7.5	73	975	IE2- 87.4	88.1	86.0	0.81	15.5	6.3	2.5	2.1	2.9	0.113	118
IE2-WE2R 160 M6	K11R 160 M6 E2 IE2	7.5	74	970	IE2- 87.5	87.6	85.9	0.79	15.5	5.9	2.1	1.8	2.9	0.053	103
IE2-WE1R 160 L6	K11R 160 L6 E1 IE2	11	108	970	IE2- 88.7	87.9	86.3	0.85	21	5.8	2.2	1.9	2.7	0.145	135
IE2-WE2R 160 L6	K11R 160 L6 E2 IE2	11	108	975	IE2- 88.9	88.8	87.0	0.81	22	6.8	2.7	2.4	3.1	0.166	155
IE2-WE1R 180 L6	K11R 180 L6 E1 IE2	15	147	975	IE2- 89.7	88.8	86.7	0.84	28.5	6.2	2.1	1.8	2.8	0.228	185
IE2-WE2R 180 L6	K11R 180 L6 E2 IE2	15	148	970	IE2- 89.7	88.8	87.8	0.83	29	5.6	2.3	1.7	2.6	0.166	157
IE2-WE1R 200 L6	K11R 200 L6 E1 IE2	18.5	180	980	IE2- 90.4	88.8	86.5	0.85	35	6.6	2.3	1.7	2.9	0.268	208
IE2-WE1R 200 LX6	K11R 200 LX6 E1 IE2	22	214	980	IE2- 90.9	90.2	88.5	0.86	40.5	6.4	2.2	1.8	2.7	0.443	272
IE2-WE2R 200 LX6	K11R 200 LX6 E2 IE2	22	215	975	IE2- 90.9	89.9	88.5	0.84	41.5	6.7	2.4	2.0	3.0	0.324	238
IE2-WE1R 225 M6	K11R 225 M6 E1 IE2	30	291	985	IE2- 92.0	91.5	90.0	0.86	54.5	7.3	2.5	2.2	2.9	0.825	365
IE2-WE2R 225 M6	K11R 225 M6 E2 IE2	30	291	985	IE2- 92.0	91.5	90.0	0.86	54.5	7.3	2.5	2.2	2.9	0.825	365
IE2-WE1R 250 M6	K11R 250 M6 E1 IE2	37	359	985	IE2- 92.2	91.7	90.7	0.85	68	6.4	2.7	1.8	2.4	1.28	480
IE2-WE2R 250 M6	K11R 250 M6 E2 IE2	37	359	985	IE2- 92.2	91.7	90.7	0.85	68	6.4	2.7	1.8	2.4	1.28	480
IE2-WE1R 280 S6	K11R 280 S6 E1 IE2	45	437	983	IE2- 93.0	92.7	92.4	0.87	80.5	6.5	2.2	1.7	2.4	1.48	560
IE2-WE1R 280 M6	K11R 280 M6 E1 IE2	55	531	990	IE2- 93.5	93.5	93.0	0.85	100	7.6	2.0	1.5	2.5	2.63	710
IE2-WE1R 315 S6	K11R 315 S6 E1 IE2	75	723	990	IE2- 93.9	93.7	93.5	0.87	133	7.8	1.9	1.5	2.5	3.33	804
IE2-WE1R 315 M6	K11R 315 M6 E1 IE2	90	868	990	IE2- 94.0	94.0	93.5	0.88	157	7.5	1.8	1.5	2.5	3.60	865
IE2-WE1R 315 MX6	K11R 315 MX6 E1 IE2	110	1061	990	IE2- 94.3	94.3	94.0	0.87	194	7.5	1.8	1.4	2.3	6.67	1210
IE2-WE1R 315 MY6	K11R 315 MY6 E1 IE2	132	1273	990	IE2- 94.6	94.3	94.0	0.87	231	7.5	1.9	1.4	2.2	6.67	1250
IE2-WE1R 315 L6	K11R 315 L6 E1 IE2	160	1543	990	IE2- 94.8	94.5	93.5	0.88	277	7.5	2.0	1.5	2.4	8.60	1430
IE2-WE1R 315 LX6	K11R 315 LX6 E1 IE2	200	1929	990	IE2- 95.0	95.0	94.5	0.86	353	7.0	1.9	1.5	2.2	8.60	1460
IE2-WE2R 355 M6	W22R 355 M6 E1 IE2	250	2402	994	IE2- 95.0	95.0	94.7	0.84	452	7.0	1.5	1.2	2.2	8.20	1850
IE2-WE2R 355 MX6	W22R 355 MX6 E1 IE2	315	3023	995	IE2- 95.2	95.2	95.2	0.86	555	7.0	1.3	1.1	2.2	12.10	2200
IE2-WE2R 355 LY6	W22R 355 LY6 E1 IE2	355	3407	995	IE2- 95.0	95.0	94.0	0.77	700	7.5	1.8	1.5	2.6	14.00	2400

Three-phase motors with squirrel-cage rotor for marine use, High Efficiency IE2

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data															Design point 400 V, 50 Hz	
Type GL DNV-GL	Type DNV, RS, LR BV, ABS, CCS	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 400 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
RS (KP.. only)		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 750 rpm – 8-pole version																
IE2-KPER 80 G8	KPER 80 G8 IE2	0.25	3.43	695	IE2- 50.6	50.4	42.5	0.56	1.12	3.0	2.3	2.3	2.5	0.00175	12
IE2-KPR 90 S8	KPR 90 S8 IE2	0.37	4.98	710	IE2- 56.1	70.3	65.7	0.63	1.20	3.6	2.1	2.1	2.3	0.00625	24
IE2-KPR 90 L8	KPR 90 L8 IE2	0.55	7.5	700	IE2- 61.7	70.6	66.3	0.64	1.72	3.6	1.8	1.8	2.3	0.0072	26
IE2-KPR 100 L8	KPR 100 L8 IE2	0.75	10.02	715	IE2- 66.2	75.9	71.3	0.63	2.25	4.4	2.5	2.5	2.8	0.0123	33.5
IE2-KPR 100 LX8	KPR 100 LX8 IE2	1.1	14.8	710	IE2- 70.8	78.0	74.2	0.63	3.20	4.2	1.9	1.8	2.5	0.0139	36
IE2-KPER 112 MV8	KPER 112 MV8 IE2	1.5	20.46	700	IE2- 74.1	78.7	76.0	0.65	4.25	3.8	1.6	1.6	2.1	0.0155	48
IE2-KPER 132 S8	KPER 132 S8 IE2	2.2	29.2	720	IE2- 77.6	81.0	77.8	0.67	5.75	5.3	2.3	2.2	3.2	0.023	55
IE2-KPER 132 M8	KPER 132 M8 IE2	3	39.8	720	IE2- 80.0	82.0	79.1	0.67	7.90	5.2	2.3	2.1	3.2	0.029	65
IE2-WE1R 132 M8	K11R 132 M8 E1 IE2	3	39.8	720	IE2- 82.7	83.0	81.3	0.74	7.1	3.9	1.6	1.3	1.9	0.0430	74
IE2-WE1R 160 M8	K11R 160 M8 E1 IE2	4	53.2	718	IE2- 84.2	83.7	81.9	0.724	9.5	4.6	1.6	0.0	2.5	0.0530	86
IE2-WE1R 160 MX8	K11R 160 MX8 E1 IE2	5.5	72	730	IE2- 86.9	86.6	84.1	0.72	12.5	4.8	2.1	1.8	2.6	0.1130	115
IE2-WE2R 160 MX8	K11R 160 MX8 E2 IE2	5.5	73	715	IE2- 83.9	84.0	81.9	0.71	13.5	4.3	1.7	1.5	2.5	0.0530	103
IE2-WE1R 160 L8	K11R 160 L8 E1 IE2	7.5	99	725	IE2- 86.9	87.6	86.6	0.76	16.5	4.5	1.8	1.6	2.3	0.1450	136
IE2-WE1R 180 L8	K11R 180 L8 E1 IE2	11	144	727	IE2- 88.2	88.2	86.7	0.78	23	4.9	1.8	1.6	2.4	0.2280	175
IE2-WE2R 180 L8	K11R 180 L8 E2 IE2	11	144	730	IE2- 87.9	87.4	85.2	0.67	25.5	4.3	1.9	1.6	2.3	0.1660	157
IE2-WE1R 200 L8	K11R 200 L8 E1 IE2	15	197	727	IE2- 88.2	88.1	86.4	0.77	32	4.9	1.9	1.7	2.3	0.2680	200
IE2-WE1R 225 S8	K11R 225 S8 E1 IE2	18.5	242	730	IE2- 89.6	89.4	87.2	0.78	38	5.4	2.1	2.0	2.8	0.44	265
IE2-WE2R 225 S8	K11R 225 S8 E2 IE2	18.5	240	735	IE2- 90.7	90.7	89.4	0.8	37	6.1	2.1	1.9	2.9	0.51	305
IE2-WE1R 225 M8	K11R 225 M8 E1 IE2	22	287	733	IE2- 90.6	89.4	89.9	0.78	45	5.6	2.2	1.8	2.6	0.83	380
IE2-WE2R 225 M8	K11R 225 M8 E2 IE2	22	286	735	IE2- 90.3	90.3	88.7	0.77	45.5	6.1	2.2	2.0	2.9	0.51	307
IE2-WE1R 250 M8	K11R 250 M8 E1 IE2	30	391	732	IE2- 90.8	91.0	90.0	0.78	61.0	5.6	2.2	1.9	2.4	0.83	380
IE2-WE1R 280 S8	K11R 280 S8 E1 IE2	37	479	737	IE2- 90.8	91.3	90.7	0.80	73.5	4.9	1.9	1.5	2.0	1.35	480
IE2-WE1R 280 M8	K11R 280 M8 E1 IE2	45	581	740	IE2- 91.8	91.8	90.7	0.77	92.0	5.8	2.3	1.8	2.5	1.55	535
IE2-WE1R 315 S8	K11R 315 S8 E1 IE2	55	710	740	IE2- 92.2	92.2	92.1	0.80	108	6.3	1.8	1.5	2.3	2.63	715
IE2-WE1R 315 M8	K11R 315 M8 E1 IE2	75	968	740	IE2- 92.7	92.5	92.5	0.81	143	6.0	2.1	1.4	2.1	3.33	805
IE2-WE1R 315 MX8	K11R 315 MX8 E1 IE2	90	1161	740	IE2- 93.0	93.0	93.0	0.79	177	6.5	1.7	1.5	2.2	3.60	850
IE2-WE1R 315 MY8	K11R 315 MY8 E1 IE2	110	1420	740	IE2- 93.4	93.4	93.4	0.82	207	6.5	1.8	1.6	2.2	6.00	1080
IE2-WE1R 315 L8	K11R 315 L8 E1 IE2	132	1704	740	IE2- 93.2	93.2	93.2	0.83	246	6.0	1.5	1.4	2.2	6.76	1250
IE2-WE1R 315 LX8	K11R 315 LX8 E1 IE2	160	2065	740	IE2- 93.9	93.9	93.8	0.80	307	7.2	2.2	1.8	2.5	8.71	1430
IE2-WE2R 355 M8	W22R 355 M8 E1 IE2	200	2571	743	IE2- 94.5	94.1	91.5	0.77	397	0.0	0.0	0.0	0.0	9.50	1850
IE2-WE2R 355 MX8	W22R 355 MX8 E1 IE2	250	3205	745	IE2- 94.0	94.0	94.0	0.83	463	7.0	1.2	1.0	2.6	13.40	2200
IE2-WE2R 355 LY8	W22R 355 LY8 E1 IE2	280	3599	743	IE2- 94.3	94.3	94.3	0.78	549	7.2	1.3	1.0	2.7	15.80	2400

