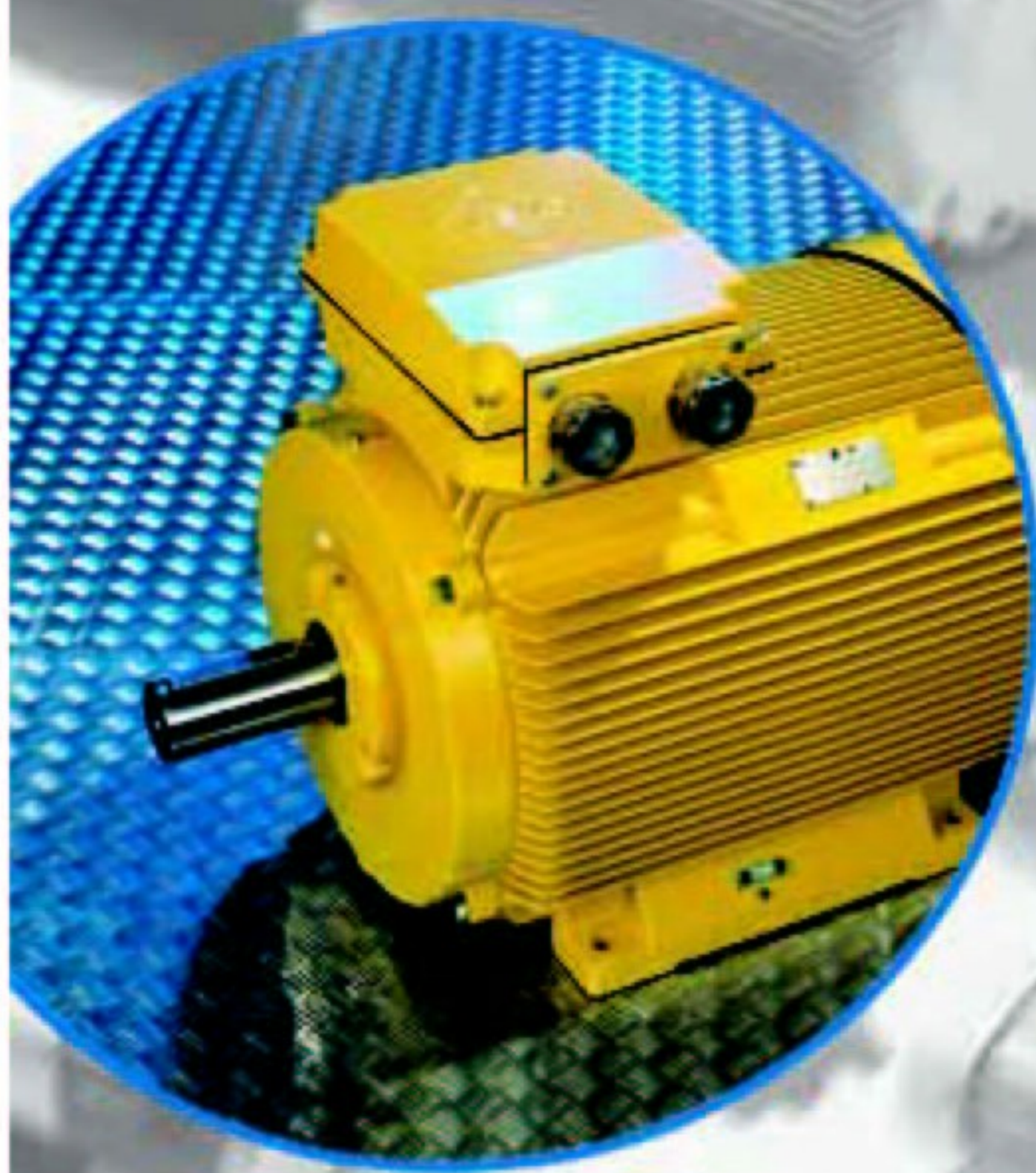


Three-phase asynchronous motors with squirrel-cage rotor for low voltage

Main catalogue 2003



we get things moving



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Introduction

Electrical drives in their many variations are now in use in every branch of industry. They determine by virtue of their characteristics the economy of production. The three-phase asynchronous motors of VEM meet the needs of users with regard to all-round versatility, superior performance parameters, environmental compatibility and high standard of reliability. VEM motors are designed for the whole of European market and offer:

- Economical performance, due to high motor efficiencies
- Versatility and reduction of stock due to series version in IP 55 degree of protection (higher degrees of protection up to IP 66 on request)
- Optional terminal box position right /on the top /left
- Increased lifetime, reliability and thermal overload capacity by series version in insulation class F with thermal reserve (special version in insulation class H on request)
- Environmental acceptability resulting from use of a low-noise ventilation system
- Supply option complying with Eastern European standards
- An alternative option for outputs according to the classic series IEC/DIN, and a progressive one based on the IEC 72 for fixing dimensions and frame sizes
- Mounting options for components, as impulse-sensors, tacho-generators, brakes, speed-sensors and forced-ventilation units for accomplishment with recent control methods according to customers' needs

Environmentally-friendly power generation, power generation by regenerative energy sources and strongly developed energy awareness are continuously increasing challenges for electric motor manufacturers.

The introduction of minimum efficiencies in some countries and the Voluntary Agreement between the EU Commission Energy and the CEMEP, the Association of European Motor and Drive Manufacturers, result in new design concepts with the special feature of energy optimisation, and finally their promotion on the market. Moreover, it is the declared objective of the Agreement to push motors with low efficiencies step by step from the market.

Taking these trends into consideration, VEM offers with the standard motors in eff2 classification and the series WE1R and W21R in eff1 classification motors which are fully matching these aims.

Further additional information is found in the Electronic Catalogue of the VEM Group. The Catalogue assists the user to select and configure the VEM products and offers the option to print out Data Sheets and Requests, to display scaled and dimensional drawings of the different products and to export them in DXF formats. Among other information about the VEM Group, also Catalogues, Lists of spare parts, Operating and maintenance manuals of the different product categories can be retrieved from the programme.

Note:

We make all efforts to better our products. Versions, technical data and figures could be changed therefore. They are always not binding before written confirmation by the supply factory.

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Standards and regulations

The motors comply with the relevant standards and regulations, particularly with the following:

Title	DIN EN/DIN VDE	IEC
Rotating electrical machines, rating and performance	DIN EN 60034-1	IEC 34-1 IEC 85
Rotating electrical machines, Methods for determining losses and efficiency	DIN EN 60034-2	IEC 34-2
Induction motors, type IM B3, mounting dimensions and relationship frame sizes – output ratings	DIN 42673	(IEC 72)
Induction motors, type IM B5, IM B35, IM B14, mounting dimensions and relationship frame sizes – output ratings	DIN 42677	(IEC 72)
Terminal markings and direction of rotation for rotating electrical machines	DIN VDE 0530 Teil 8	IEC 34-8
Rotating electrical machines, symbols for types of construction	DIN EN 60034-7	IEC 34-7
Rotating electrical machines, built-in thermal protection	-	IEC 34-11
Rotating electrical machines, methods of cooling	DIN EN 60034-6	IEC 34-6
Rotating electrical machines, degrees of protection	DIN EN 60034-5	IEC 34-5
Rotating electrical machines, mechanical vibrations	DIN EN 60034-14	IEC 34-14
Cylindrical shaft ends for electrical machines	DIN 748 Teil 3	IEC 72
Rotating electrical machines, noise limits	DIN EN 60034-9	IEC 34-9
Rotating electrical machines, starting performance of induction cage motors up to 660 V, 50 Hz	DIN EN 60034-12	IEC 34-12
IEC standard voltages	DIN IEC 38	IEC 38

Apart from this, the following apply to EEx motors

General regulations	DIN EN 50014 / VDE 0170/0171 T. 1	IEC 79-0
Flameproof enclosure "d"	DIN EN 50018 / VDE 0170/0171 T. 5	-
Increased safety "e"	DIN EN 50019 / VDE 0170/0171 T. 6	IEC 79-7
Type of ignition protection "n"	DIN EN 50021 / VDE 0170/0171 T. 16	-
Electrical equipment for use in the presence of combustible dust	DIN EN 50281-1-1	-

In addition, VEM motors comply with various foreign regulations that are adapted to IEC 34-1

NF C 51 Belgium	France	NBNC 51-101
ÖVE M10 Italy	Austria	CEI 2-3, V1
NEK-IEC 34-1 Great Britain	Norway	BS 5000/4999
SEV 3009 SS 426 0101	Switzerland (replaced by EN 60034-1) Sweden (replaced by EN 60034-1)	

and the Series KPER / KPR / K11R / K10R have been approved and can be supplied as specified in the regulations of the classification societies

Germanischer Lloyd Lloyd's Register of Shipping American Bureau of Shipping China Classification Society	Det Norske Veritas Russian Register Bureau Veritas
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(In so far as motors as specified in IEC Norms are accepted) recognition of the motor series as specified by Underwriters' Laboratories Inc.® (UL), both for the electrical insulation system and for the motor construction (UL Files E216022, E216143), was achieved for the US and Canadian market. It is possible to supply the motors as specified in the electrical (not mechanical) regulations of NEMA MG1 "Motors and Generators".

Motors with Certificates in accordance with the requirements of the Energy Policy and Conservation Act (EPA Act) (CSA File 184535) for the minimum efficiency legally prescribed for the USA and Canada (Table 12-10 according to NEMA and C390 according to CSA) are available.

The following permissible temperature rise applies to the standards and regulations specified:

Regulations	Cooling air temperature		Permissible limits of temperature rise in K (measured by resistance method) thermal class				
	°C		A	E	B	F	H
DIN EN 60034-1	40		60	75	80	105	125
IEC 34-1	40		60	75	80	105	125
Great Britain BS	40		60	75	80	105	125
Italy CEI	40		60	70	80	105	125
Sweden SEN	40		60	70	80	105	125
Norway NEK	40		60	-	80	105	125
Belgium NBN	40		60	75	80	105	125
France NF	40		60	75	80	105	125
Switzerland SEV	40		60	75	80	105	125
Germanischer Lloyd	45		55	70	75	100	100
American Bureau of Shipping	50		50	65	70	90	115
Bureau Veritas	45		50	65	70	90	110
Norske Veritas	45		50	65	70	90	115
Lloyd's Register	45		50	65	70	95	110
Russian Register	40/45		60	75	85	110	125

Progressive coordination of output

VEM three phase motors with squirrel-cage rotor are available in two type series that are both based on IEC 72 with regard to their designs and frame sizes. (See Table of Motor Selection Data for type coordination).

The K11R/K21R/K22R series is conceived as a classic IEC/DIN series, i.e. the fixing dimensions and correspondence of output as specified in DIN 42673/DIN 42677.

The K10R/K20R series have arisen from a progressive coordination of output in comparison with these DIN standards. They offer output up to two stages higher with the same frame size.

The variations derived from both series with different output coordination can also be supplied as special versions.

Design version

Shaft height	Series	Material for			Foot mounting
		Housing	End shields	Feet	
63 bis 132T	KPER/K21R	Grey cast iron			Screwed on
100 LX	KPER/K21R				Cast on
132 bis 280	K11R/K21R				Screwed on
315	K11R/K21R				Cast on
355	K22R				
56 up to 100	KPR/K20R				Cast on
112 up to 250	K10R/K20R				Screwed on
280 up to 315	K10R/K20R				Cast on

Degree of protection

The normal version of the motors complies with degree of protection IP 55, which can be raised to IP 56, according to the order. IP 65 and higher degrees of protection are possible on request.

The motors are equipped with drain holes in the end shields (only to order in the case of shaft sizes up to 132T), which are closed with plastic stoppers.

The penetration of water along the shaft must be prevented by the user in all motors with the shaft end upwards.

In the case of flange motors in types of construction IM V3/IM V36, the collection of water in the flange end shield is prevented by a standard outlet hole.

In normal cases, no special protective measures against the effects of weather are necessary for positioning outside. However, the motors must be protected against intensive solar radiation, e.g. by a protective roof, and against the fan being frozen up by a direct fall of snow, rain or ice.

Cooling and ventilation

The motors are equipped with radial plastic or aluminium alloy fans, which cool independently of the direction of rotation of the motor (IC 411 as specified in DIN EN 60034-6).

Attention is to be paid that a minimum distance of the fan cover from the wall is maintained (dimension B1) when the motor is being installed.

Types	Materials		
	Fan		Fan cover
KPER/KPR/K21R 56-112	Plastic ¹⁾	Sheet steel	Plastic ²⁾
K21R/K11R 132-225	Plastic ¹⁾	Sheet steel	Plastic ²⁾
K21R/K11R 250-315L	Plastic ¹⁾	Sheet steel	
K21R 315LX2, 4	Cast aluminium alloy	Sheet steel	
K22R 355	Cast aluminium alloy ³⁾	Sheet steel	
K20R 56-100	Plastic ¹⁾	Sheet steel	Plastic ²⁾
K20R 112-200	Plastic ¹⁾	Sheet steel	Plastic ²⁾
K20R 225-315L	Plastic ¹⁾	Sheet steel	
KPER 132/160 EEx e II	Plastic ¹⁾	Sheet steel	
KPER 180-315 EEx e II	Cast aluminium alloy	Sheet steel	
K11R 132-160, 180 M4, L6, 8	Plastic ¹⁾	Sheet steel	Plastic ²⁾

¹⁾ Cast aluminium alloy possible at extra charge on request

²⁾ Possible at extra charge for special versions

³⁾ 2-pole with uni-directional fan

Type designation of VEM low voltage motors

Example: K21R 132 SX2 KR

K	2	1	R	132	S	X	2	KR ...
Version								
K ... Squirrel-cage rotor								
W... Energy-saving motor								
S ... Slip ring rotor								
B ... Brake motor								
Design version								
P, 1, 2								
Standard mark								
0 ... Transnorm								
1, 2 ... DIN								
E ... DIN (old Series)								
Degree of protection/Cooling								
R ... Fin cooled, IP 55								
O ... Nonventilated, IP 55,								
with reduction in output according to preference,								
with U if installed in the airstream and the								
air quantity indicated at special symbols								
F ... Surface cooled, IP 55, with information								
about the surface cooling unit at special								
symbols								
Shaft height in mm								
Foot length								
K ... small								
G ... large								
S ... short								
M... medium								
L ... long								
Symbol for different output								
X, Y, Z ...								
Pole number								
2, 4, 6, ...								
pole-changing separated								
by dashes								
Special symbols								
e.g. KR ... Terminal box								
right								
VIK ... VIK Version								

Vibration behaviour

The permissible vibration intensities of electrical motors are specified in DIN EN 60034-14. The vibration intensity level N (normal) is achieved or bettered by VEM motors in the basic version. The vibration intensity levels (R) (reduced)

and S (special) can be supplied at extra cost dependent on type. Please consult the manufacturer.

The following values are recommended as specified in DIN EN 60034-14:

Vibration intensity levels	Speed range min ⁻¹	Limits of the vibration velocity (mm/s) in the frequency range from 10 to 1000 Hz		
		56 – 132	for sizes 160 – 225	250 – 450
N (normal)	600-3600	1.8	2.8	3.5
R (reduced)	600-1800 above 1800-3600	0.71 1.12	1.12 1.8	1.8 2.8
S (special)	600-1800 above 1800-3600	0.45 0.71	0.71 1.12	1.12 1.8

All rotors are dynamically balanced with inserted half key. This balance status is documented on the rating plate by the letter H behind the motor number; the rotor can also

be balanced with a full key if the customer prefers. In that case, the code letter behind the motor number will be F.

Bearings / bearing lubrication

VEM motors are equipped with anti-friction bearings from respected manufacturers. The rated bearing lifetime is at least 20.000 h with the exploitation of the maximum permissible load. The rated bearing lifetime for motors installed in a horizontal position without additional axial loading is 40.000 h in the case of coupling service.

The versions

- Fixed bearing at N-end
- Without fixed bearing (floating bearing arrangement)
- Permanent lubrication
- Relubrication device
- Heavy bearing on D-end (for increased lateral forces)
- Easy bearing arrangement

and the

- Bearing schedules
- Disk spring or wave washer types
- V-ring types
- Figures of bearing arrangements

can be taken from the overviews of the bearing arrangements.

The respective flat grease nipples are contained in the tables of the design drawings. Motors in the normal versions with two deep groove ball bearings have preloaded bearings, where the preloading is implemented by a disk spring or a wave washer. Versions with cylindrical roller bearings on the D-end (heavy bearing arrangement VL) are excepted from the preloading.

The fixed bearing N-end version is possible in the case of motors without a fixed bearing.

Fixed bearing at D-end possible on request.

The most important prerequisite for achieving the normal bearing lifetime is correct lubrication, i.e. the use of the right kind of grease according to the application, the filling with the correct amount of grease and the maintenance of the subsequent relubrication periods.

The frame sizes 56 – 160 are equipped with life-lubricated bearings. These bearings are to be changed promptly in accordance with the usable grease life. In the case of motors from size 180, the bearings must be relubricated

promptly in accordance with the usable grease life, so that the scheduled bearing lifetime can be achieved.

Under normal operating conditions, the lubrication filling will allow 10.000 operating hours for the 2-pole version and 20.000 operating hours for the 4-pole version without relubrication.

Under normal service conditions, for version with relubrication device, 2.000 or 4.000 operational hours will apply. A grease of type KE2R-40 as specified in DIN 51825 will be used as a standard grease. The used grease is to be removed from the lubrication chamber in the external bearing cover after five relubrications. Information about bearing sizes, types and quantities of lubrication and times for relubrication is to be taken from an additional plate attached to the motor.

Use of cylindrical roller bearings

Relatively large radial forces or masses can be taken up at the end of the motor shaft by the use of cylindrical roller bearings (heavy bearing arrangement VL). Examples: belt drive, pinion or heavy couplings.

The minimum radial force at the shaft end must be a quarter of the permissible radial force. The permissible shaft end load is to be taken into account. The information can be taken from the tables and diagrams in the design selection data.

Important Note:

If the radial force falls below the minimum value, damage to the bearings can be caused within a few hours. Test runs in no-load state only permissible for a short period.

If the minimum radial force specified is not reached, we recommend the use of grooved ball bearings (easy bearing arrangement). The bearings can be changed on request.

Loading of the bearing and the shaft end

The design of the bearing and the shaft can only be varied within certain limits because of the international standardization of asynchronous motors. Therefore, an optimum design size has been selected.

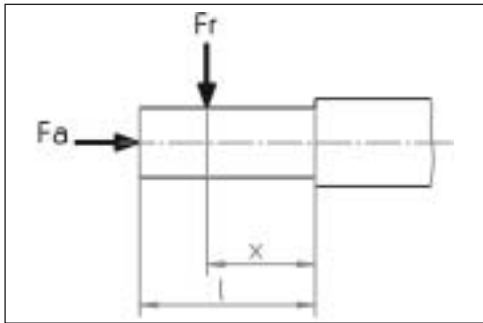
Permissible shaft end loading

The size of the permissible shaft end loading is determined by the following principle criteria:

- permissible bending of the shaft
- shaft end fatigue strength
- bearing lifetime

The permissible shaft end loading (radial and axial forces) is based on a rated bearing lifetime of 20,000 hours and a security against fatigue failure of > 2.0.

The following figure is given as a load diagram.



- F_r = radial shaft end loading
- F_a = axial shaft end loading
- l = shaft end length
- x = distance of F_r point of application from shaft shoulder

The type-related data for the permissible axial shaft end load F_a and the permissible radial shaft end load $F_{r0.5}$ (at application point $x : l = 0.5$), $F_{r1.0}$ (at point of application $x : l = 1.0$) for the basic version and for the heavy bearing arrangement in the horizontal and vertical mounting positions of the motor are given in the tables on the respective pages. The permissible axial shaft loads for sizes 315 L and 315 LX, depending on the mounting position and the direction of the forces, are to be taken from the tables on the respective pages. The permissible radial loads for motors mounted in horizontal and vertical positions are presented in dependence on the position of the point of application (taking the direction of the radial

force in relation to gravity into account) on the shaft end. The permissible loads given apply to an installation of the motor practically free of vibration and load application planes as specified in the above presentation.

The checking of the shaft loading for size 355 will take place by the manufacturer on request.

In general, the loads F_r and F_a are dependent on the transmission members used, i.e. on the axial and radial forces occurring at these transmission members including their weights.

The forces are calculated according to mechanical formulas, e.g. for drive belt pulleys

$$F_r = 2 \cdot 10^7 \frac{P}{n \cdot D} \cdot c$$

where

- F_r = Radial force in N
- P = Rated motor output in kW (transfer output)
- n = Rated motor speed
- D = Belt pulley diameter in mm
- c = Pre-tension factor as stated by the belt manufacturer (preferably 2.5 in the case of V-belts)

In practice, the radial force F_r is not always effective at $x : l = 0.5$. The permissible radial force in the range of $x : l = 0.5$ to $x : l = 1.0$ can be converted by linear interpolation.

If the calculated shaft loadings are larger than those permitted, it will be necessary to change the drive members. Among others, possibilities for this can be:

- Selection of a larger belt pulley diameter
- Use of V-belts instead of flat belts
- Selection of a different pinion diameter or skew angle of the toothed wheel
- Selection of a different coupling version, etc.

In general, care should be taken as far as possible that the resulting load application point of the force F_r does not lie beyond the shaft end. However, if no solution is found, the manufacturer will be glad to check special constructions, with which problems of this sort can be solved.

Noise behaviour

The noise measurement is carried out at design output, design voltage and design frequency, as specified in DIN EN 23741/23742. According to DIN EN 60034-9, the spatial mean value of the sound pressure level L_{pA} measured at a 1 m distance from the machine outline will be given as the noise intensity in dB(A).

The A-weighted sound power level L_{WA} at the measurement area dimension L_S ($d = 1$ m) will be given as

$$L_{WA} = L_{pA} + L_S \text{ (dB)}$$

The measurement area dimensions will be dependent on the geometry of the machine and are for

Size	L_S (dB)
56 - 132	12
160 - 225	13
250 - 315	14
355	15

The tabular value +4 dB(A) will apply as an approximate value for machines in the 60 Hz version. Binding data about 60 Hz is available on request. The noise data for the basic types is quoted in tabular form. Enquiries are necessary in the case of special series.



Paint finish

Normal finish

- Suitable for 'moderate' climatic group as specified in IEC 721-2-1
Weather protected and non-weather protected locations, up to 100 % relative air humidity at temperatures up +30 °C for a short time, up to 85 % relative air humidity at temperatures up to +25 °C continuously

Paint systems

Sizes 56 – 132T

- all components apart from plastic parts (terminal boxes, fan cover) and aluminium terminal boxes synthetic basic primer, layer thickness $\geq 30 \mu\text{m}$
- finish coat water-soluble paint with layer thicknesses $30 \mu\text{m}$ to $60 \mu\text{m}$
- Special requirement dual component paint, layer thickness $\geq 30 \mu\text{m}$

Sizes 132 – 355

- primer coat synthetic resin/zinc phosphate, layer thickness $\geq 30 \mu\text{m}$
- finish layer dual component polyurethane paint, layer thickness $\geq 30 \mu\text{m}$

Special finish

- Suitable for the "world wide" climatic group as specified in IEC 721-2-1
Open air positioning in atmospheres tending to be

heavily stressed, up to 100 % relative air humidity at temperatures up +35 °C for a short time, up to 98 % relative air humidity at temperatures up to +30 °C continuously

Paint systems

Size 56 – 132T

- all components synthetic basic primer, layer thickness $\geq 30 \mu\text{m}$
- finish coat dual component paint, layer thickness $\geq 60 \mu\text{m}$

Size 132 – 355

- primer coat synthetic resin/zinc phosphate, layer thickness $\geq 30 \mu\text{m}$
- second coat on dual component basis, layer thickness $30 \geq \mu\text{m}$
- finish layer dual component paint, layer thickness $30 \geq \mu\text{m}$

Special finishes on request

Standard colour RAL 7031 blue-grey

Additional special paint finish systems

- Version for excessive thermal stress
- Version for excessive chemical and radiation stress
- Version for extreme ambient conditions, e.g. offshore areas
- Special paint finish on customer's request

Shaft ends

The definition of the motor ends is made in accordance to IEC 34-7:

D-end (DS): Drive end of the motor (driving side)

N-end (NS): End opposite to the drive (the side positioned opposite the DS) (Non-driving side)

Centring borings as specified in DIN 332, Sheets 1 and 2, Form DS.

The key and key ways for sizes 56 – 112 are executed as specified in DIN 6885 Sheet 1, Form A or B, and those for the sizes 132 – 355 are executed as specified in DIN 6885 Sheet 1, Form A. The key lengths for sizes 132 – 355 already comply with DIN 748 Part 3 Draft Dec. 91.

Threads for press-on and dismantling devices:

Shaft end diameters	Thread
at 7 up to 10 mm	M3
from 10 to 13 mm	M4

Shaft end diameters

from 13 to 16 mm
from 16 to 21 mm
from 21 to 24 mm
from 24 to 30 mm
from 30 to 38 mm
from 30 to 50 mm
from 50 to 85 mm
from 85 to 130 mm

Thread

M5
M6
M8
M10
M12
M16
M20
M24

The motors are always supplied with key fitted.

The second shaft end is able to transfer the full nominal output in the case of coupling drive. The output transmission capability of the second shaft end is, in the case of belt, chain or pinion drive, available on request. The drive elements with key ways, such as belt pulleys or couplings, are to be balanced with a half key inserted with a balance quality grade of at least G 6.3 as specified in DIN ISO 1949 p. 1.

Design voltage and frequency

In the basic version, motors are supplied for the following design voltages and frequencies:

230/400 V Δ/Y	50 Hz
400/690 V Δ/Y	50 Hz
690 V Δ	50 Hz
480 V Δ	60 Hz

The motors can be operated in networks in which the voltage at the design frequency deviates from the rated

value (design voltage area A) by up to $\pm 5 \%$ without changing the design output. The frequency in these networks can deviate by $\pm 2 \%$ from the rated value in the case of the design voltage.

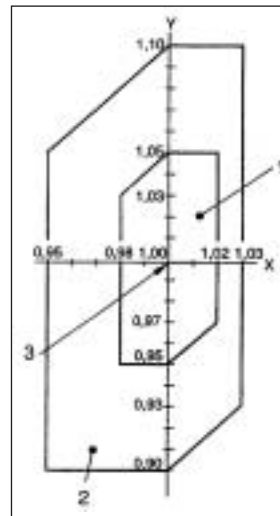
The above-given standard voltages, specified as in DIN IEC 38, will be taken as design points.

Special voltages and frequencies on customer request.

Design voltage range, design frequency range

Motors that are to be used for mains voltage with a general tolerance of $\pm 10\%$ as specified in DIN IEC 38 are to be selected according to the corresponding design voltage listed in the technical tables. The design voltage range restricted by U_u and U_o is also given there.

If the motors are connected to voltages between 95 % and 105 % of the design voltage range – this will correspond to the relevant mains voltage value as specified in DIN IEC 38 with $\pm 10\%$ – it will already be permissible to exceed the permissible temperature rise of the stator winding at the frequency limits of the measuring range by approximately 10 K as specified in DIN EN 60034-1, without taking the permissible tolerances into account. For the sizes K21R 56 – 112 / K20R 56 – 100, the current at the upper voltage range U_o has been set at such a point that the motor protective switch is, even in no-load conditions and at +5 % tolerance, not triggered at the usual setting of 1.05 I_n .



- 1 Range A
- 2 Range B
- 3 Design point
- x Related frequency f/f_N
- y Related voltage U/U_N

Voltage and frequency limits for motors
DIN EN 60034-1

Design output

The rated output applies to continuous operation as specified in DIN EN 60034-1, related to a coolant temperature of 40 °C and an altitude of ≤ 1000 m above sea level, operating frequency 50 Hz and design voltage. The series K11R/K21R and K10R/K20R have thermal reserves that enable the following type-dependent continuous loads:

- up to 10 % above the rated output at 40 °C coolant temperature, or
 - rated output up to 50 °C coolant temperature or
 - rated output at an installation altitude up to 2,500 m
- These conditions are only applicable alternatively; when more than one applies, it will be necessary to reduce output.

Motor torque

The design torque in Nm given at the motor shaft will be

$$M = 9550 \cdot \frac{P}{n}$$

where P = design output in kW
 n = speed in r.p.m.

The starting torque, pull-up torque and pull-out torque are given as multiples of the design torques in the motor selection data tables.

If the voltage deviates from your design data, the torques will change approximately quadratically.

Ambient temperature

All VEM motors in the basic version in shaft heights 56 up to 132 T can be used at ambient temperatures from -20 °C up to +40 °C, in shaft heights 132 up to 355 from -40 °C up to +40 °C. Deviations from this on request. If the

fact that motors will frequently and repeatedly be exposed to dew where they are used has to be taken into account, we recommend the use of anti-condensation heating devices or other precautions.

Overload capacity

All motors can be subjected to the following overload conditions as specified in DIN EN 60034-1:

- 1.5-fold rated current for 2 min.
- 1.6-fold rated torque for 15 sec.

Both conditions apply to rated voltage and rated frequency.

Nominal efficiency and power factor

Efficiency η and the power factor $\cos \varphi$ are given in the lists of the motor selection data.

Restarting in the case of residual field and phase opposition

It is possible to restart all motors after a network failure with 100 % residual field.

Motor protection

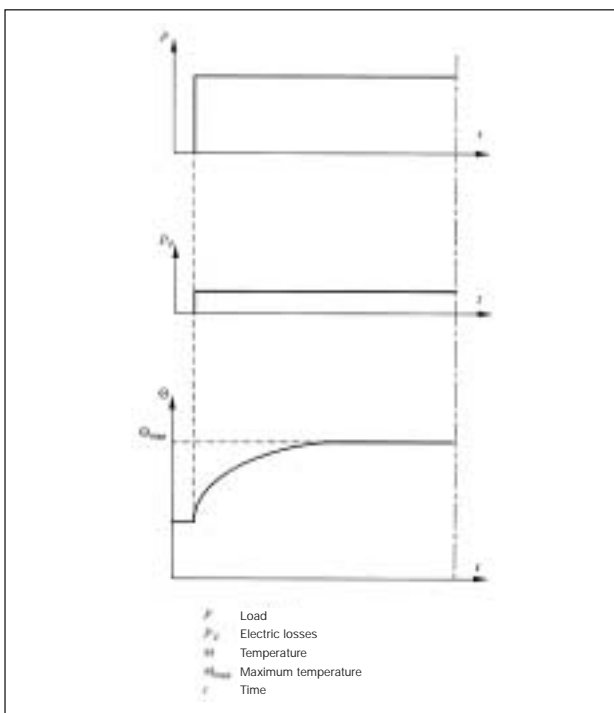
The following variations of motor protection are possible, if ordered:

- Motor protection with thermistor temperature sensors in the stator winding
- Bimetal temperature sensor as opener or closer in the stator winding

- Silicon diodes
- Resistance thermometer to monitor winding or bearing temperature
- Bearing vibration diagnosis

Duty types

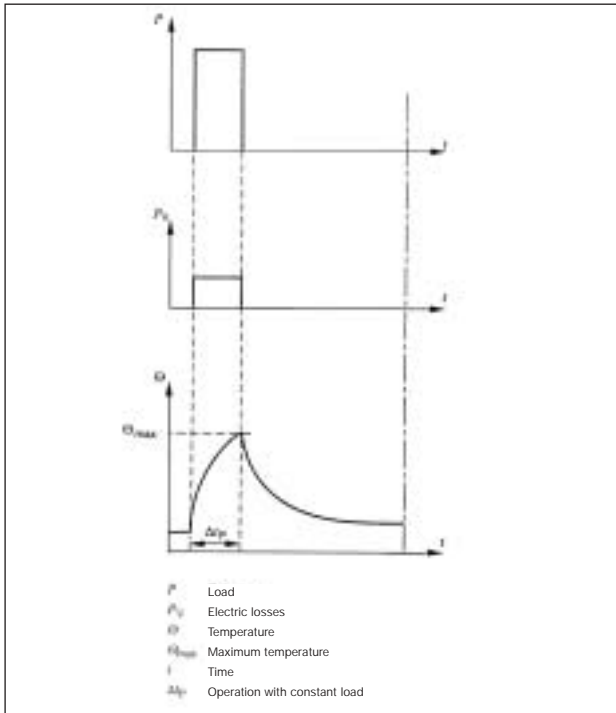
Special types of operation for switched operation, short-time operation or electrical braking are possible on request. The following nominal types of duty, which take thermal and mechanical conditions into account, are defined as specified in DIN EN 60034-1:



Duty type S1 – Continuous duty

Operation with constant load that lasts until the machine is able to reach thermal equilibrium. If there is no indication of the duty type on the rating plate, the motor is intended for S1 continuous duty.

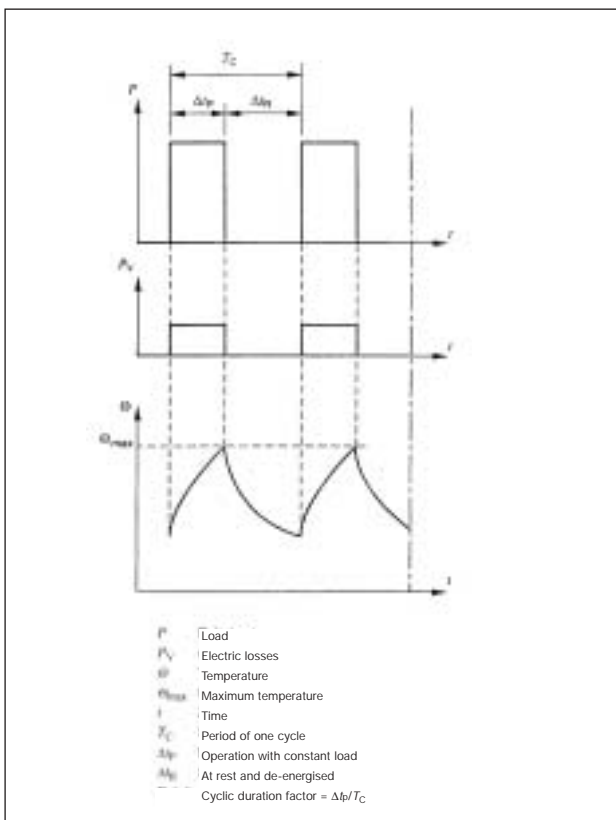
The design data for this duty type are given in the motor selection data.



Duty type S2 – Short-time operation

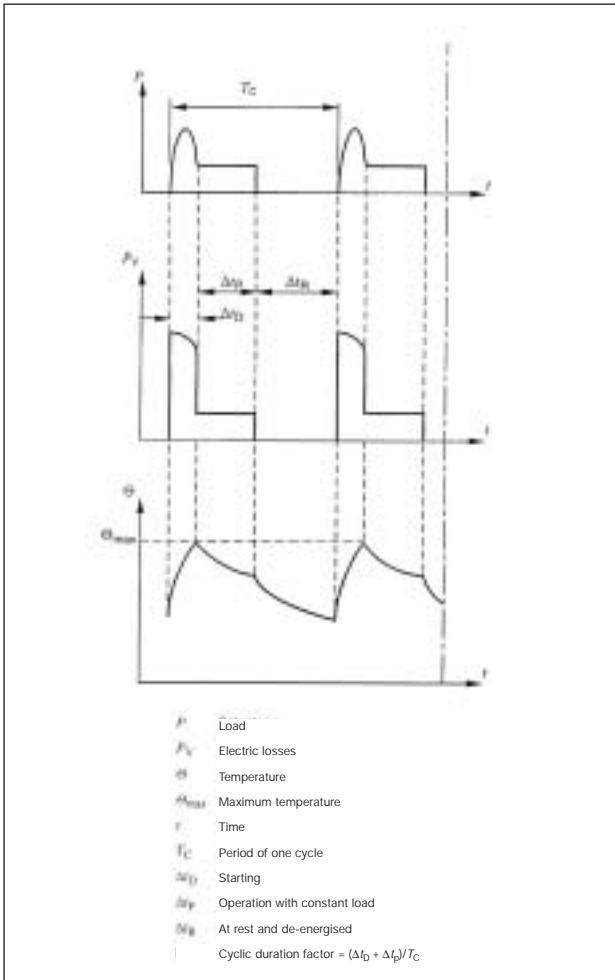
Operation at constant load not long enough to reach thermal equilibrium and a subsequent period at rest with a de-energised winding, of such a length that the again decreased machine temperature is re-established to deviate by less than 2 K from the temperature of the coolant. In the case of S2 duty type, the length of the operation period is to be given.

For permissible motor outputs for VEM standard motors see the "Electronic Catalogue" of the VEM Group (from Version 3.0).



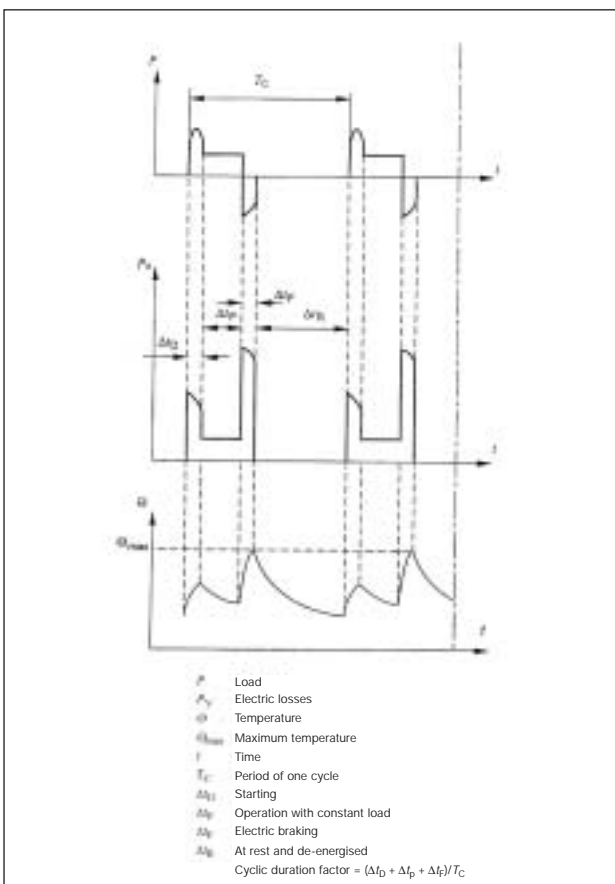
Duty type S3 – Intermittent periodic duty

Operation that is composed of a sequence of identical cycles, each comprising an operating period at constant load and a period at rest with de-energised windings, where the starting current does not significantly affect the temperature rise. The duty type must be followed by the cyclic duration factor. Periodic operation means that a state of thermal equilibrium is not reached during the period of the load.



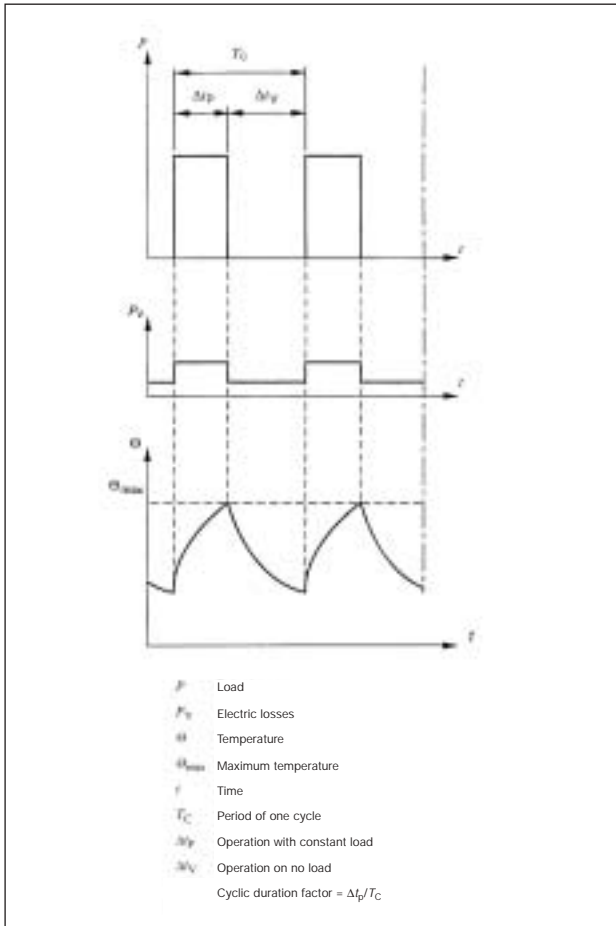
Duty type S4 – Intermittent periodic duty with an effect from the starting

Operation that is composed of a sequence of identical duty cycles, each of which comprises a significant period of starting, an operating period at constant load and a period at rest with de-energised windings. The information about this duty type is to be followed by the cyclic duration factor, the mass moment of inertia of the motor and mass moment of inertia of the load, both of which will be related to the motor shaft. Periodic operation means that a state of thermal equilibrium is not reached during the period of the load.



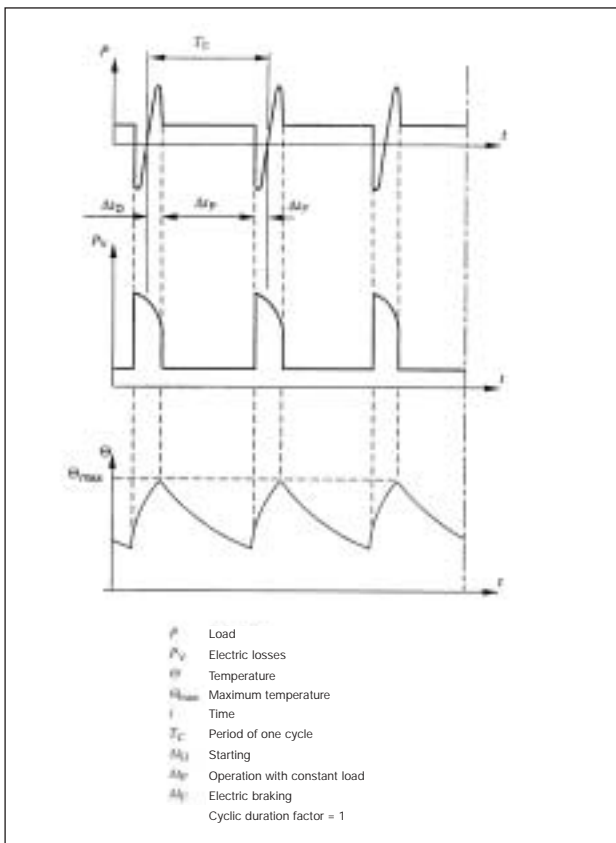
Duty type S5 – Intermittent periodic operation with electric braking

Operation that is composed of a sequence of identical duty cycles, each of which comprises a starting period, an operating period at constant load, a period with electric braking and a period at rest with de-energised windings. The duty type will be followed by information about the cyclic duration factor, the mass moment of inertia of the motor and mass moment of inertia of the load, related to the motor shaft. Periodic duty means that a state of thermal equilibrium is not reached during the period of the load.



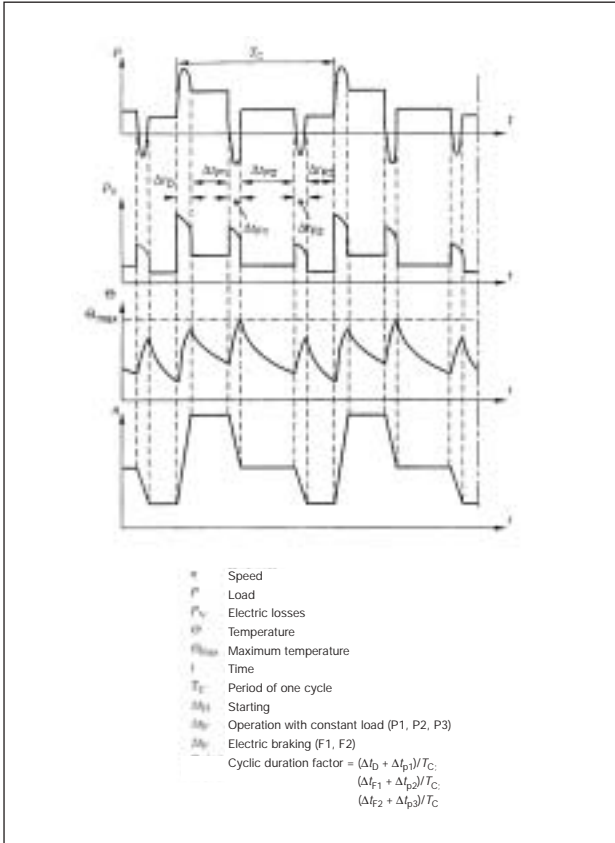
Duty type S6 – Continuous-operation periodic duty

Operation that is composed of a sequence of identical duty cycles, each of which comprises an operating period at constant load and period of operation at no-load. No period at rest with de-energised windings occurs. The duty type must be followed by information about the cyclic duration factor. Periodic operation means that a state of thermal equilibrium is not reached during the period of the load.



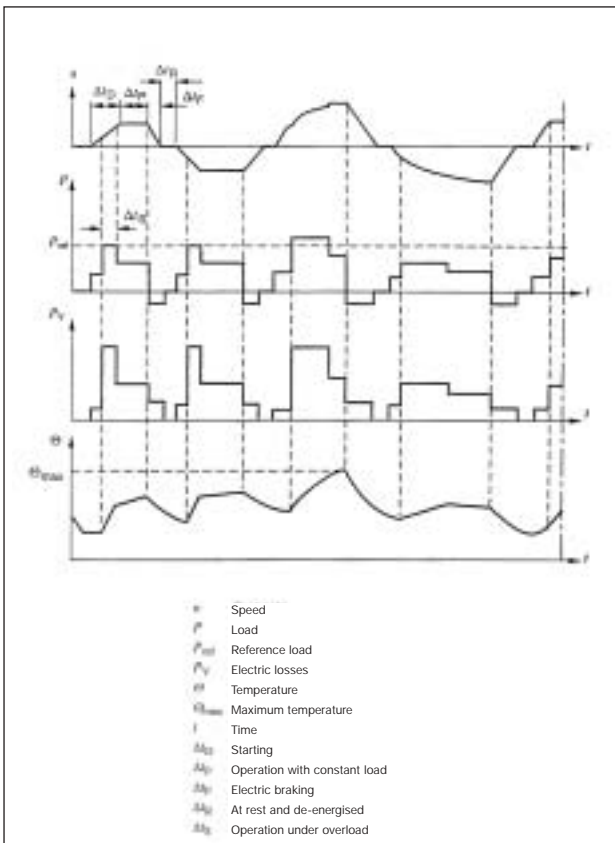
Duty type S7 – Continuous-operation periodic duty with electric braking

Operation that is composed of a sequence of identical duty cycles, each of which comprises a starting period, an operating period at constant load and a period of electric braking. No period at rest with de-energised windings occurs. The duty type must be followed by the mass moment of inertia of the motor and mass moment of inertia of the load (both related to the motor shaft).



Duty type S8 - Continuous-operation periodic operation with related load/speed changes

Duty type that is composed of a sequence of identical duty cycles, each of which comprises a starting period, an operating period at constant load and at a specific speed and one or more operating periods with different constant loads according to the different speeds. (For example, this will be achieved by changing the number of poles of asynchronous motors.) No period at rest with de-energised windings occurs. The information must be followed by the mass moment of inertia of the motor and of the load (both related to the motor shaft), the load, the speed and the cyclic duration factor for each speed that comes into question.



Duty type S9 – Duty with non-periodic load and speed variations

Duty where the load and the speed generally change non-periodically within the permissible operating range. Frequently applied overloads that can lie far above the reference load frequently occur during this duty. A constant load corresponding to the S1 mode of operation will be suitably selected as the reference value for the overload in the case of this duty type.

Duty type S10 – Duty with individual constant loads

Operation that does not contain more than four individual load values (or equivalent loads), each of which is individually maintained for sufficient time to allow the machine to achieve the state of thermal equilibrium. The smallest load within this sequence of duty cycles may occupy a value of null (no-load or rest with de-energised windings).

A constant load according to the S1 mode of operation must be suitably selected for this mode of operation as the reference value for the individual loads.

Pole-changing motors

According to the load torque behaviour of the working machines, pole-changing motors are intended for drives with a constant load torque and those with a quadratically increasing load torque. The type of torque characteristics is given in the selection tables. The motors can only be designed for one specified voltage, e.g. 230 V, 400 V or 660 V and are generally intended for direct starting across the pole sequence. A 60 Hz version or IEC 38 special voltages are possible.

Pole-changing is achieved by

- two separate windings
- one winding in Dahlander connection
- two separate windings, one of them in Dahlander connection
- two separate windings, both in Dahlander connection

While only a speed ratio of 1:2 can be reached in the case of the winding in Dahlander connection, two separate windings offer different speed ratios, but with lower outputs in relation to the same basic version. For separate windings, Y or Δ will be executed and Δ/YY or Y/YY will be implemented for windings in Dahlander connection.

Then, the connection schemes given in the lists of the motor selection data will apply in the case of the individual pole number stages. Star-delta switching can then be implemented for the highest pole number (lowest speed) if its operational connection is Δ . In the case of two separate winding with at least one winding in Δ -connection, the non-live Δ -connection must be opened.

Other pole number variations are possible.

Energy saving motors as specified in CEMEP "High efficiency" eff1 and EPAct

VEM has developed the WE1R Series on the basis of the tried and trusted K21R motor Series, using the most modern magnetic materials, special winding design and optimised bearing and ventilation. The efficiency is determined as specified in DIN EN 60034-2 / IEC 34-2, and classification in the appropriate eff classes for the European region has been established in a voluntary agreement.

The minimum regulations for efficiency of the Energy Policy and Conservation Act (EPCA) apply in the North American economic area. The determination of efficiency to be achieved (nominal and minimum values) are prescribed in the standards NEMA MG 1, Table 12-10 and CSA C390, Table 2 and 3. The determination of efficiency

must be done analogously to IEEE 112 or C390. The WE1R series fulfils the requirements as specified in EPCA. The determination of efficiency must be done as specified in IEEE 112-1996 method B. VEM Motors GmbH offers a complete WE1R ... EP, 2 and 4-pole series in a range of outputs from 1 Hp to 450 Hp at 60 Hz or to 400 Hp in the case of 50 Hz. The classification of output corresponds to that given in Standard NEMA MG1, Table 12-10. The Series is certified with File No. 184535 by CSA.

With the determination of efficiency of this motor series as specified in DIN EN 60034-2, all motors comply with the eff1 classification of the level of efficiency.

Motors for use at frequency inverters

In principle, all squirrel-cage rotor motors from VEM can be operated at a frequency inverter. Special type-related measures are necessary in the case of a few models. Frequency inverter feeding is permissible without restrictions up to a maximum link voltage of the frequency inverter of 600 V. Thus, operation is guaranteed up to an outgoing inverter voltage of 420 V (link voltage = $420 \text{ V} \cdot \sqrt{2} = 594 \text{ V}$).

For inverter output voltages > 420V to 690 V, VEM offers a special KU1R series (special code Sp. 2945 or version

BAH in the case of sizes $\leq 132T$), which has overall special insulation and, from size 280, has an insulated antifriction bearing on the N-end, since harmonics, asymmetries in the inverter voltage, incorrect cable run and earthing between motor and inverter can cause rotor voltages, resulting in current flow across the bearings and subsequent grease decomposition and bearing damages. The following table gives comprehensive information about the possible options of the individual series.

Operation at a frequency inverter
Standard series K21R, K22R, K20R

Series/Shaft height	Outgoing inverter voltage	63 to 200	225 to 250	280 to 355
K21R, K22R, K20R	Up to 420 V	Permissible		
	>420 V to 690 V	Special insulation necessary		
Insulated bearing N-end		as Option	as Option	Recommended
Forced ventilation			as Option	
Transmitter			as Option	
Transmitter mounting prepared			as Option	

Special series KU1R, KU2R, Special code Sp.2945, BAH in the case of sizes ≤ 132T

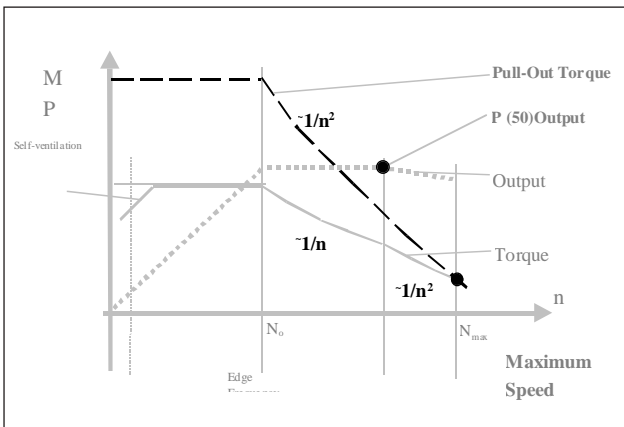
Series / shaft height	Outgoing inverter voltage	63 to 200	225 to 250	280 to 355
KU1R, KU2R	Up to 690 V	Permissible		
Special insulation		Standard		
Insulated bearing N-end		as Option		Standard
Forced ventilation			as Option	
Transmitter			as Option	
Transmitter mounting prepared			as Option	

Motor limits for continuous operation

The factors influencing changes to the torque and temperature behaviour of the whole drive are very diverse. They are determined both by the motor (electrical design and mechanical construction), the frequency inverter (parameters, pulse frequency, modulation behaviour) and the load conditions (torques, frequencies) required. For example, the facts of the matter can be presented in a curve of thermal limits or in an M-n characteristic curve (torque limit curve).

Higher losses in the motor in comparison to sinusoidal supply arise because of frequency inverter feeding of the drive. They must be taken into account when planning. The harmonic content created by each frequency inverter has different effects according to the electrical design of the motors, so that it is necessary, in the case of critical circumstances, where there are no planning reserves, to support the planning by measurements.

The additional remarks concern voltage source d.c. link inverters with a modern control procedure, pulse frequencies greater than 4 kHz and S1 operation. Other types must be converted to S1 operation.



P(50) Output - Frequency point, up to which the available output at 50 Hz can be demanded

Insulation class

Full exploitation of insulation class F in the case of S1 mode of operation.

Air stream quantity – self- (IC 411) or forced (IC 416) ventilated

Because of the different kinds of ventilation, different characteristic curves arise for drives with a continuous load torque. The cooling effect of the self-ventilation decreases in the lower speed range because of the lower quantity of air transported. For speeds above the nominal speed, increased fan noise and losses result if the original fan is used in (this is to be taken into account particularly in the case of two-pole motors).

Stator resistance in motors of small sizes

The relatively high stator resistance plays a decisive role in small motors. This leads to the motor stalling without reaching its thermal limits.

Countermeasures:

- Compensation for the ohmic voltage drop
- Use of frequency converters with IxR compensation (boost)

Mechanical speed limits

The permissible speed limits of the motors are to be taken into account in the case of operation above 50 Hz. Motors of version HS (special balancing) are to be used for operation with frequencies above 60 to 100 Hz. Motors for frequencies > 100 Hz on request.

Pull-out torques

Reduced relative pull-out torques are permitted particularly in the case of operation above 50 Hz (field weakening area) and in the case of frequencies under 10 Hz, however $M_k/M_N > 1.6$ is always ensured. If users need higher pull-out torques, appropriately lower torque reduction factors are to be adopted (linear conversion).

Frequency inverter settings

Voltage/frequency coordination (U/f)

The linear characteristic curve (M = constant) with auto-boost is used to adjust to the load, i.e. the optimal voltage is at every working point up to 50 Hz applied.

The fundamental voltage at the frequency inverter output (at the rated point and in the field weakening area) will be 100% of the mains voltage.

Modulation procedure and pulse frequency

In modern voltage source d.c. link inverters, the three-phase system is formed by sine-evaluated vector modulation. For this, the constant link voltage for the motor is split up into individual voltage blocks in such a way that the pulse period has a length corresponding to the voltage at the respective angle of the motor voltage. As a consequence, a quasi sinusoidal current will flow in the motor. The pulse frequency is 4 kHz. The harmonic content of the current decreases with rising pulse frequency, it approximates closer and closer to the sinus shape, and additional losses in the motor are reduced.

Limit characteristic curve for torque

The reduction of the torque in the case of frequency inverter feeding and a constant load torque is subject to many influencing factors that differ in their weighting with different conditions of use. For this reason, it is not possible to give a standard torque limit characteristic curve for all applications. It will be the responsibility of project workers to undertake

an assessment of the risk factors and thus to plan an appropriate reserve.

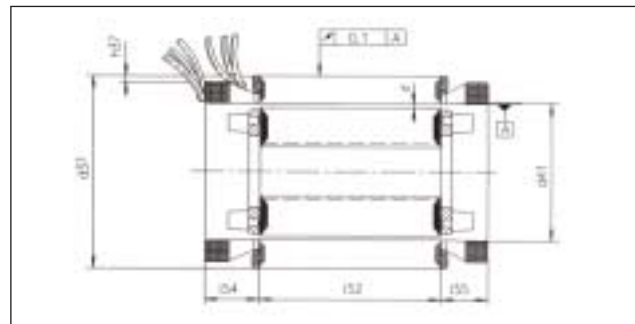
It is assumed that the operation of the motors, in relation to the noise and vibration behaviour, is possible within the investigated control range, or that an appropriate adjustment of the frequency inverter used will be made. The following influencing factors should be taken into account in a complete characteristic curve tailor-made for the relevant application, or it should contain the following information:

- Motor type (Standard or Special motor, $M_{pull-out} / M_{nominal}$)
- Number of poles
- Speed range with the torque required
- Frequency inverter type, pulse frequency
- Information about ventilation
- Edge frequency
- Boost (IxR compensation)
- Insulation class
- Link voltage

With special windings, for special applications, higher output and torques, if necessary, can be realised after consultation with the manufacturer.

Built-in motors

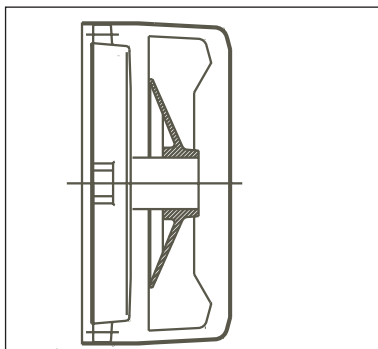
Built-in motors can be supplied for special areas of application, in which the customer provides a housing or corresponding protection against the touching of live or moving parts and mechanical influences, realised in the machine or plant that is to be driven. Components consisting of wound stator cores and complete rotors or wound stator cores and rotor bodies are available according to customer preference. Electrical data on request.



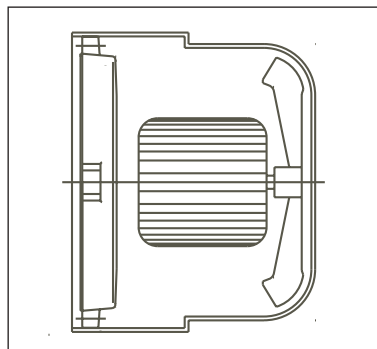
Modular structure of the different series and modifications

The design concept of the series permits the option of adding components to solve modern control tasks, such as a pulse generator, a tachogenerator, brakes, a speed

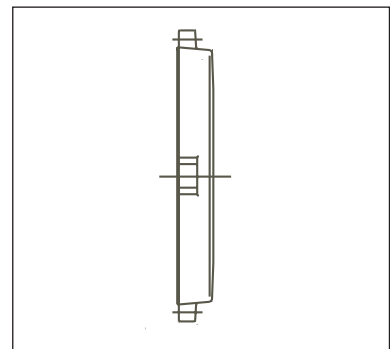
monitor and forced-ventilation units according to the customers need.



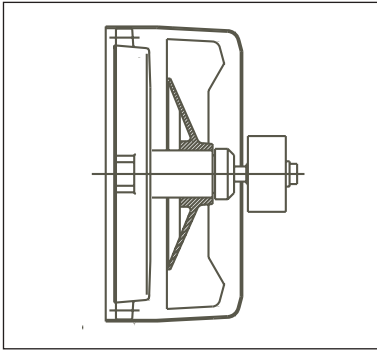
Standard Version
Cooling method IC 411,
Self-ventilation
Series K21R, K20R, K22R



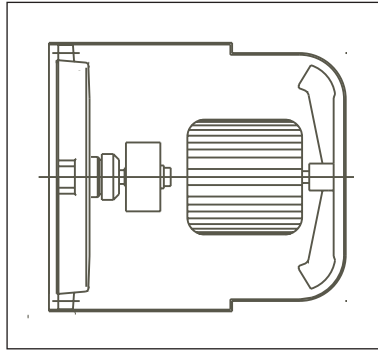
Special Version
Cooling Method IC 416,
Forced-ventilation
Series K21F, K20F, K22F



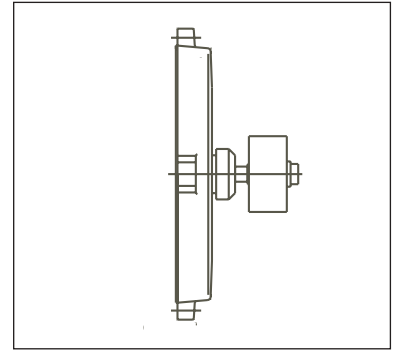
Special Version
Cooling Method IC 410,
Non-ventilated
Series K210..(U¹), K200..(U¹), K220..