Three-phase motors with squirrel-cage rotor for marine use, High Efficiency IE2

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data																Design point 460 V, 60 Hz
Type	Type	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 460 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
GL	DNV, RS, LR														
DNV-GL	BV, ABS, CCS														
RS (KP.. only)		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 3600 rpm – 2-pole version															
IE2-KPR 56 G2	KPR 56 G2 IE2	0.14	0.39	3410	IE2- 59.5	70.2	66.5	0.82	0.3	5.2	2	2	2.3	0.00015	4.8
IE2-KPR 63 K2	KPR 63 K2 IE2	0.21	0.58	3430	IE2- 64	68.6	63.1	0.83	0.44	5.5	2.6	2.5	3.1	0.00025	6.3
IE2-KPR 63 G2	KPR 63 G2 IE2	0.3	0.83	3440	IE2- 68	73.8	69.8	0.87	0.57	6.1	2.7	2.5	3.2	0.00032	7
IE2-KPR 71 K2	KPR 71 K2 IE2	0.44	1.21	3460	IE2- 72	83.9	82.4	0.86	0.78	7.3	3	2.8	3.2	0.00057	10
IE2-KPR 71 G2	KPR 71 G2 IE2	0.65	1.79	3465	IE2- 75.5	82	81.6	0.87	1.13	7.8	2.8	2.5	2.9	0.00072	11.2
IE2-KPR 80 K2	KPR 80 K2 IE2	0.75	2.05	3500	IE2- 75.5	83.5	80.6	0.87	1.3	8.5	2.5	2.1	3	0.00132	15
IE2-KPR 80 G2	KPR 80 G2 IE2	1.1	3.01	3490	IE2- 82.5	83.3	77.7	0.88	1.9	9.2	3	2.7	3.3	0.0017	18
IE2-KPR 90 S2	KPR 90 S2 IE2	1.5	4.06	3530	IE2- 84	85.6	83	0.85	2.54	9.2	2.6	2.4	3.5	0.00275	23.5
IE2-KPR 90 L2	KPR 90 L2 IE2	2.2	6	3500	IE2- 85.5	85.9	83	0.86	3.7	8.4	2.4	2.1	3.1	0.00275	23.5
IE2-KPR 100 L2	KPR 100 L2 IE2	3	8.09	3540	IE2- 87.5	86.2	82.5	0.74	5.8	8.4	2.2	1.9	3.8	0.0045	31
IE2-KPER 112 MX2	KPER 112 MX2 IE2	4	10.82	3530	IE2- 87.5	89.1	88.4	0.83	6.8	7.1	1.6	1.4	2.6	0.0055	38
IE2-KPER 112 MV2	KPER 112 MV2 IE2	5.5	14.96	3510	IE2- 88.5	89.3	88.9	0.87	8.85	9.2	2.1	2	3.1	0.0068	46
IE2-KPER 132 S2T	KPER 132 S2T IE2	5.5	14.96	3510	IE2- 88.5	89.3	88.9	0.87	8.85	9.2	2.1	2	3.1	0.0068	48
IE2-KPER 132 S2	KPER 132 S2 IE2	6.6	17.86	3530	IE2- 89.5	89.7	87.9	0.83	11.1	8.9	2.4	1.8	3.7	0.011	57
IE2-WE1R 132 SX2	K11R 132 SX2 E1 IE2	9.0	24.5	3505	IE2- 89.5	89.4	88.5	0.90	14.0	6.2	2.1	1.7	2.8	0.0168	75
IE2-WE1R 160 M2	K11R 160 M2 E1 IE2	13.0	35.0	3550	IE2- 91.0	90.9	89.5	0.91	20.0	7.3	2.0	1.6	2.7	0.0258	125
IE2-WE1R 160 MX2	K11R 160 MX2 E1 IE2	16.5	44.6	3535	IE2- 90.2	89.7	88.4	0.91	25.0	6.5	1.9	1.4	2.6	0.0675	140
IE2-WE1R 160 L2	K11R 160 L2 E1 IE2	22.0	59.6	3525	IE2- 91.6	91.3	89.6	0.92	37.5	7.0	1.8	1.3	2.6	0.0675	140
IE2-WE1R 180 M2	K11R 180 M2 E1 IE2	26	70	3545	IE2- 91.7	91.6	90.9	0.90	39.5	6.0	1.5	1.2	2.4	0.105	173
IE2-WE1R 200 L2	K11R 200 L2 E1 IE2	36	97	3550	IE2- 92.4	92.5	91.6	0.91	54.0	6.0	1.4	1.1	2.3	0.128	210
IE2-WE1R 200 LX2	K11R 200 LX2 E1 IE2	44	119	3545	IE2- 93.0	92.4	92.1	0.91	65.5	6.8	1.9	1.5	2.8	0.154	233
IE2-WE2R 200 LX2	K11R 200 LX2 E2 IE2	44	119	3545	IE2- 93.0	92.4	92.1	0.91	65.5	6.8	1.9	1.5	2.8	0.154	238
IE2-WE1R 225 M2	K11R 225 M2 E1 IE2	54	145	3545	IE2- 93.0	92.5	91.8	0.88	83.0	6.9	1.7	1.4	2.8	0.220	295
IE2-WE1R 250 M2	K11R 250 M2 E1 IE2	66	178	3550	IE2- 93.6	93.7	93.0	0.90	98.5	7.6	2.1	1.8	2.7	0.375	385
IE2-WE1R 280 S2	K11R 280 S2 E1 IE2	90	241	3570	IE2- 94.5	93.9	92.8	0.91	131	7.3	1.9	1.6	2.8	0.65	500
IE2-WE1R 280 M2	K11R 280 M2 E1 IE2	110	294	3568	IE2- 94.5	94.0	93.7	0.91	161	7.5	1.9	1.6	2.7	0.68	550
IE2-WE1R 315 S2	K11R 315 S2 E1 IE2	120	320	3580	IE2- 94.5	94.0	93.0	0.89	179	8.5	1.4	1.3	2.5	1.21	730
IE2-WE1R 315 M2	K11R 315 M2 E1 IE2	145	387	3580	IE2- 95.0	94.5	94.0	0.90	213	9.4	1.4	1.2	2.4	1.44	820
IE2-WE1R 315 MX2	K11R 315 MX2 E1 IE2	175	467	3575	IE2- 95.4	95.0	94.0	0.90	256	8.2	1.7	1.6	2.7	1.76	955
IE2-WE1R 315 MY2	K11R 315 MY2 E1 IE2	220	586	3585	IE2- 95.4	95.0	94.0	0.89	325	9.5	2.8	2.0	3.0	2.82	1200
IE2-WE1R 315 L2	K11R 315 L2 E1 IE2	280	748	3580	IE2- 95.5	95.5	95.5	0.92	400	8.0	2.3	1.4	2.3	3.66	1450
IE2-WE1R 315 LX2	K11R 315 LX2 E1 IE2	330	879	3585	IE2- 95.4	95.4	95.4	0.92	472	9.0	2.8	1.6	2.5	4.43	1700
IE2-WE2R 355 M2	W22R 355 M2 E1 IE2	375	999	3585	IE2- 95.4	95.0	94.5	0.91	542	8.5	1.5	1.3	2.2	4.20	2000
IE2-WE2R 355 MX2	W22R 355 MX2 E1 IE2	440	1170	3590	IE2- 95.8	95.5	95.0	0.91	633	9.4	1.7	1.1	3.0	4.50	2200
IE2-WE2R 355 LY2	W22R 355 LY2 E1 IE2	490	1303	3590	IE2- 95.5	95.5	95.0	0.92	700	7.5	1.5	0.9	2.4	7.10	2400
IE2-WE2R 355 L2	W22R 355 L2 E1 IE2	550	1467	3580	IE2- 95.5	95.5	95.0	0.92	786	8.5	1.5	1.0	2.4	7.10	2400

Three-phase motors with squirrel-cage rotor for marine use, High Efficiency IE2

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data															Design point 460 V, 60 Hz
Type GL DNV-GL RS (KP.. only)	Type DNV, RS, LR BV, ABS, CCS	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 460 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 1800 rpm – 4-pole version															
IE2-KPR 63 K4	KPR 63 K4 IE2	0.14	0.79	1700	IE2- 64	70.3	65.8	0.71	0.35	4.1	2	1.9	2.4	0.0004	6.3
IE2-KPR 63 G4	KPR 63 G4 IE2	0.21	1.16	1725	IE2- 68	68.8	62.9	0.66	0.56	4.8	2.6	2.6	2.9	0.0005	7.1
IE2-KPR 71 K4	KPR 71 K4 IE2	0.3	1.66	1725	IE2- 70	76.5	72.8	0.74	0.66	5.2	2.1	2	2.7	0.00087	9.9
IE2-KPR 71 G4	KPR 71 G4 IE2	0.44	2.44	1725	IE2- 72	79.6	76	0.72	0.96	6.1	2.5	2.4	3.2	0.00107	11
IE2-KPR 80 K4	KPR 80 K4 IE2	0.65	3.6	1725	IE2- 78	80.5	76.9	0.81	1.24	6.2	2.2	2.1	2.6	0.00207	14.5
IE2-KPR 80 G4	KPR 80 G4 IE2	0.75	4.1	1745	IE2- 82.5	81.7	79.2	0.78	1.46	7.7	3.1	2.9	3.5	0.0026	17
IE2-KPR 90 S4	KPR 90 S4 IE2	1.1	6.02	1745	IE2- 84	84.5	82	0.76	2.15	7.3	3	2.8	3.5	0.004	23
IE2-KPR 90 L4	KPR 90 L4 IE2	1.5	8.19	1750	IE2- 84	82.3	78.6	0.74	3.02	7.9	3.2	3	3.5	0.0045	28
IE2-KPR 100 L4	KPR 100 L4 IE2	2.2	11.9	1765	IE2- 87.5	86.3	82.9	0.71	4.45	8.6	2.6	2.5	3.9	0.009	36
IE2-KPR 100 LX4	KPR 100 LX4 IE2	3	16.3	1760	IE2- 87.5	87.3	84.4	0.74	5.78	8.7	3.2	3	3.8	0.011	45
IE2-KPER 112 MZ4	KPER 112 MZ4 IE2	4	21.8	1750	IE2- 87.5	87.8	85.4	0.76	7.5	8.4	2.8	2.6	3.8	0.013	50
IE2-KPR 112 M4	KPR 112 M4 IE2	4.5	24.6	1745	IE2- 87.5	87.5	85.9	0.8	8.05	7.8	2.4	2.3	3.5	0.013	50
IE2-KPER 132 S4	KPER 132 S4 IE2	6.6	36.1	1745	IE2- 89.5	90.1	89.7	0.88	10.5	7.1	2	1.6	3.2	0.02	64
IE2-WE1R 132 S4	K11R 132 S4 E1 IE2	6.6	35.7	1765	IE2- 89.8	90.0	88.5	0.88	11	6.6	2.2	1.6	3.0	0.035	87
IE2-WE1R 132 M4	K11R 132 M4 E1 IE2	9.0	48.6	1770	IE2- 90.8	90.6	89.0	0.83	15	8.1	2.5	2.0	3.8	0.035	88
IE2-WE1R 160 M4	K11R 160 M4 E1 IE2	13.0	70	1775	IE2- 91.1	90.8	89.2	0.82	22.0	7.7	2.8	2.2	3.2	0.078	122
IE2-WE2R 160 M4	K11R 160 M4 E2 IE2	13	70	1765	IE2- 91.3	91.5	90.4	0.80	22.5	7.5	2.3	1.9	3.6	0.043	105
IE2-WE1R 160 L4	K11R 160 L4 E1 IE2	18.0	97	1770	IE2- 92.5	92.4	91.4	0.86	28.0	8.0	2.5	2.0	3.0	0.115	160
IE2-WE2R 160 L4	K11R 160 L4 E2 IE2	18	97	1775	IE2- 92.5	92.4	91.4	0.85	28.5	8.5	2.7	2.3	3.5	0.115	161
IE2-WE1R 180 M4	K11R 180 M4 E1 IE2	22.0	118	1775	IE2- 92.4	91.4	89.9	0.86	35.0	6.3	1.6	1.4	2.5	0.168	207
IE2-WE2R 180 M4	K11R 180 M4 E2 IE2	22	118	1775	IE2- 92.4	91.5	90.1	0.80	37.5	6.1	1.9	1.5	2.6	0.138	176
IE2-WE1R 180 L4	K11R 180 L4 E1 IE2	26	139	1780	IE2- 93.0	91.7	90.0	0.84	42.0	7.2	2.0	1.7	2.9	0.168	215
IE2-WE1R 200 L4	K11R 200 L4 E1 IE2	36	193	1780	IE2- 93.0	92.5	91.4	0.82	59.5	6.8	2.0	1.7	2.8	0.275	277
IE2-WE1R 225 S4	K11R 225 S4 E1 IE2	44	237	1775	IE2- 93.6	92.9	92.1	0.83	71.5	6.5	1.9	1.6	2.5	0.313	313
IE2-WE1R 225 M4	K11R 225 M4 E1 IE2	49	263	1780	IE2- 93.6	93.0	91.5	0.84	78.0	8.0	2.2	1.8	2.4	0.525	390
IE2-WE2R 225 M4	K11R 225 M4 E2 IE2	45	242	1775	IE2- 93.6	92.7	91.2	0.80	75.5	8.3	2.9	2.1	3.3	0.356	346
IE2-WE1R 250 M4	K11R 250 M4 E1 IE2	64	343	1780	IE2- 94.1	93.5	93.0	0.85	100	7.6	1.7	1.5	2.2	0.95	535
IE2-WE2R 250 M4	K11R 250 M4 E2 IE2	63	339	1777	IE2- 94.1	93.6	93.2	0.83	101	7.2	2.3	1.8	2.3	0.62	435
IE2-WE1R 280 S4	K11R 280 S4 E1 IE2	90	483	1779	IE2- 94.5	94.2	93.9	0.84	142	6.6	1.7	1.4	2.0	0.95	550
IE2-WE1R 280 M4	K11R 280 M4 E1 IE2	105	563	1780	IE2- 95.0	94.6	94.1	0.84	166	7.4	1.8	1.6	2.2	1.10	610
IE2-WE1R 315 S4	K11R 315 S4 E1 IE2	132	707	1784	IE2- 95.2	95.2	94.6	0.85	205	8.0	1.6	1.5	2.2	1.96	760
IE2-WE1R 315 M4	K11R 315 M4 E1 IE2	145	776	1784	IE2- 95.0	95.0	94.5	0.85	225	8.2	1.9	1.7	2.3	2.27	850
IE2-WE1R 315 MX4	K11R 315 MX4 E1 IE2	175	939	1780	IE2- 95.1	95.1	94.5	0.85	272	8.0	1.6	1.5	2.2	2.73	975
IE2-WE1R 315 MY4	K11R 315 MY4 E1 IE2	220	1174	1790	IE2- 95.4	95.4	95.0	0.87	333	8.8	2.0	1.6	2.6	4.82	1270
IE2-WE1R 315 L4	K11R 315 L4 E1 IE2	280	1792	1790	IE2- 95.4	95.4	95.3	0.88	419	8.5	2.2	1.6	2.5	5.93	1450
IE2-WE1R 315 LX4	K11R 315 LX4 E1 IE2	330	1761	1790	IE2- 95.4	94.5	93.5	0.87	499	9.2	2.5	1.7	1.7	6.82	1630
IE2-WE2R 355 M4	W22R 355 M4 E1 IE2	375	1997	1793	IE2- 95.4	95.4	94.5	0.87	567	9.0	1.3	0.9	2.9	7.90	2150
IE2-WE2R 355 MX4	W22R 355 MX4 E1 IE2	425	2267	1790	IE2- 95.8	95.8	95.5	0.87	640	9.0	1.4	1.0	3.1	9.50	2400
IE2-WE2R 355 LY4	W22R 355 LY4 E1 IE2	475	2529	1794	IE2- 95.8	95.8	95.5	0.83	750	9.2	1.5	1.0	3.5	10.00	2500
IE2-WE2R 355 L4	W22R 355 L4 E1 IE2	525	2795	1794	IE2- 95.8	95.8	95.5	0.83	829	9.0	1.3	1.0	3.3	10.00	2500

Three-phase motors with squirrel-cage rotor for marine use, High Efficiency IE2

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data																Design point 460 V, 60 Hz
Type	Type	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 460 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
GL	DNV, RS, LR														
DNV-GL	BV, ABS, CCS														
RS (KP.. only)		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 1200 rpm – 6-pole version															
IE2-KPR 71 K6	KPR 71 K6 IE2	0.21	1.78	1125	IE2- 55	68.3	63.5	0.68	0.55	3.6	2.1	2	2.3	0.0013	11
IE2-KPR 71 G6	KPR 71 G6 IE2	0.3	2.55	1125	IE2- 61.6	72.5	67.5	0.7	0.73	4.4	2.2	2.2	2.4	0.00175	12.5
IE2-KPR 80 K6	KPR 80 K6 IE2	0.44	3.67	1145	IE2- 64	75.9	72.2	0.7	1.03	4.1	1.8	1.8	2.3	0.00325	15
IE2-KPR 80 G6	KPR 80 G6 IE2	0.65	5.42	1145	IE2- 73	77.6	74.3	0.69	1.5	4.4	2.1	2.1	2.5	0.00425	18
IE2-KPR 90 S6	KPR 90 S6 IE2	0.75	6.17	1160	IE2- 80	79.6	75.9	0.67	1.76	5.6	2.7	2.6	3.1	0.00625	24
IE2-KPR 90 L6	KPR 90 L6 IE2	0.92	7.51	1170	IE2- 82.5	80	74.9	0.62	2.26	6.4	2.9	2.5	3.5	0.0072	30
IE2-KPR 100 LX6	KPR 100 LX6 IE2	0.92	7.57	1160	IE2- 73	84.4	81.2	0.72	3.08	6.1	2.2	2.2	3.1	0.0139	36
IE2-KPER 112 MV6	KPER 112 MV6 IE2	0.92	***)	***)	IE2- ***)	***)	***)	***)	***)	***)	***)	***)	***)	0.0155	48
IE2-KPER 112 MZ6	KPER 112 MZ6 IE2	2.2	***)	***)	IE2- ***)	***)	***)	***)	***)	***)	***)	***)	***)	0.043	50
IE2-KPER 132 SX6T	KPER 132 SX6T IE2	***)	***)	***)	***) ***)	***)	***)	***)	***)	***)	***)	***)	***)	***)	***)
IE2-KPER 132 S6	KPER 132 S6 IE2	3.6	29.6	1160	IE2- 87.5	86.8	85.4	0.81	6.4	5.7	1.8	1.2	2.8	0.023	55
IE2-KPER 132 M6	KPER 132 M6 IE2	4.5	37.2	1155	IE2- 87.5	87.2	86.1	0.82	8	5.7	2.1	1.9	2.9	0.029	66
IE2-WE1R 132 M6	K11R 132 M6 E1 IE2	4.5	36.9	1165	IE2- 87.5	86.0	83.4	0.79	8	5.3	1.8	1.6	2.5	0.043	76
IE2-WE1R 132 MX6	K11R 132 MX6 E1 IE2	6.6	54	1170	IE2- 89.5	88.5	87.1	0.8	11.5	5.6	1.9	1.7	2.9	0.053	85
IE2-WE1R 160 M6	K11R 160 M6 E1 IE2	9.0	73	1175	IE2- 89.5	88.9	87.0	0.82	16	5.8	2.2	2.0	2.7	0.113	118
IE2-WE2R 160 M6	K11R 160 M6 E2 IE2	9	73	1170	IE2- 89	89	87.7	0.81	15.5	5.7	1.9	1.7	2.7	0.053	103
IE2-WE1R 160 L6	K11R 160 L6 E1 IE2													0.145	135
IE2-WE2R 160 L6	K11R 160 L6 E2 IE2	13	106	1175	IE2- 90.3	89.9	88.1	0.83	22	6.4	2.5	2.2	2.8	0.166	155
IE2-WE1R 180 L6	K11R 180 L6 E1 IE2	16.5	134	1175	IE2- 90.2	89.8	88.4	0.85	27.0	7.3	2.2	1.9	2.7	0.228	185
IE2-WE2R 180 L6	K11R 180 L6 E2 IE2	15	122	1175	IE2- 90.2	89.5	87.4	0.83	25	6.3	2.5	1.9	2.9	0.166	157
IE2-WE1R 200 L6	K11R 200 L6 E1 IE2	22.0	179	1175	IE2- 91.7	90.1	88.5	0.85	35.5	6.6	2.2	1.8	2.7	0.268	208
IE2-WE1R 200 LX6	K11R 200 LX6 E1 IE2	25	202	1180	IE2- 91.7	91.2	90.0	0.86	40.0	6.4	2.2	1.8	2.7	0.443	272
IE2-WE2R 200 LX6	K11R 200 LX6 E2 IE2	25	202	1180	IE2- 91.7	90.8	89.5	0.86	40	6.6	2.3	1.9	2.9	0.324	238
IE2-WE1R 225 M6	K11R 225 M6 E1 IE2	36	291	1182	IE2- 93.0	92.0	90.5	0.85	57.0	7.1	2.3	2.0	2.6	0.825	365
IE2-WE2R 225 M6	K11R 225 M6 E2 IE2	25	201	1185	IE2- 91.7	90.8	88.1	0.86	40	8.2	2.9	2.4	3.7	0.825	365
IE2-WE1R 250 M6	K11R 250 M6 E1 IE2	40	322	1185	IE2- 93.0	92.0	90.5	0.86	63	6.6	2.7	1.8	2.5	1.28	480
IE2-WE2R 250 M6	K11R 250 M6 E2 IE2	40	324	1179	IE2- 93	93.4	91.8	0.86	63	6.7	2.7	2.1	2.6	1.28	480
IE2-WE1R 280 S6	K11R 280 S6 E1 IE2	49	396	1183	IE2- 93.6	93.5	90.5	0.86	76.5	6.7	2.3	1.9	2.6	1.48	560
IE2-WE1R 280 M6	K11R 280 M6 E1 IE2	64	514	1190	IE2- 94.1	93.5	93.0	0.84	102	8.0	2.1	1.6	2.7	2.63	710
IE2-WE1R 315 S6	K11R 315 S6 E1 IE2	90	722	1190	IE2- 94.1	93.5	93.0	0.87	138	7.5	1.8	1.6	2.5	3.33	804
IE2-WE1R 315 M6	K11R 315 M6 E1 IE2	99	794	1190	IE2- 94.1	94.0	93.5	0.87	152	8.0	2.1	1.6	2.6	3.60	865
IE2-WE1R 315 MX6	K11R 315 MX6 E1 IE2	110	883	1190	IE2- 95.0	94.6	94.2	0.87	167	8.3	2.0	1.7	2.6	6.67	1210
IE2-WE1R 315 MY6	K11R 315 MY6 E1 IE2	145	1164	1190	IE2- 95.0	95.0	94.5	0.86	223	8.0	2.0	1.5	2.4	6.67	1250
IE2-WE1R 315 L6	K11R 315 L6 E1 IE2	175	1404	1190	IE2- 95.0	94.8	94.3	0.87	266	8.0	2.0	1.5	2.4	8.60	1430
IE2-WE1R 315 LX6	K11R 315 LX6 E1 IE2	220	1766	1190	IE2- 95.0	95.0	94.5	0.86	338	7.0	1.9	1.5	2.3	8.60	1460
IE2-WE2R 355 M6	W22R 355 M6 E1 IE2	280	2241	1193	IE2- 95.0	94.5	93.5	0.83	446	8.0	1.7	1.3	2.5	8.20	1850
IE2-WE2R 355 MX6	W22R 355 MX6 E1 IE2	330	2633	1197	IE2- 95.2	95.2	95.2	0.86	506	7.0	1.3	1.1	2.2	12.10	2200
IE2-WE2R 355 LY6	W22R 355 LY6 E1 IE2	375	2997	1195	IE2- 95.0	94.5	93.5	0.76	652	8.0	1.9	1.6	2.8	14.00	2400