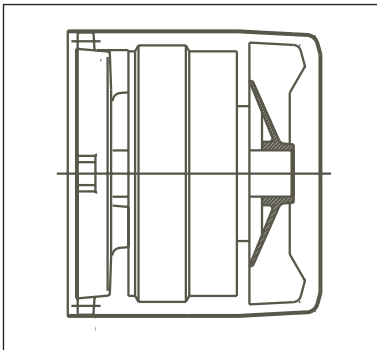
Special Version
Cooling Method IC 411,
Self-ventilation
Series K21R, K20R, K22R
With built-on incremental sensor



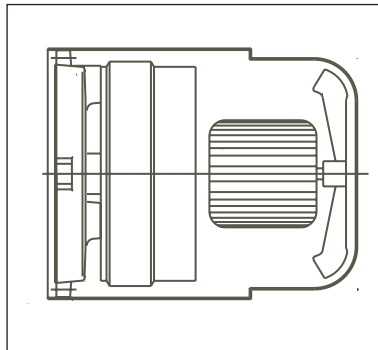
Special Version
Cooling Method IC 416,
Forced-ventilation
Series K21F, K20F, K22F
With built-on incremental sensor



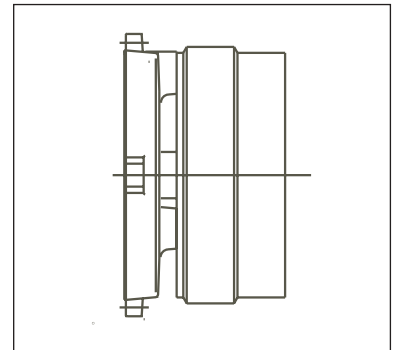
Special Version
Cooling Method IC 410,
Non-ventilated
Series K210..(U¹), K200..(U¹), K220..
With built-on incremental sensor



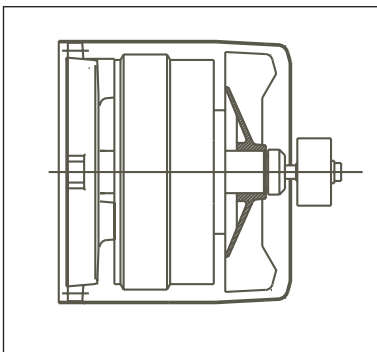
Special Version
Cooling Method IC 411,
Self-ventilation
Series B21R, B20R, B22R
With built-on brake



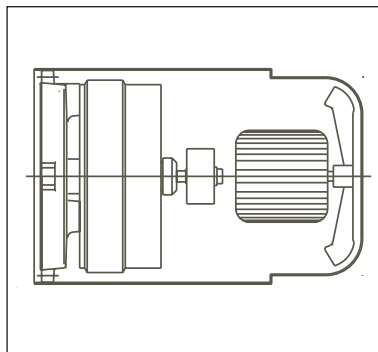
Special Version
Cooling Method IC 416,
Forced-ventilation
Series B21F, B20F, B22F
With built-on brake



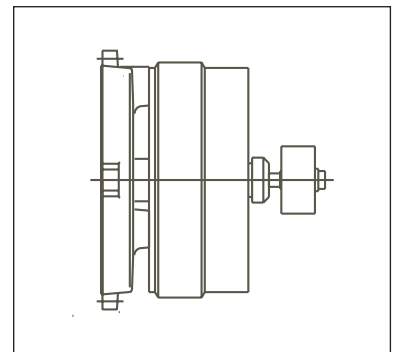
Special Version
Cooling Method IC 410,
Non-ventilated
Series B210..(U¹), B200..(U¹), B220..
With built-on brake



Special Version
Cooling Method IC 411,
Self-ventilated
Series B21R, B20R, B22R
With built-on brake and
incremental sensor



Special Version
Cooling Method IC 416,
Forced-ventilation
Series B21F, B20F, B22F
With built-on brake and
incremental sensor



Special Version
Cooling Method IC 410,
Non-ventilated
Series B210..(U¹), B200..(U¹), B220..
With built-on brake and incremental
sensor

¹⁾ in the case of sizes ≤ 132T

Brake motors

VEM brake motors consist of a three-phase squirrel-cage motor and a built-on brake of appropriate manufacture. The brakes are executed as double-face disk brakes and work according to the closed-circuit principle. For example, depending on the particular version ordered, the brake systems themselves form a compact unit ready for connection and installation, where the most varied braking torques and versions can be realised according to customer preference. In principle, the brake motors have their holding torque in a dead state. For this purpose, an axial force on the axial armature pulley is exerted by compression springs, so that this force results, across friction linings, in the braking torque. The braking torque will be transmitted, across a key joint of the friction lining carrier or of a toothed driving hub, to the shaft. The armature pulley is released

by energising the brake coil and this will in turn release the friction lining carrier, so that the motor can start up.

Information

It is possible to adapt the switching periods of the brakes by a number of different switching variations. In the basic version, the brake coil is to be driven directly, through a dual-pole connection terminal, with the appropriate coil voltage (d.c.voltage) or is driven, through the additionally supplied rectifier device, by a respective a.c. voltage. Depending on the motor size, in the special version "ready for connection", the brake coil is connected in parallel, via a rectifier device in the motor terminal box, to a phase of the motor winding.

Motors for ship operation

Motors in the marine version are intended for driving supplementary units on board sea-going ships and satisfy the special climatic and mechanical requirements of this application field. They are designed as specified in the regulations of national and international Classification Authorities, such as Germanischer Lloyd, Det Norske Veritas, Lloyd's Register of Shipping, Russisches Register, American Bureau of Shipping, Bureau Veritas or the China Classification Society. The specific applications of the motors are an important criterion for the selection of motors in marine versions.

Operation on deck

Motors for operation on deck are designed as type series K11W in degree of protection IP 56 without exter-

nal fan, with sizes from 112 to 180 mm. Since the motors do not have an external fan and the cooling is exclusively effected by heat radiation, outputs are reduced by approximately 30 to 40 % during continuous operation, compared to the basic series. Precise electrical data on request.

Operation below deck

Motors for operation below deck are designed in degree of protection IP 55 for general use, e.g. in machine rooms, or in degree of protection IP 56 for use in rooms with splash water, according to the application.

Forced-ventilated motors, cooling method IC 416

The use of forced ventilation is recommended in order to increase the motor output available in the range of lower speeds (setting range 1:5, 1:10) when operated with a frequency inverter, or to restrict the noise level when the motor is operated with frequencies > 60 Hz at a frequency inverter. According to the required degree of protection, radial (degree of protection from IP 55) or axial ventilation

units (degree of protection up to IP 55) are used. In some cases, reductions of the degree of protection can sometimes result.

On the forced-ventilation unit, there is a separate rating plate with the relevant type data. Attention must be paid to the direction of rotation when axial ventilation units are connected.

Non-ventilated motors, cooling method IC 410

The motors are designed without their own fan and fan cover. Up to size 250, the motors have completely closed bearing covers on the N-end; from size 280, the N-end is sealed as in the basic grey cast iron version. The design output will be reduced according to the decreased cooling.

The motor windings are adjusted to this reduced output. If non-ventilated motors are installed in a stream of cooling air, different outputs are possible on request, depending on the cooling effect achieved (dependant on size indicated with ...U for sizes ≤ 132T).

Explosion-protected motors

Explosion-protected operating rooms, in which potentially explosive mixtures of gas and air can occur, require the use of electrical apparatus for potentially explosive areas.

To an increasing extent, explosion-protected motors in the "increased safety" type of ignition protection represent a technically safe and commercially optimal solution for use in potentially explosive areas of Zones 1 and 2 of Device Group II, Categories 2 and 3.

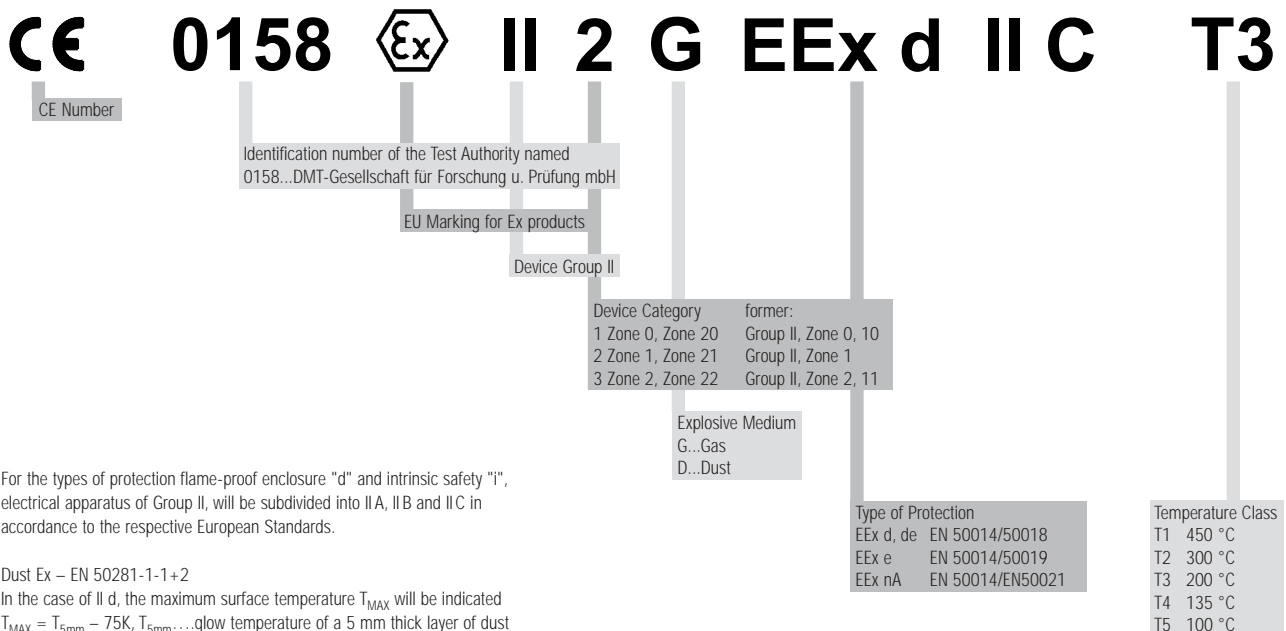
The motors of the VEM type series have been tested and certified by the Physikalisch-Technische Bundesanstalt Braunschweig [Federal physical-technical institution] (named Test Authority No. 102), the IBExU Freiberg (named Test Authority No. 0637) and the DMT Gesellschaft für Forschung und Prüfung mbH [Society for Research and Testing] (named Test Authority No. 0158). The test certificates are recognised by all member states of the European Union; members of CENELEC that do not belong to the EU also accept them. An additional or new certificate can

be necessary in the case of special versions that influence explosion protection (different frequency, output, coolant temperature, etc.).

Directive 94/9/EG – ATEX 95 (formerly ATEX 100a)

In addition, the Physikalisch-Technische Bundesanstalt Braunschweig and the IBExU Freiberg, as named Test Authorities as identified in Article 9 of the Directive of the Council of the European Union of 23 March 1994 (94/9/EG), have certified the fulfilment of the basic safety and health requirements for the design and manufacturing of apparatus and protective systems for intended use in explosion-protected areas as specified in Appendix II of the Directive.

The quality management system is certified by the DMT Gesellschaft für Forschung und Prüfung mbH, named Test Authority No. 0158, and is monitored as specified in Article 10(1) of RL 94/9/EG.



Information for planning and use

It must be left exclusively to the operator, which areas in the open air or in closed rooms are to be regarded as endangered by explosion in the sense of ATEX 137 or other relevant prescriptions or regulations; if doubts about the arrangement of potentially explosive areas arise, the decision must be left to the responsible supervisory authority.

Explosion-protected electrical machines comply with the standards of the series DIN EN 60034 (VDE 0530) and DIN EN 50014 to 50021 or DIN EN 50281-1-1. They must be used in potentially explosive areas only as specified in the instructions of the supervisory authority responsible. These authorities are responsible for the verification of the danger of explosion (zoning). The type of ignition protection, the temperature class and special conditions will be given on the rating plate or in the declaration of conformity.

Apparatus group I, Category M2

Electrical machines with the types of ignition protection increased safety, flame-proof enclosure, pressurised apparatus, for use in mining fall into this category.

Apparatus group II, Category 2 (Zone 1 up to now)

Electrical machines with the types of ignition protection increased safety, flame-proof enclosure, pressurised apparatus for use in other areas endangered by a potentially explosive atmosphere fall into this category.

Apparatus group II, Category 3 (Zone 2 up to now)

Electrical machines with the EEx nA II type of ignition protection fall into this category.

Special conditions in the certificate of conformity are to be observed, if the certificate number is augmented by an X. The operation at a frequency inverter must be expressly certified. Attention must be paid to the separate manufacturer information. In the case of operation of motors at a frequency inverter, the motor, frequency converter and protection device must be labelled as belonging together for ignition protection type EEx e and the permissible operating data must be fixed in the joint test certificate (VDE 0165). The fact that the motor and the frequency inverter must be tested as a unit also applies to motors of ignition protection type EEx nA II.

The size of the voltage peaks created by the frequency inverter can be unfavourably affected by the connection cable installed between the frequency inverter and the electrical machine. The maximum value of the voltage peaks at the connection terminals of the machine in the system of frequency inverter – cable – electrical machine must not exceed the data specified in the separate manufacturer information.

In Germany, the erection of electrical installations in potentially explosive areas requires the observation of the following regulations:

- DIN VDE 0118 The erection of electrical installations in underground mines
- EIBergV Electrical prescription for mining
- DIN 57165/ VDE 0165 The erection of electrical installations in potentially explosive areas
- ElexV Prescription concerning electrical installations in potentially explosive spaces
- VbF Regulation concerning flammable fluids

The regulations of the country concerned are to be observed in foreign countries.

To the electrical connection, the general instructions on safety and putting into service will apply. The cable glands must be certified for the potentially explosive areas and be protected against self-activated loosening. Openings that are not used are to be closed with certified plugs.

Protective measures against impermissible heating

If no other instructions in relation to the mode of operation and tolerances are made in the test certificate or on the rating plate, electrical machines are designed for continuous operation and normally not frequently reoccurring start-ups, where no significant start-up heating arises. The motors must only be used for the mode of operation given on the rating plate.

The area A in DIN EN 60034-1 (VDE 0530, Part 1) with a voltage tolerance of $\pm 5\%$ and a frequency tolerance of $\pm 2\%$ and the information about the curve shape and mains symmetry must be observed, so that the temperature rise remains within the permissible limits. Wider deviations from the design values can increase the temperature rise of the electrical machine impermissibly and must be specified on the rating plate.

Each machine is to be protected against impermissible heating in all phases by a current-dependant delayed protective switch with phase failure protection as specified in VDE 0660, or an equivalent device in all phases. The protective device is to be adjusted to the design current. In the case of windings in Δ -connection, the tripping devices will be connected in series with the winding branches and adjusted to 0.58-fold of the design current. If this connection is not possible, additional protective measures will be necessary (e.g. thermal machine protection).

Motors for use in mechanical smoke and heat exhaust ventilators

(Fire gas version)

By means of specially modified insulation systems, bearing arrangements and connection techniques, a series for use in mechanical smoke and heat exhaust ventilators has been developed on the basis of the series K21R/K11R. Under normal conditions, these fire gas exhausting motors run as conventional fan motors and are constructed in such

In contrast to the EEx nA II protective type, the start-up is also monitored in the case of the "increased safety" protective type. Therefore, in the case of a blocked rotor, the protective device must switch off within the t_E period specified for the indicated temperature class. This requirement will be fulfilled if the tripping time, which is to be taken from the characteristic tripping curve (initial temperature 20 °C) for the ratio I_A/I_N , is not longer than the specified t_E period. Electrical machines for heavy start-ups (high start-up time $> 1.7 \times t_E$ period) are to be protected by a start-up monitoring device according to the certificate of conformity.

Thermal machine protection by direct temperature monitoring of the winding is permissible if it is certified and specified on the rating plate. It will consist of temperature sensors as specified in DIN 44081/44082, which will, in association with tripping devices with the test certificate of a registered testing authority, guarantee explosion protection.

In the case of pole-changing motors, separated, mutually interlocked protecting devices are necessary for each speed. Devices with the test report of a registered testing authority are recommended.

Maintenance and repairs

In Germany, maintenance, repairs and changes to explosion-protected machines are to be carried out subject to the observation of ElexV/EIBergV and the safety regulations and prescriptions of the general maintenance instructions.

Work that will affect the explosion protection, which are regarded as such, e.g.
 repairs to the stator or the rotor winding and at the terminals,
 repairs to the ventilation system or
 dismantling of flame-proof machines,
 must be carried out at the manufacturer or by a specialist workshop for electrical machines.

The work is to be identified by an additional repair plate with the following information:

- Date,
- Executing company,
- Type of repair, if applicable,
- Identification of the specialist, if applicable.

If the work is not carried out by the manufacturer, it must be inspected and approved by an officially recognised specialist. This specialist must draw up a written confirmation of this and provide the machine with a test mark, respectively. In foreign countries, the regulations of the country concerned are to be observed.

a way that, in the case of a fire, they have to work according to the guideline of the customer for a specified period, subject to severely increased temperature, and are permitted to cease functioning subsequently. The motors are classified into the categories F200 to F600 according to EN 12101-3.



Fire gas temperature	Load period			Class acc. to EN 12101-3
	0,5 h	1 h	2 h	
200°C	•			F200
200°C		•		
200°C			•	
250°C	•			F300
250°C		•		
250°C			•	
300°C	•			F400
300°C		•		
300°C			•	
400°C		•		F600
400°C			•	
600°C		•		

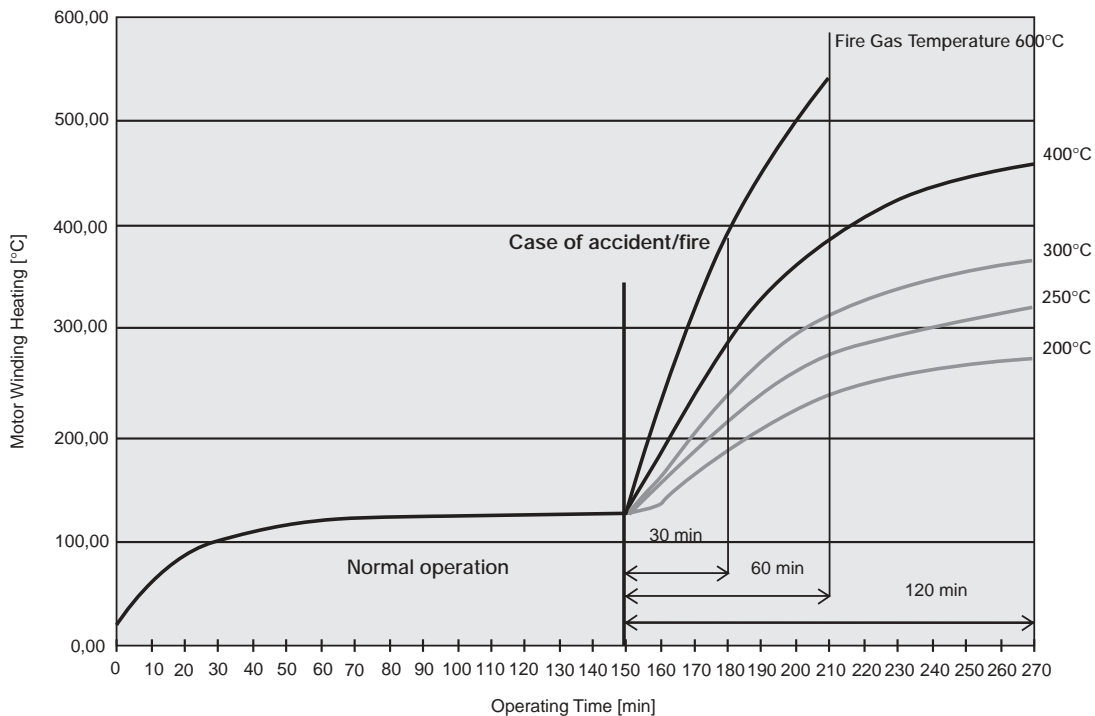
However, in practice, deviating from the EN load periods are also demanded, which are then allocated to the basic class. Therefore, the most frequent periods and temperatures in practice have already been registered in the above table.

In class F200, the coordination of the motor size to the design output complies with DIN 42673/DIN 42677. In classes F300 and F400, the design outputs are reduced by approximately one stage, and the output is reduced by two stages in F600. The cause of the reduction in output lies in the use of special winding wires. Their increased diameter reduces the potential slot filling of the

motors. The motor selection data is related to self-ventilated motors with IC411 cooling method. When motors are used in jet fans or air ducts, without motor-specific self-ventilation, the fan unit will take over the cooling of the motor with a significantly higher quantity of cooling air. This offers the possibility to come to an increased output. Then, the motors will be designed for the specific customer.

The certification of the motors acc. to EN 12101-3 for classes F200 to F600 by a named Test Authority is in preparation.

Theoretical Course of Temperature of the Motor Winding of an Asynchronous Motor Size 200 for Fire Gas Ventilators



In the case of an accident, the insulation system of the fire gas motors will be subjected to such extreme temperatures that these can lead to the partial disintegration of the materials. For this reason, as specified in IEC 85,

materials of heat classes F, H or 250 will be used according to the respective load temperature. Comprehensive information and advice on request

VEM global version

The VEM three-phase asynchronous motors in the VEM global version have been developed specially for use in the chemical and petrochemical industry and off-shore areas. They take the extreme environmental conditions, strict requirements of safety and useful life and the special features of maintenance in this field of application into account. For of the climatic conditions, the world-wide use of this electrical apparatus has been assumed. The motors can be supplied in a standard and in an explosion-protected version.

- Standard IP 55 motors
- Explosion-protected motors (certified as specified in ATEX)
 - Increased safety EEx e II 2G
 - Flame-proof enclosure EEx d/de II 2G
 - Non-sparking version EEx nA II 3G
 - Standard motors for Zone 2, Ex II 3G
 - Zone 21, Ex II 2D
 - Zone 22, Ex II 3D

The motors comply with the relevant standards and regulations for rotating electrical machines, but they also take the technical requirements of VIK (Vereinigung Industrielle

Kraftwirtschaft), the special climatic requirement of off-shore use and customer-specific requirements for the sectors of the chemical/petrochemical industry into account:

- Grey cast iron version including grey cast iron terminal boxes
- Version complying with VIK recommendation
- Offshore painting system with zinc-galvanised fan cover
- Stainless steel standard parts
- Relubrication device from size 225
- Item identification plate
- At least IP 55 type of protection
- Insulation system of insulation class F, used as specified in insulation class B
- Ambient temperature range from -40 °C to +50 °C (Deviations according the test certificate possible in the case of products requiring official approval)
- Vibration velocity Grade R as specified in DIN EN 60034-14
- Thermal motor protection with thermistors (PTC) standard version from size 225
- Half-key balancing
- Metric cable entries

Tolerances – Electrical parameters

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

Efficiency (when determined indirectly)	- 0.15 (1-η) at $P_N \leq 50$ kW - 0.1 (1-η) at $P_N > 50$ kW
Power factor	$\frac{1-\cos\phi}{6}$ at least 0.02 at most 0.07
Slip (at standard load in warmed-up state)	± 20 % at $P_N \geq 1$ kW ± 30 % at $P_N < 1$ kW
Starting current (in the planned starting connection)	+ 20 % without lower limit
Starting torque	- 15 % and + 25 %
Pull-up torque	- 15 %
Pull-out torque	- 10 % (after application of this tolerance M_K/M still at least 1.6)
Moment of inertia	± 10 %
Noise level (measurement-area related sound intensity level)	+ 3 dB (A)

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

1. A guarantee of all or any of the values as specified in the table is not mandatory. Guaranteed values to which the permissible deviations should apply must be specified expressly in tenders. The permissible deviations must comply with the table.
2. Attention is drawn to the differences in the interpretation of the concept of a 'guarantee'. In some countries, there is a differentiation between typical and declared values.
3. If a permissible deviation only applies in one direction, the value will not be limited in the other direction.

Tolerances - Mechanical parameters

Letter codes according to DIN 42939	Meaning of the Dimension	Fit or Tolerance
a	Spacing of feet fixing holes in axial direction	± 1 mm
a ₁	Diameter or width across corners of the flange	- 1 mm
b	Spacing of feet fixing holes across axial direction	± 1 mm
b ₁	Diameter of the flange spigot	Up to diameter 230 mm j6 from diameter 250 mm h6
d, d ₁	Diameter of the cylindrical shaft end	Up to diameter 48 mm k6 from diameter 55 mm m6
e ₁	Pitch circle diameter of the mounting flange	± 0.8 mm
f, g	Largest width of the motor (without terminal boxes)	+ 2 %
h	Shaft height (lowest edge of foot to centre of shaft end)	Up to 250 mm -0.5 above 250 mm -1
k, k ₁	Total length of the motor	+ 1 %
p	Total height of the motor (lowest edge of foot, housing or flange up to the highest point of the motor)	+ 2 %
s, s ₁	Diameter of the mounting holes of the foot or flange	+ 3 %
t, t ₁	Lowest edge of shaft end to the upper edge of the key	+ 0.2 mm
u, u ₁	Width of the key	h9
w ₁ , w ₂	Distance from the centre of the first foot mounting hole to the shaft shoulder or flange face	± 3.0 mm
	Distance from the shaft shoulder to the flange face in the case of fixed bearing on D-end	± 0.5 mm
	Distance from the shaft shoulder to the flange face	± 3.0 mm
	Motor mass	-5 to +10 %

Motor selection data

Speed limits Series K21R, K21F, KU1R, KU1F

Type	Synchronous speed at 50 Hz				
	3000 rpm		1500 rpm	1000 rpm	750 rpm
K21./KU1. 63	15000		12000	12000	-
K21./KU1. 71	14000		11000	11000	11000
K21./KU1. 80	13000		11000	10000	10000
K21./KU1. 90	11000		9000	9000	9000
K21./KU1. 100	10000		8000	8000	8000
K21./KU1. 100 LX	7000		6000	6000	6000
K21./KU1. 112	7000		6000	6000	6000
K21./KU1. 132	7000		3600	2400	1800
K21./KU1. 160	6000		3600	2400	1800
K21./KU1. 180	6000		3000	2000	1500
K21./KU1. 200	5000		3000	2000	1500
K21./KU1. 225	5000		3000	2000	1500
K21./KU1. 250	4500		3000	2000	1500
K21./KU1. 280	4300		3000	2000	1500
K21./KU1. 315 S, M	3800		3000	2000	1500
K21./KU1. 315 MX	3600 ¹⁾	3000 ²⁾	3000	2000	1500
K21R/KU1. 315 MY, L, LX	3600 ¹⁾	3000 ²⁾	3000 ¹⁾	2600 ²⁾	2000
K22R/KU2. 355	3600 ¹⁾	3000 ²⁾	3000 ¹⁾	2600 ²⁾	2000

Speed limits Series K20R, K20F, KU0R, KU0F

Type	Synchronous speed at 50 Hz				
	3000 rpm		1500 rpm	1000 rpm	750 rpm
K20./KU0. 56	15000		12000	12000	-
K20./KU0. 63	14000		11000	11000	11000
K20./KU0. 71	13000		11000	10000	10000
K20./KU0. 80	11000		9000	9000	9000
K20./KU0. 90	10000		8000	8000	8000
K20./KU0. 100	7000		6000	6000	6000
K20./KU0. 112	7000		3600	2400	1800
K20./KU0. 132	7000		3600	2400	1800
K20./KU0. 160	6000		3000	2000	1500
K20./KU0. 180	6000		3000	2000	1500
K20./KU0. 200	5000		3000	2000	1500
K20./KU0. 225	4500		3000	2000	1500
K20./KU0. 250	4300		3000	2000	1500
K20./KU0. 280	3800		3000	2000	1500
K20./KU0. 315 S	3600 ¹⁾	3000 ²⁾	3000	2000	1500
K22. 315 M, L, LX	3600 ¹⁾	3000 ²⁾	3000 ¹⁾	2600 ²⁾	2000

Speed limits Series K20R, K20F, KU0R, KU0F

Type	Synchronous speed at 50 Hz				
	3000 rpm		1500 rpm	1000 rpm	750 rpm
K11R 132	7000		3600	2400	1800
K11R 160	6000		3600	2400	1800
K11R 180	6000		3000	2000	1500
K11R 200	5000		3000	2000	1500
K11R 225	5000		3000	2000	1500
K11R 250	4500		3000	2000	1500
K11R 280	4300		3000	2000	1500
K11R 315 S, M	3800		3000	2000	1500
K11R 315 MX	3600 ¹⁾	3000 ²⁾	3000	2000	1500
K11R 315 MY, L, LX	3600 ¹⁾	3000 ²⁾	3000 ¹⁾	2600 ²⁾	2000

Speed limits Series K10R, KPR

Type	Synchronous speed at 50 Hz				
	3000 rpm		1500 rpm	1000 rpm	750 rpm
K10R 112	7000		3600	2400	1800
K10R 132	7000		3600	2400	1800
K10R 160	6000		3000	2000	1500
K10R 180	6000		3000	2000	1500
K10R 200	5000		3000	2000	1500
K10R 225	4500		3000	2000	1500
K10R 250	4300		3000	2000	1500
K10R 280	3800		3000	2000	1500
K10R 315 S	3600 ¹⁾	3000 ²⁾	3000	2000	1500
K12R 315 M, L, LX	3600 ¹⁾	3000 ²⁾	3000 ¹⁾	2600 ²⁾	2000

¹⁾ easy bearing arrangement (D-end grooved all bearing)

²⁾ heavy bearing arrangement (D-end cylindrical roller bearing)



Noise data

Measurement area related sound pressure level L_{pA}
for motors K21R, KU1R, K22R in standard version

	L_{pA} dB	L_{pA} dB	L_{pA} dB	L_{pA} dB
	2-pole	4-pole	6-pole	8-pole
63 K	46	41	40	-
63 G	46	41	40	-
71 K	48	42	41	37
71 G	48	42	41	37
80 K	52	44	41	40
80 G	52	44	41	40
90 S	56	49	43	42
90 L	56	49	43	42
100 L	59	50	49	47
100 LX	-	50	-	47
112 M	61	53	51	50
112 MX	61	-	-	-
132 S	65	58	54	52
132 SX	65	-	-	-
132 M	-	60	54	52
132 MX	-	-	56	-
160 M	66	60	56	57
160 MX	67	-	-	57
160 L	67	62	61	57
180 M	-	62	-	-
180 L	-	-	61	58
180 M	70	-	-	-
180 L	-	64	-	-
200 L	73	64	62	61
200 LX	73	-	62	-
225 S	-	66	-	59
225 M	74	66	63	59
250 M	74	68	63	63
280 S	75	69	65	61
280 M	75	69	65	61
315 S	78	72	68	65
315 M	78	72	68	65
315 MX	79	76	70	65
315 MY	79	76	68	66
315 L	79	76	68	66
315 LX	79	76	68	66
355 MY, M, MX ¹⁾	77 ²⁾	77	70	68
355 LY, L ¹⁾	77 ²⁾	77	70	68

Low noise version ²⁾

	L_{pA} dB
	2-pole
200 LX	65
225 S	-
225 M	65
250 M	65
280 S	66
280 M	66
315 S	68
315 M	68
315 MX	68
315 MY	68
315 L	70
315 LX	68

¹⁾ series K22R
²⁾ with axial fan, rotation-sense dependable fan

The data given in the table are valid for nominal output, nominal voltage, and 50 Hz with tolerances of +3 dB. Noise measurement according to DIN EN 21 680 p. 1

Noise data

Measurement area related sound pressure level L_{pA}
for motors K20R, KUOR in standard version

	L_{pA} dB	L_{pA} dB	L_{pA} dB	L_{pA} dB
	2-pole	4-pole	6-pole	8-pole
56 K	46	41	40	-
56 G	46	41	40	-
63 K	48	42	41	37
63 G	48	42	41	37
71 K	52	44	41	40
71 G	52	44	41	40
80 K	56	49	43	42
80 G	56	49	43	42
90 L	59	50	49	47
100 S	61	50	-	47
100 L	61	53	51	50
100 LX	-	-	-	-
112 M	65	58	54	52
112 MX	-	-	54	52
132 S	66	60	56	57
132 M	66	60	56	57
160 S	67	62	61	57
160 M	67	62	61	58
180 S	70	64	62	61
180 M	73	64	62	61
200 M	73	66	63	59
200 L	74	66	-	-
225 M	74	68	63	63
250 S	75	69	65	61
250 M	75	69	65	61
280 S	78	72	68	65
280 M	78	72	68	65
315 S	79	76	70	65
315 M	79	76	68	66
315 L	79	76	68	66
315 LX	79	76	68	66

The data given in the table are valid for nominal output, nominal voltage, and 50 Hz with tolerances of +3 dB. Noise measurement according to DIN EN 21 680 p. 1

Noise data

Measurement area related sound pressure level L_{pA}
for motors K11R in standard version

	L_{pA} dB	L_{pA} dB	L_{pA} dB	L_{pA} dB
	2-pole	4-pole	6-pole	8-pole
132 S	71	60	56	56
132 SX	71	-	-	-
132 M	-	65	57	54
132 MX	-	-	60	-
160 M	76	66	62	60
160 MX	77	-	-	58
160 L	77	69	63	60
180 M	78	70	-	-
180 L	-	69	64	61
200 L	77	69	65	63
200 LX	76	-	65	-
225 S	-	72	-	63
225 M	76	72	64	68
250 M	80	73	65	65
280 S	81	76	67	63
280 M	81	76	69	63
315 S	82	78	72	71
315 M	82	78	72	71
315 MX	82	79	75	71
315 MY	82	79	75	73

Measurement area related sound pressure level L_{pA}
for motors K10R in standard version

	L_{pA} dB	L_{pA} dB	L_{pA} dB	L_{pA} dB
	2-pole	4-pole	6-pole	8-pole
112 MY	71	-	-	-
112 M	71	60	56	56
112MX	-	-	57	54
132 S	-	65	60	60
132 M	76	66	62	58
160 S	77	69	63	60
160 M	77	70	64	61
180 S	78	69	65	63
180 M	77	69	65	63
200 M	76	72	-	68
200 L	76	72	-	-
225 M	80	73	65	65
250 S	81	76	67	63
250 M	81	76	69	63
280 S	82	78	72	71
280 M	82	78	72	71
315 S	82	79	75	71
315 M	82	79	75	73

The data given in the table are valid for no-load conditions,
nominal voltage and 50 Hz with tolerances of +3 dB.
Noise measurement according to DIN EN 21 680 p. 1

Types of construction

The most frequently used types of construction are shown in the following table. Other types of construction on request.

The basic type of construction is designated on the nameplate according to Code I, DIN EN 60034-7. Standard motors in sizes 56 – 200, that are ordered in the basic types of construction (universal types of construction) IM B3, IM B5 or IM B14, can also be used in the following other types of construction:

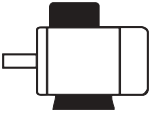

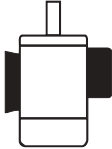
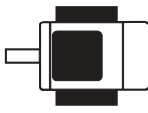
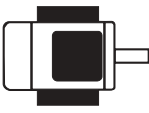
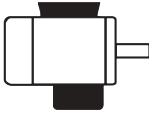
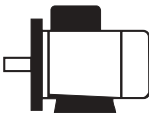



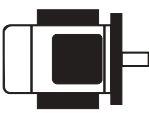
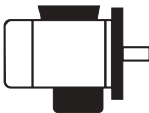
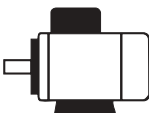


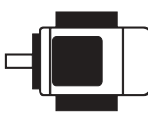
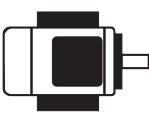
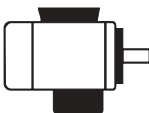



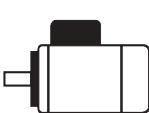


IM B3 in IM B6, IM B7, IM B8, IM V5 or IM V6,
 IM B5 in IM V15 or IM V36, IM 2051, IM 2061, IM 2071,
 IM B14 in IM 2111 or IM 2131, IM 2151, IM 2161, IM 2171,

IM B5 in IM V1 or IM V3,
 IM B14 in IM V18 or IM V19.

From size 225, for the types of construction IM V5, IM V6, IM B6, IM B7 and IM B8, request in required.

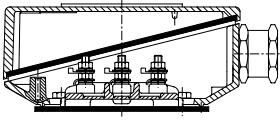
In sizes between 315 L up to 355, the types of construction IM B5 and IM V3 are not available.

To facilitate a simple and safe connection to the feeding mains, the terminal box is for all types of construction rotatable by every 90°. For explosion protected motors in vertical types of construction with shaft end downwards, the fan cover must be equipped with a protective canopy, to prevent foreign bodies from falling into the fan area.

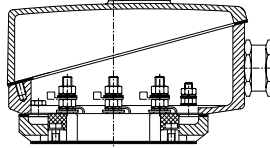
Basic types of construction	Other types of construction					
IM B3 IM 1001 	IM V5 IM 1011 	IM V6 IM 1031 	IM B6 IM 1051 	IM B7 IM 1061 	IM B8 IM 1071 	
IM B35 IM 2001 	IM V15 IM 2011 	IM V36 IM 2031 	IM 2051 	IM 2061 	IM 2071 	
IM B34 IM 2101 	IM 2111 	IM 2131 	IM 2151 	IM 2161 	IM 2171 	
IM B5 IM 3001 	IM V1 IM 3011 	IM V3 IM 3031 				
IM B14 IM 3601 	IM V18 IM 3611 	IM V19 IM 3631 				

Terminal boxes

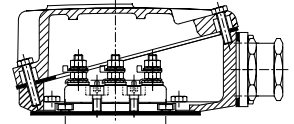
Standard version, ship version and VIK version



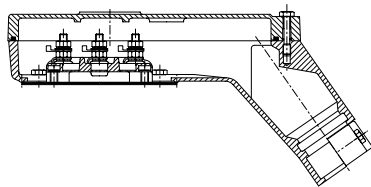
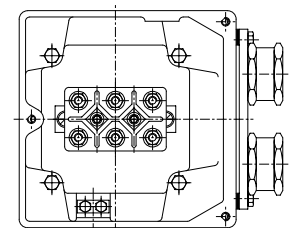
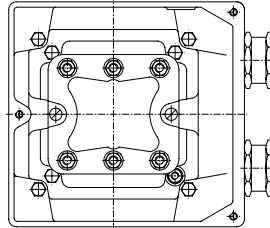
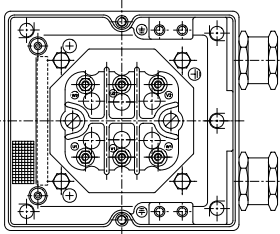
AK01



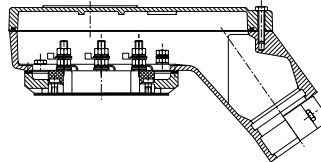
AK02



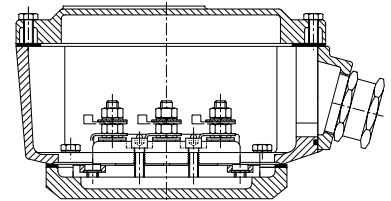
AK01-1



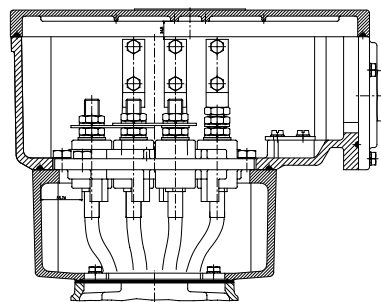
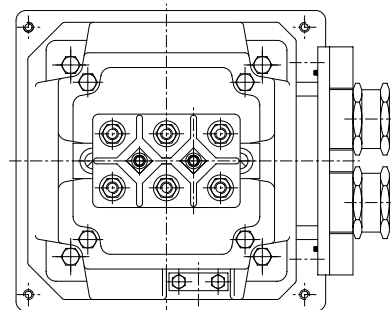
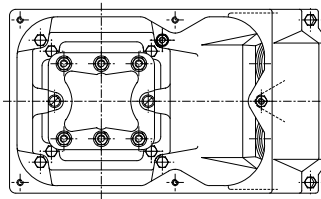
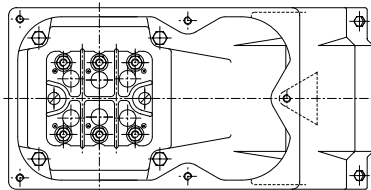
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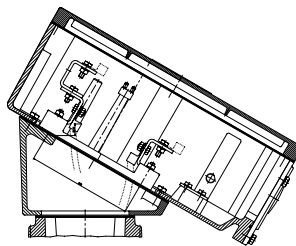
AK04



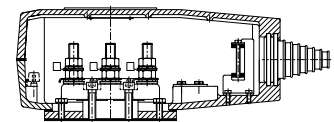
AK012



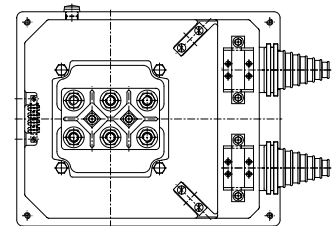
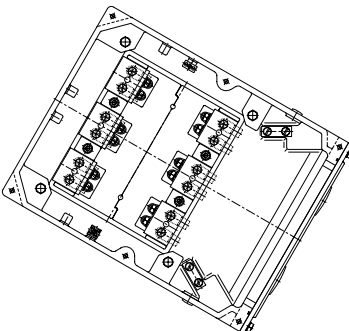
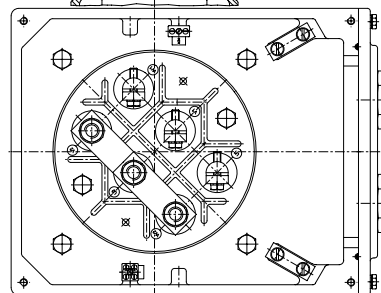
AK05



AK06



AK07-1



Terminal boxes

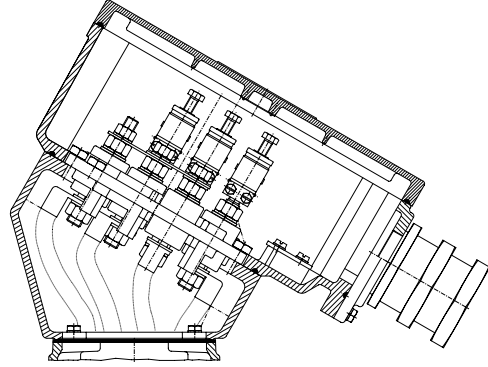
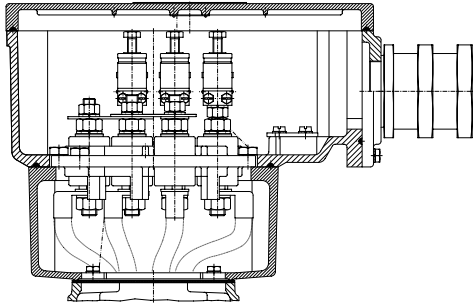
Standard version, ship version and VIK version

Type designation for terminal box	Dimensions		Adapter flange		Data for terminal boxes							Figure	
	x	z	Variant	Material	Material	Thread cable gland	Maximum cable diameter	Number of terminals	Thread terminal stud	Maximum current	Thread protective conductor		Terminal plate
KK16_M20	92	92	-	-	Alu / GG	M20x1.5	13	6	M4	16	M4	K1M4	
KK16_M25	92	92	-	-	Alu / GG	M25x1.5	17	6	M4	16	M4	K1M4	
BKK16_M20	96	134	-	-	Alu / GG	M20x1.5	13	6	M4	16	M4	K1M4	
BKK16_M25	96	134	-	-	Alu / GG	M25x1.5	17	6	M4	16	M4	K1M4	
KK25_M32	155	145	-	-	Alu / GG	M32x1.5	21	6	M5	25	M6	SB5	AK01
KK63_25	192	165	-	-	Alu / GG	M40x1.5	28	6	M5	25	M6	SB5	AK01
KK63_M40	192	165	-	-	Alu / GG	M40x1.5	28	6	M6	63	M6	SB6	AK01
KK63_M50	192	165	-	-	Alu / GG	M50x1.5	35	6	M6	63	M6	SB6	AK01
KK100_M50	212	207	-	-	GG	M50x1.5	35	6	M8	100	M8	SB8	AK01
KK200_100	280	242	-	-	GG	M63x1.5	45	6	M8	100	M8	SB8	AK01
KK200_M63	280	242	-	-	GG	M63x1.5	45	6	M10	200	M10	SB10	AK01
KK400_M63	315	296	-	-	GG	M63x1.5	45	6	M12	315	M10	SB12	AK02
VGK200	387	242	-	-	GG	Ø 66	66	6	M10	200	M10	SB10	AK03
VGK400	422	296	-	-	GG	Ø 95	95	6	M12	315	M10	SB12	AK04
KK630_M63	496	390	horizontal sloping	GG	GG	M63x1.5	45	6	(M20)	630	strap terminal	KLP M20	AK05
KK630_M72	496	390	horizontal sloping	GG	GG	M72x2	56.5	6	(M20)	630	strap terminal	KLP M20	AK05
KK1000	615	475	horizontal sloping	GG	GG	M72x2	56.5	contact rail		1000	strap terminal	KS 1000A	AK06
KK1000A	615	475	horizontal sloping	GG	GG	M80x2	68	contact rail		1000	strap terminal	KS 1000A	AK06
KK25SS	155	145	-	-	GG	M30x2	20.5	6	M5	25	M6	SB5Ms	AK01
KK63SS	192	165	-	-	GG	M36x2	26.5	6	M6	63	M6	SB6Ms	AK01
KK100SS	212	207	-	-	GG	M45x2	32.5	6	M8	100	M8	SB8Ms	AK01
KK200SS	280	242	-	-	GG	M56x2	41.5	6	M10	200	M10	SB10Ms	AK01
KK200ASS	280	242	-	-	GG	M72x2	56.5	6	M10	200	M10	SB10Ms	AK01
KK400SS	315	296	-	-	GG	M72x2	56.5	6	M12	315	M10	SB12Ms	AK02
VIK16_M20	101	101	-	-	GG	M20x1.5	13	6	M4	16	M4	K1M4	
VIK16_M25	101	101	-	-	GG	M25x1.5	17	6	M4	16	M4	K1M4	
VIK25_M32	155	145	-	-	GG	M32x1.5	21	6	M5	25	M6	KL155	AK01
VIK63_25	192	165	-	-	GG	M40x1.5	28	6	M5	25	M6	KL155	AK01-1
VIK63_M40	192	165	-	-	GG	M40x1.5	28	6	M6	63	M6	K1M6	AK01-1
VIK63_M50	192	165	-	-	GG	M50x1.5	35	6	M6	63	M6	K1M6	AK01-1
VIK100_M50	222	207	-	-	GG	M50x1.5	35	6	M8	100	M8	K1M8	AK01-1
VIK200_M63	292	258	-	-	GG	M63x1.5	45	6	M10	200	M10	K1M10	AK12
VIK400_M63	350	306	-	-	GG	M63x1.5	45	6	M12	315	M10	KM12	AK12
VIK200T	400	300	-	-	GG	Ø 60	60	6	M10	200	M10	K1M10	AK07-1
VIK400T	430	350	-	-	GG	Ø 60	60	6	M12	315	M10	KM12	AK07-1

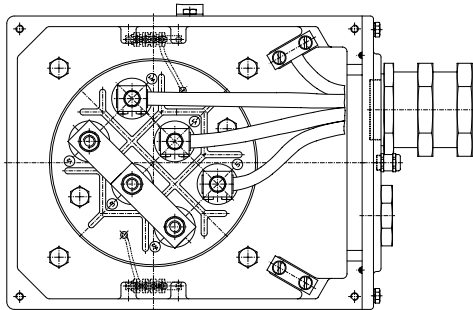
KK_FV version for fire and heat exhaust ventilators, with terminal box, with flying leads, 2 m length

Terminal boxes

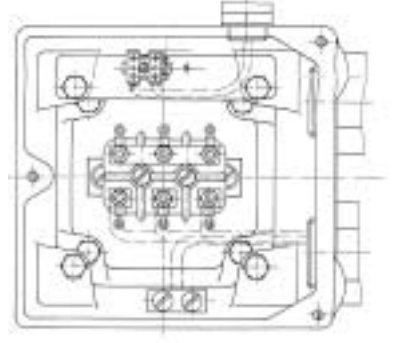
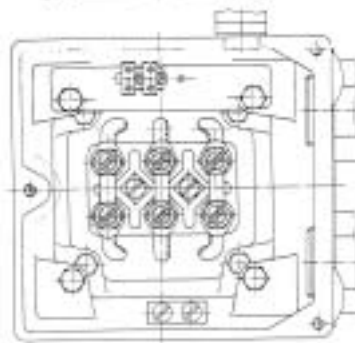
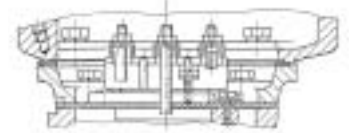
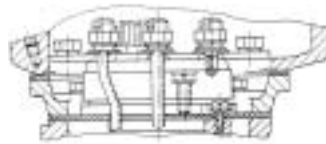
Explosion protected version (EEx e)



AK05-2

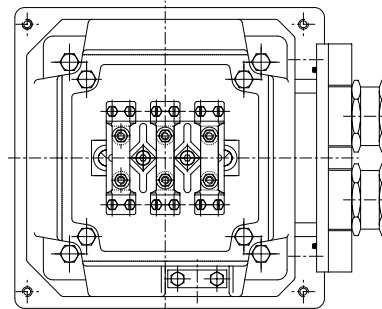
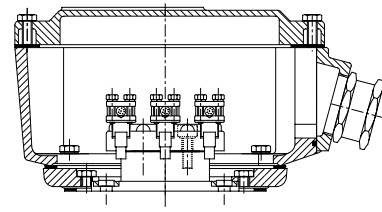


AK05-1

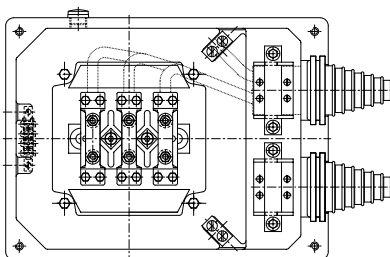
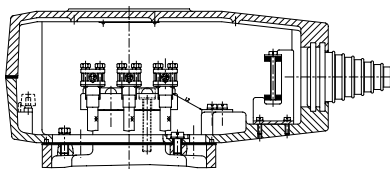


AK10

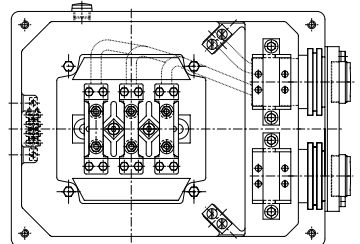
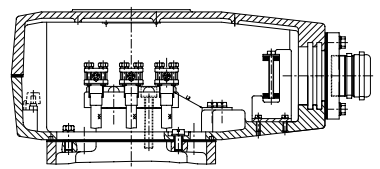
AK11



AK12-1



AK13-1



AK13-2

Terminal boxes

Explosion protected version (EEx e, EEx d IIC)

Type designation for terminal box	Dimensions		Adapter flange		Data for terminal boxes								
	x mm	z mm	Variant	Material	Material	Thread cable gland standard / as an option	Cable diameter range mm	Number of terminals	Terminal plate	Thread terminal stud	Maximum current A	Thread protective conductor	Figure
KK16_M20EX	92	92	-	-	ALu / GG	M20x1.5	7 - 13	6			16	M4	
KK16_M25EX	92	92	-	-	ALu / GG	M25x1.5	9 - 17	6			16	M4	
KK25_M32EX	155	145	-	-	GG	M32x1.5	11 - 21	6	KS 10A	S 10x1.00	40	M6	AK10
KK63_M40EX	192	165	-	-	GG	M40x1.5	19 - 28	6	KS 14A	S 14x1.25	65	M6	AK10
KK63_M50EX	192	165	-	-	GG	M50x1.5	27 - 35	6	KS 14A	S 14x1.25	65	M6	AK10
KK100_M50EX	212	207	-	-	GG	M50x1.5	27 - 35	6	KS 14A	S 14x1.25	65	M8	AK10
KK200_M63EX	280	242	-	-	GG	M63x1.5	34 - 45	6	KS 18A	S 18x1.25	110	M10	AK10
KK400_M63EX	315	296	-	-	GG	M63x1.5	34 - 45	6	KS 18A	S 18x1.25	110	M10	AK10
KK630_M63EX as an option	496	390	horizontal sloping	GG	GG	M63x1.5	45	6	KLP M20	(M16)	315	strap terminal	AK05-1
KK630_M72EX as an option	496	390	horizontal sloping	GG	GG	M72x2	45	6	KLP M20	(M16)	315	strap terminal	AK05-2
VIK16_M20EX	101	101	-	-	GG	M20x1.5	13	6				M4	
VIK16_M25EX	101	101	-	-	GG	M25x1.5	17	6				M4	
VIK25_M32EX	155	145	-	-	GG	M32x1.5	21	6	KL155	M5	25	M6	AK10
VIK63_M40EX	192	165	-	-	GG	M40x1.5	28	6	KM8/6	M6	63	M6	AK11
VIK63_M50EX	192	165	-	-	GG	M50x1.5	35	6	KM8/6	M6	63	M6	AK-11
VIK100_M50EX	222	207	-	-	GG	M50x1.5	35	6	KM10/8	M8	100	M8	AK-11
VIK200_M63EX	292	258	-	-	GG	M63x1.5	45	6	KM10/8	M12	120	M10	AK12-1
VIK400_M63EX	350	306	-	-	GG	M63x1.5	45	6	KM10/8	M12	120	M10	AK12-1
VIK200T_EEX as an option	400	300	-	-	GG	Ø 60	60	6	KM10/8	M12	120	M10	AK13-1
VIK400T_EEX as an option	430	350	-	-	GG	M63x1.5 Ø 60	60	6	KM16/12	M12	250	M10	AK13-2 AK13-1 AK13-2
													Size
FG01E	145	145	-	-	GG	M25x1.5	13 - 19	6	KL155	M5	25	M5	63 - 71
FG02E	145	145	-	-	GG	M25x1.5	8 - 17	6	KL155	M5	25	M5	80 - 90
FG03E	145	145	-	-	GG	M32x1.5	12 - 17	6	KL155	M5	25	M5	100 - 112
FG04E	220	220	-	-	GG	M32x1.5	12 - 17	6	KM8/6	M6	63	M6	132
FG05E	220	220	-	-	GG	M40x1.5	17 - 28	6	KM8/6	M6	63	M6	160
FG06E	280	340	-	-	GG	M40x1.5	17 - 28	6	KM10/8	M8	100	M8	180
FG07E	280	340	-	-	GG	M50x1.5	21 - 35	6	KM10/8	M8	100	M8	200 - 225
FG08E	340	422	-	-	GG	M63x1.5	27 - 48	6	KM16/12	M12	250	M12	250 - 280
FG09E	340	422	-	-	GG	M63x1.5	27 - 48	6	-	M12	250/315 ¹⁾	M12	315
FG10E	472	512	-	-	GG	M80x2	62 - 68	6	-	M16	315/400 ¹⁾	M16	355
FG11E	472	512	-	-	GG	M95x2	74 - 80	6	-	M16	315/400 ¹⁾	M16	400 - 450
FG01D	145	145	-	-	GG	M25x1.5							63 - 90
FG02D	145	145	-	-	GG	M32x1.5							100 - 112
FG03D	220	220	-	-	GG	M40x1.5							132 - 160
FG04D	265	270	-	-	GG	M50x1.5							180 - 200
FG05D	265	270	-	-	GG	M50x1.5							225
FG06D	380	380	-	-	GG	M63x1.5							250 - 280
FG07D	380	380	-	-	GG	M80x2							315
FG08D	583	489	-	-	GG	M95x2							355 - 450

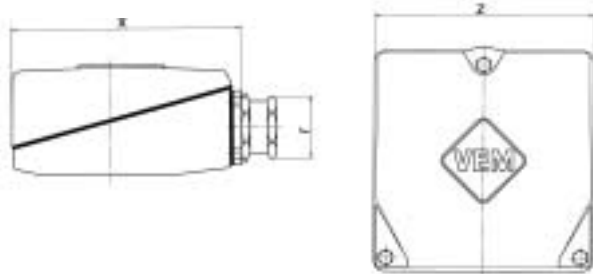
¹⁾ Material: copper

GG - grey cast iron,
Alu - aluminium alloy

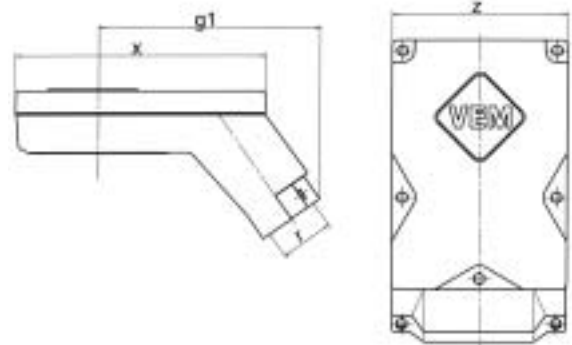
Terminal boxes

Dimensions

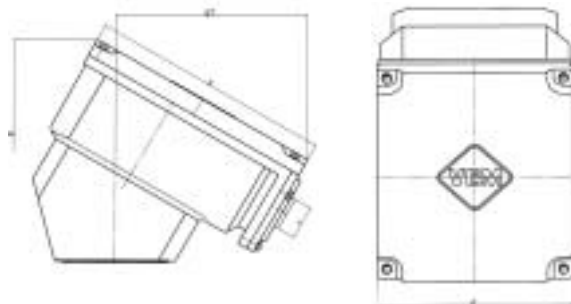
Standard terminal box
with cable gland



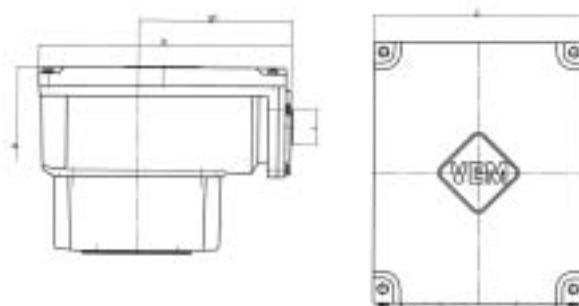
Standard terminal box
with cable sealing connection



Standard terminal box KK 630_M, KK1000
with sloping adapter flange



Standard terminal box KK 630_M, KK1000
with horizontal adapter flange



Bearing arrangement

Basic version, K2.R

Type	D-end					N-end					Figure		Fixed bearing
	Antifriction bearing	V-ring	γ-ring	Felt ring	Wave washer	Disc spring	Antifriction bearing	V-ring	Wave washer	Felt ring	DS	NS	
K21R 63	6201 2Z C3	-	-	11.5x19	-	-	6201 2Z C3	-	32	12x22	1	2	none
K21R 71	6202 2Z C3	-	-	14.5x21	-	-	6202 2Z C3	-	35	15x24	1	2	none
K21R 80	6204 2Z C3	-	-	19.5x26	-	-	6204 2Z C3	-	47	20x32	1	2	none
K21R 90	6205 2Z C3	-	-	24.5x35	-	-	6205 2Z C3	-	52	25x40	1	2	none
K21R 100	6206 2Z C3	-	-	29.2x40	-	-	6205 2Z C3	-	52	25x40	1	2	none
K21R 100 LX	6206 2Z C3	-	-	29.2x40	-	-	6206 2Z C3	-	62	30x50	1	2	none
K21R 112 M	6206 2Z C3	-	-	29.2x40	-	-	6206 2Z C3	-	62	30x50	1	2	none
K21R 132 S2,4 T	6208 2RS C3	-	-	39x60	-	-	6206 2Z C3	-	62	30x50	1	2	none
K21R 132 S, SX2,M6,8	6208 2RS C3	-	-	-	80	-	6207 2RS C3	-	-	-	3	5	none
K21R 132 M4,MX6	6308 2RS C3	-	-	-	90	-	6308 2RS C3	-	-	-	3	5	none
K21R 160 M,MX8	6309 2RS C3	-	-	-	100	-	6308 2RS C3	-	-	-	3	5	none
K21R 160 MX2, L	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	3	5	none
K21R 180 M4, L6, 8	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	3	5	none
K21R 180 M2, L4	6310 C3	50A	-	-	110	-	6310 C3	50A	-	-	6	8	N-end
K21R 200 L, LX6	6312 C3	60A	-	-	-	130	6310 C3	50A	-	-	6	8	N-end
K21R 200 LX2	6312 C3	60A	-	-	-	130	6312 C3	60A	-	-	6	8	N-end
K21R 225 M2	6312 C3	60A	-	-	-	130	6312 C3	60A	-	-	6	8	N-end
K21R 225 S4, 8, M4,6,8,	6313 C3	65A	-	-	-	140	6312 C3	60A	-	-	6	8	N-end
K21R 250 M2	6313 C3	65A	-	-	-	140	6313 C3	65A	-	-	6	8	N-end
K21R 250 M4,6,8	6314 C3	70A	-	-	-	150	6313 C3	65A	-	-	6	8	N-end
K21R 280 S2,M2	6314 C3	70A	-	-	-	150	6314 C3	70A	-	-	6	8	N-end
K21R 280 S4,6,8,M4,6,8	6316 C3	80A	-	-	-	170	6314 C3	70A	-	-	6	8	N-end
K21R 315 S2,M2	6316 C3	80A	-	-	-	170	6316 C3	80A	-	-	6	8	N-end
K21R 315 S4,6,8,M4,6,8	6317 C3	80A	-	-	-	180	6316 C3	80A	-	-	6	8	N-end
K21R 315 MX2	6317 C3	-	RB85	-	-	180	6316 C3	80A	-	-	13	16	N-end
K21R 315 MX4,6,8	6220 C3	-	RB100	-	-	180	6316 C3	80A	-	-	13	16	N-end
K21R 315 MY2	6317 C3	-	RB85	-	-	180	6317 C3 ¹⁾	85A	-	-	18	19	N-end
K21R 315 MY4,6,8	6320 C3	-	RB100	-	-	215	6317 C3 ¹⁾	85A	-	-	18	19	N-end
K21R 315 L2, LX2	6317 C3	-	RB85	-	-	180	6317 C3 ¹⁾	85A	-	-	18	19	N-end
K21R 315 L4,6,8, LX4,6,8	6320 C3	-	RB100	-	-	215	6317 C3 ¹⁾	85A	-	-	18	19	N-end
K22R 355 MY/M/MX/LY/L 2pole	6317 C3	-	RB85	-	-	180	6317 C3 ¹⁾	85A	-	-	18	19	N-end
K22R 355 MY/M/MX/LY/L 4,6,8pole	6324 C3	120S	-	-	-	260	6317 C3 ¹⁾	85A	-	-	18	19	N-end

1) for vertical types of mounting Q317 C3; figures 18, 21
From size K21R 315 MX standard version with relubrication device

Type	D-end					N-end					Figure		Fixed bearing
	Antifriction bearing	V-ring	γ-ring	Felt ring	Wave washer	Disc spring	Antifriction bearing	V-ring	Wave washer	Felt ring	DS	NS	
K20R 56	6201 2Z C3	-	-	11.5x19	-	-	6201 2Z C3	-	32	12x22	1	2	none
K20R 63	6202 2Z C3	-	-	14.5x21	-	-	6202 2Z C3	-	35	15x24	1	2	none
K20R 71	6204 2Z C3	-	-	19.5x26	-	-	6204 2Z C3	-	47	20x32	1	2	none
K20R 80	6205 2Z C3	-	-	24.2x35	-	-	6205 2Z C3	-	52	25x40	1	2	none
K20R 90	6205 2Z C3	-	-	24.5x35	-	-	6205 2Z C3	-	52	25x40	1	2	none
K20R 100	6206 2Z C3	-	-	29.2x40	-	-	6206 2Z C3	-	62	30x50	1	2	none
K20R 112 M2,4,6,8	6207 2RS C3	-	-	-	72	-	6207 2RS C3	-	-	-	3	5	none
K20R 112 MX6,8	6207 2RS C3	-	-	-	72	-	6207 2RS C3	-	-	-	3	5	none
K20R 132 S,M	6308 2RS C3	-	-	-	90	-	6308 2RS C3	-	-	-	3	5	none
K20R 160 S,M	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	3	5	none
K20R 180 S2,M2	6310 C3	50A	-	-	110	-	6310 C3	50A	-	-	6	8	N-end
K20R 180 S4,6,8 ; M4,6,8	6312 C3	60A	-	-	-	130	6310 C3	50A	-	-	6	8	N-end
K20R 200 M2,L2	6312 C3	60A	-	-	-	130	6312 C3	60A	-	-	6	8	N-end
K20R 200 M4,6,8 ; L4,6,8	6313 C3	65A	-	-	-	140	6312 C3	60A	-	-	6	8	N-end
K20R 225 M2	6313 C3	65A	-	-	-	140	6313 C3	65A	-	-	6	8	N-end
K20R 225 M4,6,8	6314 C3	70A	-	-	-	150	6313 C3	65A	-	-	6	8	N-end
K20R 250 S2,M2	6314 C3	70A	-	-	-	150	6314 C3	70A	-	-	6	8	N-end
K20R 250 S4,6,8 ; M4,6,8	6316 C3	80A	-	-	-	170	6314 C3	70A	-	-	6	8	N-end
K20R 280 S2,M2	6316 C3	80A	-	-	-	170	6316 C3	80A	-	-	6	8	N-end
K20R 280 S4,6,8 ; M4,6,8	6317 C3	80A	-	-	-	180	6316 C3	80A	-	-	6	8	N-end
K20R 315 S2	6317 C3	-	RB85	-	-	180	6316 C3	80A	-	-	13	16	N-end
K20R 315 S4,6,8	6220 C3	-	RB100	-	-	180	6316 C3	80A	-	-	13	16	N-end
K20R 315 M2 ; L2	6317 C3	-	RB85	-	-	180	6317 C3 ¹⁾	85A	-	-	18	19	N-end
K20R 315 M4,6,8 ; L4,6,8	6320 C3	-	RB100	-	-	215	6317 C3 ¹⁾	85A	-	-	18	19	N-end

1) for vertical types of mounting Q317 C3; figures 18, 21
From size K20R 315 standard version with relubrication device



Bearing arrangement

Basic version, K1.R

Type	D-end				N-end			Figure		Fixed bearing	
	Antifriction bearing	V-ring	γ-ring	Wave washer	Disc spring	Antifriction bearing	V-ring	Wave washer	DS		NS
									DS		NS
K11R 132 S, SX2,M6,8	6208 2RS C3	-	-	80	-	6207 2RS C3	-	-	3	5	none
K11R 132 M4,MX6	6308 2RS C3	-	-	90	-	6308 2RS C3	-	-	3	5	none
K11R 160 M,MX8	6309 2RS C3	-	-	100	-	6308 2RS C3	-	-	3	5	none
K11R 160 MX2, L	6310 2RS C3	-	-	110	-	6309 2RS C3	-	-	3	5	none
K11R 180 M4, L6, 8	6310 2RS C3	-	-	110	-	6309 2RS C3	-	-	3	5	none
K11R 180 M2, L4	6310 C3	50A	-	110	-	6310 C3	50A	-	6	8	N-end
K11R 200 L, LX6	6312 C3	60A	-	-	130	6310 C3	50A	-	6	8	N-end
K11R 200 LX2	6312 C3	60A	-	-	130	6312 C3	60A	-	6	8	N-end
K11R 225 M2	6312 C3	60A	-	-	130	6312 C3	60A	-	6	8	N-end
K11R 225 S4, 8, M4,6,8,	6313 C3	65A	-	-	140	6312 C3	60A	-	6	8	N-end
K11R 250 M2	6313 C3	65A	-	-	140	6313 C3	65A	-	6	8	N-end
K11R 250 M4,6,8	6314 C3	70A	-	-	150	6313 C3	65A	-	6	8	N-end
K11R 280 S2,M2	6314 C3	70A	-	-	150	6314 C3	70A	-	6	8	N-end
K11R 280 S4,6,8,M4,6,8VL	NU316 E	80A	-	-	-	6314 C3	70A	-	7	9	N-end
K11R 315 S2,M2	6316 C3	80A	-	-	170	6316 C3	80A	-	6	8	N-end
K11R 315 S4,6,8,M4,6,8 VL	NU 317 E	80A	-	-	-	6316 C3	80A	-	7	9	N-end
K11R 315 MX2	NU317 E	-	RB85	-	-	6316 C3	80A	-	15	16	N-end
K11R 315 MX4,6,8 VL	NU 2220 E	-	RB100	-	-	6316 C3	80A	-	15	16	N-end
K11R 315 MY2	NU317 E	-	RB85	-	-	6317 C3 ¹⁾	85A	-	20	19	N-end
K11R 315 MY4,6,8 VL	NU 320 E	-	RB100	-	-	6317 C3 ¹⁾	85A	-	20	19	N-end
K11R 315 L2, LX2	NU317 E	-	RB85	-	-	6317 C3 ¹⁾	85A	-	20	19	N-end
K11R 315 L4,6,8, LX4,6,8 VL	NU 320 E	-	RB100	-	-	6317 C3 ¹⁾	85A	-	20	19	N-end

1) for vertical types of mounting Q317 C3; figures 18, 21
From size K11R 315 MX standard version with relubrication device

Type	D-end				N-end			Figure		Fixed bearing	
	Antifriction bearing	V-ring	γ-ring	Wave washer	Disc spring	Antifriction bearing	V-ring	Wave washer	DS		NS
									DS		NS
K10R 112 M2,4,6,8	6207 2RS C3	-	-	72	-	6207 2RS C3	-	-	3	5	none
K10R 112 MX6,8	6207 2RS C3	-	-	72	-	6207 2RS C3	-	-	3	5	none
K10R 132 S,M	6308 2RS C3	-	-	90	-	6308 2RS C3	-	-	3	5	none
K10R 160 S,M	6310 2RS C3	-	-	110	-	6309 2RS C3	-	-	3	5	none
K10R 180 S2,M2	6310 C3	50A	-	110	-	6310 C3	50A	-	6	8	N-end
K10R 180 S4,6,8 ; M4,6,8	6312 C3	60A	-	-	130	6310 C3	50A	-	6	8	N-end
K10R 200 M2,L2	6312 C3	60A	-	-	130	6312 C3	60A	-	6	8	N-end
K10R 200 M4,6,8 ; L4,6,8	6313 C3	65A	-	-	140	6312 C3	60A	-	6	8	N-end
K10R 225 M2	6313 C3	65A	-	-	140	6313 C3	65A	-	6	8	N-end
K10R 225 M4,6,8	6314 C3	70A	-	-	150	6313 C3	65A	-	6	8	N-end
K10R 250 S2,M2	6314 C3	70A	-	-	150	6314 C3	70A	-	6	8	N-end
K10R 250 S4,6,8 ; M4,6,8	NU316 E	80A	-	-	-	6314 C3	70A	-	7	9	N-end
K10R 280 S2,M2	6316 C3	80A	-	-	170	6316 C3	80A	-	6	8	N-end
K10R 280 S4,6,8 ; M4,6,8	NU317 E	80A	-	-	-	6316 C3	80A	-	7	9	N-end
K10R 315 S2	NU317 E	-	RB85	-	-	6316 C3	80A	-	15	16	N-end
K10R 315 S4,6,8	NU220 E	-	RB100	-	-	6316 C3	80A	-	15	16	N-end
K10R 315 M2 ; L2	NU317 E	-	RB85	-	-	6317 C3 ¹⁾	85A	-	20	19	N-end
K10R 315 M4,6,8 ; L4,6,8	NU320 E	-	RB100	-	-	6317 C3 ¹⁾	85A	-	20	19	N-end

1) for vertical types of mounting Q317 C3; figures 18, 21
From size K10R 315 standard version with relubrication device

Bearing arrangement

Special version "heavy bearing arrangement" VL, K2.R

Type	D-end		N-end		Figure		Fixed bearing	
	Antifriction bearing	Antifriction bearing		DS	NS			
		V-ring	γ-ring			V-ring		
K21R 132 S, SX2,M6,8 VL	NU 208 E	40A	-	6207 RS C3	-	4	10	N-end
K21R 132 M4,MX6 VL	NU 308 E	40A	-	6308 RS C3	-	4	10	N-end
K21R 160 M, MX8 VL	NU 309 E	45A	-	6308 RS C3	-	4	10	N-end
K21R 160 MX2, L VL	NU 310 E	50A	-	6309 RS C3	-	7	10	N-end
K21R 180 M4, L6, 8 VL	NU 310 E	50A	-	6309 RS C3	-	7	10	N-end
K21R 180 M2, L4 VL	NU 310 E	50A	-	6310 C3	50A	7	9	N-end
K21R 200 L, LX6 VL	NU 312 E	60A	-	6310 C3	50A	7	9	N-end
K21R 200 LX2 VL	NU 312 E	60A	-	6312 C3	60A	7	9	N-end
K21R 225 M2 VL	NU 312 E	-	RB60	6312 C3	60A	7	9	N-end
K21R 225 S4, 8, M4,6,8 VL	NU 313 E	-	RB65	6312 C3	60A	7	9	N-end
K21R 250 M2 VL	NU 313 E	-	RB65	6313 C3	65A	7	9	N-end
K21R 250 M4,6,8 VL	NU 314 E	-	RB70	6313 C3	65A	7	9	N-end
K21R 280 S2,M2 VL	NU 314 E	-	RB70	6314 C3	70A	7	9	N-end
K21R 280 S4,6,8,M4,6,8 VL	NU 316 E	-	RB80	6314 C3	70A	7	9	N-end
K21R 315 S2,M2 VL	NU 316 E	-	RB80	6316 C3	80A	7	9	N-end
K21R 315 S4,6,8,M4,6,8 VL	NU 317 E	-	RB85	6316 C3	80A	7	9	N-end
K21R 315 MX2 VL	NU 317 E	-	RB85	6316 C3	80A	15	16	N-end
K21R 315 MX4,6,8 VL	NU 2220 E	-	RB100	6316 C3	80A	15	16	N-end
K21R 315 MY2 VL	NU 317 E	-	RB85	6317 C3 ¹⁾	85A	20	19	N-end
K21R 315 MY4,6,8 VL	NU 320 E	-	RB100	6317 C3 ¹⁾	85A	20	19	N-end
K21R 315 L2, LX2 VL	NU 317 E	-	RB85	6317 C3 ¹⁾	85A	20	19	N-end
K21R 315 L4,6,8, LX4,6,8 VL	NU 320 E	-	RB100	6317 C3 ¹⁾	85A	20	19	N-end
K22R 355 M/MX/L 2pole VL	NU 317 E	-	RB85	6317 C3 ¹⁾	85A	20	19	N-end
K22R 355 M/MX/L 4,6,8pole VL	NU 324 E	120S	-	6317 C3 ¹⁾	85A	20	19	N-end

1) for vertical types of mounting Q317 C3; figures 20, 21
From size K21R 315 MX standard version with relubrication device

Type	D-end		N-end		Figure		Fixed bearing	
	Antifriction bearing	Antifriction bearing		DS	NS			
		V-ring	γ-ring			V-ring		
K20R 112 M2,4,6,8 VL	NU 207 E	40A	-	6207 RS C3	-	4	10	N-end
K20R 112 MX6,8 VL	NU 207 E	40A	-	6207 RS C3	-	4	10	N-end
K20R 132 S,M VL	NU 308 E	40A	-	6308 RS C3	-	4	10	N-end
K20R 160 S,M VL	NU 310 E	50A	-	6309 RS C3	-	7	10	N-end
K20R 180 S2,M2 VL	NU 310 E	50A	-	6310 C3	50A	7	9	N-end
K20R 180 S4,6,8; M4,6,8 VL	NU 312 E	60A	-	6310 C3	50A	7	9	N-end
K20R 200 M2,L2 VL	NU 312 E	-	RB60	6312 C3	60A	7	9	N-end
K20R 200 M4,6,8; L4,6,8 VL	NU 313 E	-	RB65	6312 C3	60A	7	9	N-end
K20R 225 M2 VL	NU 313 E	-	RB65	6313 C3	65A	7	9	N-end
K20R 225 M4,6,8 VL	NU 314 E	-	RB70	6313 C3	65A	7	9	N-end
K20R 250 S2,M2 VL	NU 314 E	-	RB70	6314 C3	70A	7	9	N-end
K20R 250 S4,6,8; M4,6,8 VL	NU 316 E	-	RB80	6314 C3	70A	7	9	N-end
K20R 280 S2,M2 VL	NU 316 E	-	RB80	6316 C3	80A	7	9	N-end
K20R 280 S4,6,8; M4,6,8 VL	NU 317 E	-	RB85	6316 C3	80A	7	9	N-end
K20R 315 S2 VL	NU 317 E	-	RB85	6316 C3	80A	15	16	N-end
K20R 315 S4,6,8 VL	NU 2220 E	-	RB100	6316 C3	80A	15	16	N-end
K20R 315 M2; L2 VL	NU 317 E	-	RB85	6317 C3 ¹⁾	85A	20	19	N-end
K20R 315 M4,6,8; L4,6,8 VL	NU 320 E	-	RB100	6317 C3 ¹⁾	85A	20	19	N-end

1) for vertical types of mounting Q317 C3; figures 20, 21
From size K20R 315 standard version with relubrication device



Bearing arrangement

Special version "heavy bearing arrangement" VL, K1.R

Type			D-end		N-end		Figure		Fixed bearing	
			Antifriction bearing	V-ring	γ-ring	Antifriction bearing	V-ring	DS		NS
K11R 132	S, SX2,M6,8 VL	NU 208 E	40A	-	6207 RS C3	-	4	10	N-end	
K11R 132	M4,MX6 VL	NU 308 E	40A	-	6308 RS C3	-	4	10	N-end	
K11R 160	M, MX8 VL	NU 309 E	45A	-	6308 RS C3	-	4	10	N-end	
K11R 160	MX2, L VL	NU 310 E	50A	-	6309 RS C3	-	7	10	N-end	
K11R 180	M4, L6, 8 VL	NU 310 E	50A	-	6309 RS C3	-	7	10	N-end	
K11R 180	M2, L4 VL	NU 310 E	50A	-	6310 C3	50A	7	9	N-end	
K11R 200	L, LX6 VL	NU 312 E	60A	-	6310 C3	50A	7	9	N-end	
K11R 200	LX2 VL	NU 312 E	60A	-	6312 C3	60A	7	9	N-end	
K11R 225	M2 VL	NU 312 E	60A	-	6312 C3	60A	7	9	N-end	
K11R 225	S4, 8, M4,6,8 VL	NU 313 E	65A	-	6312 C3	60A	7	9	N-end	
K11R 250	M2 VL	NU 313 E	65A	-	6313 C3	65A	7	9	N-end	
K11R 250	M4,6,8 VL	NU 314 E	70A	-	6313 C3	65A	7	9	N-end	
K11R 280	S2,M2 VL	NU 314 E	70A	-	6314 C3	70A	7	9	N-end	
K11R 280	S4,6,8,M4,6,8 VL		basic version is heavy bearing arrangement							
K11R 315	S2,M2 VL	NU 316 E	80A	-	6316 C3	80A	7	9	N-end	
K11R 315	S4,6,8,M4,6,8 VL		basic version is heavy bearing arrangement							
K11R 315	MX2 VL		basic version is heavy bearing arrangement							
K11R 315	MX4,6,8 VL		basic version is heavy bearing arrangement							
K11R 315	MY2 VL		basic version is heavy bearing arrangement							
K11R 315	MY4,6,8 VL		basic version is heavy bearing arrangement							
K11R 315	L2, LX2 VL		basic version is heavy bearing arrangement							
K11R 315	L4,6,8, LX4,6,8 VL		basic version is heavy bearing arrangement							

1) for vertical types of mounting Q317 C3; figures 20, 21
From size K11R 315 MX standard version with relubrication device

Type			D-end		N-end		Figure		Fixed bearing	
			Antifriction bearing	V-ring	γ-ring	Antifriction bearing	V-ring	DS		NS
K10R 112	M2,4,6,8	NU 207 E	40A	-	6207 RS C3	-	4	10	N-end	
K10R 112	MX6,8	NU 207 E	40A	-	6207 RS C3	-	4	10	N-end	
K10R 132	S,M	NU 308 E	40A	-	6308 RS C3	-	4	10	N-end	
K10R 160	S,M	NU 310 E	50A	-	6309 RS C3	-	7	10	N-end	
K10R 180	S2,M2	NU 310 E	50A	-	6310 C3	50A	7	9	N-end	
K10R 180	S4,6,8; M4,6,8	NU 312 E	60A	-	6310 C3	50A	7	9	N-end	
K10R 200	M2,L2	NU 312 E	65A	-	6312 C3	60A	7	9	N-end	
K10R 200	M4,6,8; L4,6,8	NU 313 E	65A	-	6312 C3	60A	7	9	N-end	
K10R 225	M2	NU 313 E	65A	-	6313 C3	65A	7	9	N-end	
K10R 225	M4,6,8	NU 314 E	70A	-	6313 C3	65A	7	9	N-end	
K10R 250	S2,M2	NU 314 E	70A	-	6314 C3	70A	7	9	N-end	
K10R 250	S4,6,8; M4,6,8		basic version is heavy bearing arrangement							
K10R 280	S2,M2	NU 316 E	80A	-	6316 C3	80A	7	9	N-end	
K10R 280	S4,6,8; M4,6,8		basic version is heavy bearing arrangement							
K10R 315	S2		basic version is heavy bearing arrangement							
K10R 315	S4,6,8		basic version is heavy bearing arrangement							
K10R 315	M2; L2		basic version is heavy bearing arrangement							
K10R 315	M4,6,8; L4,6,8		basic version is heavy bearing arrangement							

1) for vertical types of mounting Q317 C3; figures 20, 21
From size K10R 315 standard version with relubrication device

Bearing arrangement

Relubrication device, K2.R

Type	D-end								N-end		Figure		Fixed bearing
	Antifriction bearing					Antifriction bearing			DE	NDE			
		V-ring	γ-ring	Wave washer	Disc spring		V-ring						
K21R 132 S, SX2,M6,8													
K21R 132 M4,MX6													
K21R 160 M,MX8													
K21R 160 MX2, L 1)	6310 C3	-	RB50	110	-	6309 C3	45A	13	14		N-end		
K21R 180 M4, L6, 8 1)	6310 C3	-	RB50	110	-	6309 C3	45A	13	14		N-end		
K21R 180 M2, L4 1)	6310 C3	-	RB50	110	-	6310 C3	50A	13	14		N-end		
K21R 200 L, LX6 1)	6312 C3	-	RB60	-	130	6310 C3	50A	13	14		N-end		
K21R 200 LX2 1)	6312 C3	-	RB60	-	130	6312 C3	60A	13	14		N-end		
K21R 225 M2	6312 C3	-	RB60	-	130	6312 C3	60A	13	14		N-end		
K21R 225 S4, 8, M4,6,8,	6313 C3	-	RB65	-	140	6312 C3	60A	13	14		N-end		
K21R 250 M2	6313 C3	-	RB65	-	140	6313 C3	65A	13	14		N-end		
K21R 250 M4,6,8	6314 C3	-	RB70	-	150	6313 C3	65A	13	14		N-end		
K21R 280 S2,M2	6314 C3	-	RB70	-	150	6314 C3	70A	13	14		N-end		
K21R 280 S4,6,8,M4,6,8	6316 C3	-	RB80	-	170	6314 C3	70A	13	14		N-end		
K21R 315 S2,M2	6316 C3	-	RB80	-	170	6316 C3	80A	13	14		N-end		
K21R 315 S4,6,8,M4,6,8	6317 C3	-	RB85	-	180	6316 C3	80A	13	14		N-end		
K21R 315 MX2			see basic version										
K21R 315 MX4,6,8			see basic version										
K21R 315 MY2			see basic version										
K21R 315 MY4,6,8			see basic version										
K21R 315 L2, LX2			see basic version										
K21R 315 L4,6,8, LX4,6,8			see basic version										
K22R 355 M/MX/L 2polig			see basic version										
K22R 355 M/MX/L 4,6,8polig			see basic version										

1) degree of protection IP 54

Type	D-end								N-end		Figure		Fixed bearing
	Antifriction bearing					Antifriction bearing			DE	NDE			
		V-ring	γ-ring	Wave washer	Disc spring		V-ring						
K20R 112 M2,4,6,8 1)	6207 C3	-	RB35	72	-	6207 C3	35A	13	14		N-end		
K20R 112 MX6,8 1)	6207 C3	-	RB35	72	-	6207 C3	35A	13	14		N-end		
K20R 132 S,M 1)	6308 C3	-	RB40	90	-	6308 C3	40A	13	14		N-end		
K20R 160 S,M 1)	6310 C3	-	RB50	110	-	6309 C3	45A	13	14		N-end		
K20R 180 S2,M2 1)	6310 C3	-	RB50	110	-	6310 C3	50A	13	14		N-end		
K20R 180 S4,6,8 ; M4,6,8 1)	6312 C3	-	RB60	-	130	6310 C3	50A	13	14		N-end		
K20R 200 M2,L2	6312 C3	-	RB60	-	130	6312 C3	60A	13	14		N-end		
K20R 200 M4,6,8 ; L4,6,8	6313 C3	-	RB65	-	140	6312 C3	60A	13	14		N-end		
K20R 225 M2	6313 C3	-	RB65	-	140	6313 C3	65A	13	14		N-end		
K20R 225 M4,6,8	6314 C3	-	RB70	-	150	6313 C3	65A	13	14		N-end		
K20R 250 S2,M2	6314 C3	-	RB70	-	150	6314 C3	70A	13	14		N-end		
K20R 250 S4,6,8 ; M4,6,8	6316 C3	-	RB80	-	170	6314 C3	70A	13	14		N-end		
K20R 280 S2,M2	6316 C3	-	RB80	-	170	6316 C3	80A	13	14		N-end		
K20R 280 S4,6,8 ; M4,6,8	6317 C3	-	RB85	-	180	6316 C3	80A	13	14		N-end		
K20R 315 S2			see basic version										
K20R 315 S4,6,8			see basic version										
K20R 315 M2 ; L2			see basic version										
K20R 315 M4,6,8 ; L4,6,8			see basic version										

1) degree of protection IP 54

Bearing arrangement

Relubrication device, K1.R

Type	D-end								N-end		Figure		Fixed bearing
	Antifriction bearing					Antifriction bearing			DE	NDE			
		V-ring	γ-ring	Wave washer	Disc spring		V-ring						
K11R 132	S, SX2,M6,8												
K11R 132	M4,MX6												
K11R 160	M,MX8												
K11R 160	MX2, L	1)	6310 C3	-	RB50	110	-	6309 C3	45A	13	14	N-end	
K11R 180	M4, L6, 8	1)	6310 C3	-	RB50	110	-	6309 C3	45A	13	14	N-end	
K11R 180	M2, L4	1)	6310 C3	-	RB50	110	-	6310 C3	50A	13	14	N-end	
K11R 200	L, LX6	1)	6312 C3	-	RB60	-	130	6310 C3	50A	13	14	N-end	
K11R 200	LX2	1)	6312 C3	-	RB60	-	130	6312 C3	60A	13	14	N-end	
K11R 225	M2		6312 C3	-	RB60	-	130	6312 C3	60A	13	14	N-end	
K11R 225	S4, 8, M4,6,8,		6313 C3	-	RB65	-	140	6312 C3	60A	13	14	N-end	
K11R 250	M2		6313 C3	-	RB65	-	140	6313 C3	65A	13	14	N-end	
K11R 250	M4,6,8		6314 C3	-	RB70	-	150	6313 C3	65A	13	14	N-end	
K11R 280	S2,M2		6314 C3	-	RB70	-	150	6314 C3	70A	13	14	N-end	
K11R 280	S4,6,8,M4,6,8VL		NU316 E	-	RB80	-	-	6314 C3	70A	15	16	N-end	
K11R 315	S2,M2		6316 C3	-	RB80	-	170	6316 C3	80A	13	14	N-end	
K11R 315	S4,6,8,M4,6,8 VL		NU 317 E	-	RB85	-	-	6316 C3	80A	15	16	N-end	
K11R 315	MX2												
K11R 315	MX4,6,8 VL												
K11R 315	MY2												
K11R 315	MY4,6,8 VL												
K11R 315	L2, LX2												
K11R 315	L4,6,8, LX4,6,8 VL												

1) degree of protection IP 54

Type	D-end								N-end		Figure		Fixed bearing
	Antifriction bearing					Antifriction bearing			DE	NDE			
		V-ring	γ-ring	Wave washer	Disc spring		V-ring						
K10R 112	M2,4,6,8	1)	6207 C3	-	RB35	72	-	6207 C3	35A	13	14	N-end	
K10R 112	MX6,8	1)	6207 C3	-	RB35	72	-	6207 C3	35A	13	14	N-end	
K10R 132	S,M	1)	6308 C3	-	RB40	90	-	6308 C3	40A	13	14	N-end	
K10R 160	S,M	1)	6310 C3	-	RB50	110	-	6309 C3	45A	13	14	N-end	
K10R 180	S2,M2	1)	6310 C3	-	RB50	110	-	6310 C3	50A	13	14	N-end	
K10R 180	S4,6,8 ; M4,6,8	1)	6312 C3	-	RB60	-	130	6310 C3	50A	13	14	N-end	
K10R 200	M2,L2		6312 C3	-	RB60	-	130	6312 C3	60A	13	14	N-end	
K10R 200	M4,6,8 ; L4,6,8		6313 C3	-	RB65	-	140	6312 C3	60A	13	14	N-end	
K10R 225	M2		6313 C3	-	RB65	-	140	6313 C3	65A	13	14	N-end	
K10R 225	M4,6,8		6314 C3	-	RB70	-	150	6313 C3	65A	13	14	N-end	
K10R 250	S2,M2		6314 C3	-	RB70	-	150	6314 C3	70A	13	14	N-end	
K10R 250	S4,6,8 ; M4,6,8		NU316 E	-	RB680	-	-	6314 C3	70A	15	16	N-end	
K10R 280	S2,M2		6316 C3	-	RB680	-	170	6316 C3	80A	13	14	N-end	
K10R 280	S4,6,8 ; M4,6,8		NU317 E	-	RB685	-	-	6316 C3	80A	15	16	N-end	
K20R 315	S2												
K20R 315	S4,6,8												
K20R 315	M2 ; L2												
K20R 315	M4,6,8 ; L4,6,8												

1) degree of protection IP 54

Bearing arrangement

Admissible axial and radial loads, K21R
 basic version, horizontal shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K21R 56/63	0.05	0.32	-	0.09	0.39	-	0.16	0.39	-	-	-	-
K21R 71	0.07	0.34	-	0.12	0.43	-	0.19	0.43	-	0.25	0.43	-
K21R 80	0.13	0.58	-	0.24	0.73	-	0.36	0.73	-	0.46	0.73	-
K21R 90	0.13	0.60	-	0.20	0.77	-	0.36	0.77	-	0.44	0.77	-
K21R 100	0.15	0.58	-	0.24	0.86	-	0.34	0.86	-	0.44	0.86	-
K21R 100/112	0.17	0.77	-	0.31	0.98	-	0.42	0.98	-	0.52	0.98	-
K21R 132 S	0.75	1.15	1.03	1.05	1.45	1.29	1.4	1.65	1.47	1.4	1.85	1.65
K21R 132 SX	0.75	1.15	1.03	-	-	-	-	-	-	-	-	-
K21R 132 M	-	-	-	1.6	2.05	1.8	1.2	1.65	1.47	1.4	1.85	1.65
K21R 132 MX	-	-	-	-	-	-	1.9	2.3	2.05	-	-	-
K21R 160 M	1.1	2.0	1.8	1.5	2.5	2.2	1.9	2.9	2.6	2.1	3.25	2.8
K21R 160 MX	1.5	2.3	2.05	-	-	-	-	-	-	2.1	3.25	2.6
K21R 160 L	1.5	2.3	2.05	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.4
K21R 180 M	1.5	2.4	2.15	1.9	3.0	2.7	-	-	-	-	-	-
K21R 180 L	-	-	-	2.5	3.1	2.75	2.3	3.4	3.0	2.5	3.8	3.4
K21R 200 L	1.8	3.2	2.8	2.4	4.0	3.5	2.8	4.6	4.1	3.0	5.2	4.6
K21R 200 LX	2.5	3.2	2.8	-	-	-	2.8	4.6	4.1	-	-	-
K21R 225 S	-	-	-	3.0	4.4	3.9	-	-	-	4.2	5.6	5.0
K21R 225 M	2.5	3.2	2.8	3	4.4	3.9	3.5	5.1	4.5	4.2	5.6	5.0
K21R 250 M	2.5	3.4	3.0	3.5	4.9	4.3	3.8	5.6	5.0	4.5	6.3	5.6
K21R 280 S	3.5	5.05	4.6	4.5	7.5	6.8	5.0	8.7	8.0	6.0	9.6	8.9
K21R 280 M	4.0	5.1	4.6	4.5	7.5	6.9	5.0	8.7	8.05	6.0	9.7	9.0
K21R 315 S	4.5	5.9	5.4	6.0	7.3	6.7	7.0	8.5	7.6	7.5	9.5	8.7
K21R 315 M	4.5	5.9	5.4	6.0	7.3	6.8	7.0	8.3	7.8	7.5	9.4	8.8
K21R 315 MX	4.5	6.0	5.6	5.0	10.0	9.4	6.0	11.3	10.6	6.0	12.8	12.0
K21R 315 MY	6.0	9.6	9.0	6.0	9.6	9.0	7.0	11.1	10.7	7.5	12.5	12.3

Admissible axial and radial loads, K21R
 basic version, heavy bearing arrangement, horizontal shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K21R 132 S	0.75	2.3	2.06	1.05	2.9	2.4	1.4	3.3	2.9	1.4	3.7	3.3
K21R 132 SX	0.75	2.3	2.06	-	-	-	-	-	-	-	-	-
K21R 132 M	-	-	-	1.6	4.1	3.6	1.2	3.3	2.9	1.4	3.7	3.3
K21R 132 MX	-	-	-	-	-	-	1.9	4.6	4.1	-	-	-
K21R 160 M	1.1	3.9	3.5	1.5	4.9	4.3	1.9	5.7	5.1	2.1	6.3	5.5
K21R 160 MX	1.5	4.5	4.0	-	-	-	-	-	-	2.1	6.3	5.1
K21R 160 L	1.5	4.5	4.0	1.9	5.9	5.3	2.3	6.6	5.9	2.5	7.4	6.6
K21R 180 M	1.5	4.7	4.2	1.9	5.9	5.3	-	-	-	-	-	-
K21R 180 L	-	-	-	2.5	6.0	5.4	2.3	6.6	5.9	2.5	7.4	6.6
K21R 200 L	1.8	6.1	5.3	2.4	7.6	6.7	2.8	8.7	7.8	3.0	9.9	8.8
K21R 200 LX	2.5	6.1	5.3	-	-	-	2.8	8.7	7.8	-	-	-
K21R 225 S	-	-	-	3.0	8.4	7.4	-	-	-	4.2	10.6	9.5
K21R 225 M	2.5	6.1	5.3	3	8.4	7.4	3.5	9.7	8.6	4.2	10.6	9.5
K21R 250 M	2.5	6.3	5.6	3.5	9.1	8.0	3.8	10.4	9.3	4.5	11.7	10.4
K21R 280 S	3.0	7.2	6.5	3.1	19.5	15.5	3.5	21.8	16.3	3.8	23.5	15.3
K21R 280 M	2.6	6.6	6.1	3.1	19.5	15.5	3.5	22.3	14.5	4.3	23.0	14.9
K21R 315 S	3.5	8.1	7.4	3.8	18.8	16.6	4.4	21.2	17.7	5.0	23.4	17.2
K21R 315 M	2.8	7.6	6.8	3.9	18.0	15.9	4.6	21.5	16.7	5.2	23.4	17.2
K21R 315 MX	3.4	18.3	16.6	3.7	26.0	21.7	4.1	28.5	18.4	4.5	31.5	20.3
K21R 315 MY	3.6	18.3	14.9	4.3	25.5	16.5	4.7	27.8	19.2	5.6	27.5	19.0

For sizes 315L, LX and 355 data on request

Bearing arrangement

Admissible axial and radial loads (in kN), K21R
basic version, vertical shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K21R 56/63	0.05	0.32	-	0.09	0.39	-	0.16	0.39	-	-	-	-
K21R 71	0.07	0.34	-	0.12	0.43	-	0.19	0.43	-	0.25	0.43	-
K21R 80	0.13	0.58	-	0.24	0.73	-	0.36	0.73	-	0.46	0.73	-
K21R 90	0.13	0.60	-	0.20	0.77	-	0.36	0.77	-	0.44	0.77	-
K21R 100	0.15	0.58	-	0.24	0.86	-	0.34	0.86	-	0.44	0.86	-
K21R 100/112	0.17	0.77	-	0.31	0.98	-	0.42	0.98	-	0.52	0.98	-
K21R 132 S	0.7	1.2	1.06	0.9	1.5	1.33	1.1	1.75	1.55	1.25	1.9	1.68
K21R 132 SX	0.7	1.2	1.06	-	-	-	-	-	-	-	-	-
K21R 132 M	-	-	-	1.4	2.1	1.9	1.05	1.7	1.5	1.25	1.9	1.68
K21R 132 MX	-	-	-	-	-	-	1.65	2.4	2.1	-	-	-
K21R 160 M	0.95	2.1	1.9	1.3	2.6	2.3	1.5	3.0	2.7	1.75	3.3	2.8
K21R 160 MX	1.2	2.4	2.1	-	-	-	-	-	-	1.75	3.3	2.7
K21R 160 L	1.1	2.5	2.2	1.5	3.1	2.7	1.8	3.6	3.2	2.1	3.9	3.5
K21R 180 M	1.4	2.5	2.2	1.5	3.1	2.7	-	-	-	-	-	-
K21R 180 L	-	-	-	1.9	3.2	2.8	1.8	3.6	3.2	2.1	3.9	3.5
K21R 200 L	1.3	3.4	3.0	1.8	4.2	3.7	2.0	4.9	4.3	2.4	5.4	4.8
K21R 200 LX	1.9	3.4	3.0	-	-	-	2.0	4.8	4.2	-	-	-
K21R 225 S	-	-	-	2.3	4.6	4.1	-	-	-	3.2	6.0	5.3
K21R 225 M	1.7	3.4	3.0	2.2	4.8	4.2	2.7	5.4	4.8	3.3	5.9	5.2
K21R 250 M	1.8	3.8	3.4	2.4	5.3	4.7	3.0	6.1	5.4	3.3	6.7	5.9
K21R 280 S	2.0	5.5	5.0	3.0	8.1	7.4	3.8	9.3	8.6	4.0	10.3	9.5
K21R 280 M	2.0	5.6	5.1	2.3	8.2	7.6	3.0	9.5	8.9	3.0	10.6	9.9
K21R 315 S	2.5	6.5	6.0	3.0	8.3	7.5	3.0	9.5	8.7	4.0	10.5	9.6
K21R 315 M	2.5	6.6	6.1	3.0	8.4	7.8	3.0	9.7	9.1	4.0	10.8	10.2
K21R 315 MX	2.0	7.0	6.5	1.5	11.4	7.3	2.3	12.9	12.1	3.0	14.3	13.5
K21R 315 MY	1.5	7.0	6.6	1.5	11.5	10.9	1.5	13.5	13.0	2.0	15.1	14.8

Admissible axial and radial loads (in kN), K21R
heavy bearing arrangement, vertical shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K21R 132 S	0.7	2.4	1.12	0.9	3.0	2.66	2.2	3.5	3.1	1.25	3.8	3.36
K21R 132 SX	0.7	2.4	1.12	-	-	-	-	-	-	-	-	-
K21R 132 M	-	-	-	1.4	4.2	3.8	1.05	3.4	3.0	1.25	3.8	3.36
K21R 132 MX	-	-	-	-	-	-	1.65	4.8	4.2	-	-	-
K21R 160 M	0.95	4.2	3.8	1.3	5.2	4.6	3.0	6.0	5.4	1.75	6.6	5.6
K21R 160 MX	1.2	4.8	4.2	-	-	-	-	-	-	1.75	6.6	5.4
K21R 160 L	1.1	4.9	4.3	1.5	6.0	5.3	1.8	7.0	6.2	2.1	7.6	6.8
K21R 180 M	1.4	4.9	4.3	1.5	6.0	5.3	-	-	-	-	-	-
K21R 180 L	-	-	-	1.9	6.2	5.5	1.8	7.0	6.2	2.1	7.6	6.8
K21R 200 L	1.3	6.6	5.9	1.8	8.2	7.2	2.0	9.6	8.4	2.4	10.5	9.4
K21R 200 LX	1.9	6.6	5.7	-	-	-	2.0	9.1	8.0	-	-	-
K21R 225 S	-	-	-	2.3	8.7	7.8	-	-	-	3.2	11.4	10.1
K21R 225 M	1.7	6.6	5.7	2.2	9.1	8.0	2.7	10.3	9.1	3.3	11.2	9.9
K21R 250 M	1.8	7.0	6.3	2.4	9.8	8.7	3.0	12.3	10.0	3.3	12.4	10.0
K21R 280 S	2.0	7.8	6.8	1.4	20.1	15.8	1.9	21.6	16.1	2.3	23.6	15.3
K21R 280 M	1.1	7.8	6.8	1.3	20.1	15.8	1.8	21.0	13.6	2.3	20.8	13.5
K21R 315 S	1.9	8.8	7.7	1.3	19.8	17.5	1.9	22.4	18.7	2.4	24.0	17.5
K21R 315 M	1.7	8.8	7.7	1.2	20.0	17.7	1.5	22.6	17.7	2.1	23.8	17.4
K21R 315 MX	0.9	19.0	16.8	0.8	27.0	23.9	0.8	28.6	18.5	1.2	28.6	18.5
K21R 315 MY	0.5	19.5	17.3	0.5	19.5	17.3	1.5	24.0	16.6	2.0	24.0	16.6

For sizes 315L, LX and 355 data on request

Bearing arrangement

Admissible axial and radial loads, K2OR
basic version, horizontal shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K2OR 56	0.05	0.32		0.09	0.39		0.16	0.39		-	-	
K2OR 63	0.07	0.34		0.12	0.43		0.19	0.43		0.25	0.43	
K2OR 71	0.13	0.58		0.24	0.73		0.36	0.73		0.46	0.73	
K2OR 80	0.13	0.60		0.20	0.77		0.36	0.77		0.44	0.77	
K2OR 90	0.15	0.58		0.24	0.86		0.34	0.86		0.44	0.86	
K2OR 100	0.17	0.77		0.31	0.98		0.42	0.98		0.52	0.98	
K2OR 112 M	0.75	1.1	1.0	1.05	1.35	1.19	1.2	1.55	1.4	1.4	1.7	1.5
K2OR 112 MX	-	-	-	-	-	-	1.2	1.55	1.4	1.4	1.7	1.5
K2OR 132 S	-	-	-	0.8	1.95	1.7	1.0	2.35	2.1	1.1	2.6	2.3
K2OR 132 M	0.7	1.6	1.4	0.8	1.95	1.7	1.0	2.35	2.1	1.1	2.6	2.3
K2OR 160 S	1.7	2.3	2.0	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.7
K2OR 160 M	1.5	2.3	2.0	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.7
K2OR 180 S	1.7	2.3	2.0	2.4	4.1	3.6	2.8	4.6	4.1	3.0	5.1	4.5
K2OR 180 M	1.7	2.3	2.0	2.4	4.1	3.6	2.8	4.6	4.1	3.0	5.1	4.5
K2OR 200 M	2.4	3.2	2.8	3.0	4.4	3.9	3.5	5.0	4.4	4.3	5.6	5.0
K2OR 200 L	2.4	3.2	2.8	3.0	4.4	3.9	-	-	-	-	-	-
K2OR 225 M	1.9	2.5	2.2	3.5	5.1	4.5	3.8	5.8	5.1	4.5	6.4	5.7
K2OR 250 S	3.5	5.05	4.6	4.5	7.5	6.8	5.0	8.7	8.0	6.0	9.6	8.9
K2OR 250 M	4.0	5.1	4.6	4.5	7.5	6.9	5.0	8.7	8.05	6.0	9.7	9.0
K2OR 280 S	4.5	5.9	5.4	6.0	7.3	6.7	7.0	8.5	7.6	7.5	9.5	8.7
K2OR 280 M	4.5	5.9	5.4	6.0	7.3	6.8	7.0	8.3	7.8	7.5	9.4	8.8
K2OR 315 S	4.5	6.0	5.6	5.0	10.0	9.4	6.0	11.3	10.6	6.0	12.8	12.0
K2OR 315 M	6.0	9.6	9.0	6.0	9.6	9.0	7.0	11.1	10.7	7.5	12.5	12.3

Admissible axial and radial loads, K2OR
heavy bearing arrangement, horizontal shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K2OR 112 M	0.75	2.2	2.4	1.05	2.7	2.38	1.2	3.1	2.8	1.4	3.4	3.0
K2OR 112 MX	-	-	-	-	-	-	1.2	3.1	2.8	1.4	3.4	3.0
K2OR 132 S	-	-	-	0.8	3.9	3.4	1.0	4.7	4.2	1.1	5.2	4.6
K2OR 132 M	0.7	3.2	2.8	0.8	3.9	3.4	1.0	4.7	4.2	1.1	5.2	4.6
K2OR 160 S	1.7	2.3	2.6	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.7
K2OR 160 M	1.5	2.3	2.6	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.7
K2OR 180 S	1.7	4.5	5.1	2.4	8.0	7.0	2.8	9.0	8.0	3.0	9.9	8.8
K2OR 180 M	1.7	4.5	5.1	2.4	8.0	7.0	2.8	9.0	8.0	3.0	9.9	8.8
K2OR 200 M	2.4	6.1	6.8	3.0	8.4	7.4	3.5	9.5	8.4	4.3	10.6	9.5
K2OR 200 L	2.4	6.1	6.8	3.0	8.4	7.4	-	-	-	-	-	-
K2OR 225 M	1.9	4.6	5.2	3.5	9.4	8.3	3.8	10.7	9.4	4.5	11.8	10.5
K2OR 250 S	2.9	7.0	8.0	3.1	19.5	15.4	3.5	21.8	16.3	3.8	23.8	15.6
K2OR 250 M	2.6	6.5	7.4	3.1	19.4	15.3	3.5	22.0	14.2	4.3	22.8	14.9
K2OR 280 S	3.5	7.9	7.2	3.7	18.8	16.6	4.5	21.3	16.6	5.0	23.5	17.3
K2OR 280 M	2.9	7.7	8.8	3.8	19.0	16.8	4.6	21.5	15.8	5.2	23.7	17.4
K2OR 315 S	3.4	18.3	16.2	3.6	26.0	22.4	4.1	28.5	19.7	4.5	31.5	20.3
K2OR 315 M	3.6	18.3	16.2	4.4	25.5	16.5	4.7	27.5	17.7	5.6	27.5	19.0

For size 315 L data on request

Bearing arrangement

Admissible axial and radial loads, K20R
basic version, vertical shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K20R 56	0.05	0.32		0.09	0.39		0.16	0.39		-	-	
K20R 63	0.07	0.34		0.12	0.43		0.19	0.43		0.25	0.43	
K20R 71	0.13	0.58		0.24	0.73		0.36	0.73		0.46	0.73	
K20R 80	0.13	0.60		0.20	0.77		0.36	0.77		0.44	0.77	
K20R 90	0.15	0.58		0.24	0.86		0.34	0.86		0.44	0.86	
K20R 100	0.17	0.77		0.31	0.98		0.42	0.98		0.52	0.98	
K20R 112 M	0.75	1.15	1.0	0.9	1.4	1.2	1.1	1.6	1.4	1.3	1.75	1.5
K20R 112 MX	-	-	-	-	-	-	1.05	1.6	1.4	1.25	1.75	1.5
K20R 132 S	-	-	-	0.7	2.0	1.8	0.8	2.3	2.0	0.9	2.6	2.3
K20R 132 M	0.5	1.65	1.45	0.65	2.15	1.9	0.75	2.45	2.2	0.85	2.7	2.4
K20R 160 S	1.1	2.4	2.1	1.6	3.05	2.7	1.8	3.5	3.1	2.2	3.9	3.5
K20R 160 M	1.2	2.4	2.1	1.6	3.05	2.7	1.8	3.6	3.2	2.1	4.0	3.5
K20R 180 S	1.4	2.5	2.1	1.8	4.1	3.6	2.1	4.8	4.2	2.5	5.2	4.6
K20R 180 M	1.3	2.6	2.3	1.8	4.3	3.8	2.0	5.0	4.4	2.4	5.4	4.8
K20R 200 M	1.8	3.4	3.0	2.4	4.7	4.2	2.75	5.4	4.8	3.2	5.9	5.2
K20R 200 L	1.7	3.4	3.0	2.2	4.8	4.2	-	-	-	-	-	-
K20R 225 M	1.5	2.8	2.5	2.5	5.4	4.8	3.0	6.2	5.5	3.5	6.8	6.0
K20R 250 S	2.0	5.5	5.0	3.0	8.1	7.4	3.8	9.3	8.6	4.0	10.3	9.5
K20R 250 M	2.0	5.6	5.1	2.3	8.2	7.6	3.0	9.5	8.9	3.0	10.6	9.9
K20R 280 S	2.5	6.5	6.0	3.0	8.3	7.5	3.0	9.5	8.7	4.0	10.5	9.6
K20R 280 M	2.5	6.6	6.1	3.0	8.4	7.8	3.0	9.7	9.1	4.0	10.8	10.2
K20R 315 S	2.0	7.0	6.5	1.5	11.4	7.3	2.3	12.9	12.1	3.0	14.3	13.5
K20R 315 M	1.5	7.0	6.6	1.5	11.5	10.9	1.5	13.5	13.0	2.0	15.1	14.8

Admissible axial and radial loads, K20R
heavy bearing arrangement, vertical shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K20R 112 M	0.75	2.3	2.0	0.9	2.8	2.4	1.1	3.2	2.8	1.3	3.5	3.0
K20R 112 MX	-	-	-	-	-	-	1.05	3.2	2.8	1.25	3.5	3.0
K20R 132 S	-	-	-	0.7	4.0	3.6	0.8	4.6	4.0	0.9	5.2	4.6
K20R 132 M	0.5	3.3	2.9	0.65	4.3	3.8	0.75	4.9	4.4	0.85	5.4	4.8
K20R 160 S	1.1	4.7	4.1	1.6	5.9	5.3	1.8	6.8	6.0	2.2	7.6	6.8
K20R 160 M	1.2	4.7	4.1	1.6	5.9	5.3	1.8	7.0	6.2	2.1	7.8	6.8
K20R 180 S	1.4	4.9	4.1	1.8	8.0	7.0	2.1	9.4	8.2	2.5	10.1	9.0
K20R 180 M	1.3	5.1	4.5	1.8	8.4	7.4	2.0	9.8	8.6	2.4	10.5	9.4
K20R 200 M	1.8	6.5	5.7	2.4	8.9	8.0	2.75	10.3	9.1	3.2	11.2	9.9
K20R 200 L	1.7	6.5	5.7	2.2	9.1	8.0	-	-	-	-	-	-
K20R 225 M	1.5	5.3	4.8	2.5	10.3	9.1	3.0	11.8	10.5	3.5	12.9	11.4
K20R 250 S	1.9	7.8	6.8	1.4	20.4	16.0	1.8	22.6	17.0	2.2	23.8	15.4
K20R 250 M	1.1	8.0	8.0	1.3	20.1	15.8	1.8	20.8	13.4	2.2	20.6	13.3
K20R 280 S	1.9	9.1	8.1	1.4	19.8	17.5	1.9	22.4	18.7	2.4	24.1	17.7
K20R 280 M	1.7	9.3	8.1	1.2	20.1	17.8	1.5	22.5	17.6	2.1	23.9	17.6
K20R 315 S	0.9	19.2	17.0	0.8	27.0	23.1	0.8	28.5	18.4	1.5	28.5	18.4
K20R 315 M	0.5	20.5	18.1	0.5	20.5	13.2	1.4	24.0	15.5	2.0	24	15.5

For size 315L data on request

Bearing arrangement

Admissible axial and radial loads, K11R
basic version, horizontal shaft position (in kN)

Size		2-pole			4-pole			6-pole			8-pole		
		F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K11R	132 S	0.75	1.15	1.03	1.05	1.45	1.29	1.4	1.65	1.47	1.4	1.85	1.65
K11R	132 SX	0.75	1.15	1.03	-	-	-	-	-	-	-	-	-
K11R	132 M	-	-	-	1.6	2.05	1.8	1.2	1.65	1.47	1.4	1.85	1.65
K11R	132 MX	-	-	-	-	-	-	1.9	2.3	2.05	-	-	-
K11R	160 M	1.1	2.0	1.8	1.5	2.5	2.2	1.9	2.9	2.6	2.1	3.25	2.8
K11R	160 MX	1.5	2.3	2.05	-	-	-	-	-	-	2.1	3.25	2.6
K11R	160 L	1.5	2.3	2.05	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.4
K11R	180 M	1.5	2.4	2.15	1.9	3.0	2.7	-	-	-	-	-	-
K11R	180 L	-	-	-	2.5	3.1	2.75	2.3	3.4	3.0	2.5	3.8	3.4
K11R	200 L	1.8	3.2	2.8	2.4	4.0	3.5	2.8	4.6	4.1	3.0	5.2	4.6
K11R	200 LX	2.5	3.2	2.8	-	-	-	2.8	4.6	4.1	-	-	-
K11R	225 S	-	-	-	3.0	4.4	3.9	-	-	-	4.2	5.6	5.0
K11R	225 M	2.5	3.2	2.8	3	4.4	3.9	3.5	5.1	4.5	4.2	5.6	5.0
K11R	250 M	2.5	3.4	3.0	3.5	4.9	4.3	3.8	5.6	5.0	4.5	6.3	5.6
K11R	280 S	3.0	3.9	3.5	3.1	19.5	15.5	3.5	21.8	16.3	3.8	23.5	15.3
K11R	280 M	2.6	3.6	3.3	3.1	19.5	15.5	3.5	22.3	14.5	4.3	23.0	14.9
K11R	315 S	3.5	4.5	4.1	3.8	18.8	16.6	4.4	21.2	17.7	5.0	23.4	17.2
K11R	315 M	2.8	4.2	3.8	3.9	18.0	15.9	4.6	21.5	16.7	5.2	23.4	17.2
K11R	315 MX	3.4	18.3	16.6	3.7	26.0	21.7	4.1	28.5	18.4	4.5	31.5	20.3
K11R	315 MY	3.6	18.3	14.9	4.3	25.5	16.5	4.7	27.8	19.2	5.6	27.5	19

Admissible axial and radial loads, K11R
heavy bearing arrangement, horizontal shaft position (in kN)

Size		2-pole			4-pole			6-pole			8-pole		
		F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K11R	132 S	0.75	2.3	2.06	1.05	2.9	2.4	1.4	3.3	2.9	1.4	3.7	3.3
K11R	132 SX	0.75	2.3	2.06	-	-	-	-	-	-	-	-	-
K11R	132 M	-	-	-	1.6	4.1	3.6	1.2	3.3	2.9	1.4	3.7	3.3
K11R	132 MX	-	-	-	-	-	-	1.9	4.6	4.1	-	-	-
K11R	160 M	1.1	3.9	3.5	1.5	4.9	4.3	1.9	5.7	5.1	2.1	6.3	5.5
K11R	160 MX	1.5	4.5	4.0	-	-	-	-	-	-	2.1	6.3	5.1
K11R	160 L	1.5	4.5	4.0	1.9	5.9	5.3	2.3	6.6	5.9	2.5	7.4	6.6
K11R	180 M	1.5	4.7	4.2	1.9	5.9	5.3	-	-	-	-	-	-
K11R	180 L	-	-	-	2.5	6.0	5.4	2.3	6.6	5.9	2.5	7.4	6.6
K11R	200 L	1.8	6.1	5.3	2.4	7.6	6.7	2.8	8.7	7.8	3.0	9.9	8.8
K11R	200 LX	2.5	6.1	5.3	-	-	-	2.8	8.7	7.8	-	-	-
K11R	225 S	-	-	-	3.0	8.4	7.4	-	-	-	4.2	10.6	9.5
K11R	225 M	2.5	6.1	5.3	3	8.4	7.4	3.5	9.7	8.6	4.2	10.6	9.5
K11R	250 M	2.5	6.3	5.6	3.5	9.1	8.0	3.8	10.4	9.3	4.5	11.7	10.4
K11R	280 S	3.0	7.2	6.5	3.1	19.5	15.5	3.5	21.8	16.3	3.8	23.5	15.3
K11R	280 M	2.6	6.6	6.1	3.1	19.5	15.5	3.5	22.3	14.5	4.3	23.0	14.9
K11R	315 S	3.5	8.1	7.4	3.8	18.8	16.6	4.4	21.2	17.7	5.0	23.4	17.2
K11R	315 M	2.8	7.6	6.8	3.9	18.0	15.9	4.6	21.5	16.7	5.2	23.4	17.2
K11R	315 MX	3.4	18.3	16.6	3.7	26.0	21.7	4.1	28.5	18.4	4.5	31.5	20.3
K11R	315 MY	3.6	18.3	14.9	4.3	25.5	16.5	4.7	27.8	19.2	5.6	27.5	19.0

For sizes 315L, LX data on request

Bearing arrangement

Admissible axial and radial load, K11R
basic version, vertical shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K11R 132 S	0.7	1.2	1.06	0.9	1.5	1.33	1.1	1.75	1.55	1.25	1.9	1.68
K11R 132 SX	0.7	1.2	1.06	-	-	-	-	-	-	-	-	-
K11R 132 M	-	-	-	1.4	2.1	1.9	1.05	1.7	1.5	1.25	1.9	1.68
K11R 132 MX	-	-	-	-	-	-	1.65	2.4	2.1	-	-	-
K11R 160 M	0.95	2.1	1.9	1.3	2.6	2.3	1.5	3.0	2.7	1.75	3.3	2.8
K11R 160 MX	1.2	2.4	2.1	-	-	-	-	-	-	1.75	3.3	2.7
K11R 160 L	1.1	2.5	2.2	1.5	3.1	2.7	1.8	3.6	3.2	2.1	3.9	3.5
K11R 180 M	1.4	2.5	2.2	1.5	3.1	2.7	-	-	-	-	-	-
K11R 180 L	-	-	-	1.9	3.2	2.8	1.8	3.6	3.2	2.1	3.9	3.5
K11R 200 L	1.3	3.4	3.0	1.8	4.2	3.7	2.0	4.9	4.3	2.4	5.4	4.8
K11R 200 LX	1.9	3.4	3.0	-	-	-	2.0	4.8	4.2	-	-	-
K11R 225 S	-	-	-	2.3	4.6	4.1	-	-	-	3.2	6.0	5.3
K11R 225 M	1.7	3.4	3.0	2.2	4.8	4.2	2.7	5.4	4.8	3.3	5.9	5.2
K11R 250 M	1.8	3.8	3.4	2.4	5.3	4.7	3.0	6.1	5.4	3.3	6.7	5.9
K11R 280 S	2.0	4.2	3.7	1.4	20.1	15.8	1.9	21.6	16.1	2.3	23.6	15.3
K11R 280 M	1.1	4.2	3.7	1.3	20.1	15.8	1.8	21.0	13.6	2.3	20.8	13.5
K11R 315 S	1.9	4.9	4.3	1.3	19.8	17.5	1.9	22.4	18.7	2.4	24.0	17.5
K11R 315 M	1.7	4.9	4.3	1.2	20.0	17.7	1.5	22.6	17.7	2.1	23.8	17.4
K11R 315 MX	0.9	19.0	16.8	0.8	27.0	23.9	0.8	28.6	18.5	1.2	28.6	18.5
K11R 315 MY	0.5	19.5	17.3	0.5	19.5	17.3	1.5	24.0	16.6	2.0	24.0	16.6