***) upon request

Three-phase motors with squirrel-cage rotor for marine use, High Efficiency IE2

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data															Design point 460 V, 60 Hz
Type GL DNV-GL RS (KP.. only)	Type DNV, RS, LR BV, ABS, CCS	P_B	M_B	n_B	η_B (EN 60034-2-1)			$\cos\varphi_B$	I_B 460 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	Nm	rpm	100 %	75 %	50 %	-	A	-	-	-	-	kgm^2	kg
Synchronous 900 rpm – 8-pole version															
IE2-KPER 80 G8	KPER 80 G8 IE2	0.3	3.41	840	IE2- 52.0	56.1	48.5	0.57	1.1	3.0	1.9	1.9	2.1	0.0018	12
IE2-KPR 90 S8	KPR 90 S8 IE2	0.4	***)	***)	IE2- 58.0	***)	***)	***)	***)	***)	***)	***)	***)	0.0063	24
IE2-KPR 90 L8	KPR 90 L8 IE2	0.7	***)	***)	IE2- 66.0	***)	***)	***)	***)	***)	***)	***)	***)	0.0072	26
IE2-KPR 100 L8	KPR 100 L8 IE2	0.9	9.94	865	IE2- 66.0	80.0	76.6	0.66	2.1	4.8	2.2	2.2	2.8	0.0123	33.5
IE2-KPR 100 LX8	KPR 100 LX8 IE2	1.3	13.72	870	IE2- 75.5	74.3	70.4	0.63	3.1	4.0	1.6	1.5	2.5	0.0139	36
IE2-KPER 112 MV8	KPER 112 MV8 IE2	1.3	13.64	875	IE2- 75.5	77.6	72.7	0.54	3.6	3.8	2.0	1.9	2.9	0.0155	48
IE2-KPER 132 S8	KPER 132 S8 IE2														
IE2-KPER 132 M8	KPER 132 M8 IE2														
IE2-WE1R 132 M8	K11R 132 M8 E1 IE2	3.6	39.5	870	IE2- 84.2	84.5	83.0	0.75	7.2	3.6	1.4	1.2	1.8	0.0430	74
IE2-WE1R 160 M8	K11R 160 M8 E1 IE2	4.5												0.0530	86
IE2-WE1R 160 MX8	K11R 160 MX8 E1 IE2	6.6	72	875	IE2- 87.8	87.2	84.6	0.74	12.7	4.9	2.0	1.6	2.4	0.1130	115
IE2-WE2R 160 MX8	K11R 160 MX8 E2 IE2	6.6	73	865	IE2- 86.4	86.7	85.3	0.72	13.5	4.2	1.6	1.4	2.3	0.0530	103
IE2-WE1R 160 L8	K11R 160 L8 E1 IE2	8.5												0.1450	136
IE2-WE1R 180 L8	K11R 180 L8 E1 IE2	13.0	141	878	IE2- 89.4	89.4	87.9	0.78	23.5	4.6	1.7	1.5	2.3	0.2280	175
IE2-WE2R 180 L8	K11R 180 L8 E2 IE2	13												0.1660	157
IE2-WE1R 200 L8	K11R 200 L8 E1 IE2	18.0	196	878	IE2- 88.9	88.7	87.4	0.78	32.5	4.8	1.8	1.6	2.2	0.2680	200
IE2-WE1R 225 S8	K11R 225 S8 E1 IE2	22	239	880	IE2- 89.9	89.6	87.5	0.79	39.0	5.2	2.0	1.9	2.7	0.44	265
IE2-WE2R 225 S8	K11R 225 S8 E2 IE2	22	237	885	IE2- 91.8	91.5	90.2	0.81	37.0	5.7	2	1.7	2.6	0.51	305
IE2-WE1R 225 M8	K11R 225 M8 E1 IE2	33	356	885	IE2- 91.5	91.0	89.5	0.78	58.0	5.6	2.1	1.8	2.4	0.83	380
IE2-WE2R 225 M8	K11R 225 M8 E2 IE2	26	281	883	IE2- 91.3	91.1	89.6	0.79	45.0	5.9	2.1	1.8	2.7	0.51	307
IE2-WE1R 250 M8	K11R 250 M8 E1 IE2	36	391	880	IE2- 91.7	92.0	90.8	0.79	62.5	5.3	2.1	1.7	2.2	0.83	380
IE2-WE1R 280 S8	K11R 280 S8 E1 IE2	44	476	883	IE2- 91.7	91.7	91.1	0.80	75.5	4.6	1.8	1.4	1.9	1.35	480
IE2-WE1R 280 M8	K11R 280 M8 E1 IE2	54	582	886	IE2- 93.0	92.2	91.1	0.79	92.0	5.5	2.1	1.6	2.3	1.55	535
IE2-WE1R 315 S8	K11R 315 S8 E1 IE2	66	708	890	IE2- 93.0	93.0	92.5	0.80	111	5.8	1.6	1.4	2.0	2.63	715
IE2-WE1R 315 M8	K11R 315 M8 E1 IE2	90	966	890	IE2- 93.6	93.6	93.4	0.82	147	6.0	1.5	1.3	2.0	3.33	805
IE2-WE1R 315 MX8	K11R 315 MX8 E1 IE2	108	1159	890	IE2- 93.6	93.6	93	0.81	179	6.2	1.6	1.3	2.0	3.60	850
IE2-WE1R 315 MY8	K11R 315 MY8 E1 IE2	132	1416	890	IE2- 93.6	93.6	93.6	0.82	216	6.0	1.6	1.4	2.0	6.00	1080
IE2-WE1R 315 L8	K11R 315 L8 E1 IE2	145	1556	890	IE2- 93.6	93.6	93.6	0.83	234	6.0	1.6	1.4	2.0	6.76	1250
IE2-WE1R 315 LX8	K11R 315 LX8 E1 IE2	190	2039	890	IE2- 94.3	94.3	94.0	0.81	312	7.0	2.1	1.7	2.3	8.71	1430
IE2-WE2R 355 M8	W22R 355 M8 E1 IE2													9.50	1850
IE2-WE2R 355 MX8	W22R 355 MX8 E1 IE2													13.40	2200
IE2-WE2R 355 LY8	W22R 355 LY8 E1 IE2													15.80	2400

***) upon request

Three-phase motors with squirrel-cage rotor for marine use

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data															Design point 400 V, 380 V, 50 Hz
Type	Type	P_B GL, RS DNV-GL	P_B BV, DNV LR, ABS, CCS	M_B	n_B	η_B (EN 60034-2) 100 %	$\cos\varphi_B$	I_B 400 V	I_B 380 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	Nm	rpm	%	-	A	A	-	-	-	-	kgm^2	kg
Synchronous 3000 rpm – 2-pole version															
KPER 56 K2		0.09	0.09	0.3	2840	70.0	0.74	0.25	0.26	4.9	2.3	2.3	2.8	0.00013	4.4
KPER 56 G2		0.12	0.12	0.4	2830	70.3	0.77	0.32	0.34	4.5	2.1	2.1	2.3	0.00013	4.5
KPER 63 K2	KPR 56 K2	0.18	0.18	0.6	2765	68	0.79	0.48	0.51	4.1	1.7	1.7	2.0	0.00013	4.9
KPER 63 G2	KPR 56 G2	0.25	0.25	0.9	2775	67	0.79	0.68	0.72	4.2	2.0	2.0	2.2	0.00015	5.2
KPER 71 K2	KPR 63 K2	0.37	0.37	1.3	2745	71.5	0.85	0.88	0.93	4.2	1.9	1.9	2.1	0.00025	6.7
KPER 71 G2	KPR 63 G2	0.55	0.55	1.9	2730	73.5	0.86	1.26	1.33	5.0	1.9	1.9	2.3	0.00032	7.6
KPER 80 K2	KPR 71 K2	0.75	0.75	2.6	2795	77.5	0.85	1.65	1.74	5.6	2.2	2.2	2.3	0.00057	10.7
KPER 80 G2	KPR 71 G2	1.1	1.1	3.7	2810	77	0.84	2.46	2.59	5.6	2.2	2.1	2.4	0.00072	11.5
KPER 90 S2	KPR 80 K2	1.5	1.5	5.1	2810	80	0.88	3.09	3.25	6.7	2.3	2.3	2.6	0.00132	16.0
KPER 90 L2	KPR 80 G2	2.2	2.2	7.4	2830	82	0.88	4.42	4.65	7.0	2.6	2.1	2.6	0.0017	19.0
KPER 100 L2	KPR 90 L2	3.0	3.0	10.1	2840	82.5	0.87	6.03	6.35	6.4	2.2	2.1	2.5	0.00275	25.0
KPER 112 M2	KPR 100 S2	4.0	4.0	13.2	2885	85.5	0.85	8.08	8.50	6.7	2	1.9	2.6	0.0045	32
KPER 112 MX2	KPR 100 L2	5.5	5.5	18.3	2875	85.5	0.87	10.64	11.2	7.0	2.2	2.0	2.7	0.0055	38
KPER 132 S2T		5.5	5.5	18.2	2890	85.9	0.84	11.0	11.6	7.5	2.4	2.2	3	0.0055	40
KPER 132 S2	KPR 112 MY2	5.5	5.5	18.4	2860	85.7	0.86	11.0	11.6	5.5	1.8	1.6	2.2	0.0081	52
KPER 112 MV2	KPR 100 LV2	7.5	7.5	24.9	2880	87.1	0.84	14.8	15.6	6.3	1.5	1.2	2.6	0.0068	46
KPER 132 SX2T		7.5	7.5	24.9	2880	87.1	0.84	14.8	15.6	6.3	1.5	1.2	2.6	0.0068	48
KPER 132 SX2	KPR 112 M2	7.5	7.5	24.7	2900	87	0.86	14.5	15.3	6.6	1.8	1.3	2.5	0.011	57
KPER 132 M2		11.0	11.0												
K11R 160 M2	K10R 132 M2	11	11	36	2900	88.5	0.90	20.0	21	7	2.4	2	2.4	0.0258	81
K11R 160 MX2	K10R 160 S2	15	15	49	2930	89.4	0.90	27.1	28.5	7.1	2.2	1.7	2.9	0.0575	118
K11R 160 L2	K10R 160 M2	18.5	18.5	61	2920	90.5	0.92	32.3	34	7.2	2.1	1.6	2.6	0.0675	134
K11R 180 M2	K10R 180 S2	22	22	72	2935	91.8	0.92	37.5	39.5	6.8	1.7	1.4	2.6	0.105	165
K11R 200 L2	K10R 180 M2	30	30	97	2940	92.8	0.92	50.8	53.5	7.3	2	1.6	2.9	0.128	195
K11R 200 LX2	K10R 200 M2	37	37	120	2940	93.0	0.90	64	67	7	1.8	1.3	2.4	0.193	255
K11R 225 M2	K10R 200 L2	45	45	146	2940	93.7	0.91	76	80	7.5	1.8	1.4	2.7	0.220	290
K11R 250 M2	K10R 225 M2	55	55	178	2955	93.7	0.91	93	98	7.5	2	1.5	2.6	0.375	360
K11R 280 S2	K10R 250 S2	75	75	241	2970	94.6	0.92	124	131	7.5	2	1.6	2.6	0.650	490
K11R 280 M2	K10R 250 M2	90	90	289	2970	94.7	0.91	151	159	8.5	2.2	1.8	2.8	0.675	510
K11R 315 S2	K10R 280 S2	110	110	353	2975	95.4	0.91	183	193	8.5	1.5	1.3	2.5	1.21	720
K11R 315 M2	K10R 280 M2	132	132	424	2975	95.4	0.91	219	231	8.5	2	1.8	2.7	1.44	800
K11R 315 MX2	K10R 315 S2	160	160	514	2975	96.0	0.93	258	272	8.5	2	1.6	2.6	1.76	980
K11R 315 MY2	K10R 315 M2	200	200	643	2970	96.0	0.92	327	344	8.2	2.6	2	2.6	2.82	1170
K11R 315 L2	K10R 315 L2	250	250	803	2973	96.1	0.93	404	425	7.3	2.1	1.4	2	3.66	1460
K11R 315 LX2	K10R 315 LX2	280	280	902	2965	96.7	0.92	454	478	8.2	2.6	1.6	2.2	4.43	1630
K22R 355 M2		315	315	1008	2985	96.8	0.91	520	547	8.2	1.4	1.0	3.0	4.20	2000
K22R 355 MX2		355	355	1136	2985	96.9	0.91	580	610	8.5	1.4	1.0	2.9	5.50	2200
K22R 355 LY2		400	400	1280	2985	97.1	0.91	650	685	8.6	1.6	1.0	2.9	7.10	2400
K22R 355 L2		450	450	1440	2985	97.2	0.92	725	765	9	2.0	0.9	2.8	7.10	2400