Admissible axial and radial loads, K11R
heavy bearing arrangement, vertical shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K11R 132 S	0.7	2.4	1.12	0.9	3.0	2.66	2.2	3.5	3.1	1.25	3.8	3.36
K11R 132 SX	0.7	2.4	1.12	-	-	-	-	-	-	-	-	-
K11R 132 M	-	-	-	1.4	4.2	3.8	1.05	3.4	3.0	1.25	3.8	3.36
K11R 132 MX	-	-	-	-	-	-	1.65	4.8	4.2	-	-	-
K11R 160 M	0.95	4.2	3.8	1.3	5.2	4.6	3.0	6.0	5.4	1.75	6.6	5.6
K11R 160 MX	1.2	4.8	4.2	-	-	-	-	-	-	1.75	6.6	5.4
K11R 160 L	1.1	4.9	4.3	1.5	6.0	5.3	1.8	7.0	6.2	2.1	7.6	6.8
K11R 180 M	1.4	4.9	4.3	1.5	6.0	5.3	-	-	-	-	-	-
K11R 180 L	-	-	-	1.9	6.2	5.5	1.8	7.0	6.2	2.1	7.6	6.8
K11R 200 L	1.3	6.6	5.9	1.8	8.2	7.2	2.0	9.6	8.4	2.4	10.5	9.4
K11R 200 LX	1.9	6.6	5.7	-	-	-	2.0	9.1	8.0	-	-	-
K11R 225 S	-	-	-	2.3	8.7	7.8	-	-	-	3.2	11.4	10.1
K11R 225 M	1.7	6.6	5.7	2.2	9.1	8.0	2.7	10.3	9.1	3.3	11.2	9.9
K11R 250 M	1.8	7.0	6.3	2.4	9.8	8.7	3.0	12.3	10.0	3.3	12.4	10.0
K11R 280 S	2.0	7.8	6.8	1.4	20.1	15.8	1.9	21.6	16.1	2.3	23.6	15.3
K11R 280 M	1.1	7.8	6.8	1.3	20.1	15.8	1.8	21.0	13.6	2.3	20.8	13.5
K11R 315 S	1.9	8.8	7.7	1.3	19.8	17.5	1.9	22.4	18.7	2.4	24.0	17.5
K11R 315 M	1.7	8.8	7.7	1.2	20.0	17.7	1.5	22.6	17.7	2.1	23.8	17.4
K11R 315 MX	0.9	19.0	16.8	0.8	27.0	23.9	0.8	28.6	18.5	1.2	28.6	18.5
K11R 315 MY	0.5	19.5	17.3	0.5	19.5	17.3	1.5	24.0	16.6	2.0	24.0	16.6

For sizes 315L, LX data on request

Bearing arrangement

Admissible axial and radial loads, K10R
basic version, horizontal shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K10R 112 M	0.75	1.1	1.0	1.05	1.35	1.19	1.2	1.55	1.4	1.4	1.7	1.5
K10R 112 MX	-	-	-	-	-	-	1.2	1.55	1.4	1.4	1.7	1.5
K10R 132 S	-	-	-	0.8	1.95	1.7	1.0	2.35	2.1	1.1	2.6	2.3
K10R 132 M	0.7	1.6	1.4	0.8	1.95	1.7	1.0	2.35	2.1	1.1	2.6	2.3
K10R 160 S	1.7	2.3	2.0	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.7
K10R 160 M	1.5	2.3	2.0	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.7
K10R 180 S	1.7	2.3	2.0	2.4	4.1	3.6	2.8	4.6	4.1	3.0	5.1	4.5
K10R 180 M	1.7	2.3	2.0	2.4	4.1	3.6	2.8	4.6	4.1	3.0	5.1	4.5
K10R 200 M	2.4	3.2	2.8	3.0	4.4	3.9	3.5	5.0	4.4	4.3	5.6	5.0
K10R 200 L	2.4	3.2	2.8	3.0	4.4	3.9	-	-	-	-	-	-
K10R 225 M	1.9	2.5	2.2	3.5	5.1	4.5	3.8	5.8	5.1	4.5	6.4	5.7
K10R 250 S	2.9	3.8	3.4	3.1	19.5	15.4	3.5	21.8	16.3	3.8	23.8	15.6
K10R 250 M	2.6	3.5	3.1	3.1	19.4	15.3	3.5	22.0	14.2	4.3	22.8	14.9
K10R 280 S	3.5	4.4	3.9	3.7	18.8	16.6	4.5	21.3	16.6	5.0	23.5	17.3
K10R 280 M	2.9	4.3	3.9	3.8	19.0	16.8	4.6	21.5	15.8	5.2	23.7	17.4
K10R 315 S	3.4	18.3	16.2	3.6	26.0	22.4	4.1	28.5	19.7	4.5	31.5	20.3
K10R 315 M	3.6	18.3	16.2	4.4	25.5	16.5	4.7	27.5	17.7	5.6	27.5	19.0

Admissible axial and radial loads, K10R
heavy bearing arrangement, horizontal shaft position (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K10R 112 M	0.75	2.2	2.4	1.05	2.7	2.38	1.2	3.1	2.8	1.4	3.4	3.0
K10R 112 MX	-	-	-	-	-	-	1.2	3.1	2.8	1.4	3.4	3.0
K10R 132 S	-	-	-	0.8	3.9	3.4	1.0	4.7	4.2	1.1	5.2	4.6
K10R 132 M	0.7	3.2	2.8	0.8	3.9	3.4	1.0	4.7	4.2	1.1	5.2	4.6
K10R 160 S	1.7	2.3	2.6	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.7
K10R 160 M	1.5	2.3	2.6	1.9	3.0	2.7	2.3	3.4	3.0	2.5	3.8	3.7
K10R 180 S	1.7	4.5	5.1	2.4	8.0	7.0	2.8	9.0	8.0	3.0	9.9	8.8
K10R 180 M	1.7	4.5	5.1	2.4	8.0	7.0	2.8	9.0	8.0	3.0	9.9	8.8
K10R 200 M	2.4	6.1	6.8	3.0	8.4	7.4	3.5	9.5	8.4	4.3	10.6	9.5
K10R 200 L	2.4	6.1	6.8	3.0	8.4	7.4	-	-	-	-	-	-
K10R 225 M	1.9	4.6	5.2	3.5	9.4	8.3	3.8	10.7	9.4	4.5	11.8	10.5
K10R 250 S	2.9	7.0	8.0	3.1	19.5	15.4	3.5	21.8	16.3	3.8	23.8	15.6
K10R 250 M	2.6	6.5	7.4	3.1	19.4	15.3	3.5	22.0	14.2	4.3	22.8	14.9
K10R 280 S	3.5	7.9	7.2	3.7	18.8	16.6	4.5	21.3	16.6	5.0	23.5	17.3
K10R 280 M	2.9	7.7	8.8	3.8	19.0	16.8	4.6	21.5	15.8	5.2	23.7	17.4
K10R 315 S	3.4	18.3	20.7	3.6	26.0	22.4	4.1	28.5	19.7	4.5	31.5	20.3
K10R 315 M	3.6	18.3	20.7	4.4	25.5	16.5	4.7	27.5	17.7	5.6	27.5	19.0

For size 315 L data on request

Bearing arrangement

Admissible axial and radial loads, K10R
basic version, vertical shaft position (in kN)

Size		2-pole			4-pole			6-pole			8-pole		
		F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K10R	112 M	0.75	1.15	1.0	0.9	1.4	1.2	1.1	1.6	1.4	1.3	1.75	1.5
K10R	112 MX	-	-	-	-	-	-	1.05	1.6	1.4	1.25	1.75	1.5
K10R	132 S	-	-	-	0.7	2.0	1.8	0.8	2.3	2.0	0.9	2.6	2.3
K10R	132 M	0.5	1.65	1.45	0.65	2.15	1.9	0.75	2.45	2.2	0.85	2.7	2.4
K10R	160 S	1.1	2.4	2.1	1.6	3.05	2.7	1.8	3.5	3.1	2.2	3.9	3.5
K10R	160 M	1.2	2.4	2.1	1.6	3.05	2.7	1.8	3.6	3.2	2.1	4.0	3.5
K10R	180 S	1.4	2.5	2.1	1.8	4.1	3.6	2.1	4.8	4.2	2.5	5.2	4.6
K10R	180 M	1.3	2.6	2.3	1.8	4.3	3.8	2.0	5.0	4.4	2.4	5.4	4.8
K10R	200 M	1.8	3.4	3.0	2.4	4.7	4.2	2.75	5.4	4.8	3.2	5.9	5.2
K10R	200 L	1.7	3.4	3.0	2.2	4.8	4.2	-	-	-	-	-	-
K10R	225 M	1.5	2.8	2.5	2.5	5.4	4.8	3.0	6.2	5.5	3.5	6.8	6.0
K10R	250 S	1.9	4.2	3.7	1.4	20.4	16.0	1.8	22.6	17.0	2.2	23.8	15.4
K10R	250 M	1.1	4.3	4.3	1.3	20.1	15.8	1.8	20.8	13.4	2.2	20.6	13.3
K10R	280 S	1.9	4.9	4.4	1.4	19.8	17.5	1.9	22.4	18.7	2.4	24.1	17.7
K10R	280 M	1.7	5.0	4.4	1.2	20.1	17.8	1.5	22.5	17.6	2.1	23.9	17.6
K10R	315 S	0.9	19.2	17.0	0.8	27.0	23.1	0.8	28.5	18.4	1.5	28.5	18.4
K10R	315 M	0.5	20.5	18.1	0.5	20.5	13.2	1.4	24.0	15.5	2.0	24	15.5

Admissible axial and radial loads, K10R
heavy bearing arrangement, vertical shaft position (in kN)

Size		2-pole			4-pole			6-pole			8-pole		
		F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K10R	112 M	0.75	2.3	2.0	0.9	2.8	2.4	1.1	3.2	2.8	1.3	3.5	3.0
K10R	112 MX	-	-	-	-	-	-	1.05	3.2	2.8	1.25	3.5	3.0
K10R	132 S	-	-	-	0.7	4.0	3.6	0.8	4.6	4.0	0.9	5.2	4.6
K10R	132 M	0.5	3.3	2.9	0.65	4.3	3.8	0.75	4.9	4.4	0.85	5.4	4.8
K10R	160 S	1.1	4.7	4.1	1.6	5.9	5.3	1.8	6.8	6.0	2.2	7.6	6.8
K10R	160 M	1.2	4.7	4.1	1.6	5.9	5.3	1.8	7.0	6.2	2.1	7.8	6.8
K10R	180 S	1.4	4.9	4.1	1.8	8.0	7.0	2.1	9.4	8.2	2.5	10.1	9.0
K10R	180 M	1.3	5.1	4.5	1.8	8.4	7.4	2.0	9.8	8.6	2.4	10.5	9.4
K10R	200 M	1.8	6.5	5.7	2.4	8.9	8.0	2.75	10.3	9.1	3.2	11.2	9.9
K10R	200 L	1.7	6.5	5.7	2.2	9.1	8.0	-	-	-	-	-	-
K10R	225 M	1.5	5.3	4.8	2.5	10.3	9.1	3.0	11.8	10.5	3.5	12.9	11.4
K10R	250 S	1.9	7.8	6.8	1.4	20.4	16.0	1.8	22.6	17.0	2.2	23.8	15.4
K10R	250 M	1.1	8.0	8.0	1.3	20.1	15.8	1.8	20.8	13.4	2.2	20.6	13.3
K10R	280 S	1.9	9.1	8.1	1.4	19.8	17.5	1.9	22.4	18.7	2.4	24.1	17.7
K10R	280 M	1.7	9.3	8.1	1.2	20.1	17.8	1.5	22.5	17.6	2.1	23.9	17.6
K10R	315 S	0.9	19.2	17.0	0.8	27.0	23.1	0.8	28.5	18.4	1.5	28.5	18.4
K10R	315 M	0.5	20.5	18.1	0.5	20.5	13.2	1.4	24.0	15.5	2.0	24	15.5

For size 315L data on request

Bearing arrangement

Energy saving motors WE1R, W21R

Type	Antifriction bearing	D-end					N-end			Figure		Fixed bearing	
		Felt ring	V-ring	γ-ring	Wave washer	Disc spring	Antifriction bearing	Felt ring	V-ring	Wave washer	DS		NS
											DS		NS
WE1R 80	6204 2Z C3	19.5x26	-	-	-	-	6204 2Z C3	20x32	-	47	1	2	none
WE1R 90	6205 2Z C3	24.5x35	-	-	-	-	6205 2Z C3	25x40	-	52	1	2	none
WE1R 100	6206 2Z C3	29.2x40	-	-	-	-	6205 2Z C3	25x40	-	52	1	2	none
WE1R 100LX	6206 2Z C3	29.2x40	-	-	-	-	6206 2Z C3	30x50	-	62	1	2	none
WE1R 112M	6206 2Z C3	29.2x40	-	-	-	-	6206 2Z C3	30x50	-	62	1	2	none
WE1R 132S 2T	6208 2Z C3	39.2x50	-	-	-	-	6206 2Z C3	30x50	-	62	1	2	none
WE1R 132S 2, SX2	6208 2RS C3	-	-	-	80	-	6207 2RS C3	-	-	-	3	5	none
WE1R 132SY4, S4, M4	6308 2RS C3	-	-	-	90	-	6308 2RS C3	-	-	-	3	5	none
WE1R 160MY2, M2;M4	6309 2RS C3	-	-	-	100	-	6308 2RS C3	-	-	-	3	5	none
WE1R 160MX2, L2, L4	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	3	5	none
WE1R 180M 4,	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	3	5	none
WE1R 180M 2, L4	6310 C3	-	50A	-	110	-	6310 C3	-	50A	-	6	8	N-end
WE1R 200L 2, LX2	6312 C3	-	60A	-	-	130	6310 C3	-	50A	-	6	8	N-end
WE1R 225S 4, M4	6313 C3	-	65A	-	-	140	6312 C3	-	60A	-	6	8	N-end
WE1R 225M 2	6313 C3	-	65A	-	-	150	6313 C3	-	65A	-	6	8	N-end
WE1R 225S 4, M4	6313 C3	-	70A	-	-	140	6312 C3	-	60A	-	6	8	N-end
WE1R 250M 2	6313 C3	-	65A	-	-	140	6313 C3	-	65A	-	6	8	N-end
WE1R 250M 4	6314 C3	-	70A	-	-	150	6313 C3	-	65A	-	6	8	N-end
WE1R 280S 2, M2	6314 C3	-	70A	-	-	150	6314 C3	-	70A	-	6	8	N-end
WE1R 280S 4, M4	6316 C3	-	80A	-	-	170	6314 C3	-	70A	-	6	8	N-end

Type	Antifriction bearing	D-end					N-end			Figure		Fixed bearing	
		Felt ring	V-ring	γ-ring	Wave washer	Disc spring	Antifriction bearing	Felt ring	V-ring	Wave washer	DS		NS
											DS		NS
W21R 63	6202 2Z C3	14.5x21	-	-	-	-	6202 2Z C3	15x24	-	32	1	2	none
W21R 71	6204 2Z C3	19.5x26	-	-	-	-	6204 2Z C3	20x32	-	35	1	2	none
W21R 80	6205 2Z C3	24.2x35	-	-	-	-	6205 2Z C3	25x40	-	47	1	2	none
W21R 90	6205 2Z C3	24.2x35	-	-	-	-	6205 2Z C3	25x40	-	52	1	2	none
W21R 100	6206 2Z C3	29.2x40	-	-	-	-	6205 2Z C3	25x40	-	52	1	2	none
W21R 100LX	6206 2Z C3	29.2x40	-	-	-	-	6206 2Z C3	30x50	-	62	1	2	none
W21R 112	6206 2Z C3	29.2x40	-	-	-	-	6206 2Z C3	30x50	-	62	1	2	none
W21R 132S6,8 ; M6,8	6208 2RS C3	-	-	-	80	-	6207 2RS C3	-	-	-	3	5	none
W21R 132MX6	6308 2RS C3	-	-	-	90	-	6308 2RS C3	-	-	-	3	5	none
W21R 160M6,8 ; MX8	6309 2RS C3	-	-	-	100	-	6308 2RS C3	-	-	-	3	5	none
W21R 180L6,8	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	3	5	none
W21R 200L6,8 ; LX6	6312 C3	-	60A	-	-	130	6310 C3	-	50A	-	6	8	N-end
W21R 225S8, M6,8,	6313 C3	-	65A	-	-	140	6312 C3	-	60A	-	6	8	N-end
W21R 250M6,8	6314 C3	-	70A	-	-	150	6313 C3	-	65A	-	6	8	N-end
W21R 280S6,8 ; M6,8	6316 C3	-	80A	-	-	170	6314 C3	-	70A	-	6	8	N-end
W21R 315S2,M2	6316 C3	-	80A	-	-	170	6316 C3	-	80A	-	6	8	N-end
W21R 315S4,6,8,M4,6,8	6317 C3	-	80A	-	-	180	6316 C3	-	80A	-	6	8	N-end
W21R 315MX2	6317 C3	-	-	RB85	-	180	6316 C3	-	80A	-	13	16	N-end
W21R 315MX4,6,8	6220 C3	-	-	RB100	-	180	6316 C3	-	80A	-	13	16	N-end
W21R 315MY2	6317 C3	-	-	RB85	-	180	6317 C3 ¹⁾	-	85A	-	18	19	N-end
W21R 315MY4,6,8	6320 C3	-	-	RB100	-	215	6317 C3 ¹⁾	-	85A	-	18	19	N-end
W21R 315L2, LX2	6317 C3	-	-	RB85	-	180	6317 C3 ¹⁾	-	85A	-	18	19	N-end
W21R 315L4,6,8 ; LX4,6,8	6320 C3	-	-	RB100	-	215	6317 C3 ¹⁾	-	85A	-	18	19	N-end

1) for vertical types of mounting Q317 C3; figures 18, 21
W21R 315 MX ; MY ; L ; LX standard version with relubrication device



Bearing arrangement

Energy saving motors WE1R according to EPAct

Type	Antifriction bearing	D-end					N-end			Figure			Fixed bearing
		Felt ring	V-ring	γ-ring	Wave washer	Disc spring	Antifriction bearing	Felt ring	V-ring	DS	NS	Wave washer	
WE1R 80	6204 2Z C3	19.5x26					6204 2Z C3	20x32		1	2	47	none
WE1R 90	6205 2Z C3	24.5x35					6205 2Z C3	25x40		1	2	52	none
WE1R 100	6206 2Z C3	29.2x40					6206 2Z C3	25x40		1	2	52	none
WE1R 100LX	6206 2Z C3	29.2x40					6206 2Z C3	30x50		1	2	62	none
WE1R 112M	6206 2Z C3	29.2x40					6206 2Z C3	30x50		1	2	62	none
WE1R 132S 2T	6208 2Z C3	39.2x50					6206 2Z C3	30x50		1	2	62	none
WE1R 132S 2, SX2	6208 2RS C3				80		6207 2RS C3			3	5		none
WE1R 132SY4, S4, M4	6308 2RS C3				90		6308 2RS C3			3	5		none
WE1R 160MY2, M2;M4	6309 2RS C3				100		6308 2RS C3			3	5		none
WE1R 160MX2, L2, L4	6310 2RS C3				110		6309 2RS C3			3	5		none
WE1R 180M 4,	6310 2RS C3				110		6309 2RS C3			3	5		none
WE1R 180M 2, L4	6310 C3		50A		110		6310 C3	50A		6	8		N-end
WE1R 200L 2, LX2	6312 C3		60A		130		6310 C3	50A		6	8		N-end
WE1R 225S 4, M4	6313 C3		65A		140		6312 C3	60A		6	8		N-end
WE1R 225M 2	6313 C3		65A		150		6313 C3	65A		6	8		N-end
WE1R 225S 4, M4	6313 C3		70A		140		6312 C3	60A		6	8		N-end
WE1R 250M 2	6313 C3		65A		140		6313 C3	65A		6	8		N-end
WE1R 250M 4	6314 C3		70A		150		6313 C3	65A		6	8		N-end
WE1R 280S 2, M2	6314 C3		70A		150		6314 C3	70A		6	8		N-end
WE1R 280S 4, M4	6316 C3		80A		170		6314 C3	70A		6	8		N-end
WE1R 315S 2, M2	6316 C3		80A		170		6316 C3	80A		6	8		N-end
WE1R 315S 4, M4	6317 C3		85A		180		6316 C3	80A		6	8		N-end
WE1R 315MX2	6317 C3			RB85	180		6316 C3	80A		13	16		N-end
WE1R 315MX4	6220 C3			RB100	180		6316 C3	80A		13	16		N-end
WE1R 315MY2, L2, LX2	6317 C3			RB85	180		6317 C3 ¹⁾	85A		18	19		N-end
WE1R 315MY4, L4, LX4	6320 C3			RB100	215		6317 C3 ¹⁾	85A		18	19		N-end

1) for vertical types of mounting Q317 C3; figures 18, 21
WE1R 315 MX; MY; L: LX standard version with relubrication device

Bearing arrangement

Explosion protected motors, type of protection increased safety EEx e
basic version

Type	D-end				N-end				Figure		Fixed bearing
	Antifriction bearing					Antifriction bearing			DS	NS	
		V-ring	γ-ring	Wave washer	Disc spring		V-ring				
KKPER 63	6201 2Z C3	-	-	-	-	6201 2Z C3	32	1	2	none	
KPER 71	6202 2Z C3	-	-	-	-	6202 2Z C3	35	1	2	none	
KPER 80	6204 2Z C3	-	-	-	-	6204 2Z C3	47	1	2	none	
KPER 90	6205 2Z C3	-	-	-	-	6205 2Z C3	52	1	2	none	
KPER 100	6205 2Z C3	-	-	-	-	6205 2Z C3	52	1	2	none	
KPER 100 LX	6206 2Z C3	-	-	-	-	6206 2Z C3	62	1	2	none	
KPER 112 M	6206 2Z C3	-	-	-	-	6206 2Z C3	62	1	2	none	
K11R 132 S, SX2,M6,8	6208 2Z C3	-	-	80	-	6207 2Z C3	-	3	5	none	
K11R 132 M4,MX6	6308 2Z C3	-	-	90	-	6308 2Z C3	-	3	5	none	
K11R 160 M6,8,MX8	6309 2Z C3	-	-	100	-	6308 2Z C3	-	3	5	none	
K11R 160 M2,4,MX2, L	6310 2Z C3	-	-	110	-	6309 2Z C3	-	3	5	none	
K11R 180 L8	6310 2Z C3	-	-	110	-	6309 2Z C3	-	3	5	none	
K11R 180 M2,4,L4,6	6310 C3	50A	-	110	-	6310 C3	50A	6	8	N-end	
K11R 200 L2,6,8	6312 C3	60A	-	-	130	6310 C3	50A	6	8	N-end	
K11R 200 LX2,6,L4	6312 C3	60A	-	-	130	6312 C3	60A	6	8	N-end	
K11R 225 S8	6313 C3	65A	-	-	140	6312 C3	60A	6	8	N-end	
K11R 225 M2	6313 C3	65A	-	-	150	6313 C3	65A	6	8	N-end	
K11R 225 S4,M4,6,8	6314 C3	70A	-	-	150	6313 C3	65A	6	8	N-end	
K11R 250 M2	6314 C3	70A	-	-	150	6313 C3	70A	6	8	N-end	
K11R 250 M4,6,8	NU 316 E	-	RB 80	-	-	6314 C3	70A	7	9	N-end	
K11R 280 S2,M2	6316 C3	80A	-	-	170	6316 C3	80A	6	8	N-end	
K11R 280 S4,6,8,M4,6,8	NU 317 E	-	RB 85	-	-	6316 C3	80A	7	9	N-end	
K11R 315 S2	6316 C3	80A	-	-	170	6316 C3	80A	6	8	N-end	
K11R 315 M2	NU 317 E	-	RB 85	-	-	6316 C3	80A	20	19	N-end	
K11R 315 S4,6,8	NU 317 E	-	RB 85	-	-	6316 C3	80A	20	19	N-end	
K11R 315 M4,6,8	NU 2220 E	-	RB100	-	-	6316 C3	80A	20	19	N-end	
K11R 315 MY2 VL	NU 317 E	-	RB85	-	-	6317 C3 ¹⁾	85A	20	19	N-end	
K11R 315 MY4,6,8 VL	NU 320 E	-	RB100	-	-	6317 C3 ¹⁾	85A	20	19	N-end	

1) for vertical types of construction Q317 C3, figures 20, 21
BG 315M, MY standard version with relubrication device

Special version heavy bearing arrangement

Type	D-end				N-end				Figure		Fixed bearing
	Antifriction bearing					Antifriction bearing			DS	NS	
		V-ring	γ-ring	Wave washer	Disc spring		V-ring				
K11R 132 S, SX2,M6,8	NU 208 E	-	RB40	-	-	6207 2Z C3	-	4	10	N-end	
K11R 132 M4,MX6	NU 308 E	-	RB40	-	-	6308 2Z C3	-	4	10	N-end	
K11R 160 M6,8,MX8	NU 309 E	-	RB45	-	-	6308 2Z C3	-	4	10	N-end	
K11R 160 M2,4,MX2	NU 310 E	-	RB50	-	-	6309 2Z C3	-	7	9	N-end	
K11R 180 L8	NU 310 E	-	RB50	-	-	6309 2Z C3	-	7	9	N-end	
K11R 180 M2,4,L4,6	NU 310 E	-	RB50	-	-	6310 C3	50A	7	9	N-end	
K11R 200 L2,4,6,8	NU 312 E	-	RB60	-	-	6310 C3	50A	7	9	N-end	
K11R 200 LX2,6,L4	NU 312 E	-	RB60	-	-	6312 C3	60A	7	9	N-end	
K11R 225 S8	NU 313 E	-	RB65	-	-	6312 C3	60A	7	9	N-end	
K11R 225 M2	NU 313 E	-	RB65	-	-	6313 C3	60A	7	9	N-end	
K11R 225 S4,M2,4,6,8	NU 314 E	-	RB70	-	-	6313 C3	65A	7	9	N-end	
K11R 250 M2	NU 314 E	-	RB70	-	-	6313 C3	70A	7	9	N-end	
K11R 250 M4,6,8		basic version is heavy bearing arrangement									
K11R 280 S2,M2	NU 316 E	-	RB 80	-	-	6316 C3	80A	7	9	N-end	
K11R 280 S4,6,8,M4,6,8		basic version is heavy bearing arrangement									
K11R 315 S2	NU 316 E	-	RB 80	-	-	6316 C3	80A	6	8	N-end	
K11R 315 M2		basic version is heavy bearing arrangement									
K11R 315 S4,6,8		basic version is heavy bearing arrangement									
K11R 315 M4,6,8		basic version is heavy bearing arrangement									
K11R 315 MY2 VL		basic version is heavy bearing arrangement									
K11R 315 MY4,6,8 VL		basic version is heavy bearing arrangement									

Bearing arrangement

Explosion protected motors in type of protection EEx e
admissible axial and radial loads
basic version (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
KPER 63 G,K	0.05	0.25	-	0.09	0.31	-	0.13	0.31	-	-	-	-
KPER 71 G,K	0.06	0.28	-	0.1	0.34	-	0.15	0.34	-	0.2	0.34	-
KPER 80 K,G	0.09	0.45	-	0.16	0.57	-	0.25	0.57	-	0.34	0.57	-
KPER 90 S,L	0.11	0.48	-	0.19	0.61	-	0.29	0.61	-	0.37	0.61	-
KPER 100 L	0.11	0.48	-	0.19	0.61	-	0.29	0.61	-	0.37	0.61	-
KPER 100 LX	-	-	-	0.24	0.78	-	-	-	-	0.41	0.78	-
KPER 112 M	0.13	0.61	-	0.24	0.78	-	0.34	0.78	-	0.41	0.78	-
KPER 112 MX	0.13	0.61	-	-	-	-	-	-	-	-	-	-
K11R 132 S	0.75	1.15	1.03	1.05	1.45	1.29	1.2	16.7	1.49	1.4	1.84	1.64
K11R 132 SX	0.75	1.15	1.03	-	-	-	-	-	-	-	-	-
K11R 132 M	-	-	-	1.62	2.2	1.96	1.2	16.7	1.49	1.4	1.84	1.64
K11R 132 MX	-	-	-	-	-	-	1.87	2.3	2.05	-	-	-
K11R 160 M	1.1	2.0	1.8	1.5	2.5	2.2	1.85	2.9	2.6	2.1	3.25	2.8
K11R 160 MX	1.4	2.3	2.05	-	-	-	-	-	-	2.1	3.25	2.6
K11R 160 L	1.4	2.3	2.05	1.9	3	2.7	2.3	3.5	3.1	2.5	3.8	3.4
K11R 180 M	1.5	2.3	2.05	2.5	3.1	2.8	-	-	-	-	-	-
K11R 180 L	-	-	-	2.5	3.1	2.8	2.5	3.5	3.1	2.5	3.8	3.4
K11R 200 L	1.9	3.2	2.8	3.0	4.0	3.6	2.8	4.6	4.1	3.0	5.1	4.5
K11R 200 LX	2.5	3.2	2.8	-	-	-	3.2	4.6	4.1	-	-	-
K11R 225 S	-	-	-	3.0	4.9	4.4	-	-	-	4.2	5.6	5.0
K11R 225 M	2.0	2.5	2.2	3.5	5.0	4.5	3.8	5.8	5.2	4.5	6.4	5.7
K11R 250 M	2.5	3.5	3.1	3.1	19.4	15.3	3.6	22.2	16.6	4.3	23	14.9
K11R 280 S	3.5	4.1	3.7	3.7	18.7	16.7	4.4	21.3	17.8	5.0	23.3	17.0
K11R 280 M	3.0	4.1	3.7	3.8	19.7	17	4.6	21.5	16.8	5.2	23.5	17.2
K11R 315 S	2.9	4.3	3.9	3.8	18	15.9	4.6	21.5	16.7	5.2	23.4	17.2
K11R 315 M	3.4	18.3	16.3	3.6	25.8	22.1	4.2	28.6	19.1	4.5	31.5	21.0
K11R 315 MY	3.5	18.3	16.3	4.3	25.6	21.9	4.8	27.5	19.1	5.6	27.5	19.0

Admissible axial and radial loads
heavy bearing arrangement (in kN)

Size	2-pole			4-pole			6-pole			8-pole		
	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}	F _a	F _{r0.5}	F _{r1.0}
K11R 132 S	0.75	2.07	1.854	1.05	2.61	2.322	1.2	3.006	2.682	1.4	3.312	2.952
K11R 132 SX	0.75	2.07	1.854	-	-	-	-	-	-	-	-	-
K11R 132 M	-	-	-	1.62	3.96	3.528	1.2	3.006	2.682	1.4	3.312	2.952
K11R 132 MX	-	-	-	-	-	-	1.87	4.14	3.69	-	-	-
K11R 160 M	1.1	3.6	3.24	1.5	4.5	3.96	1.85	5.22	4.68	2.1	5.85	5.04
K11R 160 MX	1.4	4.14	3.69	-	-	-	-	-	-	2.1	5.85	4.68
K11R 160 L	1.4	4.14	3.69	1.9	5.4	4.86	2.3	6.3	5.58	2.5	6.84	6.12
K11R 180 M	1.5	4.14	3.69	2.5	5.58	5.04	-	-	-	-	-	-
K11R 180 L	-	-	-	2.5	5.58	5.04	2.5	6.3	5.58	2.5	6.84	6.12
K11R 200 L	1.9	5.76	5.04	3.0	7.2	6.48	2.8	8.28	7.38	3.0	9.18	8.1
K11R 200 LX	2.5	5.76	5.04	-	-	-	3.2	8.28	7.38	-	-	-
K11R 225 S	-	-	-	3.0	8.82	7.92	-	-	-	4.2	10.08	9
K11R 225 M	2.0	4.5	3.96	3.5	9	8.1	3.8	10.44	9.36	4.5	11.52	10.26
K11R 250 M	2.5	6.3	5.58	-	-	-	-	-	-	-	-	-
K11R 280 S	3.5	7.38	6.66	-	-	-	-	-	-	-	-	-
K11R 280 M	3.0	7.38	6.66	-	-	-	-	-	-	-	-	-
K11R 315 S	2.9	7.7	8.8	-	-	-	-	-	-	-	-	-



Bearing arrangement

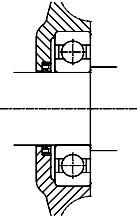
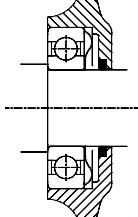
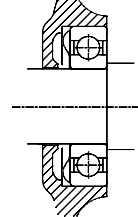
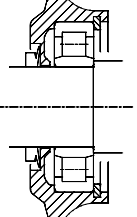
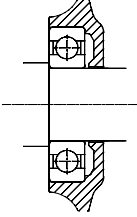
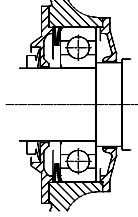
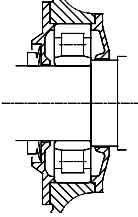
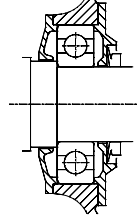
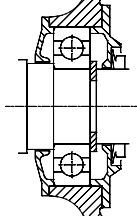
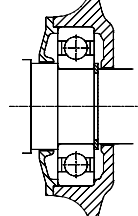
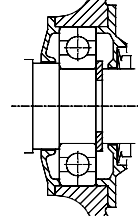
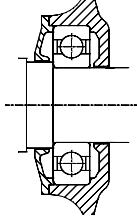
Explosion protected motors in type protection EEx d/de
basic version

Type K8.R	Pole number	D-end		minimum load (N)	N-end	
		Standard bearing arrangement	Heavy bearing arrangement		all types of mouting	
63	2. 4	6202 2ZR			6004 2ZR	
71	2. 4	6202 2ZR			6004 2ZR	
80	2. 4. 6. 8	6204 2ZR			6204 2ZR	
90	2. 4. 6. 8	6205 2ZR			6205 2ZR	
100	2. 4. 6. 8	6306 2ZR C3			6306 2ZR C3	
112	2. 4. 6. 8	6306 2ZR C3	21306 CC/C3	1050	6306 2ZR C3	
132	2. 4. 6. 8	6308 2ZR C3	21308 CC/C3	1580	6308 2ZR C3	
160	2. 4. 6. 8	6309 2ZR C3	21309 E/C3	1880	6309 2ZR C3	
180	2. 4. 6. 8	6310 2ZR C3	21310 E/C3 Explorer	2660	6310 2ZR C3	
200	2. 4. 6. 8	6312 2ZR C3	21312 E/C3 Explorer	3310	6312 2ZR C3	
225	2. 4. 6. 8	6313 2ZR C3	21313 E/C3 Explorer	3770	6313 2ZR C3	
250	2. 4. 6. 8	6315 2ZR C3	21315 E/C3 Explorer	4860	6313 2ZR C3	
280	2. 4. 6. 8	6316 2ZR C4	21316 E/C3 Explorer	5470	6315 2ZR C3	
315	2	6316 C4	21316 E/C3 Explorer	5450	6316 C4	
315	4. 6. 8	6318 C4	21318 E/C3 Explorer	7470	6316 C4	
355	2	6318 C4	NU318C3	3710	6318 C4	
355	4. 6. 8	6320 C3	NU320	4440	6320 C3	

							Types of mouting	
							IM B3. IM B5	IM V1. IM V3
400	2	6318 C4	NU318 C3	4570	6318 C4	7316 B + 6316 C4		
400	4. 6. 8	6322 C3	NU 322	6420	6322 C3	7322 B + 6322 C3		
450	4. 6. 8	6324 C3	NU 324 C3	7560	6322 C3	7322 B + 6322 C3		

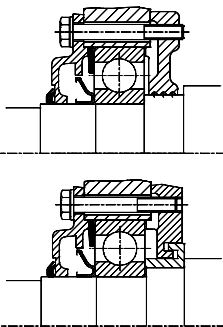
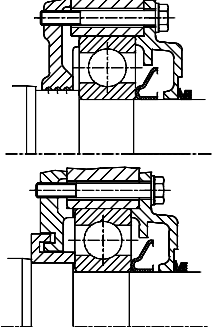
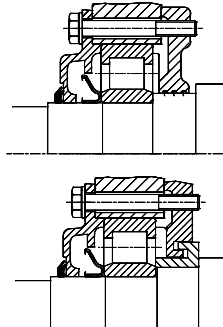
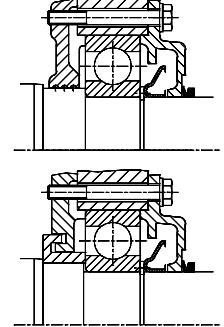
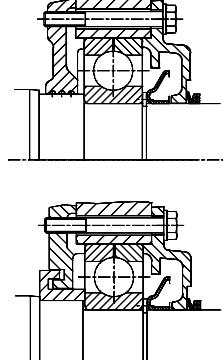
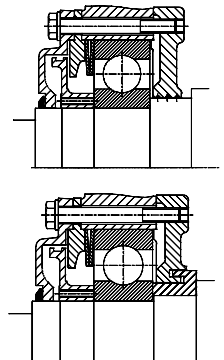
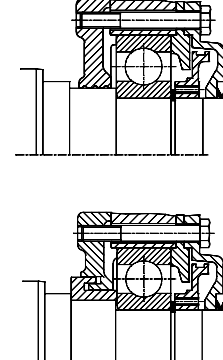
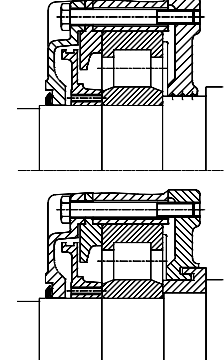
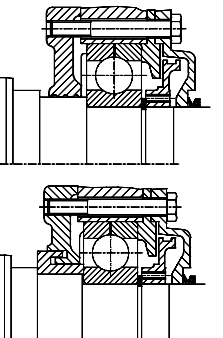
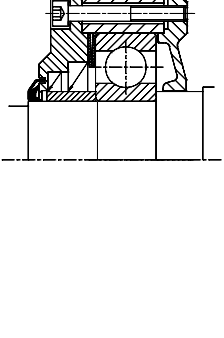
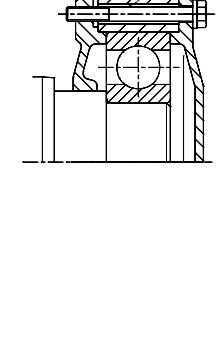
Bearing arrangement

Figures

			
<p>Figure 1</p>	<p>Figure 2</p>	<p>Figure 3</p>	<p>Figure 4</p>
			
<p>Figure 5</p>	<p>Figure 6</p>	<p>Figure 7</p>	<p>Figure 8</p>
			
<p>Figure 9</p>	<p>Figure 10</p>	<p>Figure 11</p>	<p>Figure 12</p>

Bearing arrangement

Figures

			
<p>Figure 13</p>	<p>Figure 14</p>	<p>Figure 15</p>	<p>Figure 16</p>
			
<p>Figure 17</p>	<p>Figure 18</p>	<p>Figure 19</p>	<p>Figure 20</p>
			
<p>Figure 21</p>	<p>Figure 22</p>	<p>Figure 23</p>	

Modifications summary

	IEC/DIN version	Transnorm version, progressive correlation between output and size	Basic version	Energy saving motors acc. to CEMEP	Energy saving motors acc. to EPAct	Motors for use on a frequency inverter	Brake motors	Motors for ship operation	Forced-ventilated motors, cooling method IC 416	Non-ventilated motors, cooling method IC 410	Type of protection "increased safety", EEx e II 2G	Type of protection "Flame-proof enclosure", EEx d II 2G / EEx de II 2G	Type of protection "Non-sparking", EEx nA II 3G	Motors for use in Zone 21, Ex II 2D	Motors for use in Zone 22, Ex II 3D	Motors for fire and smoke exhaust fans
1 Deviating voltage ¹⁾ and/or frequency (special winding)			•	•	•	•	•	•	•	•	•	•	•	•	•	•
2 Voltage changeable (12 terminal studs)			•													
3 Voltage range version			•	•	•	•	•	•	•	•	•	•	•	•	•	•
4 Built-in motor																
- wound stator core and rotor body			•													
- wound stator core and complete rotor			•													
5 Built-in motor in half-hermetic version																
- wound stator core and rotor body			•													
- wound stator core and complete rotor			•													
6 Different switches			•	•	•	•	•	•	•	•	•	•	•	•	•	•
7 Pole-changing motors			•				•									•
8 Star-Delta starting for																
- 1 speed			•	•	•	•	•	•	•	•	•	•	•	•	•	•
- 2 speeds			•													•
9 Type of mounting IM B5, IM V1, IM V3			•	•	•	•	•	•	•	•	•	•	•	•	•	•
10 Type of mounting IM B6, IM B7, IM B8, IM V5, IM V6			•	•	•	•	•	•	•	•	•	•	•	•	•	•
11 Type of mounting IM B9, IM B15, IM V8, IM V9			•	•	•	•	•	•	•	•	•	•	•	•	•	•
12 Type of mounting IM B14, IM V18, IM V19			•	•	•	•	•	•	•	•	•	•	•	•	•	•
13 Type of mounting IM B34			•	•	•	•	•	•	•	•	•	•	•	•	•	•
14 Type of mounting IM B35, IM V15, IM V36			•	•	•	•	•	•	•	•	•	•	•	•	•	•
15 Steel feet version for increased mechanical stress			•	•	•	•	•	•	•	•	•	•	•	•	•	•
16 Built-on gear motor			•	•	•	•	•	•	•	•	•	•	•	•	•	•
17 Plastic fan ²³⁾			•	•	•	•	•	•	•	•	•	•	•	•	•	•
18 Cast aluminium fan ²²⁾			•	•	•	•	•	•	•	•	•	•	•	•	•	•
19 Grey cast iron fan			•								•	•	•	•	•	•
20 Plastic fan cover			•								•	•	•	•	•	•
21 Protective canopy for fan cover			•	•	•	•	•	•	•	•	•	•	•	•	•	•
22 Version for textile industries ¹⁷⁾			•													
23 Thermal winding protection																
1 set (3 PTCs)			•	•	•	•	•	•	•	•	•	•	•	•	•	•
2 sets (6 PTCs)			•	•	•	•	•	•	•	•	•	•	•	•	•	•
3 Platinum resistance thermometers PT 100			•	•	•	•	•	•	•	•	•	•	•	•	•	•
24 Microtherm switch, triplet connected			•	•	•	•	•	•	•	•	•	•	•	•	•	•
25 Dredger version			•	•	•	•	•	•	•	•	•	•	•	•	•	•
26 Vibration-proof version			•	•	•	•	•	•	•	•	•	•	•	•	•	•
27 Special painting RAL 5009, 7030, 1023			•	•	•	•	•	•	•	•	•	•	•	•	•	•
28 Special paintings (except RAL 5009, 7030, 1023)			•	•	•	•	•	•	•	•	•	•	•	•	•	•
29 Special paint system ¹⁵⁾			•	•	•	•	•	•	•	•	•	•	•	•	•	•
30 Paint system world wide			•	•	•	•	•	•	•	•	•	•	•	•	•	•
31 Special shaft			•	•	•	•	•	•	•	•	•	•	•	•	•	•
32 Shaft made of special steel			•	•	•	•	•	•	•	•	•	•	•	•	•	•
33 2nd shaft end, 1 conical shaft end, respectively deviating diameter, shorter shaft end			•	•	•	•	•	•	•	•	•	•	•	•	•	•
34 Resistance rotor (Si 10)			•	•	•	•	•	•	•	•	•	•	•	•	•	•
35 Oil-protected bearing arrangement at D-end			•	•	•	•	•	•	•	•	•	•	•	•	•	•
36 Easy bearing arrangement			•	•	•	•	•	•	•	•	•	•	•	•	•	•
37 Heavy bearing arrangement D-end (with fixed bearing ND-end)			•	•	•	•	•	•	•	•	•	•	•	•	•	•

63	71	80	90	100	100LX	112	132	132MM4, MX6	160	160MX2, L	180MM4, L6, 8	180M2, L4	200L, LX6	200LX2	225S, M	250	280	315S, M	315MX	315MY, LLX	K22R 355	
56	63	71	80	90	100	100	112	132	132	160	160	180	180	200	200	225	250	280	315S	315M, MY, L		
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	A	A	A	A	A
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
x	x	x	x	x	x	x	A	A	A	A	A	A	A	A	A	A	A	K	K	K	K	K
x	x	x	x	x	x	x	A	A	A	A	A	A	A	A	A	A	A	K	K	K	K	K
x	x	x	x	x	x	x	A	A	A	A	A	A	A	A	A	A	A	K	K	K	K	K
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	A	A	A	A	A
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	A	A	A	A	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x ²¹⁾	x ²¹⁾	x ¹⁸⁾	A
0	0	0	0	0	0	0	0	0	0	0	0	0	0	x ²⁾	x ²⁾	x ²⁾	x ²⁾	0	0	0	A	A
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
x	x	x	x	x	x	x	x	A	A	A	A	K	K	K	K	K	K	K	K	K	K	K
x	x	x	x	x	x	x	x	A	A	A	A	K	K	K	K	K	K	K	K	K	K	K
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	x	x	x	x
K	K	K	K	K	K	K	A	A	A	A	A	A	A	x	x	x	x	K	K	K	K	K
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N ³⁾	N ³⁾	N ³⁾	N ³⁾	N ³⁾	N ³⁾	N ³⁾	N ³⁾	K
A	x	x	x	x	x	x	x	x	x	x	x	x	x	x ⁴⁾	x ⁴⁾	x ⁴⁾	x ⁴⁾	x ⁴⁾	x ⁴⁾	x ⁴⁾	N ³⁾	A
x	x	x	x	x	x	x	K	K	K	K	K	K ¹⁴⁾	K ¹⁴⁾	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	K	K	K	K	K	K
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	A	A	A	A	A	A	K
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	A
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x ⁶⁾	x ⁶⁾	N	N	N	A

Modifications summary

IEC/DIN version	Basic version	Energy saving motors acc. to CEMEP	Energy saving motors acc. to EPAAct	Motors for use on a frequency inverter	Brake motors	Motors for ship operation	Forced-ventilated motors, cooling method IC 416	Non-ventilated motors, cooling method IC 410	Type of protection "increased safety", EEx e II 2G	Type of protection "Flame-proof enclosure", EEx d II 2G / EEx de II 2G	Type of protection "Non-sparking", EEx nA II 3G	Motors for use in Zone 21, Ex II 2D	Motors for use in Zone 22, Ex II 3D	Motors for fire and smoke exhaust fans
38 Fixed bearing ND-end	•	•	•	•	•	•	•	•	•	•	•	•	•	•
39 Version with angular contact ball bearing D-end	•	•	•	•	•	•	•	•	•	•	•	•	•	•
40 Relubrication device	•	•	•	•	•	•	•	•	•	•	•	•	•	•
41 Reverse lock	•	•	•	•	•	•	•	•	•	•	•	•	•	•
42 Version with Gamma-ring	•	•	•	•	•	•	•	•	•	•	•	•	•	•
43 Version for operation at speeds > 1,2 n up to limit speed (inverter feeding, HS version)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
44 Degree of protection IP 56	•	•	•	•	•	•	•	•	•	•	•	•	•	•
45 Degree of protection IP 65	•	•	•	•	•	•	•	•	•	•	•	•	•	•
46 Degree of protection IP 66	•	•	•	•	•	•	•	•	•	•	•	•	•	•
47 Tropicalised version	•	•	•	•	•	•	•	•	•	•	•	•	•	•
48 Terminal box right or left	•	•	•	•	•	•	•	•	•	•	•	•	•	•
49 Terminal box with cable sealing connection pipe	•	•	•	•	•	•	•	•	•	•	•	•	•	•
50 Larger terminal box	•	•	•	•	•	•	•	•	•	•	•	•	•	•
51 Additional terminal box	•	•	•	•	•	•	•	•	•	•	•	•	•	•
52 Without terminal box, with cover box, with mains cable, length ...m ¹⁾	•	•	•	•	•	•	•	•	•	•	•	•	•	•
53 Flat connection system, height > 30 mm height 13 (10) mm	•	•	•	•	•	•	•	•	•	•	•	•	•	•
54 Terminal box in VIK version	•	•	•	•	•	•	•	•	•	•	•	•	•	•
55 High-temperature grease	•	•	•	•	•	•	•	•	•	•	•	•	•	•
56 Low-temperature grease ⁹⁾ , special grease acc. to customers' spec.	•	•	•	•	•	•	•	•	•	•	•	•	•	•
57 Outer earth terminal on housing	•	•	•	•	•	•	•	•	•	•	•	•	•	•
58 Second nameplate, loose	•	•	•	•	•	•	•	•	•	•	•	•	•	•
59 Stamping of changed nameplate (only after alteration)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
60 Customers' nameplate (or additional plate)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
61 Version with built-on tachogenerator IGR or brake sensor	•	•	•	•	•	•	•	•	•	•	•	•	•	•
62 Version SPM bearing monitoring (prepared for)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
63 Bearing monitoring PT 100 or PTC	•	•	•	•	•	•	•	•	•	•	•	•	•	•
64 Anti-condensation heating 110 V, 220 V or 230 V, 50 Hz	•	•	•	•	•	•	•	•	•	•	•	•	•	•
65 Vibration grade SGR (reduced)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
66 Vibration grade SGS (special)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
67 Vibration grade SGP (precise)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
68 Version fan motor (terminal box ND-end) ¹⁹⁾	•	•	•	•	•	•	•	•	•	•	•	•	•	•
69 VIK version	•	•	•	•	•	•	•	•	•	•	•	•	•	•
70 Insulation class F - with increased output or - with increased ambient temperature (55°C) or - for heights of > 1000 up to 2500 m above sea level	•	•	•	•	•	•	•	•	•	•	•	•	•	•
71 Insulation class H - with increased output or - with increased ambient temperature or - for heights > 2500 m above sea level	•	•	•	•	•	•	•	•	•	•	•	•	•	•
72 Insulation class H with thermal reserve up to insulation class F	•	•	•	•	•	•	•	•	•	•	•	•	•	•
73 Special leadings (brought-out winding terminations)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
74 Dipping into, spraying with insulating rotor head varnish	•	•	•	•	•	•	•	•	•	•	•	•	•	•
75 Auxiliary traction motor	•	•	•	•	•	•	•	•	•	•	•	•	•	•
76 Special mounting flange	•	•	•	•	•	•	•	•	•	•	•	•	•	•
77 Flange motor with increased accuracy "R" acc. to DIN 42955	•	•	•	•	•	•	•	•	•	•	•	•	•	•
78 Electrical brake release ²⁰⁾	•	•	•	•	•	•	•	•	•	•	•	•	•	•
79 Mechanical brake release (manual release) ⁹⁾	•	•	•	•	•	•	•	•	•	•	•	•	•	•
80 Protection against aggressive chemical medium ¹⁵⁾	•	•	•	•	•	•	•	•	•	•	•	•	•	•

	63	71	80	90	100	100LX	112	132	132MM4, MX6	160	160MX2, L	180MM4, L6, 8	180MX2, L4	200L, LX6	200LX2	225S, M	250	280	315S, M	315MX	315MY, LLX	K22R 355
	56	63	71	80	90	100	100	112	132	132	160	160	180	180	200	200	225	250	280	315S	315M, MY, L	
x	x	x	x	x	x	x	x	x	x	x	x ⁵⁾	x ⁵⁾	x ⁵⁾	N	N	N	N	N	N	N	N	A
A	A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
A	A	A	A	A	A	A	A	K	K	x ⁷⁾	x ⁷⁾	x	x	x	x ¹⁶⁾	x ¹⁶⁾	x ¹⁶⁾	x ¹⁶⁾	x ¹⁶⁾	x ¹⁶⁾	x ¹⁶⁾	A
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
A	A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
A	A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x ¹²⁾	x ¹²⁾	K
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A	A	K
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
x	x	x	x	x	x	x	x	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
x	x	x	x	x	x	x	N	N	N	N ¹³⁾	N ¹³⁾	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	N	N	N
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
K	K	K	K	K	K	K	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	K
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
K	K	K	K	K	K	K	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
A	A	A	A	A	A	A	x	x	x	x	x	x	x	x	x	x	A	A	A	A	A	A
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
x	x	x	x	x	x	x	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A	A	A	A	A	A	A	A
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

Legend for modifications summary

- A = on request
- O = without extra charge
- K = not available
- N = standard version
- X = special version against extra charge

- 1) The following voltages and frequencies are standard versions:
 - 500 V (50 Hz)
 - 440 V (60 Hz)
 - 460 V (60 Hz)
 - 220/380 V (50 Hz)
 - 380/660 V (50 Hz)
 - 230/400 V (50 Hz)
 - 400 V (50 Hz)
 - 400/690 V (50 Hz)
 - 690 V (50 Hz)
 - 660 V (50 Hz)
- 2) For the shaft heights K21R 225, 250, 280
for wall and ceiling mounting request must be made
(welded feet version must be used).
- 3) 2-pole aluminium fan; K22R 355 / 2-pole axial fan
- 4) standard version für 2-pole motors
- 5) standard version for sizes 180 M2, L4
- 6) standard version for sizes 280, 4- up to 8pole,
315S 4- up to 8pole,
315M 4- up to 8pole
- 7) for sizes 132, 160 M/MX 8 and 200 L2 relubrication device
at D-end not possible due to design version.
- 8) not possible for motors with single-face brake
- 9) special kinds of grease on request
- 10) expenses for the Classification Authorities are charged separately.
- 11) expenses for cabling are charged separately.
- 12) high-speed drives not available for sizes 315 MX2, MY2
- 13) sizes 180 M2, L4 as special versions against extra charges available
- 14) Grey cast iron fans for sizes 180 M2, 200 L, 200 LX2 against extra charges
- 15) modification according to specific customer requirements
- 16) IP 55
- 17) special series of outputs
- 18) type of mounting IM V1 only
- 19) sizes 56 - 112 as types YPE, Y21R; sizes 132 - 225 as types Y11R, Y21R
- 20) for built-in single-face and double-face brakes only available
with additional circuitry (not ready for connection)
- 21) size 315L not available in types of mounting IM B5 and IM V3
- 22) standard version for all explosion protected motors
- 23) standard version for motors for fire and smoke exhaust fans

Basic version

Motor selection data for design voltage range A, 50 Hz, 2- up to 24pole
3000/1500/1000/750/600/500/375/300/250 rpm

Motor selection data for design voltage range A, 60 Hz, 2- up to 8pole
3600/1800/1200/900 rpm

Partial load data

Motor selection data for design voltage range B, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Pole changing motors for two speeds

1500/3000 rpm	1000/3000 rpm	1000/1500 rpm
750/3000 rpm	750/1500 rpm	750/1000 rpm
	500/3000 rpm	500/1000 rpm

Pole changing motors for three speeds

750/1500/3000 rpm 750/1000/1500 rpm

Pole changing motors for four speeds

500/750/1000/1500 rpm

Built-in motors, 50 Hz, 2- up to 8pole

3000/1500/1000/750 rpm

Series

K21R, mounting dimensions and output correlation acc, to DIN 42673 and 42677
K20R, K22R, Transnorm version

Output range

0,06 – 500 kW

Sizes

56 – 355

Degrees of protection

IP 55 acc, to DIN EN 60034- 5, higher degrees of protection as an option

Cooling method

IC 411 acc, to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc, to DIN EN 60034-7

Ambient temperatures

shaft heights 56 up to 132T –20 °C up to +40 °C
from shaft height 132 –40 °C up to +40 °C

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P_B	n_B	EFF-	$\eta_{4/4B}$	$\eta_{3/4B}$	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
	kW	rpm	-	%	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version													
K21R 56 K2	0.09	2865		70.0	67.5	0.74	0.25	4.9	2.3	2.3	2.8	0.00013	4.4
K21R 56 G2	0.12	2830		70.3	69.6	0.77	0.32	4.5	2.1	2.1	2.3	0.00013	4.5
K21R 63 K2	0.18	2790		67.1	63.1	0.76	0.50	4.1	1.9	1.9	2.2	0.00013	4.9
K21R 63 G2	0.25	2800		68.1	65.6	0.72	0.74	4.2	2.2	2.2	2.4	0.00015	5.2
K21R 71 K2	0.37	2780		71.5	69.7	0.79	0.94	4.4	2.1	2.1	2.3	0.00025	6.7
K21R 71 G2	0.55	2815		74.3	72.7	0.81	1.38	5.1	2.3	2.1	2.6	0.00032	7.6
K21R 80 K2	0.75	2825		77.5	77.3	0.81	1.72	5.9	2.4	2.4	2.4	0.00057	10.7
K21R 80 G2	1.1	2835	2	77.8	77.4	0.80	2.55	6.0	2.4	2.3	2.6	0.00072	11.5
K21R 90 S2	1.5	2850	2	80.4	80.2	0.80	3.35	7.0	2.5	2.5	2.8	0.00132	16.0
K21R 90 L2	2.2	2850	2	82.0	81.5	0.85	4.55	7.5	2.8	2.3	2.9	0.0017	19.0
K21R 100 L2	3.0	2865	2	83.4	84.2	0.84	6.15	7.0	2.4	2.4	2.8	0.00275	25.0
K21R 112 M2	4.0	2900	2	84.4	84.7	0.81	8.4	7.0	2.2	2.1	2.9	0.0045	32
K21R 132 S2 T	5.5	2890	2	86.3	86.6	0.84	11	7.5	2.4	2.2	3.0	0.0055	40
K21R 132 SX2	7.5	2900	2	87.0	87.0	0.86	14.5	6.6	1.8	1.3	2.5	0.0110	57
K21R 160 M2	11.0	2900	2	88.5	88.5	0.90	20	7.0	2.4	2.0	3.0	0.0258	81
K21R 160 MX2	15.0	2930	2	89.4	89.4	0.90	27	7.1	2.2	1.7	2.9	0.0575	118
K21R 160 L2	18.5	2920	2	90.5	89.5	0.92	32	7.2	2.1	1.6	2.8	0.0675	134
K21R 180 M2	22	2935	2	91.8	91.0	0.92	37.5	6.8	1.7	1.4	2.6	0.105	165
K21R 200 L2	30	2940	2	92.8	92.0	0.92	50.5	7.3	2.0	1.6	2.9	0.128	195
K21R 200 LX2	37	2940	2	93.0	92.0	0.90	64	7.0	1.8	1.3	2.4	0.193	255
K21R 225 M2	45	2940	1	93.7	93.0	0.91	76	7.5	1.8	1.4	2.7	0.220	290
K21R 250 M2	55	2955	2	93.7	92.5	0.91	93	7.5	2.0	1.5	2.6	0.375	360
K21R 280 S2	75	2970	1	94.6	93.5	0.92	124	7.5	2.0	1.6	2.6	0.650	490
K21R 280 M2	90	2970	2	94.7	94.2	0.91	151	8.5	2.2	1.8	2.8	0.675	510
K21R 315 S2	110	2975		95.4	94.5	0.91	183	8.5	1.5	1.3	2.5	1.21	720
K21R 315 M2	132	2975		95.4	94.5	0.91	219	8.5	2.0	1.8	2.7	1.44	800
K21R 315 MX2	160	2975		96.0	95.0	0.93	259	8.5	2.0	1.6	2.6	1.76	980
K21R 315 MY2	200	2970		96.0	95.2	0.92	327	8.2	2.6	2.0	2.6	2.82	1170
K21R 315 L2	250	2973		96.1	95.2	0.93	404	7.3	2.1	1.4	2.0	3.66	1460
K21R 315 LX2	315	2975		96.7	95.5	0.92	511	7.4	2.4	1.4	2.0	4.43	1630
K22R 355 MY2	315	2988		96.8	96.6	0.88	534	8.6	1.3	1.0	3.0	4.10	1900
K22R 355 M2	355	2980		96.5	96.5	0.91	583	7.3	1.3	1.0	2.3	4.20	2000
K22R 355 MX2	400	2985		96.8	96.7	0.90	663	8.5	1.9	1.3	3.2	5.50	2200
K22R 355 LY2	450	2983		96.9	96.7	0.92	729	7.2	1.3	1.0	2.4	7.10	2400
K22R 355 L2	500	2985		97.2	97	0.92	807	8.2	1.8	0.9	2.6	7.10	2400

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 480 V, 60 Hz

Type	P_B	n_B	η_B	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
	kW	rpm	%	-	480 V A	-	-	-	-	kgm ²	kg
Synchronous speed 3600 rpm – 2-pole version											
K21R 56 K2	0.105	3450	71	0.72	0.25	5.8	2.6	2.6	3.3	0.00013	4.4
K21R 56 G2	0.14	3440	73	0.72	0.32	5.2	2.3	2.3	2.8	0.00013	4.5
K21R 63 K2	0.21	3420	67	0.71	0.53	4.6	2.4	2.2	2.7	0.00013	4.9
K21R 63 G2	0.30	3430	70	0.66	0.78	4.3	2.2	2.2	2.4	0.00015	5.2
K21R 71 K2	0.44	3400	73	0.77	0.94	4.6	2.1	2.1	2.2	0.00025	6.7
K21R 71 G2	0.65	3430	75	0.73	1.43	5.6	2.4	2.4	2.6	0.00032	7.6
K21R 80 K2	0.90	3440	80	0.78	1.74	6.4	2.6	2.4	2.4	0.00057	10.7
K21R 80 G2	1.3	3440	79	0.75	2.65	6.6	2.4	2.3	2.6	0.00072	11.5
K21R 90 S2	1.8	3470	81	0.78	3.45	6.8	2.5	2.4	2.5	0.00132	16.0
K21R 90 L2	2.6	3460	83	0.82	4.60	6.9	2.9	2.3	2.9	0.0017	19.0
K21R 100 L2	3.6	3470	86	0.83	6.10	7.4	2.5	2.4	2.8	0.00275	25.0
K21R 112 M2	4.8	3500	85	0.80	8.50	7.6	2.2	2.1	2.9	0.0045	32
K21R 132 S2 T	6.6	3500	86	0.84	11.00	8.8	2.4	2.2	3.0	0.0055	40
K21R 132 SX2	9.0	3480	87.0	0.86	14.5	6.6	1.8	1.3	2.4	0.0110	57
K21R 160 M2	13.0	3480	88.0	0.90	19.5	7.0	2.4	1.9	3.0	0.0258	81
K21R 160 MX2	18.0	3530	89.6	0.90	27	7.1	2.2	1.7	2.9	0.0575	118
K21R 160 L2	22.0	3520	90.5	0.92	32	7.2	2.1	1.6	2.8	0.0675	134
K21R 180 M2	26.0	3535	92.0	0.92	37	7.0	1.7	1.4	2.6	0.105	165
K21R 200 L2	36.0	3550	93.0	0.92	51	7.4	2.1	1.6	2.9	0.128	195
K21R 200 LX2	44.0	3545	93.0	0.91	63	7.0	1.8	1.3	2.4	0.193	255
K21R 225 M2	54.0	3535	93.7	0.90	77	7.5	1.8	1.4	2.7	0.220	290
K21R 250 M2	66.0	3550	93.7	0.90	94	7.4	2.0	1.5	2.6	0.375	360
K21R 280 S2	90.0	3570	94.5	0.91	126	7.5	2.0	1.6	2.6	0.650	490
K21R 280 M2	105	3570	94.5	0.91	147	8.5	2.2	1.8	2.8	0.675	510
K21R 315 S2	132	3575	95.0	0.91	184	8.5	1.5	1.3	2.5	1.21	720
K21R 315 M2	158	3575	95.4	0.91	219	8.5	2.0	1.8	2.6	1.44	800
K21R 315 MX2	190	3575	96.0	0.92	259	8.5	2.1	1.6	2.6	1.76	980
K21R 315 MY2	225	3570	95.8	0.91	310	8.7	2.8	2.1	2.8	2.82	1170
K21R 315 L2	300	3570	96.1	0.92	408	7.3	2.2	1.4	2.0	3.66	1460
K21R 315 LX2	340	3575	96.7	0.92	460	7.5	2.5	1.4	2.1	4.43	1630
K22R 355 MY2	340									4.10	1900
K22R 355 M2	400									4.20	2000
K22R 355 MX2	450									5.50	2200
K22R 355 LY2	500									7.10	2400
K22R 355 L2	550									7.10	2400

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P_B	n_B	EFF-	$\eta_{4/4B}$	$\eta_{3/4B}$	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m	
	kW	rpm	-	%	%	-	A	-	-	-	-	kgm ²	kg	
Synchronous speed 1500 rpm – 4-pole version														
K21R 56 K4	0.06	1410		60.5	56.8	0.60	0.24	3.1	2.3	2.3	2.7	0.00019	4.3	
K21R 56 G4	0.09	1375		62.0	61	0.68	0.31	3.2	1.9	1.9	2.2	0.00019	4.4	
K21R 63 K4	K20R 56 K4	0.12		1370	57.5	56.7	0.68	0.44	3.2	1.9	1.8	2.2	0.00019	4.8
K21R 63 G4	K20R 56 G4	0.18		1360	61.0	56.5	0.66	0.65	3.3	2.0	2.0	2.3	0.00024	5.2
K21R 71 K4	K20R 63 K4	0.25		1385	64.6	62.3	0.72	0.78	3.6	1.8	1.8	2.1	0.00040	6.8
K21R 71 G4	K20R 63 G4	0.37		1370	67.8	66.9	0.74	1.06	3.8	2.0	2.0	2.2	0.00050	7.8
K21R 80 K4	K20R 71 K4	0.55		1400	71.5	69.3	0.69	1.60	4.1	2.1	2.0	2.3	0.00087	10.6
K21R 80 G4	K20R 71 G4	0.75		1400	73.5	70.8	0.70	2.10	4.6	2.2	2.1	2.3	0.00107	11.7
K21R 90 S4	K20R 80 K4	1.1		1410	76.6	75.3	0.79	2.62	5.5	2.3	2.2	2.5	0.00207	15.5
K21R 90 L4	K20R 80 G4	1.5	2	1400	78.8	77.9	0.81	3.40	5.5	2.5	2.4	2.6	0.00260	18.0
K21R 100 L4	K20R 90 L4	2.2	2	1410	81.0	80	0.76	5.15	6.0	3.0	2.7	3.1	0.00400	23.5
K21R 100 LX4	K20R 100 S4	3.0	2	1430	82.6	82.3	0.79	6.70	6.5	2.3	2.1	2.8	0.00725	30
K21R 112 M4	K20R 100 L4	4.0	2	1435	84.2	83.6	0.78	8.80	6.9	2.6	2.5	3.2	0.00900	37
K21R 132 S4 T	K20R 100 LX4	5.5	2	1425	85.7	85.3	0.77	11.8	6.3	2.5	2.4	2.9	0.01100	47
K21R 132 M4	K20R 132 S4	7.5	2	1450	87.0	86	0.84	15	6.0	2.0	1.7	2.9	0.0280	70
K21R 160 M4	K20R 132 M4	11.0	2	1450	88.4	88	0.85	21	6.8	2.2	1.9	3.3	0.0350	92
K21R 160 L4	K20R 160 S4	15.0	2	1465	89.4	89	0.86	28	7.3	2.5	2.0	3.0	0.0780	120
K21R 180 M4	K20R 160 M4	18.5	2	1460	90.0	89.5	0.86	34.5	6.8	2.5	2.0	2.9	0.0900	136
K21R 180 L4	K20R 180 S4	22	2	1465	90.5	90.5	0.84	42	6.5	2.0	1.8	2.6	0.1380	170
K21R 200 L4	K20R 180 M4	30	2	1465	91.5	91	0.85	55.5	7.0	2.0	1.7	2.4	0.1680	200
K21R 225 S4	K20R 200 M4	37	2	1470	92.5	91.5	0.86	67	7.0	2.0	1.7	2.5	0.2750	270
K21R 225 M4	K20R 200 L4	45	2	1470	93.0	92.5	0.86	81	7.0	2.0	1.7	2.5	0.3130	300
K21R 250 M4	K20R 225 M4	55	2	1475	93.5	93	0.86	98.5	7.0	2.2	1.7	2.3	0.5250	375
K21R 280 S4	K20R 250 S4	75	2	1480	94.1	93.5	0.86	134	7.0	2.0	1.7	2.2	0.9500	520
K21R 280 M4	K20R 250 M4	90	2	1480	94.6	93.5	0.86	160	7.0	2.1	1.6	2.2	1.10	580
K21R 315 S4	K20R 280 S4	110		1485	95.1	94.5	0.86	194	7.5	1.8	1.6	2.2	1.96	740
K21R 315 M4	K20R 280 M4	132		1485	95.1	94.5	0.86	233	7.0	1.8	1.5	2.2	2.27	840
K21R 315 MX4	K20R 315 S4	160		1480	95.0	94.8	0.87	279	7.0	1.8	1.5	2.0	2.73	1000
K21R 315 MY4	K20R 315 M4	200		1485	96.0	95	0.88	342	7.5	2.0	1.8	2.4	4.82	1200
K21R 315 L4	K20R 315 L4	250		1485	96.1	95	0.90	417	8.0	2.0	1.6	2.3	5.93	1510
K21R 315 LX4	K20R 315 LX4	315		1490	96.5	95.5	0.88	535	8.6	1.9	1.5	2.5	6.82	1630
K22R 355 MY4		315		1492	95.6	95.5	0.85	560	7.1	1.4	1.0	2.9	5.60	1950
K22R 355 M4		355		1490	96.8	96.5	0.84	630	8.1	1.8	1.0	3.1	7.9	2150
K22R 355 MX4		400		1494	96.8	96.7	0.84	710	8.6	1.3	1.0	3.0	9.5	2400
K22R 355 LY4		450		1490	96.8	96.7	0.82	818	8.0	1.2	1.0	3.0	10.0	2500
K22R 355 L4		500		1490	96.7	96.4	0.79	945	7.9	1.1	1.0	3.0	10.0	2500

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 480 V, 60 Hz

Type	P_B	n_B	η_B	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m	
	kW	rpm	%	-	480 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 1800 rpm – 4-pole version												
K21R 56 K4	0.075	1710	63	0.60	0.24	3.5	2.5	2.5	2.9	0.00019	4.3	
K21R 56 G4	0.105	1690	63	0.63	0.32	3.5	2.3	2.3	2.5	0.00019	4.4	
K21R 63 K4	K20R 56 K4	0.14	1685	57	0.62	0.48	3.2	1.9	1.8	2.2	0.00019	4.8
K21R 63 G4	K20R 56 G4	0.21	1685	62	0.61	0.67	3.3	2.0	2.0	2.3	0.00024	5.2
K21R 71 K4	K20R 63 K4	0.30	1690	66	0.68	0.80	3.7	1.8	1.8	2.1	0.00040	6.8
K21R 71 G4	K20R 63 G4	0.44	1685	71	0.69	1.08	4.0	2.0	2.0	2.2	0.00050	7.8
K21R 80 K4	K20R 71 K4	0.65	1710	71	0.66	1.67	4.5	2.1	2.0	2.2	0.00087	10.6
K21R 80 G4	K20R 71 G4	0.90	1710	74	0.68	2.15	5.0	2.2	2.1	2.3	0.00107	11.7
K21R 90 S4	K20R 80 K4	1.3	1720	77	0.77	2.65	5.5	2.3	2.2	2.5	0.00207	15.5
K21R 90 L4	K20R 80 G4	1.8	1710	80	0.77	3.50	5.6	2.5	2.4	2.6	0.00260	18.0
K21R 100 L4	K20R 90 L4	2.6	1720	81	0.75	5.15	6.7	3.0	2.7	3.1	0.00400	23.5
K21R 100 LX4	K20R 100 S4	3.6	1730	83	0.77	6.80	6.7	2.2	2.1	2.8	0.00725	30
K21R 112 M4	K20R 100 L4	4.8	1735	85	0.78	8.70	7.3	2.8	2.5	3.2	0.00900	37
K21R 132 S4 T	K20R 100 LX4	6.6	1720	87	0.76	12.20	6.7	2.5	2.5	2.9	0.01100	47
K21R 132 M4	K20R 132 S4	9.0	1750	87.0	0.84	15	6.0	2.0	1.7	2.8	0.0280	70
K21R 160 M4	K20R 132 M4	13.0	1755	88.4	0.84	21	6.9	2.2	1.9	3.3	0.0350	92
K21R 160 L4	K20R 160 S4	18.0	1765	89.5	0.86	28	7.6	2.5	2.0	3.0	0.0780	120
K21R 180 M4	K20R 160 M4	22.0	1760	90.0	0.85	35	6.7	2.5	2.0	2.8	0.0900	136
K21R 180 L4	K20R 180 S4	26.0	1765	90.5	0.83	42	6.5	2.0	1.8	2.6	0.1380	170
K21R 200 L4	K20R 180 M4	36.0	1765	91.5	0.84	56	7.0	2.0	1.7	2.4	0.1680	200
K21R 225 S4	K20R 200 M4	44.0	1770	92.5	0.85	67	7.0	2.0	1.7	2.5	0.2750	270
K21R 225 M4	K20R 200 L4	54.0	1770	93.0	0.85	82	7.0	2.0	1.7	2.5	0.3130	300
K21R 250 M4	K20R 225 M4	66.0	1775	93.0	0.85	100	7.0	2.2	1.7	2.3	0.5250	375
K21R 280 S4	K20R 250 S4	90.0	1780	94.0	0.85	135	7.0	2.0	1.7	2.1	0.9500	520
K21R 280 M4	K20R 250 M4	105.0	1780	94.4	0.86	156	7.0	2.1	1.6	2.2	1.10	580
K21R 315 S4	K20R 280 S4	132.0	1785	95.0	0.85	197	7.5	1.8	1.6	2.2	1.96	740
K21R 315 M4	K20R 280 M4	158.0	1780	95.0	0.85	235	7.0	1.8	1.5	2.2	2.27	840
K21R 315 MX4	K20R 315 S4	190.0	1780	94.8	0.86	280	7.0	1.8	1.5	2.0	2.73	1000
K21R 315 MY4	K20R 315 M4	225.0	1785	96.0	0.87	324	7.7	2.1	1.9	2.5	4.82	1200
K21R 315 L4	K20R 315 L4	300.0	1785	96.2	0.88	426	8.0	2.0	1.6	2.3	5.93	1510
K21R 315 LX4	K20R 315 LX4	340.0	1790	96.9	0.88	480	9.5	2.1	1.7	2.8	6.82	1630
K22R 355 MY4		340	data on request								5.60	1950
K22R 355 M4		400	1790	96.5	0.84	594	8.8	2.1	0.9	3.2	7.9	2150
K22R 355 MX4		440	data on request								9.5	2400
K22R 355 LY4		500	data on request								10.0	2500
K22R 355 L4		550	data on request								10.0	2500

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P_B	n_B	$\eta_{4/4B}$	$\eta_{3/4B}$	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_G/M_B	M_K/M_B	J	m
		kW	rpm	%	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version													
K21R 63 K6	K20R 56 K6	0.09	895	50.5	45.3	0.56	0.46	2.5	2.0	2.0	2.4	0.00024	4.9
K21R 63 G6	K20R 56 G6	0.12	880	52.0	48	0.56	0.59	2.5	2.0	2.0	2.3	0.00027	5.7
K21R 71 K6	K20R 63 K6	0.18	925	58.0	54.5	0.51	0.88	2.8	1.6	1.6	2.1	0.00045	7.4
K21R 71 G6	K20R 63 G6	0.25	915	60.0	56.5	0.55	1.10	2.9	2.0	2.0	2.2	0.00060	8.3
K21R 80 K6	K20R 71 K6	0.37	915	66.0	62.5	0.66	1.22	3.4	2.0	2.0	2.0	0.00130	11.0
K21R 80 G6	K20R 71 G6	0.55	915	68.0	65.5	0.67	1.73	3.7	2.2	2.2	2.4	0.00175	12.5
K21R 90 S6	K20R 80 K6	0.75	935	70.0	67.5	0.64	2.43	4.5	2.4	2.4	2.4	0.00325	16.0
K21R 90 L6	K20R 80 G6	1.1	935	73.0	70	0.69	3.15	4.6	2.2	2.2	2.4	0.00425	19.0
K21R 100 L6	K20R 90 L6	1.5	945	76.4	76.2	0.73	3.90	4.6	2.1	2.0	2.4	0.00625	24.0
K21R 112 M6	K20R 100 L6	2.2	950	79.8	78.9	0.74	5.35	5.3	2.2	2.1	2.7	0.01225	33.5
K21R 132 S6	K20R 112 M6	3.0	955	78.5	78.5	0.82	6.7	5.7	1.8	1.6	2.7	0.0180	46
K21R 132 M6	K20R 112 MX6	4.0	955	80.0	79	0.80	9	6.0	2.2	2.0	3.1	0.0230	53
K21R 132 MX6	K20R 132 S6	5.5	955	83.0	83	0.83	11.5	5.0	1.8	1.5	2.3	0.0430	70
K21R 160 M6	K20R 132 M6	7.5	960	85.0	84	0.82	15.5	5.5	2.0	1.6	2.5	0.0530	86
K21R 160 L6	K20R 160 S6	11.0	965	85.2	85	0.86	21.5	5.0	2.0	1.7	2.3	0.1130	114
K21R 180 L6	K20R 160 M6	15.0	965	86.0	85	0.83	30.5	6.0	2.4	2.1	2.7	0.1450	136
K21R 200 L6	K20R 180 S6	18.5	970	88.1	88	0.87	35	5.5	2.0	1.7	2.4	0.2280	175
K21R 200 LX6	K20R 180 M6	22	970	88.8	88.5	0.87	41	6.2	2.2	1.8	2.6	0.2680	200
K21R 225 M6	K20R 200 M6	30	973	90.4	90	0.89	54	6.5	2.2	1.7	2.5	0.4430	265
K21R 250 M6	K20R 225 M6	37	975	91.0	90.8	0.89	66	6.5	2.2	1.7	2.3	0.8250	360
K21R 280 S6	K20R 250 S6	45	980	92.0	92	0.87	81	6.0	2.0	1.5	2.0	1.28	465
K21R 280 M6	K20R 250 M6	55	980	92.5	92	0.88	97.5	6.5	2.3	1.7	2.4	1.48	520
K21R 315 S6	K20R 280 S6	75	985	93.7	93	0.87	133	7.0	2.0	1.6	2.4	2.63	690
K21R 315 M6	K20R 280 M6	90	990	94.4	93.5	0.88	156	7.0	2.0	1.7	2.4	3.33	800
K21R 315 MX6	K20R 315 S6	110	990	94.0	93.8	0.88	192	7.5	2.2	1.7	2.6	3.60	880
K21R 315 MY6	K20R 315 M6	132	990	95.0	94.7	0.88	228	7.5	2.0	1.7	2.4	6.00	1050
K21R 315 L6	K20R 315 L6	160	985	95.3	95	0.89	272	7.5	2.3	1.9	2.4	6.67	1250
K21R 315 LX6	K20R 315 LX6	200	990	95.0	94.7	0.87	349	8.3	2.2	2.0	2.7	8.6	1460
K22R 355 MY6		200	995	96.1	96	0.83	362	7.0	1.5	1.3	2.4	8.1	1550
K22R 355 M6		250	994	96.0	95.7	0.81	464	7.0	1.8	1.3	2.3	8.2	1650
K22R 355 MX6		315	995	96.5	96.5	0.83	568	6.8	1.6	1.3	2.5	12.1	2200
K22R 355 LY6		355	995	96.0	95.8	0.78	684	7.4	1.9	1.4	2.6	14.0	2400

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 480 V, 60 Hz

Type	P_B	n_B	η_B	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_S/M_B	M_L/M_B	J	m	
	kW	rpm	%	-	480 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 1200 rpm – 6-pole version												
K21R 63 K6	K20R 56 K6	0.105	1105	50	0.53	0.48	2.7	2.1	2.1	2.5	0.00024	4.9
K21R 63 G6	K20R 56 G6	0.14	1100	53	0.51	0.62	2.6	2.3	2.3	2.7	0.00027	5.7
K21R 71 K6	K20R 63 K6	0.21	1135	60	0.48	0.88	3.1	1.6	1.6	2.1	0.00045	7.4
K21R 71 G6	K20R 63 G6	0.30	1120	62	0.52	1.12	3.3	2.0	2.0	2.2	0.00060	8.3
K21R 80 K6	K20R 71 K6	0.44	1125	68	0.65	1.20	3.8	2.0	2.0	2.0	0.00130	11.0
K21R 80 G6	K20R 71 G6	0.65	1120	70	0.64	1.75	4.0	2.3	2.2	2.4	0.00175	12.5
K21R 90 S6	K20R 80 K6	0.90	1140	71	0.60	2.55	4.8	2.4	2.4	2.6	0.00325	16.0
K21R 90 L6	K20R 80 G6	1.3	1135	74	0.63	3.35	4.7	2.2	2.2	2.4	0.00425	19.0
K21R 100 L6	K20R 90 L6	1.8	1145	78	0.69	4.05	4.9	2.1	2.0	2.4	0.00625	24.0
K21R 112 M6	K20R 100 L6	2.6	1150	81	0.74	5.20	6.0	2.2	2.1	2.7	0.01225	33.5
K21R 132 S6	K20R 112 M6	3.6	1155	79.0	0.79	6.9	5.7	1.9	1.6	2.7	0.0180	46
K21R 132 M6	K20R 112 MX6	4.8	1155	80.0	0.78	9.3	6.0	2.2	2.0	3.1	0.0230	53
K21R 132 MX6	K20R 132 S6	6.6	1150	83.0	0.82	11.7	5.0	1.8	1.5	2.3	0.0430	70
K21R 160 M6	K20R 132 M6	9.0	1150	84.5	0.80	16.0	5.5	2.0	1.6	2.5	0.0530	86
K21R 160 L6	K20R 160 S6	13.0	1160	85.0	0.85	22	5.0	2.0	1.7	2.3	0.1130	114
K21R 180 L6	K20R 160 M6	18.0	1165	86.0	0.80	31	6.0	2.4	2.1	2.8	0.1450	136
K21R 200 L6	K20R 180 S6	21.0	1175	88.3	0.86	33	5.8	2.1	1.8	2.6	0.2280	175
K21R 200 LX6	K20R 180 M6	26.0	1175	89.0	0.86	41	6.3	2.2	1.7	2.7	0.2680	200
K21R 225 M6	K20R 200 M6	34.0	1175	90.5	0.88	51	6.5	2.2	1.7	2.6	0.4430	265
K21R 250 M6	K20R 225 M6	42.0	1175	91.5	0.87	63	6.5	2.2	1.8	2.3	0.8250	360
K21R 280 S6	K20R 250 S6	54.0	1185	92.0	0.87	81	6.0	2.0	1.5	2.0	1.28	465
K21R 280 M6	K20R 250 M6	66.0	1180	92.5	0.88	98	7.0	2.4	1.8	2.4	1.48	520
K21R 315 S6	K20R 280 S6	90.0	1185	93.5	0.87	133	7.0	2.0	1.6	2.4	2.63	690
K21R 315 M6	K20R 280 M6	108	1190	94.3	0.86	160	7.0	2.0	1.7	2.4	3.33	800
K21R 315 MX6	K20R 315 S6	132	1185	93.5	0.87	195	7.5	2.2	1.7	2.6	3.60	880
K21R 315 MY6	K20R 315 M6	158	1190	95.0	0.87	230	7.5	2.1	1.7	2.5	6.00	1050
K21R 315 L6	K20R 315 L6	190	1185	95.2	0.89	270	7.0	2.2	1.8	2.3	6.67	1250
K21R 315 LX6	K20R 315 LX6	240	1190	95.0	0.87	349	8.2	2.2	2.0	2.7	8.6	1460
K22R 355 MY6		240	data on request							8.1	1550	
K22R 355 M6		275	data on request							8.2	1650	
K22R 355 MX6		350	data on request							12.1	2200	
K22R 355 LY6		400	data on request							14.0	2400	

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P_B	n_B	$\eta_{4/4B}$	$\eta_{3/4B}$	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_G/M_B	M_K/M_B	J	m
		kW	rpm	%	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 750 rpm – 8-pole version													
K21R 71 K8	K20R 63 K8	0.09	675	45.5	40.3	0.51	0.56	2.1	1.9	1.9	2.1	0.00050	6.6
K21R 71 G8	K20R 63 G8	0.12	670	46.5	41.3	0.51	0.73	2.3	1.8	1.8	2.1	0.00060	8.1
K21R 80 K8	K20R 71 K8	0.18	690	56.5	53.8	0.59	0.78	2.8	2.0	2.0	2.2	0.00130	10.5
K21R 80 G8	K20R 71 G8	0.25	695	58.0	54	0.56	1.12	3.0	2.3	2.3	2.5	0.00175	12.0
K21R 90 S8	K20R 80 K8	0.37	700	61.5	56.3	0.54	1.6	3.0	1.9	1.9	2.1	0.00300	15.0
K21R 90 L8	K20R 80 G8	0.55	695	64.9	61.8	0.60	2.04	3.2	1.9	1.9	2.2	0.00375	18.0
K21R 100 L8	K20R 90 L8	0.75	705	67.0	64	0.60	2.7	3.3	2.0	2.0	2.3	0.00625	23.0
K21R 100 LX8	K20R 100 S8	1.1	705	73.0	72.5	0.67	3.25	4.0	2.0	2.0	2.4	0.00900	28.0
K21R 112 M8	K20R 100 L8	1.5	705	75.5	75.3	0.70	4.1	4.4	2.2	2.1	2.5	0.01225	33.5
K21R 132 S8	K20R 112 M8	2.2	705	75.5	75	0.76	5.5	4.5	1.7	1.6	2.3	0.01800	46
K21R 132 M8	K20R 112 MX8	3.0	705	78.0	78	0.75	7.4	4.5	1.7	1.6	2.3	0.0230	53
K21R 160 M8	K20R 132 S8	4.0	710	79.3	79	0.78	9.3	4.0	1.6	1.3	1.9	0.0430	70
K21R 160 MX8	K20R 132 M8	5.5	710	81.4	81	0.78	12.5	4.5	1.7	1.6	2.1	0.0530	86
K21R 160 L8	K20R 160 S8	7.5	725	83.0	83	0.78	16.5	4.5	1.8	1.6	2.1	0.1130	114
K21R 180 L8	K20R 160 M8	11.0	720	85.0	84	0.78	24	4.5	2.0	1.7	2.1	0.1450	136
K21R 200 L8	K20R 180 S8	15.0	725	86.5	86	0.79	31.5	5.0	2.0	1.7	2.3	0.228	175
	K20R 180 M8	18.5	725	87.5	86.5	0.80	38	5.0	1.9	1.7	2.2	0.268	200
K21R 225 S8		18.5	725	89.2	88	0.83	36	5.5	2.0	1.6	2.2	0.440	265
K21R 225 M8	K20R 200 M8	22	725	89.2	89	0.84	42.5	5.0	1.8	1.5	2.2	0.440	265
K21R 250 M8	K20R 225 M8	30	730	90.2	90	0.79	61	5.5	2.2	1.8	2.2	0.825	360
K21R 280 S8	K20R 250 S8	37	735	91.0	90.5	0.80	73.5	5.5	2.0	1.5	2.0	1.35	465
K21R 280 M8	K20R 250 M8	45	735	91.5	91	0.77	92	6.0	2.3	1.8	2.4	1.55	520
K21R 315 S8	K20R 280 S8	55	740	93.1	92	0.80	107	6.5	1.8	1.6	2.3	2.63	690
K21R 315 M8	K20R 280 M8	75	740	93.3	93	0.81	143	6.0	2.0	1.6	2.3	3.33	800
K21R 315 MX8	K20R 315 S8	90	740	93.5	93	0.81	172	6.0	1.9	1.6	2.2	3.60	880
K21R 315 MY8	K20R 315 M8	110	740	94.6	94	0.81	207	6.5	2.1	1.8	2.4	6.00	1100
K21R 315 L8	K20R 315 L8	132	740	95.0	94.3	0.83	242	6.3	2.0	1.7	2.1	6.76	1250
K21R 315 LX8	K20R 315 LX8	160	740	95.2	94.5	0.79	307	7.2	2.2	1.9	2.5	8.71	1430
K22R 355 MY8		160	744	95.2	95	0.80	303	6.8	1.3	1.0	2.5	9.3	1500
K22R 355 M8		200	743	95.6	95.3	0.77	392	6.5	1.6	1.0	2.7	9.5	1600
K22R 355 MX8		250	744	95.8	95.6	0.78	483	6.6	1.3	1.0	2.8	13.4	2200
K22R 355 LY8		280	744	95.3	95.1	0.78	544	8.2	1.2	1.0	2.8	15.8	2400

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 480 V, 60 Hz

Type	P_B	n_B	η_B	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_G/M_B	M_K/M_B	J	m	
	kW	rpm	%	-	480 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 900 rpm – 8-pole version												
K21R 71 K8	K20R 63 K8	0.105	835	48	0.49	0.54	2.3	1.9	1.9	2.1	0.00050	6.6
K21R 71 G8	K20R 63 G8	0.14	830	47	0.48	0.74	2.5	1.8	1.8	2.1	0.00060	8.1
K21R 80 K8	K20R 71 K8	0.21	845	58	0.57	0.76	2.9	2.0	2.0	2.2	0.00130	10.5
K21R 80 G8	K20R 71 G8	0.30	845	61	0.54	1.10	3.3	2.3	2.3	2.5	0.00175	12.0
K21R 90 S8	K20R 80 K8	0.44	855	62	0.51	1.67	3.7	1.9	1.9	2.1	0.00300	15.0
K21R 90 L8	K20R 80 G8	0.65	850	68	0.54	2.13	3.7	2.1	2.1	2.2	0.00375	18.0
K21R 100 L8	K20R 90 L8	0.90	855	68	0.57	2.80	3.7	2.0	2.0	2.3	0.00625	23.0
K21R 100 LX8	K20R 100 S8	1.3	855	75	0.64	3.25	4.4	2.0	2.0	2.4	0.00900	28.0
K21R 112 M8	K20R 100 L8	1.8	850	78	0.67	4.15	4.6	2.2	2.1	2.5	0.01225	33.5
K21R 132 S8	K20R 112 M8	2.6	865	76.0	0.71	5.8	4.5	1.7	1.7	2.4	0.01800	46
K21R 132 M8	K20R 112 MX8	3.6	855	78.0	0.73	7.6	4.4	1.7	1.6	2.3	0.0230	53
K21R 160 M8	K20R 132 S8	4.8	860	79.5	0.73	9.9	4.0	1.6	1.3	1.9	0.0430	70
K21R 160 MX8	K20R 132 M8	6.6	865	82.0	0.74	13.1	4.5	1.7	1.6	2.2	0.0530	86
K21R 160 L8	K20R 160 S8	9.0	875	83.0	0.78	16.7	4.4	1.8	1.6	2.1	0.1130	114
K21R 180 L8	K20R 160 M8	13.0	870	85.0	0.77	24	4.5	2.0	1.8	2.2	0.1450	136
K21R 200 L8	K20R 180 S8	18.0	875	87.0	0.76	33	5.0	2.0	1.7	2.3	0.228	175
	K20R 180 M8	21.0	870	87.5	0.80	36	4.5	2.0	1.8	2.3	0.268	200
K21R 225 S8		22.0	880	89.5	0.81	37	5.5	2.0	1.6	2.3	0.440	265
K21R 225 M8	K20R 200 M8	26.0	875	89.5	0.83	42	5.0	1.8	1.5	2.2	0.440	265
K21R 250 M8	K20R 225 M8	36.0	880	90.5	0.77	62	5.5	2.2	1.8	2.2	0.825	360
K21R 280 S8	K20R 250 S8	44.0	885	91.0	0.80	73	5.5	2.1	1.5	2.1	1.35	465
K21R 280 M8	K20R 250 M8	54.0	885	91.5	0.77	92	6.0	2.3	1.8	2.3	1.55	520
K21R 315 S8	K20R 280 S8	66.0	890	93.3	0.78	109	6.5	1.8	1.6	2.2	2.63	690
K21R 315 M8	K20R 280 M8	90.0	880	93.0	0.80	146	6.0	2.0	1.5	2.3	3.33	800
K21R 315 MX8	K20R 315 S8	108	885	93.0	0.80	175	6.0	1.7	1.5	2.0	3.60	880
K21R 315 MY8	K20R 315 M8	132	890	94.5	0.80	210	6.5	2.1	1.8	2.5	6.00	1100
K21R 315 L8	K20R 315 L8	158	890	94.7	0.81	248	6.5	2.0	1.7	2.2	6.76	1250
K21R 315 LX8	K20R 315 LX8	190	890	95.2	0.78	308	7.2	2.2	1.9	2.5	8.71	1430
K22R 355 MY8		190	data on request								9.3	1500
K22R 355 M8		220	data on request								9.5	1600
K22R 355 MX8		275	data on request								13.4	2200
K22R 355 LY8		310	data on request								15.8	2400

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P_B	n_B	η_B	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	rpm	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 600 rpm – 10-pole version												
K21R 80 K10	K20R 71 K10	0.09	550	38.5	0.56	0.65	2.2	1.7		1.9	0.00130	11
K21R 80 G10	K20R 71 G10	0.12	545	44.0	0.58	0.68	2.2	1.6		1.8	0.00175	12
K21R 90 S10	K20R 80 K10	0.18	555	51.0	0.51	1.00	2.3	1.6		1.8	0.00300	15
K21R 90 L10	K20R 80 G10	0.25	555	49.0	0.49	1.50	2.3	1.5		1.9	0.00375	18
K21R 100 S10	K20R 90 L10	0.37	545	53.0	0.53	1.90	2.9	1.5		1.9	0.00625	24
K21R 100 LX10	K20R 100 S10	0.55	570	67.5	0.49	2.26	3.1	1.6		1.9	0.00900	28
K21R 112 M10	K20R 100 L10	0.75	545	61.0	0.61	2.90	3.4	1.7		1.9	0.01225	34
K21R 112 MX10	K20R 100 LX10	1.10	550	68.0	0.61	3.85	3.1	1.4		2.0	0.01390	39.0
K21R 132 S10	K20R 112 M10	1.1	570	67.0	0.65	3.6	3.7	1.7	1.6	2.5	0.0180	46
K21R 132 M10	K20R 112 MX10	1.5	570	71.5	0.65	4.7	3.8	1.8	1.8	2.6	0.0230	53
K21R 132 MX10	K20R 132 S10	2.2	575	75.0	0.65	6.5	3.7	1.7	1.6	2.2	0.0430	70
K21R 160 M10	K20R 132 M10	3.0	575	77.0	0.65	8.7	3.7	1.8	1.7	2.2	0.0530	86
K21R 160 L10	K20R 160 S10	5.5	575	80.5	0.68	14.5	4.0	1.8	1.7	2.1	0.113	114
K21R 180 L10	K20R 160 M10	6.0	575	82.0	0.68	15.5	3.9	2.0	1.7	2.1	0.145	136
K21R 200 L10	K20R 180 S10	9.0	585	83.0	0.65	24	4.6	2.3	2.0	2.7	0.228	175
K21R 200 LX10	K20R 180 M10	13	575	85.0	0.70	31.5	4.2	1.8	1.6	2.1	0.268	200
K21R 225 M10	K20R 200 M10	17	580	85.0	0.70	41	4.3	1.7	1.5	2.1	0.440	265
K21R 250 M10	K20R 225 M10	22	580	87.0	0.69	53	3.9	1.9	1.5	1.6	0.825	360
K21R 280 S10	K20R 250 S10	27	585	89.5	0.70	62	4.2	1.9	1.4	1.7	1.35	465
K21R 280 M10	K20R 250 M10	34	585	89.0	0.71	77.5	4.5	2.0	1.5	2.0	1.55	520
K21R 315 S10	K20R 280 S10	45	590	91.5	0.75	94.5	5.2	1.5	1.5	2.3	2.63	690
K21R 315 M10	K20R 280 M10	55	592	92.0	0.74	117	6.3	1.7	1.7	2.7	3.33	800
K21R 315 MX10	K20R 315 M10	75	590	92.0	0.75	157	5.5	1.5	1.5	2.2	3.60	880
K21R 315 L10	K20R 315 L10	90	593	93.0	0.69	202	6.0	2.1	1.8	2.3	6.76	1250
K22R 355 MY10		110	595	94.7	0.74	227	5.3	0.9		2.3	9.3	1500
K22R 355 M10		135	595	data on request							9.3	1500
K22R 355 MX10		160	595	data on request							9.5	1600
K22R 355 LY10		180	595	95.3	0.74	370	5.7	1.3		2.4	11.6	2100
K22R 355 L10		220	595	data on request							15.8	2400
K22R 355 LX10		230	595	data on request							15.8	2400

Synchronous speed 500 rpm – 12-pole version

K21R 90 S12	K20R 80 K12	0.18	450	39.0	0.51	1.30	1.8	1.6		1.9	0.00300	15.0
K21R 90 L12	K20R 80 G12	0.25	450	44.5	0.49	1.65	2.0	1.5		1.7	0.00375	18.0
K21R 100 L12	K20R 90 L12	0.37	450	50.5	0.48	2.20	2.1	1.5		1.7	0.00625	24.0
K21R 100 LX12	K20R 100 S12	0.55	455	53.5	0.53	2.80	2.4	1.4		1.9	0.00900	28.0
K21R 112 M12	K20R 100 L12	0.75	450	57.0	0.55	3.45	2.5	1.4		2.0	0.01225	33.5
K21R 132 S12	K20R 112 M12	0.75	475	60.0	0.57	3.2	3.0	2.2	2.0	2.2	0.0180	46
K21R 132 M12	K20R 112 MX12	1.1	470	63.0	0.60	4.2	3.2	1.6	1.6	2.4	0.0230	53
K21R 132 MX12	K20R 132 S12	1.5	480	67.0	0.57	5.7	3.0	1.5	1.5	2.1	0.0430	70
K21R 160 M12	K20R 132 M12	2.2	475	69.5	0.55	8.3	3.3	1.9	1.8	2.4	0.0530	86
K21R 160 L12	K20R 160 S12	3.0	480	77.0	0.60	9.4	3.4	2.0	1.7	2.0	0.113	114
K21R 180 L12	K20R 160 M12	5.5	475	76.0	0.60	17.5	3.0	1.8	1.7	2.0	0.145	136
K21R 200 L12	K20R 180 S12	6.0	480	83.0	0.65	16	3.3	1.6	1.5	1.9	0.228	175
K21R 200 LX12	K20R 180 M12	9.0	480	82.0	0.61	26	3.8	1.9	1.8	2.2	0.268	200
K21R 225 M12	K20R 200 M12	13	480	83.0	0.68	33	3.6	1.7	1.5	1.9	0.440	265
K21R 250 M12	K20R 225 M12	17	480	86.0	0.69	41.5	3.9	1.7	1.5	1.9	0.825	360
K21R 280 S12	K20R 250 S12	20	487	88.0	0.68	48	3.8	1.8	1.4	1.7	1.35	465
K21R 280 M12	K20R 250 M12	24	488	87.5	0.63	63	4.0	2.1	1.6	1.9	1.55	520
K21R 315 S12	K20R 280 S12	37	490	91.0	0.71	82.5	4.2	1.2	1.1	2.0	2.63	690
K21R 315 M12	K20R 280 M12	45	490	91.0	0.72	99	4.5	1.2	1.2	1.9	3.33	800
K21R 315 MX12	K20R 315 M12	55	485	91.0	0.74	118	4.5	1.3	1.1	1.9	3.60	880
K21R 315 L12	K20R 315 L12	75	492	92.5	0.64	183	4.5	1.5	1.2	1.6	6.76	1250
K22R 355 MY12		90	490	data on request							9.3	1500
K22R 355 M12		110	490	data on request							9.3	1500
K22R 355 MX12		132	490	data on request							9.5	1600
K22R 355 LY12		145	490	data on request							15.8	2400
K22R 355 L12		160	490	data on request							15.8	2400

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P_B	n_B	η_B	$\cos \varphi_B$	I_B	I_A/I_B	M_A/M_B	M_C/M_B	M_K/M_B	J	m
		kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 375 rpm – 16-pole version												
K21R 132 S16	K20R 112 M16	0.55	350	42	0.43	4.4	2	1.8		2.3	0.0180	46
K21R 132 M16	K20R 112 MX16	0.75	350	45	0.43	5.6	2	1.7		2.2	0.0230	53
K21R 160 M16	K20R 132 S16	0.9	355	49	0.38	7	2	1.3		1.9	0.0430	70
K21R 160 MX16	K20R 132 M16	1.1	355	51	0.37	8.4	2	1.4		1.9	0.0530	86
K21R 160 L16	K20R 160 S16	1.5	360	58	0.4	9.3	2.5	1.5		2.2	0.113	114
K21R 180 L16	K20R 160 M16	2.2	360	65	0.44	11	2.5	1.4		1.9	0.145	136
K21R 200 L16	K20R 180 S16	3	360	71	0.4	15	2.8	1.5		2.2	0.228	175
K21R 200 LX16	K20R 180 M16	4	360	73	0.4	20	2.8	1.4		2	0.268	200
K21R 225 M16	K20R 200 M16	5.5	365	74	0.41	26	2.8	1.3		2	0.440	265
K21R 250 M16	K20R 225 M16	7.5	365	75	0.37	39	2.8	1.4		2	0.825	360
K21R 280 S16	K20R 250 S16	9.5	370	76	0.35	51.5	2.8	1.5		2.1	1.35	465
K21R 280 M16	K20R 250 M16	11	370	77	0.36	57.5	2.9	1.5		2.1	1.55	520
K21R 315 S16	K20R 280 S16	15	370	82	0.4	66	3.5	1.5		2	2.63	690
K21R 315 M16	K20R 280 M16	18.5	370	82	0.4	81.5	3.7	1.6		2.1	3.33	800
K21R 315 MX16	K20R 315 S16	22	370	83	0.41	93.5	3.5	1.3		1.9	3.60	880
K21R 315 MY16	K20R 315 M16	30	370	84	0.38	136	3.4	1.3		1.8	6	1050
K21R 315 L16	K20R 315 L16	37	370	84.5	0.38	166	3.2	1.2		1.7	6.76	1250

Synchronous speed 300 rpm – 20-pole version

K21R 160 L20	K20R 160 S20	0.75	292	51	0.32	6.6	2.1	1.6		2.3	0.113	114
K21R 180 L20	K20R 160 M20	1.1	291	52	0.33	9.3	2.1	1.6		2.2	0.145	136
K21R 200 L20	K20R 180 S20	1.5	293	55	0.31	12.5	2.2	1.6		2.4	0.228	175
K21R 200 LX20	K20R 180 M20	1.8	292	58	0.32	14	2.2	1.5		2.2	0.268	200
K21R 225 M20	K20R 200 M20	2.1	295	61	0.28	17.5	2.3	1.5		2.6	0.440	265
K21R 250 M20	K20R 225 M20	3	295	63	0.29	23.5	2.3	1.5		2.3	0.825	360
K21R 280 S20	K20R 250 S20	4	296	62	0.25	37	2.2	1.6		2.2	1.35	465
K21R 280 M20	K20R 250 M20	5.5	296	67	0.27	44	2.2	1.4		2.2	1.55	520
K21R 315 S20	K20R 280 S20	7.5	297	79	0.25	55	2.4	1.4		2.4	2.63	690
K21R 315 M20	K20R 280 M20	9.5	297	72	0.25	76	2.4	1.4		2.4	3.33	800
K21R 315 MX20	K20R 315 S20	12	297	75	0.3	77	2.7	1.4		2.7	3.60	880
K21R 315 MY20	K20R 315 M20	16	296	80	0.32	90	3	1.4		3	6	1050
K21R 315 L20	K20R 315 L20	18	296	82	0.34	93	2.8	1.2		2.8	6.76	1250

Synchronous speed 250 rpm – 24-pole version

K21R 160 L24	K20R 160 S24	0.37	240	40	0.29	4.6	1.6	1.5		2	0.113	114
K21R 180 L24	K20R 160 M24	0.55	240	42	0.28	6.8	1.6	1.5		2	0.145	136
K21R 200 L24	K20R 180 S24	0.75	245	44	0.28	8.8	1.7	1.4		2	0.228	175
K21R 200 LX24	K20R 180 M24	1.1	245	46	0.27	13	1.7	1.4		2	0.268	200
K21R 225 M24	K20R 200 M24	1.5	245	48	0.24	19	1.7	1.3		2.1	0.440	265
K21R 250 M24	K20R 225 M24	2.2	245	53	0.23	26	1.7	1.2		1.8	0.825	360
K21R 280 S24	K20R 250 S24	2.6	245	54	0.21	33	1.7	1.3		1.8	1.35	465
K21R 280 M24	K20R 250 M24	3	245	54	0.2	40	1.7	1.4		2	1.55	520
K21R 315 S24	K20R 280 S24	4	245	63	0.23	40	2.3	1.6		2.2	2.63	690
K21R 315 M24	K20R 280 M24	5.5	245	66	0.24	50	2.2	1.4		2	3.33	800
K21R 315 MX24	K20R 315 S24	7.5	245	65	0.23	72.5	2.2	1.4		1.9	3.60	880
K21R 315 MY24	K20R 315 M24	9.5	245	69	0.22	90.3	2.2	1.2		1.7	6	1050
K21R 315 L24	K20R 315 L24	11	245	72	0.24	92	2.2	1.2		1.7	6.76	1250

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Partial load data

Type	P kW	Efficiency and power factor within partial load range										
		efficiency					power factor					
		1/4	2/4	3/4	4/4	5/4	1/4	2/4	3/4	4/4	5/4	
Synchronous speed 3000 rpm – 2-pole version												
K21R 56 K2	0.09	44.0	60.0	67.5	70.0	67.0	0.37	0.52	0.67	0.74	0.82	
K21R 56 G2	0.12	45.0	63.0	69.6	70.3	68.0	0.39	0.54	0.68	0.77	0.84	
K21R 63 K2	K20R 56 K2	0.18	38.0	55.5	63.1	67.1	64.0	0.40	0.54	0.68	0.76	0.85
K21R 63 G2	K20R 56 G2	0.25	40.0	58.0	65.6	68.1	66.0	0.35	0.48	0.61	0.72	0.84
K21R 71 K2	K20R 63 K2	0.37	50.0	65.0	69.7	71.5	67.0	0.39	0.57	0.72	0.79	0.88
K21R 71 G2	K20R 63 G2	0.55	52.5	68.0	72.7	74.3	71.0	0.36	0.53	0.68	0.81	0.85
K21R 80 K2	K20R 71 K2	0.75	61.0	74.0	77.3	77.5	74.0	0.39	0.59	0.73	0.81	0.87
K21R 80 G2	K20R 71 G2	1.1	58.0	73.0	77.4	77.8	74.0	0.40	0.58	0.73	0.8	0.88
K21R 90 S2	K20R 80 K2	1.5	70.0	79.0	80.2	81.2	79.0	0.41	0.61	0.74	0.86	0.87
K21R 90 L2	K20R 80 G2	2.2	72.0	80.0	81.5	82.0	78.0	0.44	0.67	0.79	0.85	0.90
K21R 100 L2	K20R 90 L2	3.0	80.0	84.0	84.2	83.4	79.0	0.50	0.71	0.81	0.84	0.87
K21R 112 M2	K20R 100 S2	4.0	74.0	83.0	84.7	85.0	79.0	0.42	0.63	0.76	0.81	0.87
K21R 132 S2 T	-	5.5	79.0	86.0	86.6	86.3	84.0	0.42	0.65	0.77	0.84	0.87
K21R 132 SX2	K20R 112 M2	7.5	77.5	85.0	87.0	87.0	85.0	0.59	0.74	0.81	0.86	0.88
K21R 160 M2	K20R 132 M2	11.0	77.0	85.5	88.5	88.5	86.0	0.61	0.79	0.87	0.9	0.9
K21R 160 MX2	K20R 160 S2	15.0	78.0	86.5	89.4	89.4	87.5	0.65	0.81	0.87	0.9	0.91
K21R 160 L2	K20R 160 M2	18.5	82.0	87.0	89.5	90.5	89.5	0.74	0.85	0.9	0.92	0.91
K21R 180 M2	K20R 180 S2	22	80.0	88.0	91.0	91.8	90.0	0.68	0.86	0.91	0.92	0.91
K21R 200 L2	K20R 180 M2	30	87.0	90.5	92.0	92.8	92.0	0.73	0.86	0.89	0.92	0.92
K21R 200 Lx2	K20R 200 M2	37	86.0	90.5	92.0	93.0	92.5	0.70	0.85	0.89	0.9	0.89
K21R 225 M2	K20R 200 L2	45	85.5	90.5	93.0	93.7	93.0	0.71	0.85	0.89	0.91	0.90
K21R 250 M2	K20R 225 M2	55	84.0	90.5	92.5	93.7	93.5	0.70	0.85	0.88	0.91	0.91
K21R 280 S2	K20R 250 S2	75	88.5	92.0	93.5	94.6	94.0	0.74	0.87	0.91	0.92	0.92
K21R 280 M2	K20R 250 M2	90	87.5	92.0	94.2	94.7	94.8	0.70	0.86	0.89	0.91	0.92
K21R 315 S2	K20R 280 S2	110	87.5	93.0	94.5	95.4	94.5	0.73	0.84	0.88	0.91	0.90
K21R 315 M2	K20R 280 M2	132	90.0	93.5	94.5	95.4	95.0	0.72	0.86	0.89	0.91	0.90
K21R 315 MX2	K20R 315 S2	160	86.0	94.5	95.0	96.0	95.0	0.75	0.88	0.91	0.93	0.91
K21R 315 MY2	K20R 315 M2	200	86.0	94.5	95.2	96.0	95.5	0.67	0.83	0.9	0.92	0.91
K21R 315 L2	K20R 315 L2	250	94.0	95.0	95.2	96.1	95.5	0.80	0.90	0.92	0.93	0.9
K21R 315 LX2	K20R 315 LX2	315	94.5	95.0	95.5	96.7	96.7	0.79	0.90	0.93	0.92	0.92
K22R 355 MY2		315	93.5	96.0	96.6	96.8	96.8	0.68	0.82	0.87	0.88	0.87
K22R 355 M2		355	94.5	96.0	96.5	96.5	96.3	0.78	0.88	0.90	0.91	0.90
K22R 355 MX2		400	93.5	96.0	96.7	96.8	96.3	0.74	0.84	0.88	0.90	0.89
K22R 355 LY2		450	94.5	96.0	96.7	96.9	96.4	0.83	0.91	0.92	0.92	0.91
K22R 355 L2		500	95.0	96.5	97.0	97.2	96.7	0.77	0.87	0.91	0.92	0.91

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Partial load data

Type	P kW	Efficiency and power factor within partial load range									
		efficiency					power factor				
		1/4	2/4	3/4	4/4	5/4	1/4	2/4	3/4	4/4	5/4
Synchronous speed 1500 rpm – 4-pole version											
K21R 56 K4	0.06	35.0	46.0	56.8	60.5	60.0	0.35	0.45	0.54	0.60	0.87
K21R 56 G4	0.09	37.0	52.0	61.0	62.0	58.0	0.35	0.49	0.61	0.71	0.87
K21R 63 K4	K20R 56 K4	0.12	27.0	44.0	56.7	57.5	54.0	0.4	0.50	0.6	0.87
K21R 63 G4	K20R 56 G4	0.18	30.0	47.0	56.5	61.0	56.0	0.37	0.47	0.59	0.66
K21R 71 K4	K20R 63 K4	0.25	38.0	55.0	62.3	64.6	60.0	0.36	0.49	0.62	0.72
K21R 71 G4	K20R 63 G4	0.37	46.0	62.0	66.9	67.8	62.0	0.37	0.51	0.65	0.74
K21R 80 K4	K20R 80 K4	0.55	45.0	61.0	69.3	71.5	68.0	0.33	0.48	0.6	0.69
K21R 80 G4	K20R 80 G4	0.75	50.0	65.0	70.8	73.5	69.0	0.33	0.49	0.62	0.7
K21R 90 K4	K20R 80 K4	1.1	60.0	72.0	75.3	76.6	73.0	0.39	0.58	0.72	0.79
K21R 90 G4	K20R 80 G4	1.5	64.0	75.0	77.9	78.8	74.0	0.41	0.62	0.75	0.81
K21R 100 S4	K20R 90 L4	2.2	64.0	76.0	80.0	81.0	77.0	0.35	0.55	0.69	0.79
K21R 100 L4	K20R 100 S4	3.0	70.0	81.0	82.3	82.6	79.0	0.36	0.56	0.7	0.79
K21R 112 M4	K20R 100 L4	4.0	73.0	82.0	83.6	84.2	81.0	0.36	0.57	0.71	0.78
K21R 132 S4 T	K20R 100 LX4	5.5	75.0	84.0	85.3	86.3	82.0	0.36	0.57	0.71	0.78
K21R 132 M4	K20R 132 S4	7.5	76.5	84.5	86.0	87.0	84.0	0.45	0.68	0.78	0.84
K21R 160 M4	K20R 132 M4	11.0	79.0	86.0	88.0	88.4	86.0	0.47	0.68	0.79	0.85
K21R 160 L4	K20R 160 S4	15.0	79.0	86.5	89.0	89.4	87.5	0.54	0.73	0.81	0.86
K21R 180 M4	K20R 160 M4	18.5	77.0	87.5	89.5	90.0	88.0	0.45	0.72	0.81	0.86
K21R 180 L4	K20R 180 S4	22	82.0	89.0	90.5	90.5	90.0	0.48	0.70	0.8	0.84
K21R 200 L4	K20R 180 M4	30	84.0	90.0	91.0	91.5	91.0	0.52	0.73	0.81	0.85
K21R 225 S4	K20R 200 M4	37	85.0	90.5	91.5	92.5	91.0	0.57	0.77	0.85	0.86
K21R 225 M4	K20R 200 L4	45	85.0	91.0	92.5	93.0	92.0	0.53	0.71	0.8	0.86
K21R 250 M4	K20R 225 M4	55	87.0	92.0	93.0	93.5	93.0	0.62	0.79	0.85	0.86
K21R 280 S4	K20R 250 S4	75	87.0	92.0	93.5	94.1	93.5	0.63	0.79	0.85	0.86
K21R 280 M4	K20R 250 M4	90	87.0	91.0	93.5	94.6	94.0	0.63	0.80	0.85	0.86
K21R 315 S4	K20R 280 S4	110	89.0	93.0	94.5	95.1	94.0	0.60	0.79	0.84	0.86
K21R 315 M4	K20R 280 M4	132	90.0	93.5	94.5	95.1	94.5	0.62	0.79	0.83	0.86
K21R 315 MX4	K20R 315 S4	160	88.0	94.0	94.8	95.0	94.5	0.66	0.80	0.85	0.87
K21R 315 MY4	K20R 315 M4	200	93.0	94.5	95.0	96.0	95.5	0.66	0.82	0.86	0.88
K21R 315 L4	K20R 315 L4	250	94.0	94.5	95.0	96.1	95.7	0.67	0.87	0.87	0.9
K21R 315 LX4	K20R 315 LX4	315	95.0	95.2	95.5	96.5	95.5	0.64	0.81	0.86	0.88
K22R 355 MY4		315	91.0	94.0	95.5	95.6	96.5	0.60	0.75	0.82	0.85
K22R 355 M4		355	92.0	95.5	96.5	96.8	96.6	0.48	0.67	0.78	0.84
K22R 355 MX4		400	93.0	96.0	96.7	96.8	96.8	0.50	0.75	0.81	0.84
K22R 355 LY4		450	93.5	96.0	96.7	96.8	96.5	0.45	0.67	0.77	0.82
K22R 355 L4		500	92.5	95.5	96.4	96.7	96.3	0.45	0.61	0.72	0.79

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Partial load data

Type	P kW	Efficiency and power factor within partial load range										
		efficiency					power factor					
		1/4	2/4	3/4	4/4	5/4	1/4	2/4	3/4	4/4	5/4	
Synchronous speed 1000 rpm – 6-pole version												
K21R 63 K6	0.09	23.0	35.0	45.3	50.5	49.0	0.35	0.44	0.51	0.56	0.83	
K21R 63 G6	0.12	26.0	40.0	48.0	52.0	48.0	0.34	0.43	0.51	0.56	0.83	
K21R 71 K6	0.18	31.0	46.0	54.5	58.0	56.0	0.28	0.36	0.44	0.51	0.85	
K21R 71 G6	0.25	33.0	48.0	56.5	60.0	58.0	0.30	0.39	0.48	0.55	0.84	
K21R 80 K6	0.37	40.0	56.0	62.5	66.0	60.0	0.34	0.47	0.6	0.66	0.65	
K21R 80 G6	0.55	44.0	59.0	65.5	68.0	62.0	0.33	0.47	0.6	0.67	0.6	
K21R 90 S6	0.75	44.0	60.0	67.5	70.0	67.0	0.30	0.41	0.52	0.64	0.6	
K21R 90 L6	1.1	50.0	64.0	70.0	73.0	69.0	0.32	0.48	0.59	0.69	0.79	
K21R 100 L6	1.5	61.0	73.0	76.2	76.4	72.0	0.32	0.50	0.64	0.73	0.8	
K21R 112 M6	2.2	65.0	76.0	78.9	79.8	76.0	0.35	0.55	0.68	0.74	0.72	
K21R 132 S6	3.0	62.0	75.0	78.5	78.5	77.0	0.41	0.60	0.73	0.82	0.85	
K21R 132 M6	4.0	60.0	74.0	79.0	80.0	80.0	0.40	0.56	0.7	0.8	0.82	
K21R 132 MX6	5.5	71.0	81.0	83.0	83.0	81.0	0.42	0.64	0.75	0.83	0.83	
K21R 160 M6	7.5	70.0	80.0	84.0	85.0	83.0	0.44	0.65	0.75	0.82	0.84	
K21R 160 L6	11.0	71.0	83.0	85.0	85.2	83.5	0.51	0.72	0.8	0.86	0.86	
K21R 180 L6	15.0	73.0	82.0	85.0	86.0	85.0	0.44	0.65	0.76	0.83	0.85	
K21R 200 L6	18.5	79.0	86.0	88.0	88.1	87.0	0.58	0.76	0.84	0.87	0.88	
K21R 200 LX6	22	78.0	86.0	88.0	88.8	87.5	0.54	0.74	0.82	0.87	0.87	
K21R 225 M6	30	81.0	88.0	90.0	90.4	89.0	0.63	0.81	0.86	0.89	0.88	
K21R 250 M6	37	81.0	88.0	90.8	91.0	90.0	0.60	0.80	0.86	0.89	0.88	
K21R 280 S6	45	84.0	90.0	92.0	92.0	91.0	0.60	0.80	0.86	0.87	0.87	
K21R 280 M6	55	85.0	90.0	92.0	92.5	92.0	0.58	0.77	0.84	0.88	0.87	
K21R 315 S6	75	88.0	92.0	93.0	93.7	93.0	0.56	0.76	0.84	0.87	0.87	
K21R 315 M6	90	86.5	92.0	93.5	94.4	93.8	0.54	0.75	0.83	0.88	0.87	
K21R 315 MX6	110	88.0	92.3	93.8	94.0	93.5	0.55	0.75	0.81	0.88	0.86	
K21R 315 MY6	132	85.0	93.5	94.7	95.0	94.5	0.62	0.80	0.86	0.88	0.88	
K21R 315 L6	160	85.0	93.8	95.0	95.3	94.5	0.63	0.80	0.86	0.89	0.88	
K21R 315 LX6	200	90.0	94.0	94.7	95.0	94.5	0.57	0.77	0.85	0.87	0.86	
K22R 355 MY6	200	93.5	95.5	96.0	96.1	96.1	0.60	0.76	0.81	0.83	0.83	
K22R 355 M6	250	92.0	94.8	95.7	96.0	95.9	0.48	0.67	0.76	0.81	0.81	
K22R 355 MX6	315	94.0	95.8	96.5	96.5	96.3	0.52	0.73	0.80	0.83	0.83	
K22R 355 LY6	355	88.0	94.0	95.8	96.0	95.8	0.30	0.60	0.71	0.78	0.77	