Three-phase motors with squirrel-cage rotor for marine use

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data															Design point 400 V, 380 V, 50 Hz
Type	Type	P_B GL, RS DNV-GL	P_B BV, DNV LR, ABS, CCS	M_B	n_B	η_B (EN 60034-2) 100 %	$\cos\varphi_B$	I_B 400 V	I_B 380 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	Nm	rpm	%	-	A	A	-	-	-	-	kgm^2	kg
Synchronous 1500 rpm – 4-pole version															
KPER 56 K4		0.06	0.06	0.41	1410	60.1	0.6	0.24	0.25	3.1	2.3	2.3	2.7	0.00019	4.3
KPER 56 G4		0.09	0.09	0.63	1375	61.6	0.68	0.31	0.33	3.2	1.9	1.9	2.2	0.00019	4.4
KPER 63 K4	KPR 56 K4	0.12	0.12	0.8	1360	57.5	0.7	0.43	0.45	3.1	1.7	1.6	2.0	0.00019	4.8
KPER 63 G4	KPR 56 G4	0.18	0.18	1.3	1340	63	0.7	0.59	0.62	3.2	1.8	1.8	2.1	0.00024	5.2
KPER 71 K4	KPR 63 K4	0.25	0.25	1.7	1370	64.5	0.76	0.73	0.77	3.5	1.6	1.6	1.9	0.00040	6.8
KPER 71 G4	KPR 63 G4	0.37	0.37	2.6	1345	68	0.78	1.01	1.06	3.6	1.8	1.8	2.0	0.00050	7.8
KPER 80 K4	KPR 71 K4	0.55	0.55	3.8	1390	70.5	0.74	1.52	1.60	4.2	2.0	1.9	2.1	0.00087	10.6
KPER 80 G4	KPR 71 G4	0.75	0.75	5.2	1380	71.5	0.74	2.04	2.15	4.4	2.1	2.0	2.2	0.00107	11.7
KPER 90 S4	KPR 80 K4	1.1	1.1	7.5	1400	75.5	0.83	2.52	2.65	5.0	2.1	2.0	2.2	0.00207	15.5
KPER 90 L4	KPR 80 G4	1.5	1.5	10.3	1390	77.5	0.84	3.33	3.50	5.2	2.3	2.2	2.4	0.00260	18.0
KPER 100 L4	KPR 90 L4	2.2	2.2	15.1	1395	82	0.81	4.80	5.05	5.6	2.2	2	2.3	0.00400	23.5
KPER 100 LX4	KPR 100 S4	3.0	3.0	20.2	1420	82	0.82	6.41	6.75	6.1	2.3	2	2.6	0.00725	30
KPER 112 M4	KPR 100 L4	4.0	4.0	26.8	1425	83	0.81	8.55	9.00	6.7	2.4	2.3	2.8	0.00900	37
KPER 112 MX4	KPR 100 LX4	5.5	5.5	36.9	1425	86.3	0.78	11.80	12.4	6.3	2.5	2.4	2.9	0.011	45
KPER 132 S4T		5.5	5.5	36.9	1425	86.3	0.78	11.80	12.4	6.3	2.5	2.4	2.9	0.011	47
KPER 132 S4	KPR 112 M4	5.5	5.5	36.5	1440	85.7	0.89	10.50	11.1	6.5	1.9	1.7	3	0.015	50
KPER 132 M4		7.5	7.5					14.90	15.7						
K11R 132 M4	K10R 132 S4	7.5	7.5	49	1450	86	0.84	15.2	16	6	2	1.7	2.9	0.0280	70
K11R 160 M4	K10R 132 M4	11	11	72	1450	86	0.85	21.9	23	6.8	2.2	1.9	3.3	0.0350	92
K11R 160 L4	K10R 160 S4	15	15	98	1465	88	0.86	28.5	30	7.3	2.5	2	3	0.0780	120
K11R 180 M4	K10R 160 M4	18.5	17.5	121	1460	88.5	0.86	35.2	37	6.8	2.5	2	2.9	0.0900	136
K11R 180 L4	K10R 180 S4	22	22	143	1465	90.5	0.84	41.8	44	6.5	2	1.8	2.6	0.1380	170
K11R 200 L4	K10R 180 M4	30	30	196	1465	91.5	0.85	55.6	58.5	7	2	1.7	2.4	0.1680	200
K11R 225 S4	K10R 200 M4	37	37	240	1470	92.5	0.86	67.0	70.5	7	2	1.7	2.5	0.2750	270
K11R 225 M4	K10R 200 L4	45	43	292	1470	93	0.86	81.2	85.5	7	2	1.7	2.5	0.3130	300
K11R 250 M4	K10R 225 M4	55	55	356	1475	93.5	0.86	99	104	7	2.2	1.7	2.3	0.5250	375
K11R 280 S4	K10R 250 S4	75	75	484	1480	94.1	0.86	134	141	7	2	1.7	2.2	0.9500	520
K11R 280 M4	K10R 250 M4	90	90	581	1480	94.6	0.86	160	168	7	2.1	1.6	2.2	1.10	580
K11R 315 S4	K10R 280 S4	110	110	707	1485	95.1	0.86	194	204	7.5	1.8	1.6	2.2	1.96	740
K11R 315 M4	K10R 280 M4	132	132	849	1485	95.1	0.86	233	245	7	1.8	1.5	2.2	2.27	840
K11R 315 MX4	K10R 315 S4	160	160	1032	1480	95	0.87	279	294	7	1.8	1.5	2	2.73	1000
K11R 315 MY4	K10R 315 M4	200	200	1286	1485	96	0.88	342	360	7.5	2	1.8	2.4	4.82	1200
K11R 315 L4	K10R 315 L4	250	250	1608	1485	96.1	0.9	417	439	8	2	1.6	2.3	5.93	1450
K11R 315 LX4	K10R 315 LX4	280	280	1795	1490	96.5	0.88	476	501	8.6	1.9	1.5	2.5	6.82	1630
K22R 355 M4		315	315	2016	1492	1495	96.8	0.85	555	585	9.0	2.0	1.3	3.4	7.90
K22R 355 MX4		355	355	2268	1495	1495	96.8	0.84	630	665	9.2	2.0	1.3	3.8	9.50
K22R 355 LY4		400	400	2555	1495	1495	96.8	0.82	730	770	9.0	2.1	1.3	4.0	10.0

Three-phase motors with squirrel-cage rotor for marine use

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data															Design point 400 V, 380 V, 50 Hz
Type	Type	P_B GL, RS DNV-GL	P_B BV, DNV LR, ABS, CCS	M_B	n_B	η_B (EN 60034-2) 100 %	$\cos\varphi_B$	I_B 400 V	I_B 380 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	Nm	rpm	%	-	A	A	-	-	-	-	kgm^2	kg
Synchronous 1000 rpm – 6-pole version															
KPER 63 K6	KPR 56 K6	0.09	0.09	1.0	880	51.5	0.59	0.43	0.45	2.4	1.9	1.9	2.2	0.00024	4.9
KPER 63 G6	KPR 56 G6	0.12	0.12	1.3	865	52	0.62	0.54	0.57	2.4	1.8	1.8	2.0	0.00027	5.7
KPER 71 K6	KPR 63 K6	0.18	0.18	1.9	920	61	0.55	0.78	0.82	2.8	1.5	1.5	1.8	0.00045	7.4
KPER 71 G6	KPR 63 G6	0.25	0.25	2.7	900	61	0.58	1.02	1.07	2.8	1.8	1.8	2.0	0.00060	8.3
KPER 80 K6	KPR 71 K6	0.37	0.37	3.9	905	66	0.69	1.17	1.23	3.3	1.8	1.8	1.8	0.00130	11.0
KPER 80 G6	KPR 71 G6	0.55	0.55	5.9	895	67	0.72	1.65	1.74	3.5	2.0	2.0	2.2	0.00175	12.5
KPER 90 S6	KPR 80 K6	0.75	0.75	7.7	930	71	0.69	2.20	2.32	4.4	2.1	2.1	2.4	0.00325	16.0
KPER 90 L6	KPR 80 G6	1.1	1.1	11.4	925	73	0.73	2.99	3.15	4.5	2.0	2.0	2.2	0.00425	19.0
KPER 100 L6	KPR 90 L6	1.5	1.5	15.3	935	76.5	0.75	3.80	4.00	4.5	1.9	1.8	2.2	0.00625	24.0
KPER 112 M6	KPR 100 L6	2.2	2.2	22.4	940	80	0.78	5.08	5.35	5.1	2.0	1.9	2.5	0.01225	33.5
KPER 112 MX6	KPR 100 LX6	3.0	3.0	30.6	935	81.9	0.75	7.05	7.4	5.2	2.5	2.5	2.9	0.0139	***)
KPER 132 S6T		3.0	3.0	30.6	935	81.9	0.75	7.05	7.4	5.2	2.5	2.5	2.9	0.0139	39
KPER 132 S6	KPR 112 M6	3.0	3.0	30	955	78.5	0.82	6.70	7.1	5.7	1.8	1.6	2.7	0.018	46
KPER 132 M6	KPR 112 MX6	4.0	4.0	40	955	80	0.8	9.00	9.5	6	2.2	2	3.1	0.023	53
K11R 132 MX6	K10R 132 S6	5.5	5.5	55	955	83	0.83	11.4	12	5	1.8	1.5	2.3	0.0430	70
K11R 160 M6	K10R 132 M6	7.5	7.5	75	960	85	0.82	15.7	16.5	5.5	2	1.6	2.5	0.0530	86
K11R 160 L6	K10R 160 S6	11	11	109	965	85.2	0.86	21.9	23	5	2	1.7	2.3	0.1130	114
K11R 180 L6	K10R 160 M6	14	13.5	139	965	86	0.83	28.5	30	6	2.4	2.1	2.7	0.1450	136
K11R 200 L6	K10R 180 S6	18.5	18.5	182	970	88.1	0.87	34.7	36.5	5.5	2	1.7	2.4	0.2280	175
K11R 200 LX6	K10R 180 M6	22	22	217	970	88.8	0.87	41.3	43.5	6.2	2.2	1.8	2.6	0.2680	200
K11R 225 M6	K10R 200 M6	30	30	294	973	90.4	0.89	53.7	56.5	6.5	2.2	1.7	2.5	0.4430	265
K11R 250 M6	K10R 225 M6	37	37	362	975	91	0.89	66.0	69.5	6.5	2.2	1.7	2.3	0.8250	360
K11R 280 S6	K10R 250 S6	45	45	439	980	92	0.87	81.2	85.5	6	2	1.5	2	1.28	465
K11R 280 M6	K10R 250 M6	55	55	536	980	92.5	0.88	98	103	6.5	2.3	1.7	2.4	1.48	520
K11R 315 S6	K10R 280 S6	75	75	727	985	93.7	0.87	133	140	7	2	1.6	2.4	2.63	690
K11R 315 M6	K10R 280 M6	90	90	868	990	94.4	0.88	157	165	7	2	1.7	2.4	3.33	800
K11R 315 MX6	K10R 315 S6	110	110	1061	990	94	0.88	192	202	7.5	2.2	1.7	2.6	3.60	880
K11R 315 MY6	K10R 315 M6	132	132	1273	990	95	0.88	228	240	7.5	2	1.7	2.4	6.00	1050
K11R 315 L6	K10R 315 L6	160	160	1551	985	95.3	0.89	273	287	7.5	2.3	1.9	2.4	6.67	1250
K11R 315 LX6	K10R 315 LX6	200	190	1929	990	95	0.87	350	368	8.3	2.2	2	2.7	8.6	1460
K22R 355 M6		220	220	2114	994	995	96.0	0.84	400	420	8.4	1.8	1.2	3.2	1650
K22R 355 MX6		250	250	2412	990	995	96.6	0.85	440	465	9.0	2.0	1.2	3.2	2200
K22R 355 LY6		315	315	3039	990	995	96.6	0.84	560	590	8.8	2.0	1.2	3.4	2400