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Partial load data

Type	P kW	Efficiency and power factor within partial load range										
		efficiency					power factor					
		1/4	2/4	3/4	4/4	5/4	1/4	2/4	3/4	4/4	5/4	
Synchronous speed 750 rpm – 8-pole version												
K21R 71 K8	K20R 63 K8	0.09	19.0	31.0	40.3	45.5	43.0	0.34	0.42	0.48	0.51	0.77
K21R 71 G8	K20R 63 G8	0.12	20.0	33.0	41.3	46.5	44.0	0.34	0.40	0.47	0.51	0.78
K21R 80 K8	K20R 80 K8	0.18	30.0	44.0	53.8	56.5	52.0	0.33	0.43	0.52	0.59	0.84
K21R 80 G8	K20R 80 G8	0.25	29.0	44.0	54.0	58.0	56.0	0.31	0.41	0.48	0.56	0.62
K21R 90 K8	K20R 80 K8	0.37	31.0	47.0	56.3	61.5	59.0	0.30	0.39	0.49	0.54	0.62
K21R 90 G8	K20R 80 G8	0.55	40.0	54.0	61.8	64.9	62.0	0.30	0.43	0.53	0.62	0.69
K21R 100 S8	K20R 90 L8	0.75	41.0	57.0	64.0	67.0	65.0	0.30	0.41	0.51	0.60	0.66
K21R 100 L8	K20R 100 S8	1.1	54.0	67.0	72.5	73.0	69.0	0.30	0.46	0.58	0.67	0.65
K21R 112 M8	K20R 100 L8	1.5	62.0	72.0	75.3	75.5	72.0	0.31	0.49	0.62	0.70	0.67
K21R 132 S8	K20R 112 M8	2.2	57.0	72.0	75.0	75.5	73.0	0.35	0.52	0.65	0.76	0.78
K21R 132 M8	K20R 112 MX8	3.0	63.0	75.0	78.0	78.0	74.0	0.33	0.52	0.66	0.75	0.78
K21R 160 M8	K20R 132 S8	4.0	67.0	77.0	79.0	79.3	75.0	0.40	0.60	0.73	0.78	0.79
K21R 160 MX8	K20R 132 M8	5.5	68.0	78.0	81.0	81.4	78.0	0.37	0.57	0.70	0.78	0.79
K21R 160 L8	K20R 160 S8	7.5	67.0	79.0	83.0	83.0	81.0	0.38	0.58	0.68	0.78	0.79
K21R 180 L8	K20R 160 M8	11.0	71.5	81.5	84.0	85.0	83.5	0.41	0.60	0.72	0.78	0.80
K21R 200 L8	K20R 180 S8	15.0	73.5	83.0	86.0	86.5	84.5	0.40	0.62	0.72	0.79	0.79
	K20R 180 M8	18.5	78.0	86.0	87.0	87.5	86.0	0.46	0.67	0.75	0.80	0.82
K21R 225 S8		18.5	79.0	86.0	88.0	89.2	87.5	0.48	0.68	0.77	0.83	0.83
K21R 225 M8	K20R 200 M8	22	81.0	88.5	89.0	89.2	87.5	0.45	0.67	0.78	0.84	0.84
K21R 250 M8	K20R 225 M8	30	81.0	87.0	90.0	90.2	89.0	0.41	0.63	0.73	0.79	0.80
K21R 280 S8	K20R 250 S8	37	82.0	88.0	90.5	91.0	90.0	0.47	0.67	0.76	0.80	0.80
K21R 280 M8	K20R 250 M8	45	81.0	88.5	91.0	91.5	91.0	0.43	0.63	0.73	0.77	0.79
K21R 315 S8	K20R 280 S8	55	85.0	90.5	92.0	93.1	92.5	0.42	0.64	0.73	0.80	0.79
K21R 315 M8	K20R 280 M8	75	87.0	91.5	93.0	93.3	92.0	0.44	0.66	0.75	0.81	0.81
K21R 315 MX8	K20R 315 S8	90	84.0	91.5	93.0	93.5	93.0	0.44	0.67	0.76	0.81	0.81
K21R 315 MY8	K20R 315 M8	110	88.0	92.0	94.0	94.6	94.0	0.46	0.67	0.76	0.81	0.80
K21R 315 L8	K20R 315 L8	132	88.0	92.0	94.3	95.0	94.5	0.50	0.70	0.77	0.83	0.82
K21R 315 LX8	K20R 315 LX8	160	88.0	92.0	94.5	95.2	94.6	0.40	0.63	0.73	0.79	0.79
K22R 355 MY8		160	92.0	94.2	95.0	95.2	95.0	0.52	0.68	0.76	0.80	0.80
K22R 355 M8		200	92.0	94.5	95.3	95.6	95.5	0.44	0.60	0.70	0.77	0.78
K22R 355 MX8		250	93.0	94.5	95.6	95.8	95.7	0.48	0.61	0.72	0.78	0.79
K22R 355 LY8		280	90.0	94.0	95.1	95.3	95.2	0.38	0.59	0.71	0.78	0.76



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at							speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight	
			U _{ll}	205	220	360	380	475	630										660
	50	U _B	220	230	380	400	500	660	690	at									
			U ₀	230	240	400	420	525	690	-									
		60	U _{ll}	250	255	435	440	570	-										
			U _B	265	275	460	480	600	-										
			U ₀	280	290	485	500	630	-										
	P	f	I	I	I	I	I	I	I	n	η	cos φ	I _A /I _N	M _A /M _N	M _C /M _N	M _K /M _N	J	m	
	kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg	
K210 56 K2 U	0.09	50		0.44	0.25					2815	70.0	0.78	4.7	2.0	2.0	2.5	0.00013	4.4	
				0.44	0.25					2830	70.0	0.74	4.9	2.3	2.3	2.8			
				0.46	0.26					2855	71.0	0.67	5.0	2.5	2.5	3.1			
	0.105	60		0.43	0.25					3410	70.0	0.79	5.2	2.2	2.2	2.7			
				0.43	0.25					3450	71.0	0.68	5.8	2.6	2.6	3.3			
				0.43	0.25					3460	72.0	0.68	5.9	2.9	2.9	3.6			
K21R 56 G2	0.12	50		0.59	0.34					2770	66.0	0.81	4.0	1.9	1.9	2.1	0.00013	4.5	
				0.57	0.32					2830	70.3	0.77	4.5	2.1	2.1	2.3			
				0.57	0.33					2860	67.0	0.74	4.6	2.3	2.3	2.6			
	0.14	60		0.57	0.33					3410	67.0	0.83	4.6	2.0	2.0	2.4			
				0.56	0.32					3440	73.0	0.72	5.2	2.3	2.3	2.8			
				0.58	0.34					3460	69.0	0.69	5.1	2.6	2.6	3.1			
K21R 63 K2 K2OR 56 K2	0.18	50		0.88	0.51			0.29		2765	68.0	0.79	4.1	1.7	1.7	2.0	0.00013	4.9	
				0.89	0.51			0.30		2790	67.1	0.76	4.1	1.9	1.9	2.2			
				1.07	0.61			-		2820	58.0	0.70	3.9	2.1	2.1	2.4			
	0.21	60		0.85	0.49			-		3370	70.0	0.80	4.4	2.0	1.8	2.3			
				0.93	0.53			-		3420	67.0	0.71	4.6	2.4	2.2	2.7			
				0.98	0.57			-		3420	63.0	0.68	4.5	2.6	2.4	2.9			
K21R 63 G2 K2OR 56 G2	0.25	50		1.24	0.72			0.41		2775	67.0	0.79	4.2	2.0	2.0	2.2	0.00015	5.2	
				1.29	0.74			0.43		2800	68.1	0.72	4.2	2.2	2.2	2.4			
				1.61	0.92			-		2820	56.0	0.67	3.7	2.4	2.3	2.6			
	0.3	60		1.21	0.70			-		3390	74.0	0.76	4.3	2.0	2.0	2.3			
				1.36	0.78			-		3430	70.0	0.66	4.3	2.2	2.2	2.4			
				1.43	0.83			-		3440	66.0	0.63	3.7	2.3	2.3	2.5			
K21R 71 K2 K2OR 63 K2	0.37	50		1.61	0.93			0.54		2745	71.5	0.86	4.2	1.9	1.9	2.1	0.00025	6.7	
				1.63	0.94			0.54		2780	71.5	0.79	4.4	2.1	2.1	2.3			
				1.72	0.98			-		2805	69.5	0.75	4.4	2.3	2.3	2.5			
	0.44	60		1.59	0.92			-		3350	74.0	0.85	4.4	1.9	1.7	2.0			
				1.64	0.94			-		3400	73.0	0.77	4.6	2.1	2.1	2.2			
				1.69	0.98			-		3410	71.0	0.73	4.6	2.3	2.3	2.4			
K21R 71 G2 K2OR 63 G2	0.55	50		2.30	1.33			0.77		2730	73.5	0.86	5.0	1.9	1.9	2.3	0.00032	7.6	
				2.30	1.32			0.77		2775	77.5	0.81	5.1	2.3	2.1	2.6			
				2.38	1.36			-		2790	72.5	0.77	4.9	2.4	2.2	2.8			
	0.65	60		2.26	1.31			-		3300	75.0	0.87	5.3	1.9	1.9	2.1			
				2.30	1.32			-		3350	75.0	0.79	5.8	2.8	2.7	2.9			
				2.33	1.35			-		3370	74.0	0.75	5.9	3.1	3.0	3.2			
	3.00	1.74			1.00		-	2795	77.5	0.85	5.6	2.2	2.2	2.3					

¹⁾ weights for K2OR

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at							speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight		
			at																	
			lower limit voltage design voltage upper limit voltage																	
P	f	I	I	I	I	I	I	I	n	η	cos φ	I _A /I _N	M _A /M _N	M ₂ /M _N	M _K /M _N	J	m			
kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg			
K21R 80 K2 K20R 71 K2	0.75	50	U _{ll}	205	220	360	380	475	630	660	2795	77.5	0.85	5.6	2.2	2.2	2.3	0.00057	10.7	
			U _B	220	230	380	400	500	660	690		2825	77.8	0.81	5.9	2.4	2.4			2.4
			U ₀	230	240	400	420	525	690	-		2845	77.5	0.75	6.0	2.8	2.6			2.8
	0.9	60	U _{ll}	250	255	435	440	570	-	3400		80.0	0.85	5.6	2.1	2.0	2.2			
			U _B	265	275	460	480	600	-	3440		80.0	0.78	6.4	2.6	2.4	2.4			
			U ₀	280	290	485	500	630	-	3455		79.0	0.75	6.6	2.8	2.6	2.6			
K21R 80 G2 K20R 71 G2	1.1	50	U _{ll}	250	255	435	440	570	-	2810	77.0	0.84	5.6	2.2	2.1	2.4	0.00072	11.5		
			U _B	265	275	460	480	600	-	2835	77.8	0.80	6.0	2.4	2.3	2.6				
			U ₀	280	290	485	500	630	-	2855	76.0	0.76	6.0	2.6	2.5	2.9				
	1.3	60	U _{ll}	250	255	435	440	570	-	3400	79.0	0.85	5.8	2.0	2.0	2.3				
			U _B	265	275	460	480	600	-	3440	79.0	0.75	6.6	2.4	2.3	2.6				
			U ₀	280	290	485	500	630	-	3455	77.0	0.70	6.7	2.6	2.5	2.9				
K21R 90 S2 K20R 80 K2	1.5	50	U _{ll}	250	255	435	440	570	-	2810	80.0	0.86	6.7	2.3	2.3	2.6	0.00132	16		
			U _B	265	275	460	480	600	-	2840	82.0	0.85	7.0	2.5	2.5	2.8				
			U ₀	280	290	485	500	630	-	2860	81.5	0.83	7.2	2.8	2.8	3.0				
	1.8	60	U _{ll}	250	255	435	440	570	-	3390	81.0	0.89	6.2	2.1	1.8	2.2				
			U _B	265	275	460	480	600	-	3440	82.0	0.85	7.0	2.5	2.2	2.7				
			U ₀	280	290	485	500	630	-	3460	82.0	0.82	7.4	2.8	2.4	3.0				
K21R 90 L2 K20R 80 G2	2.2	50	U _{ll}	250	255	435	440	570	-	2830	82.0	0.88	7.0	2.6	2.1	2.6	0.0017	19		
			U _B	265	275	460	480	600	-	2850	82.0	0.85	7.5	2.8	2.3	2.9				
			U ₀	280	290	485	500	630	-	2870	81.0	0.81	7.0	3.1	2.5	3.1				
	2.6	60	U _{ll}	250	255	435	440	570	-	3420	82.0	0.88	7.3	2.4	1.9	2.4				
			U _B	265	275	460	480	600	-	3460	83.0	0.82	6.9	2.9	2.3	2.9				
			U ₀	280	290	485	500	630	-	3480	83.0	0.78	7.2	3.1	2.5	3.1				
K21R 100 L2 K20R 90 L2	3.0	50	U _{ll}	250	255	435	440	570	-	2840	82.5	0.87	6.4	1.8	2.1	2.5	0.00275	25		
			U _B	265	275	460	480	600	-	2865	83.4	0.84	6.8	2.4	2.2	2.8				
			U ₀	280	290	485	500	630	-	2880	82.5	0.81	7.0	2.6	2.4	2.9				
	3.5	60	U _{ll}	250	255	435	440	570	-	3430	85.0	0.88	6.3	2.0	1.9	2.3				
			U _B	265	275	460	480	600	-	3470	85.5	0.83	6.1	2.5	2.4	2.8				
			U ₀	280	290	485	500	630	-	3480	85.0	0.79	6.2	2.6	2.5	2.9				
K21R 112 M2 K20R 100 S2	4.0	50	U _{ll}	250	255	435	440	570	-	2885	85.5	0.85	6.7	2.0	1.9	2.6	0.0045	32		
			U _B	265	275	460	480	600	-	2900	85.0	0.81	7.0	2.2	2.1	2.9				
			U ₀	280	290	485	500	630	-	2910	85.0	0.76	7.2	2.4	2.3	3.1				
	4.8	60	U _{ll}	250	255	435	440	570	-	3470	85.0	0.86	7.0	1.7	1.7	2.4				
			U _B	265	275	460	480	600	-	3500	87.0	0.80	7.6	2.2	2.1	2.9				
			U ₀	280	290	485	500	630	-	3510	84.0	0.76	7.8	2.0	2.2	3.1				
K21R 132 S2T	5.5	50	U _{ll}	250	255	435	440	570	-	2875	85.5	0.87	7.0	2.2	2.0	2.7	0.0055	40		
			U _B	265	275	460	480	600	-	2890	86.3	0.84	7.5	2.4	2.2	3.0				
			U ₀	280	290	485	500	630	-	2900	85.5	0.81	7.8	2.6	2.4	3.2				
	6.6	60	U _{ll}	250	255	435	440	570	-	3460	85.0	0.89	8.0	2.0	1.8	2.5				
			U _B	265	275	460	480	600	-	3500	86.0	0.84	8.8	2.4	2.2	3.0				
			U ₀	280	290	485	500	630	-	3505	86.0	0.80	9.1	2.6	2.4	3.2				

¹⁾ weights for K20R



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight	
			U _{ll}	205	220	360	380	475	630	660										
	50	U _B	220	230	380	400	500	660	690	at	lower limit voltage		design voltage	upper limit voltage						
			U _{ll}	250	265	435	460	570	-											
			U _B	265	275	460	480	600	-											
			U ₀	280	290	485	500	630	-											
			60																	
	P	f	Load								n	η	η	cosφ	I _M /I _N	M ₂ /M _N	M ₃ /M _N	M ₄ /M _N	J	m
	kW	Hz	I	I	I	I	I	I	I	rpm	%	%	-	-	-	-	-	-	kgm ²	kg
			A	A	A	A	A	A	A											
K21R 132 S2 -	5.5	50	21	19.5	12	11.5	9.1	6.8	6.5	2850	85.7	85.7	0.86	5	1.6	1.4	2			
			19.5	18.5	11.5	11	8.6	6.5	6.2	2860	85.7	85.7	0.86	5.5	1.8	1.6	2.2	0.0081	52	
			19	18.5	11	10.5	8.4	6.4	6.1	2870	84.7	84.7	0.85	5.8	2	1.7	2.4			
	6.6	60	21	19.5	12	11.5	9.2	-	-	3420	85.7	85.7	0.85	5	1.5	1.3	2			
			19.5	19	11.5	11	8.7	-	-	3430	85.7	85.7	0.85	5.5	1.7	1.5	2.2			
			19	18.5	11	10.5	8.5	-	-	3440	84.7	84.7	0.84	5.8	1.9	1.8	2.4			
K21R 132 SX2 K20R 112 M2	7.5	50	28.0	26.0	16.0	15.0	12.0	9.1	8.7	2890	87.0	87.0	0.87	6.1	1.6	1.2	2.3			
			26.5	25.0	15.0	14.5	11.5	8.8	8.4	2900	87.0	87.0	0.86	6.6	1.8	1.3	2.5	0.0110	57	
			26.0	25.0	15.0	14.5	11.5	8.7	8.3	2910	86.0	86.0	0.84	7.0	2.0	1.4	2.7			
	9	60	27.5	26.0	16.0	15.0	12.0	-	-	3470	87.0	87.0	0.87	6.1	1.6	1.2	2.1			
			26.0	25.5	15.0	14.5	11.5	-	-	3480	87.0	87.0	0.86	6.6	1.8	1.3	2.4			
			25.5	25.0	15.0	14.5	11.5	-	-	3490	86.0	86.0	0.84	7.0	2.0	1.4	2.6			
K21R 160 M2 K20R 132 M2	11	50	39.0	36.5	22.5	21.0	17.0	12.5	12.0	2890	88.0	88.0	0.90	6.4	2.2	1.7	2.7			
			36.0	34.5	21.0	20.0	16.0	12.0	11.5	2900	88.5	88.5	0.90	7.0	2.4	2.0	3.0	0.0258	81	
			36.0	34.5	20.5	19.5	15.5	12.0	11.5	2910	87.5	87.5	0.88	7.5	2.6	2.1	3.3			
	13	60	38.0	36.0	22.0	20.5	16.5	-	-	3470	87.5	87.5	0.90	6.4	2.2	1.6	2.7			
			36.0	34.5	20.5	19.5	16.0	-	-	3480	88.0	88.0	0.90	7.0	2.4	1.9	3.0			
			34.5	33.5	20.0	19.5	15.5	-	-	3490	88.0	88.0	0.88	7.5	2.6	2.0	3.3			
K21R 160 MX2 K20R 160 S2	15	50	52.5	49.0	30.0	28.5	22.5	17.0	16.5	2920	88.6	88.6	0.91	6.5	2.0	1.5	2.5			
			49.0	47.0	28.5	27.0	21.5	16.5	15.5	2930	89.4	89.4	0.90	7.1	2.2	1.7	2.9	0.0575	118	
			48.0	46.0	27.5	26.5	21.0	16.0	15.0	2940	89.1	89.1	0.88	7.6	2.4	1.8	3.1			
	18	60	51.5	48.5	29.5	28.0	22.5	-	-	3525	89.6	89.6	0.90	6.6	2.0	1.5	2.6			
			48.5	47.0	28.0	27.0	21.5	-	-	3530	89.6	89.6	0.90	7.1	2.2	1.7	2.9			
			47.0	45.5	27.0	26.5	21.0	-	-	3535	89.6	89.6	0.88	7.6	2.4	1.8	3.1			
K21R 160 L2 K20R 160 M2	18.5	50	63.5	59.0	36.0	34.0	27.5	20.5	19.5	2910	89.5	88.5	0.92	6.5	1.8	1.4	2.5			
			58.5	56.0	34.0	32.0	25.5	19.5	18.5	2920	90.5	89.5	0.92	7.2	2.1	1.6	2.8	0.0675	134	
			56.5	54.0	32.5	31.0	24.5	19.0	18.0	2930	90.5	89.5	0.91	7.7	2.3	1.8	3.1			
	22	60	61.5	58.0	35.5	33.5	27.0	-	-	3515	90.0	89.0	0.92	6.5	1.9	1.4	2.6			
			57.5	55.5	33.0	32.0	25.5	-	-	3520	90.5	89.5	0.92	7.2	2.1	1.6	2.8			
			54.0	52.5	31.5	30.5	24.0	-	-	3530	91.0	90.0	0.92	7.8	2.3	1.8	3.1			
K21R 180 M2 K20R 180 S2	22	50	73.5	68.5	42.0	39.5	32.0	24.0	23.0	2925	91.5	90.7	0.92	6.1	1.5	1.3	2.3			
			68.5	65.5	39.5	37.5	30.0	23.0	22.0	2935	91.8	91.0	0.92	6.8	1.7	1.4	2.6	0.105	165	
			66.0	63.0	38.0	36.0	29.0	22.0	21.0	2945	92.0	91.2	0.91	7.5	1.9	1.6	2.8			
	26	60	71.0	67.0	41.0	38.5	31.0	-	-	3525	91.8	91.0	0.92	6.3	1.5	1.3	2.3			
			67.0	64.5	38.5	37.0	29.5	-	-	3535	92.0	91.2	0.92	7.0	1.7	1.4	2.6			
			64.0	62.0	37.0	36.0	28.5	-	-	3540	92.0	91.2	0.91	7.5	1.9	1.6	2.8			

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight	
			at																	
			U _{ll}	205	220	360	380	475	630	660										lower limit voltage
		50	U _B	220	230	380	400	500	660	690										
			U ₀	230	240	400	420	525	690	725										
		60	U _{ll}	250	265	435	460	570	-	-										
			U _B	265	275	460	480	600	-	-										
			U ₀	280	290	485	500	630	-	-										
												Load								
												100%	75%	100%						
P	f	I	I	I	I	I	I	I	I	n	η	η	cos φ	I _s /I _N	M _s /M _N	M _c /M _N	M _k /M _N	J	m	
kW	Hz	A	A	A	A	A	A	A	A	rpm	%	%	-	-	-	-	-	kgm ²	kg	
K21R 200L2	K20R 180 M2	30	50	99.5	92.5	56.5	53.5	43.0	32.5	31.0	2935	92.5	91.7	0.92	6.7	1.9	1.5	2.7	0.128	195
				92.0	88.0	53.5	50.5	40.5	30.5	29.5	2940	92.8	92.0	0.92	7.3	2.0	1.6	2.9		
				89.0	85.5	51.5	49.0	39.0	29.5	28.5	2945	92.8	92.0	0.91	7.9	2.5	1.9	3.2		
	36	60	97.5	92.0	56.0	53.0	43.0	-	-	-	3535	92.5	91.7	0.92	6.9	2.0	1.5	2.7		
			91.5	88.5	53.0	50.5	40.5	-	-	-	3550	93.0	92.2	0.92	7.4	2.1	1.6	2.9		
			87.5	84.5	50.5	49.0	39.0	-	-	-	3555	93.0	92.2	0.91	7.8	2.4	1.8	3.2		
K21R 200 LX2	K20R 200 M2	37	50	125	117	71.5	67.5	54.0	40.5	39.0	2930	92.5	91.5	0.90	6.5	1.6	1.2	2.2	0.193	255
				116	111	67.0	64.0	51.0	38.5	37.0	2940	93.0	92.0	0.90	7.0	1.8	1.3	2.4		
				112	108	64.5	61.5	49.0	37.5	35.5	2950	93.0	92.0	0.89	7.6	2.1	1.4	2.6		
	44	60	120	113	69.0	65.5	52.5	-	-	-	3535	93.0	92.0	0.91	6.5	1.6	1.2	2.3		
			113	109	65.5	62.5	50.0	-	-	-	3545	93.0	92.0	0.91	7.0	1.8	1.3	2.4		
			108	105	62.5	60.5	48.0	-	-	-	3550	93.0	92.0	0.90	7.6	2.1	1.4	2.6		
K21R 225 M2	K20R 200 L2	45	50	149	139	85.0	80.5	64.5	48.5	46.5	2935	93.5	92.8	0.91	6.9	1.7	1.3	2.5	0.22	290
				138	132	80.0	76.0	61.0	46.0	44.0	2940	93.7	93.0	0.91	7.5	1.8	1.4	2.7		
				134	128	77.0	73.5	58.5	44.5	42.5	2945	93.7	93.0	0.90	8.5	2.1	1.7	3.1		
	54	60	148	140	85.0	80.5	65.0	-	-	-	3530	93.5	92.8	0.90	7.0	1.7	1.3	2.5		
			140	134	80.5	77.0	61.5	-	-	-	3535	93.7	93.0	0.90	7.5	1.8	1.4	2.7		
			134	129	77.0	75.0	59.5	-	-	-	3540	93.7	93.0	0.89	8.4	2.1	1.7	3.1		
K21R 250 M2	K20R 225 M2	55	50	182	170	104	98	78.5	59	56.5	2945	93.5	92.3	0.91	6.8	1.8	1.4	2.3	0.375	360
				169	162	98	93	74.5	56.5	54	2955	93.7	92.5	0.91	7.5	2.0	1.5	2.6		
				166	159	95	90.5	72.5	55	52.5	2965	93.7	92.5	0.89	8.1	2.2	1.6	2.8		
	66	60	181	171	104	98.5	79.5	-	-	-	3545	93.5	92.3	0.90	6.8	1.8	1.4	2.3		
			171	164	98	94	75.5	-	-	-	3550	93.7	92.5	0.90	7.4	2.0	1.5	2.6		
			163	158	94	91.5	72.5	-	-	-	3555	93.7	92.5	0.89	8.1	2.2	1.6	2.8		
K21R 280 S2	K20R 250 S2	75	50	244	228	139	132	105	79.5	76	2965	94.0	92.9	0.92	6.8	1.8	1.4	2.4	0.650	490
				226	216	131	124	99.5	75.5	72	2970	94.6	93.5	0.92	7.5	2.0	1.6	2.6		
				219	210	126	120	96	73	69.5	2975	94.6	93.5	0.91	8.1	2.2	1.7	2.9		
	90	60	240	227	138	131	105	-	-	-	3565	94.0	92.9	0.92	6.8	1.8	1.4	2.4		
			228	220	131	126	101	-	-	-	3570	94.5	93.4	0.91	7.5	2.0	1.6	2.6		
			216	208	124	121	96	-	-	-	3575	94.6	93.5	0.91	8.1	2.2	1.7	2.9		
K21R 280 M2	K20R 250 M2	90	50	291	271	166	157	126	94.5	90.5	2965	94.7	94.2	0.92	7.6	2.0	1.6	2.6	0.675	510
				274	262	159	151	121	91.5	87.5	2970	94.7	94.2	0.91	8.5	2.2	1.8	2.8		
				269	257	154	147	118	89.5	85	2975	94.5	94.0	0.89	8.9	2.5	2.0	3.1		
	105	60	282	266	162	153	124	-	-	-	3565	94.5	94.0	0.91	7.6	2.0	1.6	2.6		
			266	256	153	147	117	-	-	-	3570	94.5	94.0	0.91	8.5	2.2	1.8	2.8		
			257	249	149	144	114	-	-	-	3575	94.5	94.0	0.89	8.9	2.5	2.0	3.1		



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output P kW	frequency f Hz	current at								speed n min ⁻¹	efficiency η %	power factor $\cos\phi$ %	starting current I_M/I_N	starting torque M_M/M_N	pull-up torque M_S/M_N	pull-out torque M_K/M_N	moment of inertia J kgm ²	weight m kg
			U_{l1}	U_B	U_0	U_{l1}	U_B	U_0	U_{l1}	U_B									
K21R 315 S2 K20R 280 S2	110	50	205	220	360	380	475	630	660	2970	95.0	94.1	0.91	7.5	1.3	1.2	2.3	1.21	720
			220	230	380	400	500	660	690										
K21R 315 M2 K20R 280 M2	132	60	230	240	400	420	525	690	725	2970	95.4	94.5	0.91	8.5	1.5	1.3	2.5	1.44	800
			250	265	435	460	570	-	-										
K21R 315 MX2 K20R 315 S2	160	50	250	265	435	460	570	-	2970	95.5	94.5	0.91	7.6	1.8	1.6	2.3	1.76	980	
			265	275	460	480	600	-											-
K21R 315 MY2 K20R 315 M2	200	50	280	290	485	500	630	-	2970	95.0	94.1	0.90	9.3	2.2	1.9	2.9	2.82	1170	
			280	290	485	500	630	-											-
K21R 315 L2 K20R 315 L2	250	50	358	334	204	193	155	117	111	2970	95.0	94.1	0.91	7.5	1.3	1.2	2.3	3.66	1460
			333	318	193	183	146	111	106										
K21R 315 LX2 K20R 315 LX2	315	50	322	308	185	176	141	107	102	2970	95.4	94.5	0.90	9.2	1.6	1.4	2.8	4.43	1630
			353	333	203	192	155	-	-										
K21R 315 L2 K20R 315 L2	300	60	333	321	192	184	147	-	-	3570	95.0	94.1	0.91	8.5	1.5	1.3	2.5	3.66	1460
			318	307	184	178	141	-	-										
K21R 315 L2 K20R 315 L2	300	60	318	307	184	178	141	-	-	3577	95.1	94.2	0.90	9.1	1.6	1.4	2.8	3.66	1460
			428	399	244	231	185	139	133										
K21R 315 L2 K20R 315 L2	300	60	399	382	231	219	176	133	127	2975	95.4	94.5	0.91	8.5	2.0	1.8	2.7	3.66	1460
			388	371	223	212	170	129	123										
K21R 315 L2 K20R 315 L2	300	60	420	397	242	228	184	-	-	3570	95.4	94.5	0.91	7.7	1.8	1.6	2.3	3.66	1460
			397	382	228	219	175	-	-										
K21R 315 L2 K20R 315 L2	300	60	381	368	220	213	169	-	-	3580	95.0	94.1	0.90	9.2	2.2	1.9	2.9	3.66	1460
			507	473	289	274	219	165	158										
K21R 315 L2 K20R 315 L2	250	50	470	450	272	259	207	157	150	2975	96.0	95.0	0.93	8.5	2.0	1.6	2.6	3.66	1460
			455	436	261	249	199	152	144										
K21R 315 L2 K20R 315 L2	250	50	497	469	286	270	218	-	-	2970	96.0	95.0	0.92	7.6	1.8	1.5	2.4	3.66	1460
			469	452	270	259	207	-	-										
K21R 315 L2 K20R 315 L2	250	50	448	433	259	251	199	-	-	3577	96.0	95.0	0.91	9.0	2.2	1.8	2.9	3.66	1460
			638	594	363	344	275	208	198										
K21R 315 L2 K20R 315 L2	200	50	594	568	344	327	261	198	189	2970	96.0	95.2	0.92	8.2	2.6	2.0	2.6	3.66	1460
			574	550	330	314	252	191	182										
K21R 315 L2 K20R 315 L2	225	60	596	562	343	324	261	-	-	3568	95.8	95.0	0.91	8.0	2.6	2.0	2.6	3.66	1460
			562	542	324	310	248	-	-										
K21R 315 L2 K20R 315 L2	225	60	539	520	311	302	239	-	-	3575	95.7	94.9	0.90	9.0	3.0	2.3	3.1	3.66	1460
			-	-	449	425	340	257	245										
K21R 315 L2 K20R 315 L2	250	50	-	-	425	404	323	245	234	2973	96.1	95.2	0.93	7.3	2.1	1.4	2.0	3.66	1460
			-	-	407	388	310	236	225										
K21R 315 L2 K20R 315 L2	300	60	-	-	451	426	344	-	-	3570	96.0	95.1	0.92	6.6	1.9	1.3	1.8	3.66	1460
			-	-	426	408	327	-	-										
K21R 315 L2 K20R 315 L2	300	60	-	-	408	395	314	-	-	3570	96.3	95.4	0.91	7.9	2.3	1.6	2.2	3.66	1460
			-	-	-	-	-	-	-										
K21R 315 LX2 K20R 315 LX2	315	50	-	-	-	511	-	-	296	2975	96.7	95.5	0.92	7.4	2.4	1.4	2.0	4.43	1630
			-	-	-	-	-	-	-										
K21R 315 LX2 K20R 315 LX2	340	60	-	-	-	-	-	-	-	3575	96.7	95.5	0.92	7.5	2.5	1.4	2.1	4.43	1630
			-	-	-	460	-	-	-										

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at							speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight						
			U _N	205	220	360	380	475	630										660					
	50	U _B	220	230	380	400	500	660	690	U ₀	230	240	400	420	525	690	-	at lower limit voltage design voltage upper limit voltage						
60	U _N	250	255	435	440	570	-	-	U _B	265	275	460	480	600	-	-	U ₀	280	290	485	500	630	-	-
	P	f	I	I	I	I	I	I	I	n	η	cos φ	I _A /I _N	M _A /M _N	M ₂ /M _N	M _K /M _N	J	m						
	kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg						
K210 56 K4 U	0.06	50	0.40	0.23	-	1400	61.5	0.64	3.1	2.0	2.0	2.4	0.00019	4.3										
			0.42	0.24	-	1410	60.5	0.60	3.1	2.3	2.3	2.7												
			0.44	0.25	-	1420	58.5	0.56	3.1	2.5	2.5	2.9												
	0.075	60	0.40	0.23	-	1685	64.0	0.67	3.4	2.0	2.0	2.4												
			0.42	0.24	-	1710	63.0	0.60	3.5	2.5	2.5	2.9												
			0.44	0.25	-	1715	62.0	0.56	3.6	2.7	2.7	3.2												
K21R 56 G4	0.09	50	0.54	0.31	-	1360	62.0	0.71	3.0	1.7	1.7	1.9	0.00019	4.4										
			0.54	0.31	-	1375	82.0	0.68	3.2	1.9	1.9	2.2												
			0.58	0.33	-	1395	61.0	0.62	3.1	2.1	2.1	2.4												
	0.105	60	0.53	0.30	-	1650	65.0	0.71	3.5	1.9	1.9	2.1												
			0.56	0.32	-	1690	63.0	0.63	3.5	2.3	2.3	2.5												
			0.57	0.33	-	1700	60.0	0.61	3.6	2.6	2.8	2.8												
K21R 63 K4 K20R 56 K4	0.12	50	0.78	0.45	0.26	1360	57.5	0.70	3.1	1.7	1.6	2.0	0.00019	4.8										
			0.77	0.44	0.26	1370	61.0	0.66	3.2	1.9	1.8	2.2												
			1.00	0.57	-	1380	46.0	0.63	2.9	2.1	2.0	2.4												
	0.14	60	0.74	0.43	-	1660	61.0	0.70	3.2	1.7	1.7	2.1												
			0.84	0.48	-	1685	57.0	0.62	3.2	1.9	1.8	2.2												
			0.93	0.54	-	1690	51.0	0.59	2.9	2.1	2.0	2.4												
K21R 63 G4 K20R 56 G4	0.18	50	1.07	0.62	0.36	1340	63.0	0.70	3.2	1.8	1.8	2.1	0.00024	5.2										
			1.13	0.65	0.38	1360	61.0	0.66	3.3	2.0	2.0	2.3												
			1.35	0.77	-	1375	52.5	0.61	2.9	2.1	2.1	2.4												
	0.21	60	1.07	0.62	-	1660	65.0	0.68	3.3	1.9	1.9	2.2												
			1.17	0.67	-	1685	62.0	0.61	3.3	2.0	2.0	2.3												
			1.29	0.75	-	1690	55.0	0.59	3.2	2.1	2.1	2.4												
K21R 71 K4 K20R 63 K4	0.25	50	1.33	0.77	0.44	1370	64.5	0.76	3.5	1.6	1.6	1.9	0.0004	6.8										
			1.36	0.78	0.45	1385	67.8	0.74	3.6	1.8	1.8	2.1												
			1.54	0.88	-	1400	58.5	0.67	3.4	2.0	2.0	2.3												
	0.3	60	1.33	0.77	-	1660	67.0	0.76	3.7	1.6	1.6	1.8												
			1.40	0.80	-	1690	66.0	0.68	3.7	1.8	1.8	2.1												
			1.47	0.85	-	1700	65.0	0.63	3.6	2.0	2.0	2.3												
K21R 71 G4 K20R 63 G4	0.37	50	1.83	1.06	0.61	1345	68.0	0.80	3.6	1.8	1.8	2.0	0.0005	7.8										
			1.84	1.06	0.62	1370	67.8	0.74	3.8	2.0	2.0	2.2												
			1.93	1.10	-	1385	67.0	0.69	3.9	2.2	2.2	2.4												
	0.44	60	1.83	1.06	-	1660	71.0	0.77	3.9	1.8	1.8	2.0												
			1.86	1.08	-	1685	71.0	0.69	4.0	2.0	2.0	2.2												
			1.93	1.12	-	1695	69.0	0.66	4.2	2.2	2.2	2.6												
K21R 80 K4 K20R 71 K4	0.55	50	2.80	1.60	0.92	1390	70.5	0.74	4.2	2.0	1.9	2.1	0.00087	10.6										
			2.80	1.60	0.93	1400	73.5	0.70	4.1	2.1	2.0	2.3												
			3.15	1.80	-	1410	65.5	0.64	4.2	2.2	2.1	2.6												
	0.65	60	2.66	1.54	-	1690	74.0	0.75	4.5	2.0	1.7	2.1												
			2.91	1.67	-	1710	71.0	0.66	4.5	2.1	2.0	2.2												
			3.07	1.78	-	1715	68.0	0.62	4.5	2.2	2.1	2.3												

¹⁾ weights for K20R



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight
			at																
			lower limit voltage design voltage upper limit voltage																
P	f	I	I	I	I	I	I	I	n	η	cos ϕ	I_s/I_N	M_s/M_N	M_c/M_N	M_k/M_N	J	m		
kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg		
K21 80 G4 K20R 71 G4	0.75	50	U _{ll} 205	220	360	380	475	630	660	1380	71.5	0.74	4.4	2.1	2.0	2.2	0.00107	11.7	
			U _B 220	230	380	400	500	660	690		1400	73.5	0.70	4.6	2.2	2.1			2.3
			U _O 230	240	400	420	525	690	-		1410	67.5	0.64	4.3	2.3	2.2			2.4
	0.9	60	U _{ll} 250	255	435	440	570	-	-	1685	76.0	0.76	4.8	1.9	1.8	2.0	-	-	
			U _B 265	275	460	480	600	-	-	1710	74.0	0.68	5.0	2.2	2.1	2.3			
			U _O 280	290	485	500	630	-	-	1715	72.0	0.63	4.9	2.3	2.2	2.4			
K21R 90 S4 K20R 80 K4	1.1	50	U _{ll} 250	265	435	440	570	-	-	1400	75.5	0.83	5.0	2.1	2.0	2.2	0.00207	15.5	
			U _B 265	275	460	480	600	-	-		1410	76.6	0.79	5.3	2.3	2.2			2.5
			U _O 280	290	485	500	630	-	-		1420	75.5	0.74	5.4	2.5	2.4			2.7
	1.3	60	U _{ll} 250	265	435	440	570	-	-	1700	78.0	0.83	5.2	1.9	1.8	2.2	-	-	
			U _B 265	275	460	480	600	-	-	1720	77.0	0.77	5.5	2.3	2.2	2.5			
			U _O 280	290	485	500	630	-	-	1720	76.0	0.73	5.5	2.5	2.4	2.7			
K21R 90 L4 K20R 80 G4	1.5	50	U _{ll} 250	265	435	440	570	-	-	1390	77.5	0.84	5.2	2.3	2.2	2.4	0.0026	18.0	
			U _B 265	275	460	480	600	-	-		1400	78.8	0.81	5.5	2.5	2.4			2.6
			U _O 280	290	485	500	630	-	-		1410	77.5	0.76	5.7	2.7	2.6			2.8
	1.8	60	U _{ll} 250	265	435	440	570	-	-	1690	80.0	0.84	5.2	2.1	2.0	2.2	-	-	
			U _B 265	275	460	480	600	-	-	1710	80.0	0.77	5.6	2.5	2.4	2.6			
			U _O 280	290	485	500	630	-	-	1720	80.0	0.74	5.9	2.7	2.6	2.8			
K21R 100 L4 K20R 90 L4	2.2	50	U _{ll} 250	265	435	440	570	-	-	1395	82.0	0.81	5.6	2.2	2.0	2.3	0.004	23.5	
			U _B 265	275	460	480	600	-	-		1410	81.2	0.79	6.0	2.5	2.3			2.7
			U _O 280	290	485	500	630	-	-		1420	80.0	0.76	6.2	2.8	2.5			3.0
	2.6	60	U _{ll} 250	265	435	440	570	-	-	1705	82.0	0.80	5.8	2.1	2.0	2.2	-	-	
			U _B 265	275	460	480	600	-	-	1720	81.0	0.75	6.4	2.6	2.3	2.7			
			U _O 280	290	485	500	630	-	-	1730	79.0	0.70	6.3	2.9	2.6	3.0			
K21R 100 LX4 K20R 100 S4	3.0	50	U _{ll} 250	265	435	440	570	-	-	1420	82.0	0.82	6.1	2.1	1.9	2.6	0.00725	30.0	
			U _B 265	275	460	480	600	-	-		1430	82.6	0.79	6.5	2.5	2.2			2.9
			U _O 280	290	485	500	630	-	-		1440	82.0	0.74	6.6	2.8	2.4			3.2
	3.6	60	U _{ll} 250	265	435	440	570	-	-	1715	82.0	0.83	6.2	2.1	1.8	2.4	-	-	
			U _B 265	275	460	480	600	-	-	1730	84.0	0.77	6.9	2.5	2.2	2.8			
			U _O 280	290	485	500	630	-	-	1740	81.0	0.73	7.0	2.7	2.3	3.1			
K21R 112 M4 K20R 100 L4	4.0	50	U _{ll} 250	265	435	440	570	-	-	1425	83.0	0.81	6.7	2.4	2.3	2.8	0.009	37.0	
			U _B 265	275	460	480	600	-	-		1435	84.2	0.78	6.9	2.6	2.5			3.2
			U _O 280	290	485	500	630	-	-		1440	83.0	0.72	6.9	2.8	2.7			3.4
	4.8	60	U _{ll} 250	265	435	440	570	-	-	1720	85.0	0.83	6.6	2.3	2.1	2.8	-	-	
			U _B 265	275	460	480	600	-	-	1735	85.0	0.78	7.3	2.8	2.5	3.2			
			U _O 280	290	485	500	630	-	-	1740	85.0	0.73	6.9	3.0	2.7	3.4			
K21R 132 S4T	5.5	50	U _{ll} 250	265	435	440	570	-	-	1410	85.2	0.80	5.9	2.2	2.2	2.6	0.011	47.0	
			U _B 265	275	460	480	600	-	-		1420	86.3	0.78	6.3	2.5	2.4			2.9
			U _O 280	290	485	500	630	-	-		1430	85.2	0.72	6.5	2.8	2.7			3.2
	6.6	60	U _{ll} 250	265	435	440	570	-	-	1700	85.2	0.82	6.0	2.1	2.0	2.4	-	-	
			U _B 265	275	460	480	600	-	-	1720	87.0	0.76	6.7	2.5	2.5	2.9			
			U _O 280	290	485	500	630	-	-	1730	84.7	0.72	6.8	2.7	2.7	3.2			

¹⁾ weights for K20R

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output P kW	frequency f Hz	current at								speed n rpm	efficiency η %	power factor $\cos\phi$	starting current I_s/I_N	starting torque M_s/M_N	pull-up torque M_c/M_N	pull-out torque M_k/M_N	moment of inertia J kgm ²	weight m kg
			U_{ij}	205	220	360	380	475	630	660									
			U_B	220	230	380	400	500	660	690									
			U_0	230	240	400	420	525	690	725									
				U_{ij}	250	265	435	460	570	-									
				U_B	265	275	460	480	600	-									
				U_0	280	290	485	500	630	-									
K21R 132 S4 K20R 112 M4	5.5	50	20	18.5	11.5	11	8.6	6.5	6.2	1430	86	86	0.9	5.9	1.6	1.5	2.7	0.015	50
			19	18	11	10.5	8.3	6.3	6	1440	85.7	85.7	0.89	6.5	1.9	1.7	3		
			19	18	11	10.5	8.3	6.3	6	1445	84.7	84.7	0.86	7.1	2	1.9	3.3		
	6.6	60	20	18.5	11.5	11	8.7	-	-	1730	85.5	85.5	0.9	6.1	1.6	1.5	2.7	0.028	70
			19	18.5	11	10.5	8.4	-	-	1745	86	86	0.88	6.5	1.9	1.7	3		
			18.5	18	11	10.5	8.3	-	-	1745	85.5	85.5	0.85	7	1.9	1.8	3.3		
K21R 132 M4 K20R 132 S4	7.5	50	28.5	26.5	16.5	15.5	12.5	9.3	8.9	1445	86.0	85.0	0.86	5.5	1.8	1.5	2.5	0.028	70
			27.0	26.0	15.5	15.0	12.0	9.0	8.6	1450	87.0	86.0	0.84	6.0	2.0	1.7	2.9		
			27.0	26.0	15.5	15.0	12.0	9.0	8.6	1455	86.0	85.0	0.81	6.4	2.2	1.9	3.2		
	9	60	28.0	26.5	16.0	15.5	12.5	-	-	1745	87.0	86.0	0.85	5.6	1.8	1.5	2.6	0.035	92
			27.0	26.0	15.5	15.0	12.0	-	-	1750	87.0	86.0	0.84	6.0	2.0	1.7	2.8		
			26.5	25.5	15.0	14.5	11.5	-	-	1755	87.0	86.5	0.81	6.4	2.2	1.9	3.1		
K21R 160 M4 K20R 132 M4	11	50	40.5	37.5	23.0	21.5	17.5	13.0	12.5	1445	88.4	88.0	0.87	6.2	1.9	1.7	2.9	0.035	92
			38.5	36.5	22.0	21.0	17.0	13.0	12.0	1450	88.4	88.0	0.85	6.8	2.2	1.9	3.3		
			38.0	36.5	22.0	21.0	16.5	12.5	12.0	1455	88.4	88.0	0.82	7.3	2.4	2.1	3.6		
	13	60	39.5	37.5	22.5	21.5	17.5	-	-	1750	88.4	88.0	0.86	6.5	2.0	1.7	3.0	0.078	120
			38.0	37.0	22.0	21.0	17.0	-	-	1755	88.4	88.0	0.84	6.9	2.2	1.9	3.3		
			37.5	36.5	21.5	21.0	16.5	-	-	1760	88.0	88.0	0.81	7.3	2.4	2.0	3.6		
K21R 160 L4 K20R 160 S4	15	50	54.5	50.5	31.0	29.5	23.5	17.5	17.0	1460	89.4	89.0	0.87	6.9	2.4	1.8	2.7	0.078	120
			51.0	49.0	29.5	28.0	22.5	17.0	16.5	1465	89.4	89.0	0.86	7.3	2.5	2.0	3.0		
			51.0	49.0	29.5	28.0	22.5	17.0	16.0	1470	89.0	89.0	0.83	8.0	2.8	2.2	3.4		
	18	60	53.5	50.5	30.5	29.0	23.5	-	-	1760	89.4	89.0	0.87	7.0	2.3	1.8	2.7	0.09	136
			51.0	49.0	29.5	28.0	22.5	-	-	1765	89.4	89.0	0.86	7.6	2.5	2.0	3.0		
			50.0	48.5	29.0	28.0	22.5	-	-	1765	89.0	89.0	0.83	8.0	2.8	2.2	3.3		
K21R 180 M4 K20R 160 M4	18.5	50	66.5	62.0	38.0	36.0	28.5	21.5	20.5	1455	90.0	89.5	0.87	6.2	2.2	1.7	2.5	0.09	136
			62.5	60.0	36.5	34.5	27.5	21.0	20.0	1460	90.0	89.5	0.86	6.8	2.5	2.0	2.9		
			63.5	60.5	36.5	34.5	27.5	21.0	20.0	1465	89.5	89.0	0.82	7.1	2.7	2.2	3.1		
	22	60	65.0	61.0	37.5	35.5	28.5	-	-	1755	90.0	89.5	0.87	6.3	2.3	1.8	2.6	0.138	170
			62.5	60.5	36.0	34.5	27.5	-	-	1760	90.0	89.5	0.85	6.7	2.5	2.0	2.8		
			61.5	59.5	35.5	34.5	27.5	-	-	1765	90.0	89.5	0.82	7.2	2.7	2.2	3.1		
K21R 180 L4 K20R 180 S4	22	50	79.5	74	45.5	43	34.5	26	24.5	1460	90.5	90.5	0.86	6.0	1.8	1.6	2.3	0.138	170
			76	72.5	44	42	33.5	25.5	24	1465	90.5	90.5	0.84	6.5	2.0	1.8	2.6		
			76	72.5	43.5	41.5	33	25.5	24	1470	90.0	90.0	0.81	7.0	2.3	2.0	2.9		
	26	60	78	73.5	45	42.5	34	-	-	1765	90.5	90.5	0.85	6.1	1.8	1.6	2.4	0.138	170
			75.5	72.5	43.5	41.5	33.5	-	-	1765	90.5	90.5	0.83	6.5	2.0	1.8	2.6		
			73.5	71	42.5	41	32.5	-	-	1770	90.0	90.0	0.81	7.0	2.2	2.0	2.9		



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output P kW	frequency f Hz	current at								speed n rpm	efficiency η %	power factor $\cos\phi$ %	starting current I_M/I_N -	starting torque M_s/M_N -	pull-up torque M_z/M_N -	pull-out torque M_k/M_N -	moment of inertia J kgm ²	weight m kg
			U_{ll}	U_B	U_0	205	220	360	380	400									
K21R 200 L4 K20R 180 M4	30	50	107	100	61	58	46.5	35	33.5	1460	91.5	91.0	0.86	6.4	1.8	1.5	2.1	0.168	200
			101	97	58.5	55.5	44.5	33.5	32.5	1465	91.5	91.0	0.85	7.0	2.0	1.7	2.4		
	36	60	105	99	60.5	57	46	-	-	1765	92.0	91.5	0.86	6.6	1.8	1.6	2.2		
			102	98.5	59	56.5	45	-	-	1765	91.5	91.0	0.84	7.0	2.0	1.7	2.4		
K21R 225 S4 K20R 200 M4	37	50	131	122	74.5	70.5	56.5	42.5	40.5	1465	92.5	91.5	0.86	6.5	1.8	1.5	2.2	0.275	270
			122	117	70.5	67	53.5	40.5	39	1470	92.5	91.0	0.86	7.0	2.0	1.7	2.5		
	44	60	123	118	71	67.5	54	41	39	1475	92.0	91.0	0.82	7.3	2.2	1.9	2.8		
			128	121	73.5	69.5	56	-	-	1765	92.5	91.5	0.86	6.6	1.8	1.5	2.3		
K21R 225 M4 K20R 200 L4	45	50	148	141	85.5	81	65	49	47	1470	93.0	92.5	0.86	7.0	2.0	1.7	2.5	0.313	300
			146	140	84	80	64	49	46.5	1475	93.0	92.5	0.83	7.3	2.2	1.9	2.8		
	54	60	158	149	90.5	85.5	69	-	-	1770	92.0	91.5	0.86	6.5	1.8	1.5	2.3		
			149	143	85.5	82	65.5	-	-	1770	93.0	92.5	0.85	7.0	2.0	1.7	2.5		
K21R 250 M4 K20R 225 M4	55	50	194	180	110	104	83.5	63	60	1470	93.0	92.5	0.86	6.5	2.0	1.5	2.0	0.525	375
			180	172	104	98.5	79	60	57	1475	93.5	93.0	0.86	7.0	2.2	1.7	2.3		
	66	60	176	168	101	96.5	77	58.5	56	1477	93.5	93.0	0.84	7.5	2.5	1.8	2.5		
			192	181	110	104	84	-	-	1770	92.5	92.0	0.86	6.5	2.0	1.5	2.0		
K21R 280 S4 K20R 250 S4	75	50	182	175	105	100	80.5	-	-	1775	93.0	92.5	0.85	7.0	2.2	1.7	2.3	0.95	520
			174	168	101	97.5	77.5	-	-	1775	93.0	92.5	0.84	7.5	2.5	1.8	2.5		
	90	60	261	243	149	141	113	85	81	1478	94.0	93.4	0.86	6.6	1.8	1.6	1.8		
			243	233	141	134	107	81	77.5	1480	94.1	93.5	0.86	7.0	2.0	1.7	2.2		
K21R 280 M4 K20R 250 M4	90	50	238	228	137	130	104	79.5	75.5	1483	94.1	93.5	0.84	7.3	2.3	1.9	2.4	1.1	580
			312	290	177	168	134	101	97	1477	94.6	93.5	0.86	6.5	1.9	1.4	1.9		
	105	60	290	278	168	160	128	97	92.5	1480	94.6	93.5	0.86	7.0	2.1	1.6	2.2		
			286	274	165	157	125	95.5	91	1482	94.0	92.9	0.84	7.5	2.3	1.7	2.4		
			299	282	172	162	131	-	-	1777	94.4	93.3	0.86	6.5	1.9	1.4	1.9		
			282	272	162	156	124	-	-	1780	94.4	93.3	0.86	7.0	2.1	1.6	2.2		
			274	265	158	154	122	-	-	1780	94.0	92.9	0.84	7.5	2.3	1.7	2.4		

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight		
			U _N	205	220	360	380	475	630	660										at	lower limit voltage
			U _B	220	230	380	400	500	660	690											
			U ₀	230	240	400	420	525	690	725											
			U _N	250	265	435	460	570	-	-											
			U _B	265	275	460	480	600	-	-											
			U ₀	280	290	485	500	630	-	-											
	P	f	I	I	I	I	I	I	I	n	100%	75%	100%	cos φ	I _k /I _N	M _s /M _N	M _c /M _N	M _k /M _N	J	m	
	kW	Hz	A	A	A	A	A	A	A	rpm	%	%	%	-	-	-	-	-	kgm ²	kg	
K21R 315 S4 K20R 280 S4	110	50	379	353	216	205	164	123	118	1483	95.0	94.4	0.86	7.3	1.6	1.4	2.0				
			353	338	204	194	155	118	113	1485	95.1	94.5	0.86	7.5	1.8	1.6	2.2	1.96	740		
			346	331	199	189	151	115	110	1487	95.1	94.5	0.84	8.0	2.0	1.8	2.4				
	132	60	378	356	217	205	166	-	-	1780	95.0	94.5	0.85	7.3	1.6	1.4	2.0				
			356	343	205	197	157	-	-	1785	95.0	94.5	0.85	7.5	1.8	1.6	2.2				
			341	329	197	191	152	-	-	1788	95.0	94.5	0.84	8.0	2.0	1.8	2.4				
K21R 315 M4 K20R 280 M4	132	50	455	424	259	245	196	148	141	1480	95.0	94.4	0.86	6.6	1.6	1.3	2.0				
			424	405	245	233	186	141	135	1485	95.1	94.5	0.86	7.0	1.8	1.5	2.2	2.27	840		
			415	398	239	227	182	138	132	1485	95.1	94.5	0.84	7.5	2.0	1.7	2.4				
	158	60	452	426	260	246	198	-	-	1777	95.0	94.5	0.85	6.6	1.6	1.3	2.0				
			426	411	246	235	188	-	-	1780	95.0	94.5	0.85	7.0	1.8	1.5	2.2				
			408	394	236	229	181	-	-	1785	95.0	94.5	0.84	7.5	2.0	1.7	2.4				
K21R 315 MX4 K20R 315 S4	160	50	548	511	312	296	237	178	170	1475	94.5	94.3	0.87	6.6	1.6	1.4	1.8				
			508	486	294	279	224	169	162	1480	95.0	94.8	0.87	7.0	1.8	1.5	2.0	2.73	1000		
			497	477	286	272	218	166	158	1483	95.0	94.8	0.85	7.5	2.0	1.6	2.3				
	190	60	540	509	310	293	237	-	-	1775	94.5	94.3	0.86	6.6	1.6	1.4	1.8				
			508	489	293	280	224	-	-	1780	94.8	94.6	0.86	7.0	1.8	1.5	2.0				
			491	474	283	275	218	-	-	1780	95.0	94.8	0.84	7.5	2.0	1.6	2.3				
K21R 315 MY4 K20R 315 M4	200	50	667	621	380	360	288	217	207	1485	96.0	95.0	0.88	7.3	1.8	1.7	2.2				
			621	594	360	342	273	207	198	1485	96.0	95.0	0.88	7.5	2.0	1.8	2.4	4.82	1200		
			608	583	350	333	266	203	193	1488	96.0	95.0	0.86	8.0	2.3	2.0	2.7				
	225	60	615	580	353	334	270	-	-	1785	96.0	95.0	0.88	7.4	1.9	1.8	2.3				
			587	566	338	324	259	-	-	1785	96.0	95.0	0.87	7.7	2.1	1.9	2.5				
			562	543	324	315	250	-	-	1788	96.0	95.0	0.86	8.2	2.3	2.0	2.7				
K21R 315 L4 K20R 315 L4	250	50	-	-	464	440	352	265	253	1485	96.0	94.9	0.90	7.4	1.9	1.5	2.2				
			-	-	439	417	334	253	242	1485	96.1	95.0	0.90	8.0	2.0	1.6	2.3	5.93	1450		
			-	-	427	406	325	247	235	1485	96.1	95.0	0.88	9.0	2.3	1.8	2.6				
	300	60	-	-	471	445	359	-	-	1785	96.1	95.0	0.88	7.4	1.9	1.5	2.2				
			-	-	445	426	341	-	-	1785	96.2	95.1	0.88	8.0	2.0	1.6	2.3				
			-	-	426	413	328	-	-	1785	96.3	95.2	0.87	8.7	2.2	1.8	2.6				
K21R 315 LX4 K20R 315 LX4	315	50	-	-	589	558	446	336	321	1490	96.4	95.4	0.89	8.0	1.7	1.4	2.2				
			-	-	564	535	428	324	310	1490	96.5	95.5	0.88	8.6	1.9	1.5	2.5	6.82	1630		
			-	-	541	515	412	314	298	1490	96.6	95.6	0.87	9.5	2.1	1.7	2.7				
	340	60	-	-	530	501	404	-	-	1790	96.8	95.4	0.88	8.8	1.9	1.6	2.5				
			-	-	500	480	384	-	-	1790	96.9	95.5	0.88	9.5	2.1	1.7	2.8				
			-	-	480	466	370	-	-	1790	96.9	95.5	0.87	10.2	2.3	1.9	3.0				



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at							speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight
			at															
			U _{ll}	205	220	360	380	475	630									
U _B	220	230	380	400	500	660	690											
			U ₀	230	240	400	420	525	690	-								
			U _{ll}	250	255	435	440	570	-									
			U _B	265	275	460	480	600	-									
			U ₀	280	290	485	500	630	-									
	P	f	I	I	I	I	I	I	I	n	η	cos φ	I _A /I _N	M _A /M _N	M _C /M _N	M _K /M _N	J	m
	kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg
K21R 63 K6 K2OR 56 K6	0.09	50	0.78	0.45				0.26	880	51.5	0.59	2.4	1.9	1.9	2.2		0.00024	4.9
			0.80	0.46				0.27	895	50.5	0.56	2.5	2.0	2.0	2.4			
			0.95	0.54				-	905	44.0	0.52	2.2	2.3	2.3	2.6			
	0.105	60	0.78	0.45				-	1085	53.0	0.58	2.7	1.9	1.9	2.2			
			0.84	0.48				-	1105	50.0	0.53	2.7	2.1	2.1	2.5			
			0.93	0.54				-	1115	45.0	0.50	2.4	2.3	2.3	2.7			
K21R 63 G6 K2OR 56 G6	0.12	50	0.98	0.57			0.33	865	52.0	0.62	2.4	1.8	1.8	2.0		0.00027	5.7	
			1.03	0.59			0.34	880	52.0	0.56	2.5	2.0	2.0	2.3				
			1.12	0.68			-	890	44.5	0.54	2.2	2.1	2.1	2.5				
	0.14	60	1.00	0.58			-	1080	56.0	0.57	2.5	1.9	1.9	2.1				
			1.08	0.62			-	1100	53.0	0.51	2.6	2.1	2.1	2.5				
			1.12	0.65			-	1110	51.0	0.49	2.5	2.3	2.3	2.7				
K21R 71 K6 K2OR 63 K6	0.18	50	1.42	0.82			0.47	920	61.0	0.55	2.8	1.5	1.5	1.8		0.00045	7.4	
			1.53	0.88			0.51	925	58.0	0.51	2.8	1.6	1.6	2.1				
			1.66	0.95			-	930	53.0	0.49	2.7	1.8	1.8	2.3				
	0.21	60	1.38	0.80			-	1120	65.0	0.53	3.2	1.4	1.4	1.7				
			1.54	0.88			-	1135	60.0	0.48	3.1	1.6	1.6	2.1				
			1.62	0.94			-	1140	56.0	0.46	3.0	1.8	1.8	2.3				
K21R 71 G6 K2OR 63 G6	0.25	50	1.85	1.07			0.62	900	61.0	0.58	2.8	1.8	1.8	2.0		0.0006	8.3	
			1.91	1.10			0.64	915	60.0	0.55	2.9	2.0	2.0	2.2				
			2.17	1.24			-	920	54.0	0.51	2.9	2.2	2.2	2.4				
	0.30	60	1.83	1.06			-	1100	64.0	0.58	3.2	1.6	1.6	1.8				
			1.94	1.12			-	1120	62.0	0.52	3.3	2.0	2.0	2.2				
			2.07	1.20			-	1125	58.0	0.50	3.0	2.2	2.2	2.4				
K21R 80 K6 K2OR 71 K6	0.37	50	2.12	1.23			0.71	905	66.0	0.79	3.3	1.8	1.8	1.8		0.0013	11.0	
			2.12	1.22			0.71	915	66.0	0.66	3.4	2.0	2.0	2.0				
			2.31	1.32			-	925	63.0	0.61	3.4	2.2	2.2	2.2				
	0.44	60	2.02	1.17			-	1110	67.0	0.74	3.6	1.7	1.6	1.7				
			1.10	1.20			-	1125	68.0	0.65	3.8	2.0	2.0	2.0				
			2.19	1.27			-	1135	65.0	0.62	3.6	2.2	2.2	2.2				
K21R 80 G6 K2OR 71 G6	0.55	50	3.00	1.74			1.00	895	67.0	0.72	3.5	2.0	2.0	2.2		0.00175	12.5	
			3.00	1.73			1.00	915	70.0	0.67	3.7	2.2	2.2	2.4				
			3.20	1.82			-	920	66.0	0.63	3.8	2.4	2.4	2.6				
	0.65	60	2.93	1.70			-	1110	71.0	0.71	3.8	1.9	1.8	2.0				
			3.05	1.75			-	1120	70.0	0.64	4.0	2.3	2.2	2.4				
			3.20	1.85			-	1130	68.0	0.60	4.1	2.5	2.4	2.6				

¹⁾ weights for K2OR

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight								
			at																								
	P	f	I	I	I	I	I	I	I	n	η	cos φ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J	m									
kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg										
K21R 90 S6 K20R 80 K6	0.75	50	U _{ll}	205	220	360	380	475	630	660	at	lower limit voltage design voltage upper limit voltage	-	-	-	-	-	-	-								
			U _B	220	230	380	400	500	660	690																	
			U ₀	230	240	400	420	525	690	-																	
	0.9	60	U _{ll}	250	255	435	440	570	-	930										71.0	0.69	4.4	2.1	2.1	2.4	0.00325	16 15.0 ¹⁾
			U _B	265	275	460	480	600	-	945										66.0	0.60	4.3	2.6	2.6	2.8		
			U ₀	280	290	485	500	630	-	1130										73.0	0.68	4.7	1.9	1.9	2.2		
K21R 90 L6 K20R 80 G6	1.1	50	U _{ll}	250	255	435	440	570	-	930	71.0	0.60	4.8	2.4	2.4	2.6	0.00425	19 18.0 ¹⁾									
			U _B	265	275	460	480	600	-	945	66.0	0.57	4.9	2.6	2.6	2.8											
			U ₀	280	290	485	500	630	-	1145	68.0	0.57	4.9	2.6	2.6	2.8											
	1.3	60	U _{ll}	250	255	435	440	570	-	1120	75.0	0.70	4.5	1.8	1.8	2.0	-	-									
			U _B	265	275	460	480	600	-	1135	74.0	0.63	4.7	2.2	2.2	2.4											
			U ₀	280	290	485	500	630	-	1145	72.0	0.60	4.7	2.4	2.4	2.6											
K21R 100 L6 K20R 90 L6	1.5	50	U _{ll}	250	255	435	440	570	-	935	76.5	0.75	4.5	1.9	1.8	2.2	0.00625	24.0 24.0 ¹⁾									
			U _B	265	275	460	480	600	-	945	76.4	0.73	4.6	2.1	2.0	2.4											
			U ₀	280	290	485	500	630	-	950	75.5	0.67	4.6	2.3	2.2	2.6											
	1.8	60	U _{ll}	250	255	435	440	570	-	1130	79.0	0.75	4.8	1.7	1.6	2.0	-	-									
			U _B	265	275	460	480	600	-	1145	78.0	0.69	4.9	2.1	2.0	2.4											
			U ₀	280	290	485	500	630	-	1150	78.0	0.65	5.0	2.3	2.2	2.6											
K21R 112 M6 K20R 100 L6	2.2	50	U _{ll}	250	255	435	440	570	-	940	80.0	0.78	5.1	2.0	1.9	2.5	0.01225	33.5 32.5 ¹⁾									
			U _B	265	275	460	480	600	-	950	79.8	0.74	5.3	2.2	2.1	2.7											
			U ₀	280	290	485	500	630	-	955	80.0	0.70	5.6	2.4	2.3	3.0											
	2.6	60	U _{ll}	250	255	435	440	570	-	1140	81.0	0.81	5.8	1.8	1.7	2.3	-	-									
			U _B	265	275	460	480	600	-	1150	81.0	0.74	5.6	2.2	2.1	2.7											
			U ₀	280	290	485	500	630	-	1155	80.0	0.71	6.4	2.4	2.3	3.0											

¹⁾ weights for K20R



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight
			U _{ll}	U _B	U ₀	U _{ll}	U _B	U ₀	U _{ll}	U _B									
	at								lower limit voltage design voltage upper limit voltage										
P		f	I	I	I	I	I	I	I	n	η	η	cos φ	I _M /I _N	M _M /M _N	M _S /M _N	M _K /M _N	J	m
kW		Hz	A	A	A	A	A	A	A	rpm	%	%	-	-	-	-	-	kgm ²	kg
K21R 132 S6 K20R 112 M6	3	50	13	12	7.4	7	5.6	4.2	4	950	78.5	78.5	0.83	5.4	1.6	1.4	2.4	0.018	46
			12	11.5	7.1	6.7	5.4	4.1	3.9	955	78.5	78.5	0.82	5.7	1.8	1.6	2.7		
			13	12.5	7.5	7.1	5.7	4.3	4.1	960	77.0	77.0	0.75	5.8	2.1	1.8	3.0		
	3.6	60	13	12.5	7.5	7.1	5.7	-	-	1155	80.0	80.0	0.80	5.5	1.7	1.4	2.4	0.018	46
			12.5	12	7.2	6.9	5.6	-	-	1155	79.0	79.0	0.79	5.7	1.9	1.6	2.7		
			12.5	12.5	7.3	7.1	5.6	-	-	1160	78.0	78.0	0.75	5.8	2.1	1.8	3.0		
K21R 132 M6 K20R 112 MX6	4	50	17.5	16	9.9	9.4	7.5	5.7	5.4	950	80.0	79.0	0.81	5.5	2.0	1.8	2.7	0.023	53
			16.5	15.5	9.5	9.0	7.2	5.5	5.2	955	80.0	79.0	0.80	6.0	2.2	2.0	3.1		
			17	16.5	9.9	9.4	7.5	5.7	5.4	960	77.0	76.0	0.76	6.1	2.4	2.4	3.3		
	4.8	60	17.5	16.5	10.0	9.4	7.6	-	-	1152	81.0	80.0	0.79	5.8	2.0	1.8	2.7	0.023	53
			17	16	9.7	9.3	7.4	-	-	1155	80.0	79.0	0.78	6.0	2.2	2.0	3.1		
			17	16.5	9.9	9.6	7.6	-	-	1160	79.0	78.0	0.73	6.1	2.4	2.4	3.3		
K21R 132 MX6 K20R 132 S6	5.5	50	22.5	21	13	12	9.7	7.3	7	950	83.0	83.0	0.83	4.8	1.6	1.3	2.0	0.043	70
			21	20	12	11.5	9.2	7	6.7	955	83.0	83.0	0.83	5.0	1.8	1.5	2.3		
			22	21	12.5	12	9.7	7.4	7	960	81.0	81.0	0.77	5.3	2.0	1.7	2.6		
	6.6	60	22.5	21.0	13.0	12.0	9.8	-	-	1145	83.0	83.0	0.82	4.8	1.6	1.3	2.0	0.043	70
			21.0	20.5	12.0	11.5	9.3	-	-	1150	83.0	83.0	0.82	5.0	1.8	1.5	2.3		
			22	21	12.5	12	9.7	-	-	1155	82.0	82.0	0.76	5.3	2.0	1.7	2.6		
K21R 160 M6 K20R 132 M6	7.5	50	30	28	17	16	13	9.7	9.3	950	85.0	84.0	0.83	5.1	1.8	1.4	2.2	0.053	86
			28	27	16.5	15.5	12.5	9.4	9	960	85.0	84.0	0.82	5.5	2.0	1.6	2.5		
			28.5	27	16.5	15.5	12.5	9.5	9	965	84.0	83.0	0.79	5.8	2.2	1.8	2.8		
	9	60	30	28	17	16	13	-	-	1145	85.0	84.0	0.82	5.2	1.8	1.4	2.2	0.053	86
			29	28	16.5	16	13	-	-	1150	84.5	83.5	0.80	5.5	2.0	1.6	2.5		
			28.5	27.5	16.5	16	12.5	-	-	1160	84.5	83.5	0.77	5.8	2.2	1.8	2.8		
K21R 160 L6 K20R 160 S6	11	50	42	39	24	22.5	18	13.5	13	962	85.2	85.0	0.87	4.6	1.8	1.5	2.0	0.113	114
			39.5	37.5	23	21.5	17.5	13	12.5	965	85.2	85.0	0.86	5.0	2.0	1.7	2.3		
			39	37.5	22.5	21.5	17	13	12.5	967	85.4	85.4	0.83	5.4	2.2	1.8	2.5		
	13	60	41	38.5	23.5	22	18	-	-	1155	85.5	85.3	0.86	4.6	1.8	1.5	2.0	0.113	114
			39	38.0	22.5	21.5	17.5	-	-	1160	85.0	84.8	0.85	5.0	2.0	1.7	2.3		
			40	38.5	23	22.5	17.5	-	-	1163	83.0	82.8	0.81	5.2	2.2	1.8	2.5		
K21R 180 L6 K20R 160 M6	15	50	58	54	33	31.5	25	19	18	963	86.5	85.5	0.84	5.7	2.2	1.9	2.6	0.145	136
			55	53	32	30.5	24.5	18.5	17.5	965	86.0	85.0	0.83	6.0	2.4	2.1	2.7		
			59	56.5	34	32.5	26	19.5	18.5	970	84.0	83.0	0.76	6.2	2.7	2.4	3.1		
	18	60	57.5	54.5	33	31.5	25	-	-	1165	87.0	86.0	0.83	5.8	2.2	1.9	2.6	0.145	136
			57	55	33	31.5	25	-	-	1165	86.0	85.0	0.80	6.0	2.4	2.1	2.8		
			56.5	55	32.5	32	25	-	-	1170	85.0	84.0	0.77	6.2	2.7	2.4	3.1		

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output P kW	frequency f Hz	current at								speed n rpm	efficiency η %	power factor $\cos \phi$ %	starting current I_s/I_N -	starting torque M_s/M_N -	pull-up torque M_c/M_N -	pull-out torque M_k/M_N -	moment of inertia J kgm ²	weight m kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			U _{ll}	U _B	U ₀	205	220	360	380	475										630	660																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
K21R 200 L6 K20R 180 S6	18.5	50	U _{ll}	205	220	360	380	475	630	660	at lower limit voltage design voltage upper limit voltage																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			U _B	220	230	380	400	500	660	690																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
			U ₀	230	240	400	420	525	690	725																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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	U _B	265	275	460	480	600	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	U ₀	280	290	485	500	630	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
<table border="1"> <thead> <tr> <th colspan="14"></th> <th colspan="3">Load</th> <th colspan="2"></th> </tr> <tr> <th colspan="14"></th> <th>100%</th> <th>75%</th> <th>100%</th> <th colspan="2"></th> </tr> <tr> <th>P</th> <th>f</th> <th>I</th> <th>I</th> <th>I</th> <th>I</th> <th>I</th> <th>I</th> <th>I</th> <th>I</th> <th>n</th> <th>η</th> <th>η</th> <th>$\cos \phi$</th> <th>I_s/I_N</th> <th>M_s/M_N</th> <th>M_c/M_N</th> <th>M_k/M_N</th> <th>J</th> <th>m</th> </tr> <tr> <th>kW</th> <th>Hz</th> <th>A</th> <th>A</th> <th>A</th> <th>A</th> <th>A</th> <th>A</th> <th>A</th> <th>A</th> <th>rpm</th> <th>%</th> <th>%</th> <th>-</th> <th>-</th> <th>-</th> <th>-</th> <th>-</th> <th>kgm²</th> <th>kg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">K21R 200 L6 K20R 180 S6</td> <td rowspan="3">18.5</td> <td rowspan="3">50</td> <td>68</td> <td>63.5</td> <td>38.5</td> <td>36.5</td> <td>29.5</td> <td>22</td> <td>21</td> <td>965</td> <td>88.1</td> <td>88.0</td> <td>0.87</td> <td>5.1</td> <td>1.8</td> <td>1.5</td> <td>2.2</td> <td rowspan="3">0.228</td> <td rowspan="3">175</td> </tr> <tr> <td>63.5</td> <td>60.5</td> <td>36.5</td> <td>35</td> <td>28</td> <td>21</td> <td>20</td> <td>970</td> <td>88.1</td> <td>88.0</td> <td>0.87</td> <td>5.5</td> <td>2.0</td> <td>1.7</td> <td>2.4</td> </tr> <tr> <td>63</td> <td>60.5</td> <td>36.5</td> <td>34.5</td> <td>27.5</td> <td>21</td> <td>20</td> <td>973</td> <td>87.5</td> <td>87.4</td> <td>0.84</td> <td>6.1</td> <td>2.2</td> <td>1.9</td> <td>2.7</td> </tr> <tr> <td rowspan="3">K21R 200 L6 K20R 180 S6</td> <td rowspan="3">18.5</td> <td rowspan="3">60</td> <td>63</td> <td>59.5</td> <td>36</td> <td>34.5</td> <td>27.5</td> <td>-</td> <td>-</td> <td>1168</td> <td>88.4</td> <td>88.3</td> <td>0.87</td> <td>5.5</td> <td>1.9</td> <td>1.6</td> <td>2.3</td> <td rowspan="3">0.228</td> <td rowspan="3">175</td> </tr> <tr> <td>60</td> <td>58.0</td> <td>34.5</td> <td>33.5</td> <td>26.5</td> <td>-</td> <td>-</td> <td>1175</td> <td>88.3</td> <td>88.2</td> <td>0.86</td> <td>5.8</td> <td>2.1</td> <td>1.8</td> <td>2.6</td> </tr> <tr> <td>58.5</td> <td>56.5</td> <td>34</td> <td>33</td> <td>26</td> <td>-</td> <td>-</td> <td>1177</td> <td>88.0</td> <td>87.9</td> <td>0.84</td> <td>6.2</td> <td>2.3</td> <td>2.0</td> <td>2.8</td> </tr> <tr> <td rowspan="3">K21R 200 LX6 K20R 180 M6</td> <td rowspan="3">22</td> <td rowspan="3">50</td> <td>80</td> <td>74.5</td> <td>45.5</td> <td>43.5</td> <td>34.5</td> <td>26</td> <td>25</td> <td>965</td> <td>88.8</td> <td>88.5</td> <td>0.87</td> <td>5.7</td> <td>1.9</td> <td>1.5</td> <td>2.4</td> <td rowspan="3">0.268</td> <td rowspan="3">200</td> </tr> <tr> <td>74.5</td> <td>71.5</td> <td>43.5</td> <td>41</td> <td>33</td> <td>25</td> <td>24</td> <td>970</td> <td>88.8</td> <td>88.5</td> <td>0.87</td> <td>6.2</td> <td>2.2</td> <td>1.8</td> <td>2.6</td> </tr> <tr> <td>75</td> <td>72</td> <td>43</td> <td>41</td> <td>33</td> <td>25</td> <td>24</td> <td>975</td> <td>87.8</td> <td>87.5</td> <td>0.84</td> <td>6.6</td> <td>2.4</td> <td>2.0</td> <td>3.0</td> </tr> <tr> <td rowspan="3">K21R 200 LX6 K20R 180 M6</td> <td rowspan="3">22</td> <td rowspan="3">60</td> <td>77.5</td> <td>73</td> <td>44.5</td> <td>42</td> <td>34.0</td> <td>-</td> <td>-</td> <td>1170</td> <td>89.3</td> <td>89.0</td> <td>0.87</td> <td>5.9</td> <td>1.9</td> <td>1.6</td> <td>2.5</td> <td rowspan="3">0.268</td> <td rowspan="3">200</td> </tr> <tr> <td>74</td> <td>71.5</td> <td>42.5</td> <td>41</td> <td>32.5</td> <td>-</td> <td>-</td> <td>1175</td> <td>89.0</td> <td>88.7</td> <td>0.86</td> <td>6.3</td> <td>2.2</td> <td>1.7</td> <td>2.7</td> </tr> <tr> <td>72.5</td> <td>70</td> <td>42</td> <td>40.5</td> <td>32</td> <td>-</td> <td>-</td> <td>1175</td> <td>88.0</td> <td>87.7</td> <td>0.84</td> <td>6.6</td> <td>2.4</td> <td>1.8</td> <td>3.0</td> </tr> <tr> <td rowspan="3">K21R 225 M6 K20R 200 M6</td> <td rowspan="3">30</td> <td rowspan="3">50</td> <td>105</td> <td>98.5</td> <td>60</td> <td>57</td> <td>45.5</td> <td>34.5</td> <td>33</td> <td>968</td> <td>90.0</td> <td>89.6</td> <td>0.89</td> <td>5.7</td> <td>1.9</td> <td>1.5</td> <td>2.3</td> <td rowspan="3">0.443</td> <td rowspan="3">265</td> </tr> <tr> <td>98</td> <td>93.5</td> <td>56.5</td> <td>54</td> <td>43</td> <td>32.5</td> <td>31</td> <td>973</td> <td>90.4</td> <td>90.0</td> <td>0.89</td> <td>6.5</td> <td>2.2</td> <td>1.7</td> <td>2.5</td> </tr> <tr> <td>96</td> <td>92</td> <td>55</td> <td>52.5</td> <td>42</td> <td>32</td> <td>30.5</td> <td>975</td> <td>90.4</td> <td>90.0</td> <td>0.87</td> <td>6.8</td> <td>2.4</td> <td>1.9</td> <td>2.8</td> </tr> <tr> <td rowspan="3">K21R 225 M6 K20R 200 M6</td> <td rowspan="3">30</td> <td rowspan="3">60</td> <td>99</td> <td>93</td> <td>57</td> <td>53.5</td> <td>43.5</td> <td>-</td> <td>-</td> <td>1170</td> <td>90.3</td> <td>89.9</td> <td>0.88</td> <td>5.9</td> <td>1.8</td> <td>1.5</td> <td>2.4</td> <td rowspan="3">0.443</td> <td rowspan="3">265</td> </tr> <tr> <td>93</td> <td>89.5</td> <td>53.5</td> <td>51.5</td> <td>41</td> <td>-</td> <td>-</td> <td>1175</td> <td>90.5</td> <td>90.1</td> <td>0.88</td> <td>6.5</td> <td>2.2</td> <td>1.7</td> <td>2.6</td> </tr> <tr> <td>89</td> <td>86</td> <td>51.5</td> <td>50</td> <td>39.5</td> <td>-</td> <td>-</td> <td>1177</td> <td>90.5</td> <td>90.1</td> <td>0.87</td> <td>6.8</td> <td>2.4</td> <td>1.9</td> <td>2.9</td> </tr> <tr> <td rowspan="3">K21R 250 M6 K20R 225 M6</td> <td rowspan="3">37</td> <td rowspan="3">50</td> <td>129</td> <td>120</td> <td>73.5</td> <td>69.5</td> <td>55.5</td> <td>42</td> <td>40</td> <td>973</td> <td>91.0</td> <td>90.8</td> <td>0.89</td> <td>5.8</td> <td>2.0</td> <td>1.5</td> <td>2.1</td> <td rowspan="3">0.825</td> <td rowspan="3">360</td> </tr> <tr> <td>120</td> <td>115</td> <td>69.5</td> <td>66</td> <td>53</td> <td>40</td> <td>38</td> <td>975</td> <td>91.0</td> <td>90.8</td> <td>0.89</td> <td>6.5</td> <td>2.2</td> <td>1.7</td> <td>2.3</td> </tr> <tr> <td>117</td> <td>112</td> <td>67.5</td> <td>64</td> <td>51.5</td> <td>39</td> <td>37</td> 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<td>90</td> <td>85.5</td> <td>68.5</td> <td>51.5</td> <td>49</td> <td>978</td> <td>92.0</td> <td>92.0</td> <td>0.87</td> <td>5.5</td> <td>1.8</td> <td>1.4</td> <td>1.8</td> <td rowspan="3">1.28</td> <td rowspan="3">465</td> </tr> <tr> <td>148</td> <td>141</td> <td>85.5</td> <td>81</td> <td>65</td> <td>49</td> <td>47</td> <td>980</td> <td>92.0</td> <td>92.0</td> <td>0.87</td> <td>6.0</td> <td>2.0</td> <td>1.5</td> <td>2.0</td> </tr> <tr> <td>143</td> <td>137</td> <td>82</td> <td>78</td> <td>62.5</td> <td>47.5</td> <td>45.5</td> <td>983</td> <td>92.0</td> <td>92.0</td> <td>0.86</td> <td>6.3</td> <td>2.2</td> <td>1.6</td> <td>2.2</td> </tr> <tr> <td rowspan="3">K21R 280 S6 K20R 250 S6</td> <td rowspan="3">45</td> <td rowspan="3">60</td> <td>156</td> <td>147</td> <td>89.5</td> <td>84.5</td> <td>68.5</td> <td>-</td> <td>-</td> <td>1180</td> <td>92.0</td> <td>92.0</td> <td>0.87</td> <td>5.5</td> <td>1.8</td> <td>1.4</td> <td>1.8</td> <td rowspan="3">1.28</td> <td rowspan="3">465</td> </tr> <tr> <td>147</td> <td>142</td> <td>84.5</td> <td>81</td> <td>65</td> <td>-</td> <td>-</td> <td>1185</td> <td>92.0</td> <td>92.0</td> <td>0.87</td> <td>6.0</td> <td>2.0</td> <td>1.5</td> <td>2.0</td> </tr> <tr> <td>141</td> <td>136</td> <td>81</td> <td>79</td> <td>62.5</td> <td>-</td> <td>-</td> <td>1188</td> <td>92.0</td> <td>92.0</td> <td>0.86</td> <td>6.3</td> <td>2.2</td> <td>1.6</td> <td>2.2</td> </tr> <tr> <td rowspan="3">K21R 280 M6 K20R 250 M6</td> <td rowspan="3">55</td> <td rowspan="3">50</td> <td>190</td> <td>177</td> <td>108</td> <td>103</td> <td>82</td> <td>62</td> <td>59</td> <td>978</td> <td>92.5</td> <td>92.0</td> <td>0.88</td> <td>6.1</td> <td>2.1</td> <td>1.6</td> <td>2.2</td> <td rowspan="3">1.48</td> <td rowspan="3">520</td> </tr> <tr> <td>177</td> <td>170</td> <td>103</td> <td>97.5</td> <td>78</td> <td>59</td> <td>56.5</td> <td>980</td> <td>92.5</td> <td>92.0</td> <td>0.88</td> <td>6.5</td> <td>2.3</td> <td>1.7</td> <td>2.4</td> </tr> <tr> <td>175</td> <td>168</td> <td>101</td> <td>96</td> <td>77</td> <td>58.5</td> <td>55.5</td> <td>982</td> <td>91.5</td> <td>91.0</td> <td>0.86</td> <td>7.5</td> <td>2.6</td> <td>1.8</td> <td>2.7</td> </tr> <tr> <td rowspan="3">K21R 280 M6 K20R 250 M6</td> <td rowspan="3">55</td> <td rowspan="3">60</td> <td>187</td> <td>177</td> <td>108</td> <td>102</td> <td>82</td> <td>-</td> <td>-</td> <td>1180</td> <td>92.5</td> <td>92.0</td> <td>0.88</td> <td>6.5</td> <td>2.2</td> <td>1.7</td> <td>2.2</td> <td rowspan="3">1.48</td> <td rowspan="3">520</td> </tr> <tr> <td>177</td> <td>170</td> <td>102</td> <td>97.5</td> <td>78</td> <td>-</td> <td>-</td> <td>1180</td> <td>92.5</td> <td>92.0</td> <td>0.88</td> <td>7.0</td> <td>2.4</td> <td>1.8</td> <td>2.4</td> </tr> <tr> <td>169</td> <td>163</td> <td>97.5</td> <td>94.5</td> <td>75</td> <td>-</td> <td>-</td> <td>1180</td> <td>92.5</td> <td>92.0</td> <td>0.87</td> <td>7.4</td> <td>2.6</td> <td>1.9</td> <td>2.7</td> </tr> </tbody> </table>																																		Load																			100%	75%	100%			P	f	I	I	I	I	I	I	I	I	n	η	η	$\cos \phi$	I_s/I_N	M_s/M_N	M_c/M_N	M_k/M_N	J	m	kW	Hz	A	A	A	A	A	A	A	A	rpm	%	%	-	-	-	-	-	kgm ²	kg	K21R 200 L6 K20R 180 S6	18.5	50	68	63.5	38.5	36.5	29.5	22	21	965	88.1	88.0	0.87	5.1	1.8	1.5	2.2	0.228	175	63.5	60.5	36.5	35	28	21	20	970	88.1	88.0	0.87	5.5	2.0	1.7	2.4	63	60.5	36.5	34.5	27.5	21	20	973	87.5	87.4	0.84	6.1	2.2	1.9	2.7	K21R 200 L6 K20R 180 S6	18.5	60	63	59.5	36	34.5	27.5	-	-	1168	88.4	88.3	0.87	5.5	1.9	1.6	2.3	0.228	175	60	58.0	34.5	33.5	26.5	-	-	1175	88.3	88.2	0.86	5.8	2.1	1.8	2.6	58.5	56.5	34	33	26	-	-	1177	88.0	87.9	0.84	6.2	2.3	2.0	2.8	K21R 200 LX6 K20R 180 M6	22	50	80	74.5	45.5	43.5	34.5	26	25	965	88.8	88.5	0.87	5.7	1.9	1.5	2.4	0.268	200	74.5	71.5	43.5	41	33	25	24	970	88.8	88.5	0.87	6.2	2.2	1.8	2.6	75	72	43	41	33	25	24	975	87.8	87.5	0.84	6.6	2.4	2.0	3.0	K21R 200 LX6 K20R 180 M6	22	60	77.5	73	44.5	42	34.0	-	-	1170	89.3	89.0	0.87	5.9	1.9	1.6	2.5	0.268	200	74	71.5	42.5	41	32.5	-	-	1175	89.0	88.7	0.86	6.3	2.2	1.7	2.7	72.5	70	42	40.5	32	-	-	1175	88.0	87.7	0.84	6.6	2.4	1.8	3.0	K21R 225 M6 K20R 200 M6	30	50	105	98.5	60	57	45.5	34.5	33	968	90.0	89.6	0.89	5.7	1.9	1.5	2.3	0.443	265	98	93.5	56.5	54	43	32.5	31	973	90.4	90.0	0.89	6.5	2.2	1.7	2.5	96	92	55	52.5	42	32	30.5	975	90.4	90.0	0.87	6.8	2.4	1.9	2.8	K21R 225 M6 K20R 200 M6	30	60	99	93	57	53.5	43.5	-	-	1170	90.3	89.9	0.88	5.9	1.8	1.5	2.4	0.443	265	93	89.5	53.5	51.5	41	-	-	1175	90.5	90.1	0.88	6.5	2.2	1.7	2.6	89	86	51.5	50	39.5	-	-	1177	90.5	90.1	0.87	6.8	2.4	1.9	2.9	K21R 250 M6 K20R 225 M6	37	50	129	120	73.5	69.5	55.5	42	40	973	91.0	90.8	0.89	5.8	2.0	1.5	2.1	0.825	360	120	115	69.5	66	53	40	38	975	91.0	90.8	0.89	6.5	2.2	1.7	2.3	117	112	67.5	64	51.5	39	37	980	91.0	90.8	0.87	7.0	2.5	2.0	2.6	K21R 250 M6 K20R 225 M6	37	60	120	114	69	65.5	53	-	-	1172	91.5	91.3	0.88	5.8	2.0	1.6	2.1	0.825	360	115	111	66	63.5	51	-	-	1175	91.5	91.3	0.87	6.5	2.2	1.8	2.3	109	105	63	61	48.5	-	-	1178	91.5	91.3	0.87	7.0	2.4	2.0	2.6	K21R 280 S6 K20R 250 S6	45	50	158	148	90	85.5	68.5	51.5	49	978	92.0	92.0	0.87	5.5	1.8	1.4	1.8	1.28	465	148	141	85.5	81	65	49	47	980	92.0	92.0	0.87	6.0	2.0	1.5	2.0	143	137	82	78	62.5	47.5	45.5	983	92.0	92.0	0.86	6.3	2.2	1.6	2.2	K21R 280 S6 K20R 250 S6	45	60	156	147	89.5	84.5	68.5	-	-	1180	92.0	92.0	0.87	5.5	1.8	1.4	1.8	1.28	465	147	142	84.5	81	65	-	-	1185	92.0	92.0	0.87	6.0	2.0	1.5	2.0	141	136	81	79	62.5	-	-	1188	92.0	92.0	0.86	6.3	2.2	1.6	2.2	K21R 280 M6 K20R 250 M6	55	50	190	177	108	103	82	62	59	978	92.5	92.0	0.88	6.1	2.1	1.6	2.2	1.48	520	177	170	103	97.5	78	59	56.5	980	92.5	92.0	0.88	6.5	2.3	1.7	2.4	175	168	101	96	77	58.5	55.5	982	91.5	91.0	0.86	7.5	2.6	1.8	2.7	K21R 280 M6 K20R 250 M6	55	60	187	177	108	102	82	-	-	1180	92.5	92.0	0.88	6.5	2.2	1.7	2.2	1.48	520	177	170	102	97.5	78	-	-	1180	92.5	92.0	0.88	7.0	2.4	1.8	2.4	169	163	97.5	94.5	75	-	-	1180	92.5	92.0	0.87	7.4	2.6	1.9	2.7
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P	f	I	I	I	I	I	I	I	I	n	η	η	$\cos \phi$	I_s/I_N	M_s/M_N	M_c/M_N	M_k/M_N	J	m																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
kW	Hz	A	A	A	A	A	A	A	A	rpm	%	%	-	-	-	-	-	kgm ²	kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
K21R 200 L6 K20R 180 S6	18.5	50	68	63.5	38.5	36.5	29.5	22	21	965	88.1	88.0	0.87	5.1	1.8	1.5	2.2	0.228	175																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			63.5	60.5	36.5	35	28	21	20	970	88.1	88.0	0.87	5.5	2.0	1.7	2.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			63	60.5	36.5	34.5	27.5	21	20	973	87.5	87.4	0.84	6.1	2.2	1.9	2.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 200 L6 K20R 180 S6	18.5	60	63	59.5	36	34.5	27.5	-	-	1168	88.4	88.3	0.87	5.5	1.9	1.6	2.3	0.228	175																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			60	58.0	34.5	33.5	26.5	-	-	1175	88.3	88.2	0.86	5.8	2.1	1.8	2.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			58.5	56.5	34	33	26	-	-	1177	88.0	87.9	0.84	6.2	2.3	2.0	2.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 200 LX6 K20R 180 M6	22	50	80	74.5	45.5	43.5	34.5	26	25	965	88.8	88.5	0.87	5.7	1.9	1.5	2.4	0.268	200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			74.5	71.5	43.5	41	33	25	24	970	88.8	88.5	0.87	6.2	2.2	1.8	2.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			75	72	43	41	33	25	24	975	87.8	87.5	0.84	6.6	2.4	2.0	3.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 200 LX6 K20R 180 M6	22	60	77.5	73	44.5	42	34.0	-	-	1170	89.3	89.0	0.87	5.9	1.9	1.6	2.5	0.268	200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			74	71.5	42.5	41	32.5	-	-	1175	89.0	88.7	0.86	6.3	2.2	1.7	2.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			72.5	70	42	40.5	32	-	-	1175	88.0	87.7	0.84	6.6	2.4	1.8	3.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 225 M6 K20R 200 M6	30	50	105	98.5	60	57	45.5	34.5	33	968	90.0	89.6	0.89	5.7	1.9	1.5	2.3	0.443	265																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			98	93.5	56.5	54	43	32.5	31	973	90.4	90.0	0.89	6.5	2.2	1.7	2.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			96	92	55	52.5	42	32	30.5	975	90.4	90.0	0.87	6.8	2.4	1.9	2.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 225 M6 K20R 200 M6	30	60	99	93	57	53.5	43.5	-	-	1170	90.3	89.9	0.88	5.9	1.8	1.5	2.4	0.443	265																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			93	89.5	53.5	51.5	41	-	-	1175	90.5	90.1	0.88	6.5	2.2	1.7	2.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			89	86	51.5	50	39.5	-	-	1177	90.5	90.1	0.87	6.8	2.4	1.9	2.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 250 M6 K20R 225 M6	37	50	129	120	73.5	69.5	55.5	42	40	973	91.0	90.8	0.89	5.8	2.0	1.5	2.1	0.825	360																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			120	115	69.5	66	53	40	38	975	91.0	90.8	0.89	6.5	2.2	1.7	2.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			117	112	67.5	64	51.5	39	37	980	91.0	90.8	0.87	7.0	2.5	2.0	2.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 250 M6 K20R 225 M6	37	60	120	114	69	65.5	53	-	-	1172	91.5	91.3	0.88	5.8	2.0	1.6	2.1	0.825	360																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			115	111	66	63.5	51	-	-	1175	91.5	91.3	0.87	6.5	2.2	1.8	2.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			109	105	63	61	48.5	-	-	1178	91.5	91.3	0.87	7.0	2.4	2.0	2.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 280 S6 K20R 250 S6	45	50	158	148	90	85.5	68.5	51.5	49	978	92.0	92.0	0.87	5.5	1.8	1.4	1.8	1.28	465																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			148	141	85.5	81	65	49	47	980	92.0	92.0	0.87	6.0	2.0	1.5	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			143	137	82	78	62.5	47.5	45.5	983	92.0	92.0	0.86	6.3	2.2	1.6	2.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 280 S6 K20R 250 S6	45	60	156	147	89.5	84.5	68.5	-	-	1180	92.0	92.0	0.87	5.5	1.8	1.4	1.8	1.28	465																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			147	142	84.5	81	65	-	-	1185	92.0	92.0	0.87	6.0	2.0	1.5	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			141	136	81	79	62.5	-	-	1188	92.0	92.0	0.86	6.3	2.2	1.6	2.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 280 M6 K20R 250 M6	55	50	190	177	108	103	82	62	59	978	92.5	92.0	0.88	6.1	2.1	1.6	2.2	1.48	520																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			177	170	103	97.5	78	59	56.5	980	92.5	92.0	0.88	6.5	2.3	1.7	2.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			175	168	101	96	77	58.5	55.5	982	91.5	91.0	0.86	7.5	2.6	1.8	2.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
K21R 280 M6 K20R 250 M6	55	60	187	177	108	102	82	-	-	1180	92.5	92.0	0.88	6.5	2.2	1.7	2.2	1.48	520																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			177	170	102	97.5	78	-	-	1180	92.5	92.0	0.88	7.0	2.4	1.8	2.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			169	163	97.5	94.5	75	-	-	1180	92.5	92.0	0.87	7.4	2.6	1.9	2.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output P kW	frequency f Hz	current at								speed n rpm	efficiency η %	power factor $\cos\phi$	starting current I_s/I_N	starting torque M_s/M_N	pull-up torque M_u/M_N	pull-out torque M_o/M_N	moment of inertia J kgm ²	weight m kg	
			I_{ll}	I_b	I_o															
		50	U_{ll}	205	220	360	380	475	630	660	at	lower limit voltage								
			U_b	220	230	380	400	500	660	690		design voltage								
			U_o	230	240	400	420	525	690	725		upper limit voltage								
		60	U_{ll}	250	265	435	460	570	-											
			U_b	265	275	460	480	600	-											
			U_o	280	290	485	500	630	-											
											Load									
											100%	75%	100%							
											η	η	$\cos\phi$	I_s/I_N	M_s/M_N	M_u/M_N	M_o/M_N	J	m	
											%	%	-	-	-	-	-	kgm ²	kg	
K21R 315 S6	K20R 280 S6	75	50	259	241	148	140	112	84.5	80.5	985	93.7	93.0	0.87	6.5	1.8	1.4	2.2	2.63	690
				241	231	140	133	106	80.5	77.0	985	93.7	93.0	0.87	7.0	2.0	1.6	2.4		
				234	224	134	128	102	78	74	987	93.7	93.0	0.86	7.5	2.2	1.8	2.7		
K21R 315 M6	K20R 280 M6	90	60	256	241	147	139	112	-	-	1182	93.5	92.8	0.87	6.5	1.8	1.4	2.2	3.33	800
				241	232	139	133	106	-	-	1185	93.5	92.8	0.87	7.0	2.0	1.6	2.4		
				231	223	133	129	103	-	-	1185	93.5	92.8	0.86	7.5	2.2	1.8	2.7		
K21R 315 M6	K20R 280 M6	90	50	305	284	174	165	132	99.5	95	985	94.4	93.5	0.88	6.5	1.8	1.5	2.1	3.33	800
				284	272	165	156	125	95	90.5	990	94.4	93.5	0.88	7.0	2.0	1.7	2.4		
				279	268	161	153	122	93	88.5	990	94.0	93.1	0.86	7.5	2.2	1.9	2.7		
K21R 315 M6	K20R 280 M6	108	60	303	286	174	165	133	-	-	1185	94.5	93.6	0.87	6.5	1.8	1.5	2.1	3.33	800
				290	280	167	160	128	-	-	1190	94.3	93.4	0.86	7.0	2.0	1.7	2.4		
				279	269	161	156	124	-	-	1190	94.0	93.1	0.85	7.5	2.2	1.9	2.6		
K21R 315 M6	K20R 280 M6	110	50	375	349	213	202	162	122	116	985	94.0	93.8	0.88	7.0	1.9	1.5	2.3	3.60	880
				349	334	202	192	154	116	111	990	94.0	93.8	0.88	7.5	2.2	1.7	2.6		
				345	331	199	189	151	115	110	990	93.0	92.8	0.86	8.0	2.4	1.9	2.8		
K21R 315 M6	K20R 315 S6	132	60	369	348	212	200	162	-	-	1185	94.0	93.8	0.88	7.0	2.0	1.6	2.4	3.60	880
				354	341	204	195	156	-	-	1185	93.5	93.3	0.87	7.5	2.2	1.7	2.6		
				344	332	199	193	153	-	-	1190	93.0	92.8	0.85	8.0	2.4	1.9	2.8		
K21R 315 M6	K20R 315 S6	132	50	440	410	250	237	190	143	137	985	95.0	94.7	0.89	6.9	1.9	1.6	2.2	6.00	1050
				414	396	240	228	182	138	132	990	95.0	94.7	0.88	7.5	2.0	1.7	2.4		
				403	386	232	221	177	134	128	990	94.5	94.2	0.87	8.0	2.3	1.8	2.6		
K21R 315 M6	K20R 315 S6	158	60	436	412	251	237	191	-	-	1190	95.0	94.7	0.88	7.0	1.9	1.6	2.3	6.00	1050
				416	401	240	230	184	-	-	1190	95.0	94.7	0.87	7.5	2.1	1.7	2.5		
				401	387	231	224	178	-	-	1190	94.5	94.2	0.86	7.9	2.3	1.8	2.7		
K21R 315 L6	K20R 315 L6	160	50	531	495	303	287	229	173	165	985	95.3	95.0	0.89	6.9	2.1	1.7	2.2	6.67	1250
				495	474	287	272	218	165	158	985	95.3	95.0	0.89	7.5	2.3	1.9	2.4		
				487	467	280	267	214	162	155	990	94.7	94.4	0.87	8.2	2.6	2.1	2.7		
K21R 315 L6	K20R 315 L6	190	60	518	489	298	281	227	-	-	1185	95.2	94.9	0.89	7.0	2.2	1.8	2.3	6.67	1250
				494	476	285	273	218	-	-	1185	95.2	94.9	0.88	7.7	2.4	2.0	2.5		
				480	463	277	269	213	-	-	1190	95.0	94.7	0.86	8.1	2.6	2.1	2.7		
K21R 315 LX6	K20R 315 LX6	200	50	674	628	384	363	291	209	209	985	95.0	94.7	0.88	7.7	2.0	1.8	2.4	8.6	1460
				635	607	368	349	279	212	202	990	95.0	94.7	0.87	8.3	2.2	2.0	2.7		
				631	605	363	346	276	210	200	990	94.7	94.4	0.84	8.8	2.5	2.2	3.0		
K21R 315 LX6	K20R 315 LX6	240	60	654	617	376	356	287	-	-	1185	95.2	94.9	0.89	7.7	2.0	1.8	2.5	8.6	1460
				633	610	364	349	279	-	-	1190	95.0	94.7	0.87	8.2	2.2	2.0	2.7		
				613	592	354	343	272	-	-	1190	95.0	94.7	0.85	8.8	2.4	2.2	2.9		

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight
			at																
	P	f	I	I	I	I	I	I	I	n	η	cos ϕ	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	J	m	
kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg		
K21R 71 K8 K20R 63 K8	0.09	50	U _{ij}	205	220	360	380	475	630	660	lower limit voltage design voltage upper limit voltage	-	-	-	-	-	-	-	-
			U _B	220	230	380	400	500	660	690									
			U ₀	230	240	400	420	525	690	-									
	U _{ij}	250	255	435	440	570	-	-											
	U _B	265	275	460	480	600	-	-											
	U ₀	280	290	485	500	630	-	-											
K21R 71 G8 K20R 63 G8	0.12	50	0.98	0.57	0.33	665	44.4	0.54	2.1	1.7	1.7	1.9	0.0005	6.6					
			0.97	0.56	0.32	675	45.5	0.51	2.1	1.9	1.9	2.1							
			1.16	0.66	-	680	40.2	0.47	1.9	2.0	2.0	2.3							
	0.88	0.51	-	820	50.0	0.54	2.3	1.6	1.6	1.7									
	0.94	0.54	-	835	48.0	0.49	2.3	1.9	1.9	2.1									
	1.05	0.61	-	840	42.0	0.47	2.3	2.0	2.0	2.3									
K21R 71 G8 K20R 63 G8	0.14	60	1.21	0.70	0.40	660	47.6	0.55	2.3	1.6	1.6	2.0	0.0006	8.1 7.4 ¹⁾					
			1.27	0.73	0.42	670	46.5	0.51	2.3	1.8	1.8	2.1							
			1.44	0.82	-	680	41.2	0.49	2.2	1.9	1.9	2.3							
	1.17	0.68	-	815	51.0	0.53	2.5	1.5	1.5	1.8									
	1.29	0.74	-	830	47.0	0.48	2.5	1.8	1.8	2.1									
	1.41	0.82	-	835	43.0	0.46	2.4	1.9	1.9	2.3									
K21R 80 K8 K20R 71 K8	0.18	50	1.31	0.76	0.44	675	56.5	0.64	2.7	1.8	1.8	2.0	0.0013	10.5 9.9 ¹⁾					
			1.36	0.78	0.45	690	56.5	0.59	2.8	2.0	2.0	2.2							
			1.47	0.84	-	695	53.4	0.55	2.7	2.2	2.2	2.4							
	1.28	0.74	-	830	60.0	0.62	2.8	1.6	1.6	1.8									
	1.33	0.76	-	845	58.0	0.57	2.9	2.0	2.0	2.2									
	1.38	0.80	-	850	57.0	0.53	2.9	2.2	2.2	2.4									
K21R 80 G8 K20R 71 G8	0.25	50	1.85	1.07	0.62	685	60.1	0.59	3.0	2.1	2.1	2.3	0.00175	12.0 11.3 ¹⁾					
			1.95	1.12	0.65	695	58.0	0.58	3.0	2.3	2.3	2.5							
			2.15	1.23	-	700	53.9	0.52	2.9	2.5	2.5	2.7							
	1.83	1.06	-	835	62.0	0.60	3.1	1.9	1.9	2.1									
	1.92	1.10	-	845	61.0	0.54	3.3	2.3	2.3	2.5									
	2.09	1.21	-	850	56.0	0.51	3.2	2.5	2.5	2.7									
K21R 90 S8 K20R 80 K8	0.37	50	2.69	1.56	0.90	695	61.5	0.59	2.9	1.7	1.7	1.9	0.003	15.0 14.0 ¹⁾					
			2.78	1.60	0.93	700	61.5	0.54	3.0	1.9	1.9	2.1							
			3.20	1.83	-	705	53.1	0.52	2.8	2.1	2.1	2.3							
	2.69	1.56	-	850	65.0	0.57	3.6	1.6	1.6	1.7									
	2.91	1.67	-	855	62.0	0.51	3.7	1.9	1.9	2.1									
	2.96	1.72	-	860	59.0	0.50	3.5	2.1	2.1	2.3									

¹⁾ weights for K20R



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight					
			U _{ll}	205	220	360	380	475	630	660										U _B	220	230	380	400
	at	U _{ll}	250	255	435	440	570	-	U _B	265	275	460	480	600	-	-	U ₀	280	290	485	500	630	-	-
	P	f	I	I	I	I	I	I	I	n	η	cos φ	I _A /I _N	M _A /M _N	M _C /M _N	M _K /M _N	J	m						
	kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kqm ²	kg						
K21R 90 L8 K20R 80 G8	0.55	50	3.60	2.07	-	-	-	1.19	690	64.5	0.62	3.1	1.7	1.7	2.0	0.00375	18.0							
			3.55	2.04	-	-	-	1.18	695	64.5	0.60	3.2	1.9	1.9	2.2									
			4.05	2.30	-	-	-	-	700	59.4	0.56	3.1	2.1	2.1	2.4									
	0.65	60	3.50	2.03	-	-	-	-	840	70.0	0.60	3.7	1.7	1.7	1.8	0.00625	23.0							
			3.70	2.13	-	-	-	-	850	68.0	0.54	3.7	2.1	2.1	2.2									
			3.80	2.20	-	-	-	-	855	67.0	0.51	3.8	2.3	2.3	2.4									
K21R 100 L8 K20R 90 L8	0.75	50	4.75	2.75	-	-	-	1.58	700	67.0	0.62	3.2	1.8	1.8	2.1	0.00625	23.0							
			4.70	2.70	-	-	-	1.57	705	67.0	0.60	3.3	2.0	2.0	2.3									
			5.45	3.10	-	-	-	-	710	61.0	0.55	3.2	2.2	2.2	2.5									
	0.9	60	4.65	2.70	-	-	-	-	850	69.0	0.63	3.7	1.6	1.6	1.9	0.009	28							
			4.90	2.80	-	-	-	-	855	68.0	0.57	3.7	2.0	2.0	2.3									
			5.00	2.90	-	-	-	-	860	68.0	0.53	3.8	2.2	2.2	2.5									
K21R 100 LX8 K20R 100 S8	1.1	50	5.70	3.30	-	-	-	1.90	695	73.0	0.69	3.9	1.8	1.8	2.2	0.009	28							
			5.65	3.25	-	-	-	1.88	705	73.0	0.67	4.0	2.0	2.0	2.4									
			5.95	3.40	-	-	-	-	710	73.0	0.61	4.0	2.2	2.2	2.6									
	1.3	60	5.60	3.25	-	-	-	-	850	76.0	0.69	4.2	1.6	1.6	2.0	0.01225	33.5							
			5.70	3.25	-	-	-	-	855	75.0	0.64	4.4	2.0	2.0	2.4									
			5.80	3.35	-	-	-	-	860	75.0	0.60	4.5	2.2	2.2	2.6									
K21R 112 M8 K20R 100 L8	1.5	50	7.25	4.20	-	-	-	2.42	695	75.5	0.73	4.1	2.0	1.9	2.3	0.01225	33.5							
			7.15	4.10	-	-	-	2.38	705	75.5	0.70	4.4	2.2	2.1	2.5									
			7.35	4.20	-	-	-	-	710	74.5	0.66	4.4	2.4	2.3	2.7									
	1.8	60	7.25	4.15	-	-	-	-	840	78.0	0.73	4.2	1.8	1.7	2.1	0.01225	32.5 ¹⁾							
			7.25	4.15	-	-	-	-	850	78.0	0.67	4.6	2.2	2.1	2.5									
			7.25	4.15	-	-	-	-	855	78.0	0.64	4.8	2.4	2.3	2.7									

¹⁾ weights for K20R



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight	
			at																	
			U _{ll}	205	220	360	380	475	630	660										at lower limit voltage
U _B	220	230	380	400	500	660	690													
			U ₀	230	240	400	420	525	690	725										
			U _{ll}	250	265	435	460	570	-	-										
			U _B	265	275	460	480	600	-	-										
			U ₀	280	290	485	500	630	-	-										
											Load									
											100%	75%	100%							
P	f		I	I	I	I	I	I	I	n	η	η	cos φ	I _s /I _N	M _s /M _N	M _c /M _N	M _k /M _N	J	m	
kW	Hz		A	A	A	A	A	A	A	rpm	%	%	-	-	-	-	-	kgm ²	kg	
K21R 132 S8 K20R 112 M8	2.2	50	11	10	6.1	5.8	4.7	3.5	3.4	700	75.5	75.0	0.76	4.2	1.5	1.4	2.1	0.018	46	
			10	9.6	5.8	5.5	4.4	3.4	3.2	705	75.5	75.0	0.76	4.5	1.7	1.6	2.3			
			11	10.5	6.2	5.9	4.7	3.6	3.4	710	73.0	72.5	0.70	4.6	1.9	1.8	2.6			
	2.6	60	10.5	10	6.1	5.8	4.7	-	-	855	76.5	76.0	0.74	4.3	1.6	1.5	2.2	0.023	53	
			10.5	10	6	5.8	4.6	-	-	865	76.0	75.5	0.71	4.5	1.7	1.7	2.4			
			10.5	10	6.1	5.9	4.7	-	-	865	75.0	74.5	0.68	4.6	1.9	1.9	2.6			
K21R 132 M8 K20R 112 MX8	3	50	14	13	7.9	7.5	6	4.5	4.3	700	78.0	78.0	0.78	4.1	1.5	1.4	2.1	0.023	53	
			13.5	13	7.8	7.4	5.9	4.5	4.3	705	78.0	78.0	0.75	4.5	1.7	1.6	2.3			
			14	13	7.9	7.5	6	4.6	4.4	710	77.0	77.0	0.71	4.6	1.9	1.8	2.6			
	3.6	60	14	13	8.1	7.6	6.2	-	-	850	78.0	78.0	0.76	4.2	1.5	1.4	2.1	0.043	70	
			14	13.5	7.9	7.6	6.1	-	-	855	78.0	78.0	0.73	4.4	1.7	1.6	2.3			
			13.5	13	7.8	7.6	6	-	-	860	78.0	78.0	0.70	4.6	1.9	1.8	2.6			
K21R 160 M8 K20R 132 S8	4	50	18	17	10.5	9.8	7.9	5.9	5.7	705	79.3	79.0	0.78	3.7	1.4	1.1	1.7	0.043	70	
			17	16	9.8	9.3	7.5	5.7	5.4	710	79.3	79.0	0.78	4.0	1.6	1.3	1.9			
			18	17	10.5	9.9	7.9	6	5.7	715	77.5	77.2	0.72	4.2	1.8	1.5	2.1			
	4.8	60	18.5	17.5	10.5	10	8.2	-	-	850	79.5	79.2	0.75	3.8	1.4	1.1	1.7	0.053	86	
			18	17.5	10.5	9.9	8	-	-	860	79.5	79.2	0.73	4.0	1.6	1.3	1.9			
			17.5	17	10	9.8	7.8	-	-	865	79.5	79.2	0.71	4.2	1.8	1.5	2.1			
K21R 160 MX8 K20R 132 M8	5.5	50	24.5	22.5	14	13	10.5	7.9	7.6	705	81.4	81.0	0.78	4.1	1.5	1.4	1.9	0.053	86	
			22.5	21.5	13	12.5	10	7.6	7.2	710	81.4	81.0	0.78	4.5	1.7	1.6	2.1			
			24.5	23.5	14	13.5	10.5	8.1	7.7	715	80.0	79.6	0.71	4.6	1.9	1.7	2.4			
	6.6	60	24	22.5	14	13.0	10.5	-	-	860	82.3	81.6	0.77	4.1	1.5	1.4	2.0	0.113	114	
			23.5	23	13.5	13	10.5	-	-	865	82.0	81.6	0.74	4.5	1.7	1.6	2.2			
			23.5	22.5	13.5	13	10.5	-	-	866	81.5	81.1	0.71	4.7	1.9	1.7	2.4			
K21R 160 L8 K20R 160 S8	7.5	50	32	30	18	17.5	14	10.5	9.9	720	83.5	83.5	0.79	4.1	1.6	1.4	1.9	0.113	114	
			30.5	29	17.5	16.5	13.5	10	9.7	725	83.0	83.0	0.78	4.5	1.8	1.6	2.1			
			30.5	29.5	17.5	17	13.5	10	9.7	730	82.0	82.0	0.75	4.7	2.0	1.7	2.3			
	9	60	31.5	29.5	18	17	14	-	-	870	83.5	83.5	0.79	4.0	1.6	1.4	1.9	0.145	136	
			30.5	29	17.5	16.5	13.5	-	-	875	83.0	83.0	0.78	4.4	1.8	1.6	2.1			
			30	29	17.5	17	13.5	-	-	880	82.0	82.0	0.75	4.6	2.0	1.7	2.3			
K21R 180 L8 K20R 160 M8	11	50	46	42.5	26	24.5	20	15	14	715	85.5	84.5	0.79	4.1	1.8	1.5	1.9	0.145	136	
			43.5	41.5	25	24	19	14.5	14	720	85.0	84.0	0.78	4.5	2.0	1.7	2.1			
			44	42	25	24	19	14.5	14	725	84.0	83.0	0.75	4.7	2.2	1.8	2.3			
	13	60	45	42	25.5	24.5	19.5	-	-	865	86.0	85.0	0.78	4.1	1.8	1.6	2.0	0.145	136	
			43.5	41.5	25	24	19	-	-	870	85.0	84.0	0.77	4.5	2.0	1.8	2.2			
			42.5	41	24.5	24	19	-	-	875	84.0	83.0	0.75	4.7	2.2	1.9	2.4			



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight			
			at																	lower limit voltage	design voltage	upper limit voltage
			U _l	U _B	U ₀	U _l	U _B	U ₀	U _l	U _B												
	P	f	I	I	I	I	I	I	I	n	η _{100%}	η _{75%}	cosφ _{100%}	I _M /I _N	M _R /M _N	M _S /M _N	M _K /M _N	J	m			
	kW	Hz	A	A	A	A	A	A	A	rpm	%	%	-	-	-	-	-	kgm ²	kg			
K21R 200 L8 K20R 180 S8	15	50	62	57.5	35	33.5	26.5	20	19	720	86.5	86.0	0.79	4.6	1.8	1.5	2.0	0.228	175			
			57.5	55	33.5	31.5	25.5	19	18.5	725	86.5	86.0	0.79	5.0	2.0	1.7	2.3					
			60.5	58	34.5	33	26.5	20	19	730	85.5	85.0	0.73	5.3	2.3	1.9	2.5					
	18	60	60	57	34.5	32.5	26.5	-	-	875	87.4	86.9	0.79	4.7	1.8	1.5	2.0	0.228	200			
			59.5	57	34	32.5	26	-	-	875	87.0	86.5	0.76	5.0	2.0	1.7	2.3					
			58.5	56.5	33.5	32.5	26	-	-	880	87.0	86.5	0.73	5.3	2.3	1.9	2.5					
K20R 180 M8	18.5	50	72.5	67.5	41.5	39	31.5	23.5	22.5	720	87.5	86.5	0.82	4.5	1.7	1.5	2.1	0.228	200			
			69.5	66.5	40	38	30.5	23	22	725	87.5	86.5	0.80	5.0	1.9	1.7	2.2					
			69	66	39.5	37.5	30	23	22	730	87.5	86.5	0.77	5.5	2.1	1.9	2.4					
	21	60	67.5	64	39	36.5	29.5	-	-	865	87.5	86.5	0.82	4.0	1.8	1.6	2.0	0.228	200			
			65.5	63	37.5	36	29	-	-	870	87.5	86.5	0.80	4.5	2.0	1.8	2.3					
			64.5	62	37	36	28.5	-	-	875	87.5	86.5	0.77	5.0	2.2	2.0	2.4					
K21R 225 S8	18.5	50	70.5	65.5	40	38	30.5	23	22	720	89.2	88.0	0.83	5.0	1.7	1.4	2.0	0.44	265			
			65.5	62.5	38	36	29	22	21	725	89.2	88.0	0.83	5.5	2.0	1.6	2.2					
			66	63.5	38	36	29	22	21	730	89.0	87.8	0.79	5.9	2.2	1.8	2.4					
	22	60	70.5	66.5	40.5	38.5	31	-	-	875	89.0	87.8	0.81	5.0	1.8	1.4	2.0	0.44	265			
			66	63.5	38	36.5	29	-	-	880	89.5	88.3	0.81	5.5	2.0	1.6	2.3					
			64	62	37	36	28.5	-	-	880	89.5	88.3	0.79	5.9	2.2	1.8	2.5					
K21R 225 M8 K20R 200 M8	22	50	83	77	47	44.5	36	27	25.5	720	89.0	88.8	0.84	4.5	1.6	1.3	2.0	0.44	265			
			77	73.5	44.5	42.5	34	25.5	24.5	725	89.2	89.0	0.84	5.0	1.8	1.5	2.2					
			75.5	72.5	43.5	41.5	33	25	24	730	89.2	89.0	0.82	5.5	2.0	1.7	2.4					
	26	60	80	75.5	46	43.5	35	-	-	870	89.5	89.3	0.84	4.7	1.6	1.4	2.0	0.44	265			
			76.5	73.5	44	42	33.5	-	-	875	89.5	89.3	0.83	5.0	1.8	1.5	2.2					
			74.5	72	43	41.5	33	-	-	880	89.0	88.7	0.81	5.4	2.0	1.6	2.4					
K21R 250 M8 K20R 225 M8	30	50	119	110	67.5	64	51	38.5	37	730	90.2	90.0	0.79	5.0	2.0	1.6	2.0	0.825	360			
			110	106	64	61	48.5	37	35	730	90.2	90.0	0.79	5.5	2.2	1.8	2.2					
			113	109	65	62	49.5	38	36	735	89.7	89.5	0.74	5.8	2.5	2.0	2.5					
	36	60	118	111	67.5	64	51.5	-	-	880	90.5	90.3	0.78	5.1	2.0	1.6	2.0	0.825	360			
			113	108	65	62	49.5	-	-	880	90.5	90.3	0.77	5.5	2.2	1.8	2.2					
			111	108	64.5	62.5	49.5	-	-	885	90.0	89.7	0.74	5.8	2.5	2.0	2.4					
K21R 280 S8 K20R 250 S8	37	50	144	134	82	77.5	62	47	44.5	732	90.5	90.0	0.80	4.8	1.9	1.4	1.9	1.35	465			
			133	128	77	73.5	58.5	44.5	42.5	735	91.0	90.5	0.80	5.5	2.0	1.5	2.0					
			129	124	74.5	70.5	56.5	43	41	736	91.0	90.5	0.79	5.8	2.3	1.7	2.3					
	44	60	140	132	80.5	76.5	61.5	-	-	882	90.5	90.0	0.80	4.9	1.9	1.4	1.9	1.35	465			
			132	127	76	72.5	58	-	-	885	91.0	90.5	0.80	5.5	2.1	1.5	2.1					
			126	122	73	70.5	56	-	-	885	91.0	90.5	0.79	5.7	2.3	1.7	2.4					