***) upon request

Three-phase motors with squirrel-cage rotor for marine use

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 50 Hz

Motor selection data															Design point 400 V, 380 V, 50 Hz
Type	Type	P_B GL, RS DNV-GL	P_B BV, DNV LR, ABS, CCS	M_B	n_B	η_B (EN 60034-2) 100 %	$\cos\varphi_B$	I_B 400 V	I_B 380 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	Nm	rpm	%	-	A	A	-	-	-	-	kgm^2	kg
Synchronous 750 rpm – 8-pole version															
KPER 71 K8	KPR 63 K8	0.09	0.09	1.3	665	44.4	0.54	0.54	0.57	2.1	1.7	1.7	1.9	0.00050	6.6
KPER 71 G8	KPR 63 G8	0.12	0.12	1.7	660	47.6	0.55	0.67	0.70	2.3	1.6	1.6	2.0	0.00060	8.1
KPER 80 K8	KPR 71 K8	0.18	0.18	2.5	675	56.5	0.64	0.72	0.76	2.7	1.8	1.8	2.0	0.00130	10.5
KPER 80 G8	KPR 71 G8	0.25	0.25	3.5	685	60.1	0.59	1.02	1.07	3.0	2.1	2.1	2.3	0.00175	12.0
KPER 90 S8	KPR 80 K8	0.37	0.37	5.1	695	61.5	0.59	1.48	1.56	2.9	1.7	1.7	1.9	0.00300	15.0
KPER 90 L8	KPR 80 G8	0.55	0.55	7.6	690	64.5	0.62	1.97	2.07	3.1	1.7	1.7	2.0	0.00375	18.0
KPER 100 L8	KPR 90 L8	0.75	0.75	10.2	700	67	0.62	2.61	2.75	3.2	1.8	1.8	2.1	0.00625	23.0
KPER 100 LX8	KPR 100 S8	1.1	1.1	15.1	695	73	0.69	3.14	3.30	3.9	1.8	1.8	2.2	0.00900	28.0
KPER 112 M8	KPR 100 L8	1.5	1.5	20.6	695	74.5	0.73	3.99	4.20	4.1	2.0	1.9	2.3	0.01225	33.5
KPER 112 MX8	KPR 100 LX8	2.2	2.2	30.7	685	74.1	0.68	6.30	6.6	3.8	2	1.9	2.3	0.0139	***)
KPER 132 S8T		2.2	2.2	30.7	685	74.1	0.68	6.30	6.6	3.8	2	1.9	2.3	0.0139	39
KPER 132 S8	KPR 112 M8	2.2	2.2	29.8	705	75.5	0.76	5.50	5.8	4.5	1.7	1.6	2.3	0.018	46
KPER 132 M8	KPR 112 MX8	3.0	3.0	40.6	705	78	0.75	7.40	7.8	4.5	1.7	1.6	2.3	0.023	53
K11R 160 M8	K10R 132 S8	4	4	54	710	79.3	0.78	9.31	9.8	4	1.6	1.3	1.9	0.0430	70
K11R 160 MX8	K10R 132 M8	5.5	5.5	74	710	81.4	0.78	12.4	13	4.5	1.7	1.6	2.1	0.0530	86
K11R 160 L8	K10R 160 S8	7.5	7.5	99	725	83	0.78	16.6	17.5	4.5	1.8	1.6	2.1	0.1130	114
K11R 180 L8	K10R 160 M8	11	10.5	146	720	85	0.78	23.8	25	4.5	2	1.7	2.1	0.1450	136
K11R 200 L8	K10R 180 S8	15	15	198	725	86.5	0.79	31.8	33.5	5	2	1.7	2.3	0.228	175
	K10R 180 M8	18.5	17.5	244	725	87.5	0.8	38.0	40	5	1.9	1.7	2.2	0.268	
K11R 225 S8		18.5	17.5	244	725	89.2	0.83	36.1	38	5.5	2	1.6	2.2	0.440	265
K11R 225 M8	K10R 200 M8	22	22	290	725	89.2	0.84	42.3	44.5	5	1.8	1.5	2.2	0.440	265
K11R 250 M8	K10R 225 M8	30	30	392	730	90.2	0.79	60.8	64	5.5	2.2	1.8	2.2	0.825	360
K11R 280 S8	K10R 250 S8	37	37	481	735	91	0.8	73.2	77	5.5	2	1.5	2	1.35	465
K11R 280 M8	K10R 250 M8	45	45	585	735	91.5	0.77	92	97	6	2.3	1.8	2.4	1.55	520
K11R 315 S8	K10R 280 S8	55	55	710	740	93.1	0.8	106	112	6.5	1.8	1.6	2.3	2.63	690
K11R 315 M8	K10R 280 M8	75	75	968	740	93.3	0.81	143	151	6	2	1.6	2.3	3.33	800
K11R 315 MX8	K10R 315 S8	90	90	1161	740	93.5	0.81	172	181	6	1.9	1.6	2.2	3.60	880
K11R 315 MY8	K10R 315 M8	110	110	1420	740	94.6	0.81	207	218	6.5	2.1	1.8	2.4	6.00	1050
K11R 315 L8	K10R 315 L8	132	132	1704	740	95	0.83	241	254	6.3	2	1.7	2.1	6.76	1250
K11R 315 LX8	K10R 315 LX8	160	160	2065	740	95.2	0.79	307	323	7.2	2.2	1.9	2.5	8.71	1430
K22R 355 M8		180	180	2307	745	95.6	0.77	355	375	7.5	1.8	1.2	3.0	9.5	1600
K22R 355 MX8		200	200	2564	745	95.9	0.79	380	400	8.2	2.0	1.3	3.5	13.4	2200
K22R 355 LY8		250	250	3205	745	95.8	0.74	510	540	8.0	2.2	1.3	3.5	15.8	2400

***) upon request

Three-phase motors with squirrel-cage rotor for marine use

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data															Design point 480 V, 440 V, 60 Hz	
Type	Type	P_B GL, RS DNV-GL	P_B BV, DNV LR, ABS, CCS	M_B	n_B	η_B (EN 60034-2) 100 %	$\cos\varphi_B$	I_B 480 V	I_B 440 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	Nm	rpm	%	-	A	A	-	-	-	-	kgm^2	kg
Synchronous 3600 rpm – 2-pole version																
KPER 56 K2		0.105	0.105	0.3	3460	71.0	0.68	0.25	0.27	5.8	2.6	2.6	3.3	0.00013	4.4
KPER 56 G2		0.14	0.14	0.4	3440	73.0	0.72	0.32	0.35	5.2	2.3	2.3	2.8	0.00013	4.5
KPER 63 K2	KPR 56 K2	0.21	0.21	0.6	3370	70.0	0.80	0.45	0.49	4.4	2.0	1.8	2.3	0.00013	4.9
KPER 63 G2	KPR 56 G2	0.30	0.30	0.8	3390	74.0	0.76	0.64	0.70	4.3	2.0	2.0	2.3	0.00015	5.2
KPER 71 K2	KPR 63 K2	0.44	0.44	1.3	3350	74.0	0.85	0.84	0.92	4.4	1.9	1.7	2.0	0.00025	6.7
KPER 71 G2	KPR 63 G2	0.65	0.65	1.9	3300	75	0.87	1.20	1.31	5.3	1.9	1.9	2.3	0.00032	7.6
KPER 80 K2	KPR 71 K2	0.90	0.90	2.5	3400	80.0	0.85	1.60	1.74	5.6	2.1	2.0	2.2	0.00057	10.7
KPER 80 G2	KPR 71 G2	1.3	1.3	3.7	3400	79.0	0.85	2.33	2.54	5.8	2.0	2.0	2.3	0.00072	11.5
KPER 90 S2	KPR 80 K2	1.8	1.8	5.0	3440	81	0.89	2.98	3.25	6.2	2.1	1.8	2.2	0.00132	16.0
KPER 90 L2	KPR 80 G2	2.6	2.6	7.3	3420	82.0	0.88	4.35	4.75	7.3	2.4	1.9	2.4	0.0017	19.0
KPER 100 L2	KPR 90 L2	3.6	3.6	10.0	3430	85.0	0.88	5.78	6.30	6.3	2.0	1.9	2.3	0.00275	25.0
KPER 112 M2	KPR 100 S2	4.8	4.8	13.2	3470	84.5	0.86	7.93	8.65	7.0	1.8	1.7	2.4	0.0045	32
KPER 112 MX2	KPR 100 L2	6.6	6.6	18.2	3460	85.0	0.89	10.5	11.5	8.0	2.0	1.8	2.5	0.0055	38
KPER 132 S2T			6.6	18.01	3500	86	0.84	11		8.8	2.4	2.2	3	0.0055	40
KPER 132 S2	KPR 112 MY2		6.6	18.38	3430	85.7	0.85	11		5.5	1.7	1.5	2.2	0.0081	52
KPER 112 MV2	KPR 100 LV2		9	24.7	3480	88	0.83	14.8		6.9	1.5	1.2	2.7	0.0068	46
KPER 132 SX2T			9	24.7	3480	88	0.83	14.8		6.9	1.5	1.2	2.7	0.0068	48
KPER 132 SX2	KPR 112 M2		9	24.7	3480	87	0.86	14.5		6.6	1.8	1.3	2.4	0.011	57
KPER 132 M2															
K11R 160 M2	K10R 132 M2	13	13	36	3480	88.0	0.90	19.7	21.5	7	2.4	1.9	3	0.0258	81
K11R 160 MX2	K10R 160 S2	18	18	49	3530	89.6	0.90	27.0	29.5	7.1	2.2	1.7	2.9	0.0575	118
K11R 160 L2	K10R 160 M2	22	22	60	3515	90.0	0.92	32.1	35	6.5	1.9	1.4	2.6	0.0675	134
K11R 180 M2	K10R 180 S2	26	26	70	3525	91.8	0.92	37.1	40.5	6.3	1.5	1.3	2.3	0.105	165
K11R 200 L2	K10R 180 M2	36	36	97	3535	92.5	0.92	50.9	55.5	6.9	2	1.5	2.7	0.128	195
K11R 200 LX2	K10R 200 M2	44	44	119	3535	93.0	0.91	62	68	6.5	1.6	1.2	2.3	0.193	255
K11R 225 M2	K10R 200 L2	54	54	146	3530	93.5	0.90	77	84	7	1.7	1.3	2.5	0.220	290
K11R 250 M2	K10R 225 M2	66	66	178	3545	93.5	0.90	94	103	6.8	1.8	1.4	2.3	0.375	360
K11R 280 S2	K10R 250 S2	90	90	241	3565	94.0	0.92	126	137	6.8	1.8	1.4	2.4	0.650	490
K11R 280 M2	K10R 250 M2	105	105	281	3565	94.5	0.91	147	160	7.6	2	1.6	2.6	0.675	510
K11R 315 S2	K10R 280 S2	132	132	353	3570	95.0	0.91	183	200	7.5	1.3	1.2	2.3	1.21	720
K11R 315 M2	K10R 280 M2	158	150	401	3570	95.4	0.91	219	239	7.7	1.8	1.6	2.3	1.44	800
K11R 315 MX2	K10R 315 S2	190	190	508	3570	96.0	0.92	259	282	7.6	1.8	1.5	2.4	1.76	980
K11R 315 MY2	K10R 315 M2	225	225	602	3568	95.8	0.91	311	339	8	2.6	2	2.6	2.82	1170
K11R 315 L2	K10R 315 L2	280	280	749	3570	96.0	0.92	381	416	6.6	1.9	1.3	1.8	3.66	1460
K11R 315 LX2	K10R 315 LX2	310	310	827	3580	96.7	0.91	424	462	8.8	2.9	1.7	2.4	4.43	1630
K22R 355 M2		340	340	906	3585									4.20	2000
K22R 355 MX2		390	390	1039	3585									5.50	2200
K22R 355 LY2		440	440	1172	3585									7.10	2400
K22R 355 L2		490	490	1305	3585									7.10	2400

Three-phase motors with squirrel-cage rotor for marine use

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data															Design point 480 V, 440 V, 60 Hz	
Type	Type	P_B GL, RS DNV-GL	P_B BV, DNV LR, ABS, CCS	M_B	n_B	η_B (EN 60034-2) 100 %	$\cos\varphi_B$	I_B 480 V	I_B 440 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	Nm	rpm	%	-	A	A	-	-	-	-	kgm^2	kg
Synchronous 1800 rpm – 4-pole version																
KPER 56 K4			0.075	0.42	1710	63	0.6	0.24		3.5	2.5	2.5	2.9	0.00019	4.3
KPER 56 G4			0.105	0.59	1690	63	0.63	0.32		3.5	2.3	2.3	2.5	0.00019	4.4
KPER 63 K4	KPR 56 K4	0.14	0.14	0.8	1660	61.0	0.70	0.39	0.43	3.2	1.7	1.7	2.1	0.00019	4.8
KPER 63 G4	KPR 56 G4	0.21	0.21	1.2	1660	65.0	0.68	0.57	0.62	3.3	1.9	1.9	2.2	0.00024	5.2
KPER 71 K4	KPR 63 K4	0.30	0.30	1.7	1660	67.0	0.76	0.71	0.77	3.7	1.6	1.6	1.8	0.00040	6.8
KPER 71 G4	KPR 63 G4	0.44	0.44	2.5	1660	71.0	0.77	0.97	1.06	3.9	1.8	1.8	2.0	0.00050	7.8
KPER 80 K4	KPR 71 K4	0.65	0.65	3.7	1690	74.0	0.75	1.41	1.54	4.5	2.0	1.7	2.1	0.00087	10.6
KPER 80 G4	KPR 71 G4	0.90	0.90	5.1	1685	76.0	0.76	1.88	2.05	4.8	1.9	1.8	2.0	0.00107	11.7
KPER 90 S4	KPR 80 K4	1.3	1.3	7.3	1700	78.0	0.83	2.43	2.65	5.2	1.9	1.8	2.2	0.00207	15.5
KPER 90 L4	KPR 80 G4	1.8	1.8	10.2	1690	80.0	0.84	3.21	3.50	5.2	2.1	2.0	2.2	0.00260	18.0
KPER 100 L4	KPR 90 L4	2.6	2.6	14.6	1705	82.0	0.80	4.77	5.20	5.8	2.1	2	2.2	0.00400	23.5
KPER 100 LX4	KPR 100 S4	3.6	3.6	20.0	1715	82.0	0.83	6.37	6.95	6.2	2.1	1.8	2.4	0.00725	30
KPER 112 M4	KPR 100 L4	4.8	4.8	26.7	1720	85.0	0.83	8.25	9.00	6.6	2.3	2.1	2.8	0.00900	37
KPER 112 MX4	KPR 100 LX4		6.6	36.65	1720	87	0.76	12.2		6.7	2.5	2.5	2.9	0.011	45
KPER 132 S4T			6.6	36.65	1720	87	0.76	12.2		6.7	2.5	2.5	2.9	0.011	47
KPER 132 S4	KPR 112 M4		6.6	36.12	1745	84.5	0.88	10.5		6.5	1.9	1.7	3	0.015	50
KPER 132 M4															
K11R 132 M4	K10R 132 S4	9	9	49	1745	86	0.85	14.7	16	5.6	1.8	1.5	2.6	0.0280	70
K11R 160 M4	K10R 132 M4	13	13	71	1750	88	0.86	20.6	22.5	6.5	2	1.7	3	0.0350	92
K11R 160 L4	K10R 160 S4	18	18	98	1760	89	0.87	28.0	30.5	7	2.3	1.8	2.7	0.0780	120
K11R 180 M4	K10R 160 M4	22	20	109	1755	89.5	0.87	33.9	37	6.3	2.3	1.8	2.6	0.0900	136
K11R 180 L4	K10R 180 S4	26	26	141	1765	90.5	0.85	40.8	44.5	6.1	1.8	1.6	2.4	0.1380	170
K11R 200 L4	K10R 180 M4	36	34	184	1765	92	0.86	54.5	59.5	6.6	1.8	1.6	2.2	0.1680	200
K11R 225 S4	K10R 200 M4	44	44	238	1765	92.5	0.86	66.5	72.5	6.6	1.8	1.5	2.3	0.2750	270
K11R 225 M4	K10R 200 L4	54	49.5	267	1770	92	0.86	82.0	89.5	6.5	1.8	1.5	2.3	0.3130	300
K11R 250 M4	K10R 225 M4	66	63	340	1770	92.5	0.86	100	109	6.5	2	1.5	2	0.5250	375
K11R 280 S4	K10R 250 S4	90	90	484	1777	94	0.85	136	148	6.5	1.8	1.6	1.9	0.9500	520
K11R 280 M4	K10R 250 M4	105	105	564	1777	94.4	0.86	156	170	6.5	1.9	1.4	1.9	1.10	580
K11R 315 S4	K10R 280 S4	132	132	708	1780	95	0.85	196	214	7.3	1.6	1.4	2	1.96	740
K11R 315 M4	K10R 280 M4	158	158	849	1777	95	0.85	236	257	6.6	1.6	1.3	2	2.27	840
K11R 315 MX4	K10R 315 S4	190	190	1022	1775	94.5	0.86	281	307	6.6	1.6	1.4	1.8	2.73	1000
K11R 315 MY4	K10R 315 M4	225	225	1204	1785	96	0.88	320	349	7.4	1.9	1.8	2.3	4.82	1200
K11R 315 L4	K10R 315 L4	280	280	1498	1785	96.1	0.88	398	434	7.4	1.9	1.5	2.2	5.93	1450
K11R 315 LX4	K10R 315 LX4	310	310	1654	1790	96.8	0.88	438	478	8.8	1.9	1.6	2.5	6.82	1630
K22R 355 M4		340	340	1814	1790									7.9	2150
K22R 355 MX4		390	390	2081	1790									9.5	2400
K22R 355 LY4		440	440	2347	1790									10.0	2500

Three-phase motors with squirrel-cage rotor for marine use

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data															Design point 480 V, 440 V, 60 Hz
Type	Type	P_B GL, RS DNV-GL	P_B BV, DNV LR, ABS, CCS	M_B	n_B	η_B (EN 60034-2) 100 %	$\cos\varphi_B$	I_B 480 V	I_B 440 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	Nm	rpm	%	-	A	A	-	-	-	-	kgm^2	kg
Synchronous 1200 rpm – 6-pole version															
KPER 63 K6	KPR 56 K6	0.105	0.105	0.9	1085	53.0	0.58	0.41	0.45	2.7	1.9	1.9	2.2	0.00024	4.9
KPER 63 G6	KPR 56 G6	0.14	0.14	1.2	1080	56.0	0.57	0.53	0.58	2.5	1.9	1.9	2.1	0.00027	5.7
KPER 71 K6	KPR 63 K6	0.21	0.21	1.8	1120	65.0	0.53	0.73	0.80	3.2	1.4	1.4	1.7	0.00045	7.4
KPER 71 G6	KPR 63 G6	0.30	0.30	2.6	1100	64.0	0.58	0.97	1.06	3.2	1.6	1.6	1.8	0.00060	8.3
KPER 80 K6	KPR 71 K6	0.44	0.44	3.8	1110	67.0	0.74	1.07	1.17	3.6	1.7	1.6	1.7	0.00130	11.0
KPER 80 G6	KPR 71 G6	0.65	0.65	5.6	1110	71.0	0.71	1.56	1.70	3.8	1.9	1.8	2.0	0.00175	12.5
KPER 90 S6	KPR 80 K6	0.90	0.90	7.6	1130	73.0	0.68	2.20	2.40	4.7	1.9	1.9	2.2	0.00325	16.0
KPER 90 L6	KPR 80 G6	1.3	1.3	11.1	1120	75.0	0.70	2.98	3.25	4.5	1.8	1.8	2.0	0.00425	19.0
KPER 100 L6	KPR 90 L6	1.8	1.8	15.2	1130	79.0	0.75	3.67	4.00	4.8	1.7	1.6	2.0	0.00625	24.0
KPER 112 M6	KPR 100 L6	2.6	2.6	21.8	1140	81.0	0.81	4.77	5.20	5.8	1.8	1.7	2.3	0.01225	33.5
KPER 112 MX6	KPR 100 LX6		3.6	30.16	1140	82.5	0.75	7		5.6	2	2.2	2.7	0.0139	***)
KPER 132 S6T			3.6	30.16	1140	82.5	0.75	7		5.6	2	2.2	2.7	0.0139	39
KPER 132 S6	KPR 112 M6		3.6	29.77	1155	79	0.79	7		5.7	1.9	1.6	2.7	0.018	46
KPER 132 M6	KPR 112 MX6		4.8	39.69	1155	80	0.78	9		6	2.2	2	3.1	0.023	53
K11R 132 MX6	K10R 132 S6	6.6	6.6	55	1145	83	0.82	11.5	12.5	4.8	1.6	1.3	2	0.0430	70
K11R 160 M6	K10R 132 M6	9	9	75	1145	85	0.82	15.6	17	5.2	1.8	1.4	2.2	0.0530	86
K11R 160 L6	K10R 160 S6	13	13	107	1155	85.5	0.86	21.1	23	4.6	1.8	1.5	2	0.1130	114
K11R 180 L6	K10R 160 M6	16	15.5	127	1165	87	0.83	26.6	29	5.8	2.2	1.9	2.6	0.1450	136
K11R 200 L6	K10R 180 S6	21	21	172	1168	88.4	0.87	33.0	36	5.5	1.9	1.6	2.3	0.2280	175
K11R 200 LX6	K10R 180 M6	26	26	212	1170	89.3	0.87	40.3	44	5.9	1.9	1.6	2.5	0.2680	200
K11R 225 M6	K10R 200 M6	34	34	278	1170	90.3	0.88	51.3	56	5.9	1.8	1.5	2.4	0.4430	265
K11R 250 M6	K10R 225 M6	42	42	342	1172	91.5	0.88	62.8	68.5	5.8	2	1.6	2.1	0.8250	360
K11R 280 S6	K10R 250 S6	54	54	437	1180	92	0.87	81.1	88.5	5.5	1.8	1.4	1.8	1.28	465
K11R 280 M6	K10R 250 M6	66	66	534	1180	92.5	0.88	97	106	6.5	2.2	1.7	2.2	1.48	520
K11R 315 S6	K10R 280 S6	90	90	727	1182	93.5	0.87	133	145	6.5	1.8	1.4	2.2	2.63	690
K11R 315 M6	K10R 280 M6	108	108	870	1185	94.5	0.87	158	172	6.5	1.8	1.5	2.1	3.33	800
K11R 315 MX6	K10R 315 S6	132	132	1064	1185	94	0.88	192	209	7	2	1.6	2.4	3.60	880
K11R 315 MY6	K10R 315 M6	158	158	1268	1190	95	0.88	227	248	7	1.9	1.6	2.3	6.00	1050
K11R 315 L6	K10R 315 L6	190	180	1451	1185	95.2	0.89	270	294	7	2.2	1.8	2.3	6.67	1250
K11R 315 LX6	K10R 315 LX6	230	220	1773	1185	95.2	0.89	326	356	7.7	2	1.8	2.5	8.6	1460
K22R 355 M6		240	240	1926	1190									8.2	1650
K22R 355 MX6		270	270	2167	1190									12.1	2200
K22R 355 LY6		340	340	2729	1190									14.0	2400

***) upon request

Three-phase motors with squirrel-cage rotor for marine use

with surface cooling, duty type S1, continuous duty
for rated voltage, thermal class 155 (F), degree of protection IP 55, 60 Hz

Motor selection data															Design point 480 V, 440 V, 60 Hz
Type	Type	P_B GL, RS DNV-GL	P_B BV, DNV LR, ABS, CCS	M_B	n_B	η_B (EN 60034-2) 100 %	$\cos\varphi_B$	I_B 480 V	I_B 440 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	Nm	rpm	%	-	A	A	-	-	-	-	kgm^2	kg
Synchronous 900 rpm – 8-pole version															
KPER 71 K8	KPR 63 K8	0.105	0.105	1.2	820	50.0	0.54	0.47	0.51	2.3	1.6	1.6	1.7	0.00050	6.6
KPER 71 G8	KPR 63 G8	0.14	0.14	1.6	815	51.0	0.53	0.62	0.68	2.5	1.5	1.5	1.8	0.00060	8.1
KPER 80 K8	KPR 71 K8	0.21	0.21	2.4	830	60.0	0.62	0.68	0.74	2.8	1.6	1.6	1.8	0.00130	10.5
KPER 80 G8	KPR 71 G8	0.30	0.30	3.4	835	62.0	0.60	0.97	1.06	3.1	1.9	1.9	2.1	0.00175	12.0
KPER 90 S8	KPR 80 K8	0.44	0.44	4.9	850	65.0	0.57	1.43	1.56	3.6	1.6	1.6	1.7	0.00300	15.0
KPER 90 L8	KPR 80 G8	0.65	0.65	7.4	840	70.0	0.60	1.86	2.03	3.7	1.7	1.7	1.8	0.00375	18.0
KPER 100 L8	KPR 90 L8	0.90	0.90	10.1	850	69.0	0.63	2.48	2.70	3.7	1.6	1.6	1.9	0.00625	23.0
KPER 100 LX8	KPR 100 S8	1.3	1.3	14.6	850	76.0	0.69	2.98	3.25	4.2	1.6	1.6	2.0	0.00900	28.0
KPER 112 M8	KPR 100 L8	1.8	1.8	20.5	840	78.0	0.73	3.80	4.15	4.2	1.8	1.7	2.1	0.01225	33.5
KPER 112 MX8	KPR 100 LX8		2.6	29.56	840	77.3	0.66	6.15		4.1	1.6	1.6	2.1	0.0139	***)
KPER 132 S8T			2.6	29.56	840	77.3	0.66	6.15		4.1	1.6	1.6	2.1	0.0139	39
KPER 132 S8	KPR 112 M8		2.6	28.71	865	76	0.71	6		4.5	1.7	1.7	2.4	0.018	46
KPER 132 M8	KPR 112 MX8		3.6	40.21	855	78	0.73	8		4.4	1.7	1.6	2.3	0.023	53
K11R 160 M8	K10R 132 S8	4.8	4.8	54	850	79.5	0.75	9.6	10.5	3.8	1.4	1.1	1.7	0.0430	70
K11R 160 MX8	K10R 132 M8	6.6	6.6	73	860	82.3	0.77	12.4	13.5	4.1	1.5	1.4	2	0.0530	86
K11R 160 L8	K10R 160 S8	9	9	99	870	83.5	0.79	16.5	18	4	1.6	1.4	1.9	0.1130	114
K11R 180 L8	K10R 160 M8	13	12	132	865	86	0.78	23.4	25.5	4.1	1.8	1.6	2	0.1450	136
K11R 200 L8	K10R 180 S8	18	18	196	875	87.4	0.79	31.2	34	4.7	1.8	1.5	2	0.228	175
	K10R 180 M8	21	20	221	865	87.5	0.82	35.3	38.5	4	1.8	1.6	2	0.268	
K11R 225 S8		22	20	218	875	89	0.81	36.7	40	5	1.8	1.4	2	0.440	265
K11R 225 M8	K10R 200 M8	26	26	285	870	89.5	0.84	41.7	45.5	4.7	1.6	1.4	2	0.440	265
K11R 250 M8	K10R 225 M8	36	36	391	880	90.5	0.78	61.4	67	5.1	2	1.6	2	0.825	360
K11R 280 S8	K10R 250 S8	44	44	476	882	90.5	0.8	72.9	79.5	4.9	1.9	1.4	1.9	1.35	465
K11R 280 M8	K10R 250 M8	54	54	583	884	91.5	0.78	91	99.5	5.5	2.1	1.6	2.1	1.55	520
K11R 315 S8	K10R 280 S8	66	66	709	889	93.3	0.8	106	116	6.1	1.6	1.5	2	2.63	690
K11R 315 M8	K10R 280 M8	90	90	978	879	93	0.81	144	157	5.7	1.8	1.4	2	3.33	800
K11R 315 MX8	K10R 315 S8	108	108	1168	883	93.5	0.81	171	187	5.4	1.6	1.4	1.8	3.60	880
K11R 315 MY8	K10R 315 M8	132	132	1420	888	94.5	0.81	207	226	6.3	1.9	1.7	2.3	6.00	1050
K11R 315 L8	K10R 315 L8	158	158	1695	890	94.8	0.82	245	267	6	1.9	1.6	2	6.76	1250
K11R 315 LX8	K10R 315 LX8	190	190	2039	890	95.3	0.8	300	327	6.8	2	1.7	2.3	8.71	1430
K22R 355 M8		200	200	2146	890									9.5	1600
K22R 355 MX8		220	220	2361	890									13.4	2200
K22R 355 LY8		270	270	2897	890									15.8	2400

***) upon request

Terminal boxes

Marine design, sealed cable glands, power station design, VIK design

Type	Material	Adapter flange	Dimensions				Cable gland thread	Max. cable diameter	Terminal mounting	Number of terminals	Thread of terminal stud	Thread of protective conductor	Figure
			AG	LL	AH	BE	O	O_{max}					
			x	z	-	-	r	$..r_{max}$					
Standard design													
KA 05	Alu	-	92	92	-	-	M20 x 1.5	Ø 13 mm	K1M4	6	M4	M4	
KA 05	Alu	-	92	92	-	-	M25 x 1.5	Ø 17 mm	K1M4	6	M4	M4	
KA 05-13	Alu	-	104	112	-	-	M20 x 1.5	Ø 13 mm	K1M4	6	M4	M4	
KA 05-13	Alu	-	104	112	-	-	M25 x 1.5	Ø 17 mm	K1M4	6	M4	M4	
KA 05-13	Alu	-	104	112	-	-	M32 x 1.5	Ø 21 mm	K1M4	6	M4	M4	
25 A	GG-15	-	143	134	-	-	M30 x 2	Ø 20.5 mm	SB 5/K1M5	6	M5	M6	01
63 A	GG-15	-	174	162	-	-	M36 x 2	Ø 23.5 mm	SB 6/K1M6	6	M6	M6	01
63 A	GG-15	-	174	162	-	-	M36 x 2	Ø 23.5 mm	SB 6/K1M6	6	M6	M6	01
100 A	GG-15	-	213	207	-	-	M45 x 2	Ø 32.5 mm	SB 8	6	M8	M8	01
200/100 A	GG-15	-	282	242	-	-	M56 x 2	Ø 41.5 mm	SB 8	6	M8	M8	01
200 A	GG-15	-	282	242	-	-	M56 x 2	Ø 41.5 mm	SB 10	6	M10	M10	01
400 A	GG-15	-	315	294	-	-	M56 x 2	Ø 41.5 mm	SB 12	6	M12	M10	02
400 B	GG-15	-	415	340	265	-	M56 x 2	Ø 41.5 mm	KM 12	6	M12	LK	03
400 B	GG-15	-	415	340	265	-	M72 x 2	Ø 56.5 mm	KM 12	6	M12	LK	03
630 A	GG-15	straight	496	390	301	140	M72 x 2	Ø 56.5 mm	KLP 630-20	6	M20	LK	04G
630 A	GG-15	inclined	496	390	301	140	M72 x 2	Ø 56.5 mm	KLP 630-20	6	M20	LK	04S
1000 A	GG-15	straight	615	474	385	200	M72 x 2	Ø 56.5 mm	KLSO 1000	6	StS	LK	05G
1000 A	GG-15	inclined	615	474	385	200	M72 x 2	Ø 56.5 mm	KLSO 1000	6	StS	LK	05S
1000 A	GG-15	straight	615	474	385	200	M80 x 2	Ø 68 mm	KLSO 1000	6	StS	LK	05G
1000 A	GG-15	inclined	615	474	385	200	M80 x 2	Ø 68 mm	KLSO 1000	6	StS	LK	05S
Sealed cable glands													
VGK 200 A	GG-15	-	387	242	-	-	Ø 66	Ø 66 mm	SB 10	6	M10	M10	06
VGK 400 A	GG-15	-	422	296	-	-	Ø 95	Ø 95 mm	SB 12	6	M12	M10	06
Power station design													
25 A KA	GG-15	-	143	134	-	-	M30 x 2	Ø 20.5 mm	KL 155	6	M5	M6	07
63 A KA	GG-15	-	184	172	-	-	M36 x 2	Ø 23.5 mm	KL 155	6	M5	M6	07
63 A KA	GG-15	-	184	172	-	-	M36 x 2	Ø 23.5 mm	K1 M6	6	M6	M6	07
63/100 A KA	GG-15	-	223	214	-	-	M45 x 2	Ø 32.5 mm	K1 M6	6	M6	M6	07
100 A KA	GG-15	-	213	207	-	-	M45 x 2	Ø 32.5 mm	K1 M8	6	M8	M8	07
200 A KA	GG-15	-	285	258	-	-	M56 x 2	Ø 41.5 mm	K1 M10	6	M10	M10	07
200 B KA	GG-15	-	330	270	200	-	M56 x 2	Ø 41.5 mm	K1 M10	6	M10	LK	03
400 A KA	GG-15	-	315	306	-	-	M56 x 2	Ø 41.5 mm	KM 12	6	M12	M10	07
VIK design													
KA 05-13	Alu	-	104	112	-	-	M20 x 1.5	Ø 13 mm	K1M4	6	M4	M4	
KA 05-13	Alu	-	104	112	-	-	M25 x 1.5	Ø 17 mm	K1M4	6	M4	M4	
KA 05-13	Alu	-	104	112	-	-	M32 x 1.5	Ø 21 mm	K1M4	6	M4	M4	
25 AV Ex eb IIC	GG-15	-	143	134	-	-	M32 x 1.5	Ø 21 mm	KL 155	6	M5	M6	07
63 AV Ex eb IIC	GG-15	-	184	172	-	-	M40 x 1.5	Ø 28 mm	KL 155	6	M5	M6	07
100/63 AV Ex eb IIC	GG-15	-	223	214	-	-	M40 x 1.5	Ø 28 mm	KM 8/6	6	M6	M6	08
100/63 AV Ex eb IIC	GG-15	-	223	214	-	-	M50 x 1.5	Ø 35 mm	KM 8/6	6	M6	M6	08
200 A-SB Ex eb IIC	GG-15	-	335	270	200	-	M50 x 1.5	Ø 35 mm	KM 10/8	6	LK	LK	09
200 A-SB Ex eb IIC	GG-15	-	335	270	200	-	M63 x 1.5	Ø 45 mm	KM 10/8	6	LK	LK	09
400 A-SB Ex eb IIC	GG-15	-	415	340	265	-	M63 x 1.5	Ø 45 mm	KM 16/12	6	LK	LK	09
630 A Ex eb IIC	GG-15	straight	496	390	301	140	M75 x 1.5	Ø 45 mm	KLP 630-20	6	LK	LK	10G
630 A Ex eb IIC	GG-15	inclined	496	390	301	140	M75 x 1.5	Ø 45 mm	KLP 630-20	6	LK	LK	10S
1000 A Ex eb IIC	GG-15	straight	615	474	385	200	M80 x 1.5	Ø 68 mm	KLSO 1000	6	StS	LK	11G
1000 A Ex eb IIC	GG-15	inclined	615	474	385	200	M80 x 1.5	Ø 68 mm	KLSO 1000	6	StS	LK	11S

StS… Busbars
LK…Terminal tabs

VMUK_NS02-111-EN-01/17 Printed in Germany. Subject to change.

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