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight	
			U _{ll}	205	220	360	380	475	630	660										at
			U ₀	230	240	400	420	525	690	725										
U _{ll}	250	265									435	460	570	lower limit voltage						
			U _B	265	275	460	480	600	design voltage											
U ₀	280	290							485	500	630	upper limit voltage								
				P	f	I	I	I				I	I	I	I	n	Load			I _A /I _N
	kW	Hz	A	A	A	A	A	A	A	rpm	η 100%	η 75%	cos φ 100%	-	-	-	-	kgm ²	kg	
K21R 280 M8 K20R 250 M8	45	50	178	165	101	96	76.5	58	55	733	91.5	91.0	0.78	5.5	2.1	1.6	2.1	1.55	520	
			168	160	97	92	74	56	53.5	735	91.5	91.0	0.77	6.0	2.3	1.8	2.4			
			166	159	95	90.5	72.5	55	52.5	740	91.0	90.5	0.75	6.4	2.6	2.0	2.6			
	54	60	175	165	100	95	76.5	-	-	884	91.5	91.0	0.78	5.5	2.1	1.6	2.1	1.55	520	
			167	161	96	92	74	-	-	885	91.5	91.0	0.77	6.0	2.3	1.8	2.3			
			162	157	93.5	91	72	-	-	887	91.5	91.0	0.75	6.4	2.5	1.9	2.6			
K21R 315 S8 K20R 280 S8	55	50	208	194	118	112	90	67.5	64.5	739	93.1	92.0	0.80	6.0	1.6	1.5	2.0	2.63	690	
			194	185	112	107	85.5	64.5	62	740	93.1	92.0	0.80	6.5	1.8	1.6	2.3			
			196	188	113	108	86	65.5	63	741	92.5	91.4	0.76	6.8	2.0	1.8	2.5			
	66	60	204	193	117	111	90	-	-	889	93.3	92.2	0.80	6.1	1.6	1.5	2.0	2.63	690	
			198	190	114	109	88	-	-	890	93.3	92.2	0.78	6.5	1.8	1.6	2.2			
			193	186	111	108	86	-	-	890	93.0	91.9	0.76	6.8	1.9	1.8	2.5			
K21R 315 M8 K20R 280 M8	75	50	279	260	159	151	121	91	87	740	93.3	93.0	0.81	5.7	1.8	1.4	2.0	3.33	800	
			260	249	151	143	115	87	83	740	93.3	93.0	0.81	6.0	2.0	1.6	2.3			
			260	249	149	142	114	86.5	83	740	93.0	92.7	0.78	6.8	2.2	1.8	2.6			
	90	60	276	260	159	150	121	-	-	879	93.0	92.7	0.81	5.7	1.8	1.4	2.0	3.33	800	
			264	254	152	146	116	-	-	880	93.0	92.7	0.80	6.0	2.0	1.5	2.3			
			252	243	145	141	112	-	-	885	93.3	93.0	0.79	6.8	2.2	1.7	2.5			
K21R 315 MX8 K20R 315 S8	90	50	335	312	191	181	144	109	104	738	93.5	93.0	0.81	5.4	1.8	1.5	2.0	3.6	880	
			312	298	181	172	137	104	99.5	740	93.5	93.0	0.81	6.0	1.9	1.6	2.2			
			307	295	177	168	135	102	97.5	741	93.0	92.5	0.79	6.4	2.2	1.8	2.4			
	108	60	329	311	189	179	144	-	-	883	93.5	93.0	0.81	5.4	1.6	1.4	1.8	3.6	880	
			316	305	182	175	140	-	-	885	93.0	92.5	0.80	6.0	1.7	1.5	2.0			
			304	293	175	170	135	-	-	888	92.8	92.3	0.79	6.6	2.0	1.7	2.3			
K21R 315 MY8 K20R 315 M8	110	50	404	377	230	218	174	132	126	740	94.6	94.0	0.81	6.2	1.9	1.7	2.2	6	1050	
			377	360	218	207	166	126	120	740	94.6	94.0	0.81	6.5	2.1	1.8	2.4			
			375	360	216	206	164	125	119	742	94.3	93.7	0.78	7.0	2.3	2.0	2.7			
	132	60	398	376	229	216	175	-	-	888	94.5	93.9	0.81	6.3	1.9	1.7	2.3	6	1050	
			380	367	219	210	168	-	-	890	94.5	93.9	0.80	6.5	2.1	1.8	2.5			
			370	357	214	207	164	-	-	892	94.3	93.7	0.78	7.0	2.3	2.0	2.7			
K21R 315 L8 K20R 315 L8	132	50	471	439	268	254	203	153	146	740	95.0	94.3	0.83	5.8	1.8	1.5	1.9	6.76	1250	
			439	420	254	242	193	146	140	740	95.0	94.3	0.83	6.3	2.0	1.7	2.1			
			438	420	252	240	192	146	139	741	94.6	93.9	0.80	6.8	2.2	1.9	2.3			
	158	60	469	443	270	255	206	-	-	890	94.8	94.1	0.82	6.0	1.9	1.6	2.0	6.76	1250	
			449	432	259	248	198	-	-	890	94.7	94.0	0.81	6.5	2.0	1.7	2.2			
			436	421	252	244	194	-	-	891	94.6	93.9	0.79	6.9	2.2	1.9	2.4			
K21R 315 LX8 K20R 315 LX8	160	50	592	551	337	319	255	193	184	740	95.2	94.5	0.80	6.7	2.0	1.7	2.3	8.71	1430	
			558	534	323	307	246	186	178	740	95.2	94.5	0.79	7.2	2.2	1.9	2.5			
			562	539	323	308	246	187	178	743	95.3	94.6	0.75	7.6	2.5	2.1	2.8			
	190	60	576	543	331	313	252	-	-	890	95.3	94.6	0.80	6.8	2.0	1.7	2.3	8.71	1430	
			557	537	321	308	246	-	-	890	95.2	94.5	0.78	7.2	2.2	1.9	2.5			
			557	538	322	312	248	-	-	892	95.0	94.3	0.74	7.5	2.5	2.1	2.8			





Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight
			at																
	P	f	I _L	I _B	I ₀	I _L	I _B	I ₀	I _L	I _B	I ₀	n	η	cos φ	I _A /I _N	M _A /M _N	M _C /M _N	M _K /M _N	J
kW	Hz	A	A	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg
K21R 132 S10 K20R 112 M10	1.1	50	6.6	6.3	3.8	3.6	2.9	2.2	2.1	570	67.0	0.65	3.7	1.7	1.6	2.5	0.018	46	
	1.3	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K21R 132 M10 K20R 112 MX10	1.5	50	8.5	8.1	4.9	4.7	3.7	2.8	2.7	570	71.5	0.65	3.8	1.8	1.8	2.6	0.023	53	
	1.8	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K21R 132MX10 K20R132 S10	2.2	50	12	11.5	6.9	6.5	5.2	3.9	3.8	570	74.0	0.69	3.5	1.5	1.4	2.0	0.043	70	
			12	11.5	6.9	6.5	5.2	3.9	3.8	575	75.0	0.65	3.7	1.7	1.6	2.2			
			12	11.5	6.8	6.5	5.2	4	3.8	580	75.0	0.62	2.9	1.9	1.8	2.5			
2.6	60	11.5	11	6.7	6.4	5.1	-	-	695	77.5	0.66	3.5	1.6	1.5	2.1				
		11.5	11	6.7	6.4	5.1	-	-	695	76.5	0.64	3.7	1.7	1.7	2.3				
		11.5	11	6.7	6.5	5.2	-	-	700	77.0	0.60	3.9	1.9	1.8	2.5				
K21R 160 M10 K20R 132 M10	3.0	50	16	15	9.2	8.7	7	5.3	5	570	77.0	0.68	3.4	1.6	1.5	1.9	0.053	86	
			15.5	15	9.1	8.7	6.9	5.2	5	575	77.0	0.65	3.7	1.8	1.7	2.2			
			16	15.5	9.3	8.8	7.1	5.4	5.1	575	76.5	0.61	3.8	2.0	1.9	2.5			
3.6	60	16	15	9.1	8.6	6.9	-	-	690	79.5	0.66	3.5	1.6	1.5	2.0				
		15.5	15	8.9	8.6	6.9	-	-	695	79.0	0.64	3.7	1.8	1.7	2.3				
		16	15	9.1	8.8	7	-	-	695	78.5	0.60	3.8	2.0	1.9	2.5				
K21R 160 L10 K20R 160 S10	5.5	50	28	26	16	15	12	9.1	8.6	573	79.5	0.70	3.8	1.7	1.6	2.0	0.113	114	
			26.5	25	15.5	14.5	11.5	8.8	8.4	575	80.5	0.68	4.0	1.8	1.7	2.1			
			28.5	27	16.5	15.5	12.5	9.5	9	580	78.5	0.62	4.1	2.0	2.0	2.5			
6.6	60	27	25.5	15.5	14.5	11.5	-	-	695	82.5	0.69	3.9	1.8	1.6	2.1				
		27	26	15.5	15	12	-	-	697	80.0	0.66	4.0	2.1	1.7	2.3				
		27.5	26.5	16	15.5	12.5	-	-	700	79.5	0.62	4.1	2.2	1.9	2.5				
K21R 180L10 K20R 160 M10	6.0	50	28	27	16.5	15.5	12.5	9.4	9	575	82.0	0.68	3.9	2.0	1.7	2.1	0.145	136	
	7.2	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K21R 200L10 K20R 180 S10	9.0	50	45	42	25.5	24	19.5	14.5	14	580	83.0	0.68	4.4	2.0	1.7	2.4	0.228	175	
			44	42	25.5	24	19.5	14.5	14	585	83.0	0.65	4.6	2.3	2.0	2.7			
			47.5	45.5	27	26	20.5	16	15	585	81.0	0.59	4.6	2.5	2.2	3.0			
11	60	44.5	42	25.5	24	19.5	-	-	700	85.0	0.67	4.5	2.0	1.7	2.4				
		45.5	43.5	26	25	20	-	-	705	84.0	0.63	4.5	2.2	2.0	2.7				
		47.5	46	27.5	26.5	21	-	-	705	82.0	0.58	4.5	2.4	2.2	2.9				
K21R 200 LX10 K20R 180 M10	13	50	59	55	33.5	32	25.5	19	18.5	573	84.0	0.74	3.9	1.6	1.4	1.8	0.268	200	
			57.5	55	33	31.5	25	19	18.5	575	85.0	0.70	4.2	1.8	1.6	2.1			
			58.5	56	33.5	32	25.5	19.5	18.5	580	83.0	0.67	4.4	2.0	1.8	2.3			
15.6	60	58.5	55	33.5	32	25.5	-	-	695	85.5	0.72	4.0	1.6	1.5	1.9				
		57	55	33	31.5	25	-	-	697	85.0	0.70	4.2	1.8	1.6	2.1				
		56.5	54.5	32.5	31.5	25	-	-	700	85.0	0.67	4.4	2.0	1.8	2.3				

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight						
			at																						
	P	f	I	I	I	I	I	I	I	n	η	cos φ	I _A /I _N	M _A /M _N	M ₂ /M _N	M _K /M _N	J	m							
kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg								
K21R 225M10 K20R 200 M10	17	50	U _{ij}	205	220	360	380	475	630	660	575	85.0	0.74	3.9	1.5	1.3	1.9	0.44	265						
			U _B	220	230	380	400	500	660	690															
			U ₀	230	240	400	420	525	690	725															
	20	60	U _{ij}	250	265	435	460	570	-	695										85.5	0.74	4.1	1.6	1.3	1.9
			U _B	265	275	460	480	600	-	700										85.5	0.70	4.3	1.8	1.5	2.1
			U ₀	280	290	485	500	630	-	700										85.0	0.68	4.5	1.9	1.7	2.4
K21R 250M10 K20R 225 M10	22	50	96	92	55.5	53	42.5	32	30.5	580	87.0	0.69	3.9	1.9	1.5	1.6	0.825	360							
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
K21R 280S10 K20R 250 S10	27	50	113	108	65.5	62	50	37.5	36	585	89.5	0.70	4.2	1.9	1.4	1.7	1.35	465							
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
K21R 280 M10 K20R 250 M10	34	50	141	135	81.5	77.5	62	47	45	585	89.0	0.71	4.5	2.0	1.5	2.0	1.55	520							
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
K21R 315 S10 K20R 280 S10	45	50	182	170	104	98.5	78.5	59.5	56.5	590	91.5	0.76	4.7	1.3	1.3	2.1	2.63	690							
			172	165	99.5	94.5	75.5	57.5	55	590	91.5	0.75	5.2	1.5	1.5	2.3									
K21R 315 M10 K20R280 M10	55	50	222	206	126	120	95.5	72	69	591	92.0	0.76	5.8	1.5	1.5	2.4	3.33	800							
			212	203	123	117	93.5	70.5	67.5	592	92.0	0.74	6.3	1.7	1.7	2.7									
K21R 315 MX10 K20R 315 M10	75	50	285	273	165	157	126	95	91	590	92.0	0.75	5.5	1.5	1.5	2.2	3.6	880							
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
K21R 315 L10 K20R 315 L10	90	50	368	352	213	202	162	123	117	593	93.0	0.69	6.0	2.1	1.8	2.3	6.76	1250							
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						



Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight
			at																
	P	f	I _U	I _B	I _O	I _U	I _B	I _O	I _U	I _B	I _O	n	η	cos φ	I _A /I _N	M _A /M _N	M _C /M _N	M _K /M _N	J
kW	Hz	A	A	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg
K21R 132 S12 K20R 112 M12	0.75	50	5.8	5.5	3.3	3.2	2.5	1.9	1.8	475	60.0	0.57	3.0	2.2	2.0	2.2	0.018	46	
	0.9	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K21R 132 M12 K20R 112 MX12	1.1	50	7.6	7.3	4.4	4.2	3.4	2.5	2.4	470	63.0	0.60	3.2	1.6	1.6	2.4	0.023	53	
	1.3	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K21R 132MX12 K20R132 S12	1.5	50	10.5	9.9	6	5.7	4.5	3.4	3.3	480	67.0	0.57	3.0	1.5	1.5	2.1	0.043	70	
	1.8	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K21R 160 M12 K20R 132 M12	2.2	50	15	14	8.6	8.1	6.5	4.9	4.7	470	71.0	0.58	3.3	1.9	1.8	2.4	0.053	86	
			15	14.5	8.7	8.3	6.6	5	4.8	475	69.5	0.55							
			16	15.5	9.2	8.7	7	5.3	5.1	475	68.0	0.51							
	2.6	60	15	14	8.6	8.1	6.6	-	-	570	73.0	0.55	-	-	-	-	-	-	
			15	14.5	8.7	8.3	6.6	-	-	575	72.5	0.52	-	-	-	-	-	-	
			15.5	15	9	8.7	6.9	-	-	575	69.0	0.50	-	-	-	-	-	-	
K21R 160 L12 K20R 160 S12	3	50	17	16.5	9.9	9.4	7.5	5.7	5.4	480	77.0	0.60	3.4	2.0	1.7	2.0	0.113	114	
	3.6	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K21R 180L12 K20R 160 M12	5.5	50	32	30	18.5	17.5	14	10.5	10	470	76.5	0.63	2.9	1.6	1.5	1.8	0.145	136	
			31.5	30.5	18.5	17.5	14	10.5	10	475	76.0	0.60	3.0	1.8	1.7	2.0			
			33.5	32	19	18.5	14.5	11	10.5	480	75.0	0.55	3.2	2.0	1.9	2.3			
	6.6	60	31	29.5	18	17	13.5	-	-	575	80.0	0.61	3.0	1.6	1.6	1.9	-	-	
			32	30.5	18.5	17.5	14	-	-	575	78.0	0.58	3.1	1.8	1.7	2.0	-	-	
			33	32	19	18.5	14.5	-	-	580	76.0	0.54	3.2	2.0	1.9	2.2	-	-	
K21R 200L12 K20R 180 S12	6	50	30	28	17	16	13	9.8	9.4	480	82.5	0.68	3.1	1.4	1.3	1.7	0.228	175	
			29	28	17	16	13	9.7	9.3	480	83.0	0.65	3.3	1.6	1.5	1.9			
			28.5	27	16.5	15.5	12.5	9.5	9	485	83.0	0.64	3.6	1.7	1.6	2.1			
	7.2	60	29.5	28	17	16	13	-	-	575	84.0	0.67	3.1	1.4	1.3	1.7	-	-	
			28.5	27.5	16.5	16	12.5	-	-	580	84.0	0.65	3.3	1.6	1.5	1.9	-	-	
			28	27	16	15.5	12.5	-	-	580	84.0	0.63	3.5	1.7	1.6	2.0	-	-	
K21R 200 LX12 K20R 180 M12	9	50	47	44	27	25.5	20.5	15.5	14.5	478	83.0	0.65	3.3	1.6	1.4	1.8	0.268	200	
			47	45	27.5	26	21	15.5	15	480	82.0	0.61	3.8	1.9	1.8	2.2			
			47.5	45.5	27.5	26	21	16	15	483	80.5	0.59	3.9	2.0	1.8	2.3			
	11	60	46.5	43.5	26.5	25	20.5	-	-	580	84.5	0.65	3.3	1.6	1.4	1.8	-	-	
			46.5	44.5	26.5	25.5	20.5	-	-	582	83.5	0.62	3.8	1.7	1.5	2.0	-	-	
			46.5	45	27	26	20.5	-	-	584	82.5	0.59	3.9	1.9	1.6	2.2	-	-	

Three-phase motors with squirrel-cage rotor

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range acc. to DIN EN 60034-1

Type	output	frequency	current at								speed	efficiency	power factor	starting current	starting torque	pull-up torque	pull-out torque	moment of inertia	weight
			at																
	P	f	I	I	I	I	I	I	I	n	η	cos φ	I _A /I _N	M _A /M _N	M ₂ /M _N	M _K /M _N	J	m	
kW	Hz	A	A	A	A	A	A	A	rpm	%	-	-	-	-	-	kgm ²	kg		
K21R 225M12 K20R 200 M12	13	50	U _N	205	220	360	380	475	630	660	475 480 482	83.5 83.0 82.5	0.72 0.68 0.63	3.4 3.6 3.7	1.5 1.7 1.9	1.3 1.5 1.7	1.7 1.9 2.1	0.44	265
			U _B	220	230	380	400	500	660	690									
			U ₀	230	240	400	420	525	690	725									
	15.6	60	U _N	250	265	435	460	570	-	-									
			U _B	265	275	460	480	600	-	-									
			U ₀	280	290	485	500	630	-	-									
K21R 250M12 K20R 225 M12	17	50	U _N	79.5	74	45.5	43	34.5	26	24.5	480 480 485	86.0 86.0 86.0	0.70 0.69 0.65	3.6 3.9 4.1	1.5 1.7 1.9	1.3 1.5 1.7	1.7 1.9 2.1	0.825	360
			U _B	75	72	43.5	41.5	33	25	24									
			U ₀	76.5	73	44	42	33.5	25.5	24									
	20	60	U _N	77.5	73	44.5	42	34	-	-									
			U _B	75	72.5	43.5	41.5	33	-	-									
			U ₀	74.5	72	43	41.5	33	-	-									
K21R 280S12 K20R 250 S12	20	50	U _N	87.5	84	51	48	38.5	29	28	487	88.0	0.68	3.8	1.8	1.4	1.7	1.35	465
			U _B	-	-	-	-	-	-	-									
			U ₀	-	-	-	-	-	-	-									
	24	60	U _N	-	-	-	-	-	-	-									
			U _B	-	-	-	-	-	-	-									
			U ₀	-	-	-	-	-	-	-									
K21R 280 M12 K20R 250 M12	24	50	U _N	114	109	66	63	50.5	38	36.5	488	87.5	0.63	4.0	2.1	1.6	1.9	1.55	520
			U _B	-	-	-	-	-	-	-									
			U ₀	-	-	-	-	-	-	-									
	28	60	U _N	-	-	-	-	-	-	-									
			U _B	-	-	-	-	-	-	-									
			U ₀	-	-	-	-	-	-	-									
K21R 315 S12 K20R 280 S12	37	50	U _N	157	146	89.5	84.5	67.5	51	48.5	487	91.0	0.73	3.8	1.1	1.0	1.7	2.63	690
			U _B	150	144	87	82.5	66	50	48									
			U ₀	148	142	85	81	65	49.5	47									
	44	60	U _N	153	144	88	83	67	-	-									
			U _B	148	143	85.5	82	65.5	-	-									
			U ₀	144	140	83.5	81	64	-	-									
K21R 315 M12 K20R280 M12	45	50	U _N	188	175	107	102	81	61	58.5	490	91.0	0.74	4.2	1.0	1.0	1.7	3.33	800
			U _B	180	172	104	99	79.5	60	57.5									
			U ₀	177	170	102	97	77.5	59	56.5									
	54	60	U _N	183	173	105	99.5	80.5	-	-									
			U _B	178	171	102	98	78.5	-	-									
			U ₀	173	167	100	97	77	-	-									
K21R 315 MX12 K20R 315 M12	55	50	U _N	227	211	129	122	98	74	70.5	485	91.0	0.75	4.2	1.2	1.0	1.7	3.6	880
			U _B	214	205	124	118	94.5	71.5	68.5									
			U ₀	214	205	123	117	93.5	71	68									
	66	60	U _N	225	212	129	122	98.5	-	-									
			U _B	215	207	124	119	95	-	-									
			U ₀	212	205	123	119	94.5	-	-									
K21R 315 L12 K20R 315 L12	75	50	U _N	332	318	192	183	146	111	106	492	92.5	0.64	4.5	1.5	1.2	1.6	6.76	1250
			U _B	-	-	-	-	-	-	-									
			U ₀	-	-	-	-	-	-	-									
	90	60	U _N	-	-	-	-	-	-	-									
			U _B	-	-	-	-	-	-	-									
			U ₀	-	-	-	-	-	-	-									

Three-phase motors with squirrel-cage rotor

variable speed for constant load torque

with one Δ/YY -Dahlander winding

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 1500/3000 rpm – 4-2 pole version											
K21R 63 G 4-2	K20R 56 G 4-2	0.12 0.18	1405 2840	53.0 63.0	0.65 0.82	0.55 0.50	3.0 4.2	1.9 2.0	1.9 1.8	2.5 2.2	0.00024 4.8 ¹⁾
K21R 71 K 4-2	K20R 63 K 4-2	0.17 0.23	1405 2840	59.0 64.0	0.69 0.82	0.61 0.64	3.3 4.3	1.3 1.5	1.3 1.5	2.1 2.0	0.00040 6.8 6.3 ¹⁾
K21R 71 G 4-2	K20R 63 G 4-2	0.30 0.45	1390 2770	60.0 62.0	0.73 0.88	1.00 1.20	3.5 3.8	1.5 1.1	1.5 1.1	2.0 1.6	0.00050 7.8 7.1 ¹⁾
K21R 80 K 4-2	K20R 71 K 4-2	0.48 0.55	1395 2855	67.0 66.0	0.77 0.86	1.35 1.40	4.1 5.1	1.5 1.3	1.5 1.3	2.0 2.1	0.00087 10.6 9.9 ¹⁾
K21R 80 G 4-2	K20R 71 G 4-2	0.70 0.85	1400 2860	67.5 68.0	0.75 0.84	2.00 2.15	3.7 4.9	1.6 1.4	1.6 1.4	1.8 1.7	0.00107 11.7 11.0 ¹⁾
K21R 90 S 4-2	K20R 80 K 4-2	1.10 1.40	1410 2845	73.0 70.0	0.80 0.90	2.71 3.20	4.7 5.5	1.4 1.5	1.4 1.5	1.9 1.7	0.00207 15.5 14.5 ¹⁾
K21R 90 L 4-2	K20R 80 G 4-2	1.40 1.80	1410 2855	73.5 70.0	0.80 0.90	3.45 4.15	4.6 5.6	1.5 1.7	1.5 1.7	2.1 1.9	0.00260 18.0 17.0 ¹⁾
K21R 100 L 4-2	K20R 90 L 4-2	2.00 2.40	1405 2865	76.0 74.0	0.85 0.91	4.50 5.10	5.1 5.8	1.5 1.4	1.5 1.4	2.1 2.0	0.00400 23.5 22.5 ¹⁾
K21R 100 LX 4-2	K20R 100 S 4-2	2.60 3.10	1440 2900	80.0 76.0	0.80 0.87	5.85 6.80	6.1 7.3	1.7 1.6	1.7 1.6	2.5 2.6	0.00725 30.0 30.0 ¹⁾
K21R 112 M 4-2	K20R 100 L 4-2	3.70 4.40	1425 2890	80.0 77.5	0.86 0.90	7.80 9.10	5.7 7.0	1.5 1.6	1.5 1.6	2.3 2.4	0.00900 37.0 36.0 ¹⁾
K21R 132 S 4-2	K20R 112 M 4-2	4.2 5.3	1430 2870	83.0 80.0	0.87 0.92	8.4 10.5	6.3 6.5	1.7 2.1	1.5 1.3	2.4 2.6	0.015 50
K21R 132 M 4-2	K20R 132 S 4-2	5.3 6.5	1450 2910	86.0 81.0	0.84 0.90	10.5 13	5.3 6.2	1.7 2.0	1.4 2.0	2.2 2.4	0.028 69
K21R 160 M 4-2	K20R 132 M 4-2	7.6 9.5	1445 2900	86.0 83.0	0.86 0.92	15 18	5.4 6.5	1.7 1.9	1.3 1.0	2.2 2.4	0.035 86
K21R 160 L 4-2	K20R 160 S 4-2	10.5 13.0	1460 2915	88.5 86.0	0.88 0.91	19.5 24	5.8 6.2	1.7 1.8	1.0 0.8	2.0 1.9	0.078 120
K21R 180 M 4-2	K20R 160 M 4-2	12.5 16.0	1460 2920	89.0 86.0	0.89 0.92	23 29	6.1 6.7	2.0 1.9	1.4 0.8	2.3 2.2	0.090 136
K21R 180 L 4-2	K20R 180 S 4-2	15.5 18.5	1470 2930	90.0 89.0	0.89 0.93	28 32.5	6.0 7.2	1.4 1.4	1.1 0.6	2.2 2.1	0.138 170
K21R 200 L 4-2	K20R 180 M 4-2	21.0 25.0	1465 2940	91.0 90.0	0.89 0.93	37.5 43	6.0 7.4	1.5 1.7	1.1 0.7	2.1 2.3	0.168 200
K21R 225 S 4-2	K20R 200 M 4-2	25.0 31.0	1470 2940	92.3 90.0	0.87 0.91	45 54.5	6.6 7.2	1.8 1.6	1.4 0.8	2.4 2.2	0.275 270
K21R 225 M 4-2	K20R 200 L 4-2	30.0 37.0	1475 2945	92.3 90.0	0.87 0.91	54 65	7.0 8.0	1.8 1.7	1.4 0.7	2.4 2.5	0.313 300
K21R 250 M 4-2	K20R 225 M 4-2	37.0 45.0	1475 2955	92.5 87.0	0.86 0.91	67 82	6.9 7.8	1.7 1.7	1.3 0.5	2.1 2.1	0.525 375
K21R 280 S 4-2	K20R 250 S 4-2	48.0 60.0	1480 2965	93.2 89.5	0.84 0.91	88.5 106	7.5 8.1	1.6 1.3	1.4 0.8	2.3 2.5	0.950 520
K21R 280 M 4-2	K20R 250 M 4-2	60.0 70.0	1480 2965	93.5 90.0	0.85 0.92	109 122	6.9 8.2	1.6 1.2	1.4 0.8	2.1 2.2	1.11 580
K21R 315 S 4-2	K20R 280 S 4-2	75.0 90.0	1485 2975	94.5 93.0	0.84 0.92	136 152	6.9 8.0	1.6 1.7	1.4 1.2	2.2 2.8	1.96 740
K21R 315 M 4-2	K20R 280 M 4-2	95.0 115	1485 2970	95.0 93.0	0.85 0.91	170 196	7.8 8.5	1.7 1.8	1.6 1.0	2.3 3.2	2.27 840
K21R 315 MX 4-2	K20R 315 S 4-2	110 132	1485 2970	95.0 93.5	0.85 0.91	197 224	8.0 8.5	1.7 1.8	1.5 1.0	2.3 2.9	2.73 1000
K21R 315 MY 4-2	K20R 315 M 4-2	135 165	1490 2980	95.8 94.8	0.86 0.92	237 273	8.0 8.5	2.0 2.1	1.5 1.1	2.8 2.9	4.82 1200
K21R 315 L 4-2	K20R 315 L 4-2	145 190	1490 2980	95.7 93.8	0.87 0.93	251 314	8.0 9.8	1.7 1.5	1.2 1.1	2.3 2.7	5.93 1450
K21R 315 LX 4-2	K20R 315 LX 4-2	160 220	1490 2980	95.6 93.2	0.87 0.94	278 362	8.5 10.0	1.7 2.0	1.4 1.0	2.4 2.4	6.82 1630

¹⁾ weights for K20R

Three-phase motors with squirrel-cage rotor

variable speed for increased output and constant load torque

with one Δ/YY -Dahlander winding

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 1500/3000 rpm – 4-2 pole version												
K21R 132 S 4-2	K20R 112 M 4-2	4.9 5.9	1435 2890	83.0 79.0	0.85 0.89	10 12	6.3 6.5	1.8 1.8	1.5 1.3	2.4 2.5	0.015	50
K21R 132 M 4-2	K20R 132 S 4-2	6.8 8.0	1440 2895	86.0 81.0	0.83 0.88	14 16	4.9 5.4	1.6 1.9	1.3 1.3	2.0 2.2	0.028	69
K21R 160 M 4-2	K20R 132 M 4-2	9.5 11.0	1440 2900	87.0 81.0	0.84 0.87	19 22.5	5.4 6.3	1.7 2.0	1.3 1.1	2.2 2.4	0.035	86
K21R 160 L 4-2	K20R 160 S 4-2	12.5 15.0	1460 2915	88.5 85.0	0.87 0.86	23.5 29.5	5.8 6.0	1.7 1.8	1.3 1.0	2.0 1.9	0.078	120
K21R 180 M 4-2	K20R 160 M 4-2	15.0 19.0	1460 2920	89.0 85.0	0.87 0.87	28 37	6.1 6.2	2.1 1.9	1.4 0.9	2.3 2.2	0.090	136
K21R 180 L 4-2	K20R 180 S 4-2	18.5 22.0	1465 2935	90.0 88.0	0.85 0.89	35 40.5	6.2 7.0	1.6 1.5	1.2 0.7	2.2 2.2	0.138	170
K21R 200 L 4-2	K20R 180 M 4-2	25.0 30.0	1470 2950	91.0 88.0	0.85 0.89	46.5 55.5	7.0 7.4	2.0 1.8	1.5 0.9	2.4 2.4	0.168	200
K21R 225 S 4-2	K20R 200 M 4-2	30.0 35.0	1470 2945	92.0 90.0	0.85 0.89	55.5 63	6.6 7.2	1.8 1.6	1.3 0.8	2.3 2.2	0.275	270
K21R 225 M 4-2	K20R 200 L 4-2	36.0 43.0	1460 2940	91.5 90.0	0.85 0.90	67 76.5	7.0 7.6	1.8 1.7	1.4 0.7	2.4 2.5	0.313	300
K21R 250 M 4-2	K20R 225 M 4-2	47.0 54.0	1475 2955	93.0 90.0	0.84 0.88	87 98.5	7.0 7.7	1.8 1.7	1.3 0.7	2.0 2.2	0.525	375
K21R 280 S 4-2	K20R 250 S 4-2	60.0 72.0	1485 2965	94.5 92.5	0.86 0.89	107 126	7.0 8.1	1.5 1.4	1.3 0.8	2.4 2.6	0.950	520
K21R 280 M 4-2	K20R 250 M 4-2	75.0 85.0	1480 2960	94.5 92.0	0.86 0.90	133 148	7.2 8.2	1.8 1.4	1.4 0.8	2.2 2.4	1.11	580
K21R 315 S 4-2	K20R 280 S 4-2	85.0 95.0	1485 2975	94.5 93.0	0.84 0.91	155 162	8.0 9.0	1.9 2.0	1.4 1.1	2.6 3.5	1.96	740
K21R 315 M 4-2	K20R 280 M 4-2	95.0 115	1485 2970	94.0 93.0	0.85 0.91	172 196	9.0 9.5	2.0 2.0	1.4 1.1	3.0 3.8	2.27	840
K21R 315 MX 4-2	K20R 315 S 4-2	110 132	1485 2970	95.0 93.5	0.85 0.91	197 224	9.0 9.5	1.7 1.8	1.5 1.0	2.5 2.9	2.73	1000
K21R 315 MY 4-2	K20R 315 M 4-2	135 165	1490 2980	95.8 94.8	0.85 0.92	239 273	9.0 10.0	2.0 2.1	1.5 1.1	2.8 2.9	4.82	1300

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives

with one Y/YY-Dahlander winding

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 1500/3000 rpm – 4-2 pole version												
K21R 71 K	K20R 63 K	0.08	1415	59.0	0.70	0.28	3.6	1.3	1.3	1.9	0.00040	6.8
4-2L	4-2L	0.30	2830	56.0	0.82	0.95	4.2	1.1	1.1	1.8	6.3 ¹⁾	
K21R 71 G	K20R 63 G	0.12	1405	67.0	0.77	0.34	3.1	1.5	1.5	1.8	0.00050	7.8
4-2L	4-2L	0.48	2795	65.0	0.88	1.21	4.2	1.6	1.6	1.9	7.1 ¹⁾	
K21R 80 K	K20R 71 K	0.18	1415	70.0	0.79	0.47	4.4	1.7	1.7	2.0	0.00087	10.6
4-2L	4-2L	0.70	2830	66.0	0.88	1.75	5.1	1.8	1.8	2.1	9.9 ¹⁾	
K21R 80 G	K20R 71 G	0.25	1405	73.0	0.79	0.63	4.6	1.5	1.5	2.0	0.00107	11.7
4-2L	4-2L	0.90	2840	69.0	0.86	2.19	5.8	2.0	2.0	2.1	11.0 ¹⁾	
K21R 90 S	K20R 80 K	0.37	1440	74.0	0.83	0.87	4.9	1.4	1.4	2.1	0.00207	15.5
4-2L	4-2L	1.50	2840	71.0	0.89	3.45	5.0	1.5	1.5	1.7	14.5 ¹⁾	
K21R 90 L	K20R 80 G	0.50	1430	78.0	0.83	1.12	4.6	1.5	1.5	2.2	0.00260	18.0
4-2L	4-2L	2.00	2840	73.0	0.89	4.45	5.5	1.5	1.5	1.8	17.0 ¹⁾	
K21R 100 L	K20R 90 L	0.70	1435	78.0	0.84	1.55	5.3	1.5	1.5	2.3	0.00400	23.5
4-2L	4-2L	2.80	2860	74.0	0.89	6.10	6.3	1.5	1.5	2.0	22.5 ¹⁾	
K21R 100 LX	K20R 100 S	0.90	1455	80.0	0.82	2.00	6.1	1.5	1.5	2.3	0.00725	30.0
4-2L	4-2L	3.60	2890	76.5	0.89	7.70	6.7	1.9	1.9	2.5	30.0 ¹⁾	
K21R 112 M	K20R 100 L	1.20	1440	80.0	0.85	2.50	5.3	1.5	1.5	2.2	0.009	37.0
4-2L	4-2L	4.80	2870	74.0	0.92	10.2	7.0	1.5	1.5	2.1	36.0 ¹⁾	
K21R 132 S	K20R 112 M	1.5	1450	82.0	0.88	3	5.2	1.4	1.2	2.2	0.015	50
4-2L	4-2L	5.5	2870	78.0	0.92	11	6.0	1.9	1.0	2.5		
K21R 132 M	K20R 132 S	2.2	1460	82.0	0.87	4.5	5.2	1.4	1.0	1.9	0.028	69
4-2L	4-2L	8.2	2900	76.0	0.88	17.5	6.0	2.0	1.1	2.4		
K21R 160 M	K20R 132 M	3.3	1450	86.0	0.87	6.4	5.0	1.3	1.0	1.8	0.038	86
4-2L	4-2L	12.0	2890	83.0	0.88	23.5	6.6	1.8	1.0	2.4		
K21R 160 L	K20R 160 S	4.3	1460	83.0	0.89	8.4	5.8	1.8	1.1	2.0	0.078	120
4-2L	4-2L	17.0	2915	80.0	0.89	34.5	6.5	1.6	0.8	2.5		
K21R 180 M	K20R 160 M	5.5	1470	89.0	0.87	10.5	5.8	1.7	1.2	2.2	0.090	136
4-2L	4-2L	20.0	2920	82.0	0.86	41	6.5	1.8	1.0	2.5		
K21R 180 L	K20R 180 S	6.4	1480	88.5	0.89	11.5	6.0	1.5	1.1	2.2	0.138	170
4-2L	4-2L	24.0	2935	85.0	0.88	46.5	7.0	2.0	0.9	2.6		
K21R 200 L	K20R 180 M	7.8	1475	90.0	0.89	14	6.5	1.5	1.2	2.4	0.168	200
4-2L	4-2L	30.0	2940	88.0	0.90	54.5	7.5	2.1	1.3	2.8		
K21R 225 S	K20R 200 M	9.5	1485	89.5	0.88	17.5	7.0	1.8	1.5	2.6	0.275	270
4-2L	4-2L	37.0	2950	86.0	0.86	72	8.0	2.4	1.5	3.0		
K21R 225 M	K20R 200 L	12.0	1480	92.0	0.88	21.5	6.5	1.4	1.1	2.4	0.313	300
4-2L	4-2L	45.0	2950	88.0	0.88	84	7.5	2.0	1.0	2.6		
K21R 250 M	K20R 225 M	15.0	1480	90.0	0.85	28.5	6.2	1.5	0.9	1.8	0.525	375
4-2L	4-2L	55.0	2950	88.0	0.88	103	7.5	2.2	0.7	2.4		
K21R 280 S	K20R 250 S	20.0	1485	91.5	0.81	39	6.0	1.1	0.9	1.7	0.950	520
4-2L	4-2L	75.0	2965	90.0	0.88	137	8.0	2.0	1.3	2.4		
K21R 280 M	K20R 250 M	24.0	1485	92.0	0.82	46	6.1	1.1	0.9	1.7	1.10	580
4-2L	4-2L	90.0	2965	91.0	0.91	157	8.0	2.0	1.3	2.4		
K21R 315 S	K20R 280 S	29.0	1490	94.0	0.81	55	6.9	1.1	1.0	1.9	1.96	740
4-2L	4-2L	110	2975	93.0	0.89	192	9.6	1.6	1.2	3.0		
K21R 315 M	K20R 280 M	35.0	1488	94.0	0.81	66.5	7.0	1.4	1.2	1.7	2.27	840
4-2L	4-2L	132	2975	92.6	0.90	229	9.6	1.6	0.8	2.6		
K21R 315 MY	K20R 315 M	50.0	1490	95.0	0.86	88.5	7.2	1.4	1.0	2.2	4.82	1200
4-2L	4-2L	160	2980	94.5	0.91	269	12.0	2.4	1.2	3.5		

¹⁾ weights for K20R

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with two separate windings, Y/Y-circuit
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 1000/3000 rpm – 6-2 pole version											
K21R 132 S 6-2L	K20R 112 M 6-2L	0.55 4.5	980 2890	65.0 82.0	0.61 0.89	2 8.9	5.2 6.6	1.5 2.2	2.9 2.4	0.015	50
K21R 132 M 6-2L	K20R 132 S 6-2L	0.8 7.0	985 2830	69.5 86.0	0.64 0.93	2.6 12.5	4.9 6.2	1.4 1.7	2.8 2.2	0.028	69
K21R 160 M 6-2L	K20R 132 M 6-2L	1.2 9.0	982 2900	72.0 87.5	0.69 0.93	3.5 16	5.0 6.5	1.3 1.8	2.5 2.3	0.035	86
K21R 160 L 6-2L	K20R 160 S 6-2L	1.5 13.0	985 2900	80.0 87.0	0.76 0.93	3.6 23	6.2 6.2	1.7 1.8	2.8 2.2	0.078	120
K21R 180 M 6-2L	K20R 160 M 6-2L	2.0 17.0	983 2910	81.0 88.0	0.79 0.93	4.5 30	5.7 6.8	1.5 2.1	2.5 2.4	0.090	136
K21R 180 L 6-2L	K20R 180 S 6-2L	2.5 22.0	989 2925	76.5 89.5	0.72 0.93	6.6 38	5.8 7.0	1.3 2.0	2.7 2.4	0.138	170
K21R 200 L 6-2L	K20R 180 M 6-2L	3.5 27.0	988 2920	80.5 90.0	0.74 0.93	8.5 46.5	6.0 6.7	1.5 1.8	2.7 2.2	0.168	200
K21R 225 S 6-2L	K20R 200 M 6-2L	4.0 32.0	990 2950	85.0 90.0	0.73 0.93	9.3 55	6.5 7.8	1.6 1.9	2.8 2.6	0.275	270
K21R 225 M 6-2L	K20R 200 L 6-2L	4.5 37.0	990 2950	84.0 90.5	0.74 0.93	10.5 63.5	6.4 7.7	1.6 1.9	2.7 2.5	0.313	300
K21R 250 M 6-2L	K20R 225 M 6-2L	5.0 45.0	990 2945	82.0 91.0	0.78 0.93	11.5 76.5	6.6 7.0	1.8 1.9	2.5 2.2	0.525	375
K21R 280 S 6-2L	K20R 250 S 6-2L	6.5 55.0	992 2965	86.0 91.0	0.76 0.93	14.5 94	7.4 7.5	2.2 1.5	2.7 2.5	0.950	520
K21R 280 M 6-2L	K20R 250 M 6-2L	8.0 75.0	989 2960	86.0 91.5	0.76 0.93	17.5 127	7.0 7.0	1.9 1.6	2.7 2.3	1.11	580
K21R 315 S 6-2L	K20R 280 S 6-2L	10.0 90.0	989 2960	85.5 92.0	0.81 0.93	21 152	6.9 7.2	1.9 1.3	2.3 2.4	1.96	740
K21R 315 M 6-2L	K20R 280 M 6-2L	13.0 110	990 2965	83.5 93.0	0.82 0.93	27.5 184	6.8 7.5	1.8 1.5	2.3 2.5	2.27	840
K21R 315 MX 6-2L	K20R 315 S 6-2L	16.0 132	992 2960	82.0 93.5	0.77 0.93	36.5 219	7.7 7.8	2.0 1.7	2.8 2.5	2.73	1000
K21R 315 MY 6-2L	K20R 315 M 6-2L	20.0 160	993 2970	84.5 93.5	0.83 0.93	41 266	7.1 8.0	2.0 1.8	2.4 2.7	4.82	1200

Δ-circuit on request



Three-phase motors with squirrel-cage rotor

variable speed for constant load torque
 with two separate windings, Y/Y-circuit
 with surface ventilation, mode of operation S1, continuous duty
 insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m			
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg			
Synchronous speed 1000/1500 rpm – 6-4 pole version														
K21R	71 K 6-4	K20R	63 K 6-4	0.10 0.15	925 1440	37.0 54.0	0.69 0.70	0.57 0.57	2.4 3.2	1.2 1.2	1.2 1.8	0.00045 7.1 ¹⁾	7.8	
K21R	71 G 6-4	K20R	63 G 6-4	0.13 0.20	920 1430	41.0 53.0	0.68 0.73	0.67 0.75	2.4 3.2	1.3 1.2	1.3 1.8	0.00060 7.4 ¹⁾	8.1	
K21R	80 K 6-4	K20R	71 K 6-4	0.20 0.28	940 1440	49.0 56.0	0.69 0.69	0.86 1.05	2.8 3.5	1.5 1.3	1.5 2.0	0.00087 9.9 ¹⁾	10.6	
K21R	80 G 6-4	K20R	71 G 6-4	0.25 0.37	950 1450	59.0 70.0	0.66 0.73	0.93 1.05	2.8 3.9	1.6 1.4	1.6 1.4	0.00107 11.0 ¹⁾	11.7	
K21R	90 S 6-4	K20R	80 K 6-4	0.35 0.60	950 1450	63.0 69.0	0.73 0.78	1.10 1.60	3.4 4.5	1.3 1.3	1.3 1.8	0.00325 15.0 ¹⁾	16.0	
K21R	90 L 6-4	K20R	80 G 6-4	0.50 0.90	945 1435	63.0 68.0	0.74 0.81	1.55 2.35	3.4 4.3	1.5 1.4	1.5 1.7	0.00425 18.0 ¹⁾	19.0	
K21R	100L 6-4	K20R	90 L 6-4	0.80 1.20	960 1445	72.0 74.0	0.73 0.83	2.20 2.80	4.1 4.9	1.4 1.2	1.4 1.8	0.00625	24.0	
K21R	100 LX 6-4	K20R	100 S 6-4	1.10 1.60	965 1450	72.0 73.0	0.74 0.83	3.00 3.80	4.1 4.9	1.3 1.3	1.3 1.8	0.00900	28.0	
K21R	112 M 6-4	K20R	100 L 6-4	1.60 2.40	950 1435	70.0 75.0	0.79 0.87	4.15 5.30	5.5 5.5	1.4 1.6	1.4 2.0	0.01225 32.5 ¹⁾	33.5	
K21R	132 S 6-4	K20R	112 M 6-4	1.5 2.2	970 1445	74.0 74.5	0.79 0.91	3.7 4.7	5.3 5.4	1.4 1.1	1.3 1.0	0.018	46	
K21R	132 M 6-4	K20R	112 MX 6-4	2.2 3.0	965 1450	75.0 78.0	0.80 0.90	5.3 6.2	5.6 6.1	1.4 1.4	1.3 1.0	0.023	53	
K21R	132 MX 6-4	K20R	132 S 6-4	2.6 3.8	970 1460	79.0 81.0	0.83 0.90	5.7 7.5	5.2 5.5	1.7 1.4	1.5 1.1	0.043	70	
K21R	160 M 6-4	K20R	132 M 6-4	3.4 5.0	970 1460	81.0 82.0	0.83 0.91	7.3 9.7	5.9 5.8	1.7 1.4	1.5 1.0	0.053	86	
K21R	160 L 6-4	K20R	160 S 6-4	5.5 7.5	970 1455	81.0 82.0	0.87 0.91	11.5 14.5	5.2 5.2	1.6 1.3	1.3 1.1	0.113	114	
K21R	180 L 6-4	K20R	160 M 6-4	7.5 10.5	970 1460	83.0 83.0	0.88 0.91	15 20	5.4 5.6	1.7 1.5	1.4 1.0	0.145	138	
K21R	200 L 6-4	K20R	180 S 6-4	9.0 12.5	980 1470	86.0 84.0	0.88 0.90	17 24	6.0 5.8	1.7 1.5	1.1 0.7	0.228	175	
K21R	200 LX 6-4	K20R	180 M 6-4	11.0 15.0	980 1470	86.0 86.0	0.88 0.91	21 27.5	7.2 7.5	2.1 1.6	1.5 1.0	0.268	200	
K21R	225 M 6-4	K20R	200 M 6-4	15.0 20.0	980 1475	88.0 88.0	0.90 0.92	27.5 35.5	7.3 8.0	2.3 1.9	1.7 1.3	0.443	265	
K21R	250 M 6-4	K20R	225 M 6-4	18.0 25.0	985 1470	89.0 89.0	0.88 0.91	33 44.5	7.5 6.3	2.8 1.7	2.3 1.1	0.825	360	
K21R	280 S 6-4	K20R	250 S 6-4	22.0 30.0	990 1482	89.0 89.0	0.88 0.91	40.5 53.5	7.8 7.5	2.5 1.9	1.9 1.1	1.28	465	
K21R	280 M 6-4	K20R	250 M 6-4	27.0 37.0	988 1475	89.5 89.5	0.89 0.92	49 65	8.0 6.1	2.7 1.6	2.0 0.8	1.48	520	
K21R	315 S 6-4	K20R	280 S 6-4	37.0 50.0	990 1485	91.5 91.0	0.88 0.91	66.5 87	9.0 7.5	2.6 1.6	2.4 1.3	2.63	690	
K21R	315 M 6-4	K20R	280 M 6-4	45.0 60.0	990 1485	91.5 92.0	0.86 0.91	82.5 103	8.1 6.7	2.0 1.4	1.8 0.8	3.33	800	
K21R	315 MX 6-4	K20R	315 S 6-4	60.0 90.0	990 1485	91.4 90.5	0.88 0.88	108 163	8.0 8.0	2.3 1.8	2.1 1.3	3.60	880	
K21R	315 MY 6-4	K20R	315 M 6-4	75.0 110	990 1488	92.8 91.5	0.88 0.87	133 199	8.0 8.0	2.2 2.0	2.0 1.5	6.00	1050	
K21R	315 L 6-4	K20R	315 L 6-4	100 150	Data on inquiry								6.76	1250

¹⁾ weights for K20R
 Δ-circuit on request

Three-phase motors with squirrel-cage rotor

variable speed for constant load torque

with two separate windings, Y/Y-circuit

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 1000/1500 rpm – 6-4 pole version												
K21R 132 S 6-4	K20R 112 M 6-4	2.0 3.1	955 1450	69.0 76.0	0.86 0.86	4.9 6.8	4.3 6.6	1.2 1.7	1.0 1.3	1.9 2.6	0.018	46
K21R 132 M 6-4	K20R 112 MX 6-4	2.8 4.3	960 1450	71.0 75.0	0.86 0.88	6.6 9.4	5.1 6.6	1.3 1.9	1.2 1.4	2.4 2.6	0.023	53
K21R 132 MX 6-4	K20R 132 S 6-4	3.3 4.9	975 1465	80.0 78.0	0.82 0.85	7.3 10.5	5.2 6.7	1.6 1.9	1.4 1.4	2.5 2.6	0.043	70
K21R 160 M 6-4	K20R 132 M 6-4	4.5 6.9	970 1465	79.0 78.0	0.81 0.89	10 14.5	5.2 6.6	1.6 1.8	1.3 1.4	2.5 2.4	0.053	86
K21R 160 L 6-4	K20R 160 S 6-4	6.5 9.5	970 1455	82.0 82.0	0.85 0.88	13.5 19	6.2 6.8	2.0 1.7	1.6 1.5	2.6 2.6	0.113	114
K21R 180 L 6-4	K20R 160 M 6-4	9.5 14.0	975 1455	84.0 84.0	0.87 0.90	19 26.5	5.3 5.7	1.6 1.7	1.2 1.3	2.0 2.1	0.145	138
K21R 200 L 6-4	K20R 180 S 6-4	13.5 16.0	975 1470	86.0 82.0	0.88 0.85	25.5 33	6.5 6.3	2.0 1.7	1.5 1.3	2.5 2.5	0.228	175
K21R 200 LX 6-4	K20R 180 M 6-4	15.0 18.0	980 1475	87.0 82.0	0.88 0.85	28.5 37.5	7.0 7.7	2.2 2.0	1.5 1.4	2.7 2.8	0.268	200
K21R 225 M 6-4	K20R 200 M 6-4	20.0 26.0	975 1465	88.0 88.0	0.89 0.90	37 47.5	7.2 7.0	2.1 1.6	1.5 1.2	2.8 2.2	0.443	265
K21R 250 M 6-4	K20R 225 M 6-4	25.0 35.0	980 1470	89.0 89.0	0.88 0.89	46 64	6.9 6.4	2.2 1.6	1.5 1.1	2.5 2.2	0.825	360
K21R 280 S 6-4	K20R 250 S 6-4	30.0 40.0	987 1485	89.0 84.5	0.87 0.82	56 83.5	7.5 7.8	2.4 2.0	1.7 1.3	2.4 2.5	1.28	465
K21R 280 M 6-4	K20R 250 M 6-4	37.0 45.0	985 1485	89.5 88.0	0.90 0.87	66.5 85	6.8 6.2	2.0 1.6	1.5 1.1	2.2 2.0	1.48	520
K21R 315 S 6-4	K20R 280 S 6-4	55.0 63.0	988 1480	91.5 91.0	0.88 0.89	98.5 112	7.5 7.5	2.4 1.6	1.9 1.1	2.7 2.7	2.63	690
K21R 315 M 6-4	K20R 280 M 6-4	65.0 80.0	990 1490	92.0 89.0	0.89 0.83	115 156	7.7 8.2	2.0 1.8	1.6 1.1	2.5 2.7	3.33	800
K21R 315 MX 6-4 ¹⁾	K20R 315 S 6-4 ¹⁾	80.0 100	988 1487	90.5 90.0	0.89 0.88	143 182	8.0 9.0	2.2 2.1	1.7 1.3	2.8 3.0	3.60	880
K21R 315 MY 6-4	K20R 315 M 6-4	100 120	990 1488	92.0 88.0	0.88 0.83	178 237	8.5 8.0	2.2 1.9	1.8 1.5	2.8 2.9	6.00	1050
K21R 315 L 6-4	K20R 315 L 6-4	100 150	990 1485	Data on inquiry							6.76	1250

¹⁾ only in insulation class H available
 Δ -circuit on request



Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
 with two separate windings, Y/Y-circuit
 with surface ventilation, mode of operation S1, continuous duty
 insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m			
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg			
Synchronous speed 1000/1500 rpm – 6-4 pole version														
K21R	71 K	K20R	63 K	0.06	940	36.0	0.69	0.35	2.3	1.3	1.3	1.7	0.00045	7.8
	6-4L		6-4L	0.18	1415	62.0	0.73	0.58	3.4	1.4	1.4	1.8		7.1 ¹⁾
K21R	71 G	K20R	63 G	0.08	945	37.5	0.67	0.46	2.4	1.4	1.4	1.8	0.00060	8.1
	6-4L		6-4L	0.25	1405	61.0	0.78	0.76	3.2	1.3	1.3	1.7		7.8 ¹⁾
K21R	80 K	K20R	71 K	0.12	950	48.0	0.69	0.52	2.5	1.3	1.3	1.8	0.00087	10.9
	6-4L		6-4L	0.40	1410	60.0	0.77	1.25	3.8	1.4	1.4	1.8		9.9 ¹⁾
K21R	80 G	K20R	71 G	0.16	955	53.0	0.69	0.63	3.0	1.3	1.3	1.7	0.00107	11.7
	6-4L		6-4L	0.55	1425	65.0	0.79	1.55	4.1	1.4	1.4	1.8		11.0 ¹⁾
K21R	90 S	K20R	80 K	0.25	950	57.0	0.73	0.87	3.1	1.4	1.4	1.7	0.00325	16.0
	6-4L		6-4L	0.75	1425	68.5	0.83	1.90	4.8	1.5	1.5	1.8		15.0 ¹⁾
K21R	90 L	K20R	80 G	0.37	955	59.0	0.73	1.25	3.4	1.3	1.3	1.6	0.00425	19.0
	6-4L		6-4L	1.10	1425	71.0	0.83	2.70	4.7	1.5	1.5	1.8		18.0 ¹⁾
K21R	100 L	K20R	90 L	0.50	965	63.0	0.71	1.60	3.9	1.5	1.5	1.9	0.00625	24.0
	6-4L		6-4L	1.50	1440	76.0	0.83	3.45	5.2	1.5	1.5	1.9		
K21R	100 LX	K20R	100 S	0.75	970	67.0	0.69	2.35	4.4	1.4	1.4	2.0	0.00900	28.0
	6-4L		6-4L	2.00	1440	74.5	0.85	4.55	6.1	1.8	1.8	2.4		
K21R	112 M	K20R	100 L	1.00	965	66.0	0.77	2.85	4.0	1.2	1.2	1.7	0.01225	33.5
	6-4L		6-4L	3.00	1440	77.0	0.82	6.85	6.0	1.8	1.8	2.5		32.5 ¹⁾
K21R	132 S	K20R	112 M	1.5	970	68.5	0.80	4	4.3	1.2	1.1	2.2	0.018	46
	6-4L		6-4L	3.7	1445	73.5	0.86	8.5	5.1	1.2	1.1	2.3		
K21R	132 MX	K20R	132 S	2.2	975	77.5	0.82	5	5.0	1.7	1.2	2.4	0.043	70
	6-4L		6-4L	6	1460	77.5	0.83	13.5	5.8	2.0	1.4	2.9		
K21R	160 M	K20R	132 M	3	975	76.5	0.84	6.7	4.6	1.4	1.1	2.0	0.053	86
	6-4L		6-4L	8.2	1445	80.0	0.88	17	5.4	1.6	1.1	2.1		
K21R	160 L	K20R	160 S	4.4	975	78.0	0.81	10	4.8	1.7	1.5	2.1	0.078	120
	6-4L		6-4L	13	1450	85.0	0.87	25.5	4.9	1.5	1.2	1.9		
K21R	180 M	K20R	160 M	5.4	982	79.0	0.76	13	5.2	1.9	1.6	2.5	0.090	136
	6-4L		6-4L	16	1450	86.0	0.88	30.5	4.9	1.5	1.2	1.9		
K21R	180 L	K20R	180 S	6.7	980	82.0	0.81	14.5	4.7	1.4	1.3	2.1	0.138	170
	6-4L		6-4L	20	1470	89.0	0.84	38.5	5.8	1.7	1.5	2.5		
K21R	200 L	K20R	180 M	9	985	84.0	0.79	19.5	5.0	1.4	1.3	2.1	0.168	200
	6-4L		6-4L	26	1470	90.0	0.85	49	6.4	1.6	1.5	2.5		
K21R	225 S	K20R	200 M	12	982	84.0	0.79	26	5.0	1.3	1.2	2.0	0.275	270
	6-4L		6-4L	34	1475	90.5	0.82	66	6.4	1.9	1.4	2.5		
K21R	225 M	K20R	200 L	14	985	86.0	0.78	30	5.4	1.8	1.5	2.3	0.313	300
	6-4L		6-4L	40	1475	91.0	0.86	74	6.5	1.9	1.6	2.5		
K21R	250 M	K20R	225 M	18	988	86.0	0.75	40.5	5.5	1.7	1.5	2.0	0.525	375
	6-4L		6-4L	50	1478	92.0	0.85	92.5	7.0	1.9	1.3	2.3		
K21R	280 S	K20R	250 S	23	988	86.0	0.74	52	5.4	1.5	1.1	1.8	0.950	520
	6-4L		6-4L	68	1480	92.0	0.84	127	7.0	1.8	1.6	2.4		
K21R	280 M	K20R	250 M	28	988	88.0	0.73	63	5.5	1.6	1.4	1.9	1.11	580
	6-4L		6-4L	80	1485	93.0	0.84	148	7.0	2.0	1.8	2.6		
K21R	315 S	K20R	280 S	34	988	87.0	0.73	77.5	5.5	1.4	1.3	1.8	1.96	740
	6-4L		6-4L	95	1485	93.5	0.84	175	7.0	1.6	1.3	2.2		
K21R	315 M	K20R	280 M	40	990	88.0	0.73	90	6.0	1.3	1.3	1.7	2.27	840
	6-4L		6-4L	115	1485	94.0	0.85	208	7.5	1.9	1.7	2.4		
K21R	315 MX	K20R	315 S	45	990	89.0	0.73	100	6.5	1.3	1.2	1.7	2.73	1000
	6-4L		6-4L	125	1485	94.0	0.85	226	7.5	1.9	1.7	2.4		
K21R	315 MY	K20R	315 M	55	992	91.5	0.77	113	6.4	1.5	1.3	2.0	4.82	1200
	6-4L		6-4L	145	1487	94.5	0.87	255	7.0	1.6	1.4	2.3		
K21R	315 L	K20R	315 L	55	995	Data on inquiry					5.93	1450		
	6-4L		6-4L	185	1490									

¹⁾ weights for K20R
 Δ-circuit on request

Three-phase motors with squirrel-cage rotor

variable speed for constant load torque
 with two separate windings, Y/Y-circuit
 with surface ventilation, mode of operation S1, continuous duty
 insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_L/M	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 750/3000 rpm – 8-2 pole version											
K21R 71 K	K20R 63 K	0.025	720	17.0	0.57	0.37	1.8	2.9	4.0	0.00040	6.8
8-2	8-2	0.09	2950	28.5	0.65	0.71	3.5	1.9	4.0	0.00040	6.3 ¹⁾
K21R 71 G	K20R 63 G	0.04	705	27.5	0.62	0.34	2.0	1.7	2.4	0.00050	7.8
8-2	8-2	0.16	2945	50.5	0.66	0.69	4.3	1.8	2.6	0.00050	7.1 ¹⁾
K21RW 80 K	K20RW 71 K	0.075	670	35.0	0.55	0.56	2.0	2.6	2.6	0.00087	10.6
8-2	8-2	0.30	2855	58.0	0.77	1.00	4.6	2.5	2.6	0.00087	9.9 ¹⁾
K21RW 80 G	K20RW 71 G	0.11	660	37.0	0.56	0.77	2.0	2.3	2.5	0.00107	11.7
8-2	8-2	0.45	2850	60.0	0.80	1.35	4.8	2.2	2.3	0.00107	11.0 ¹⁾
K21RW 90 S	K20RW 80 K	0.18	675	43.0	0.60	1.05	2.3	2.2	2.3	0.00207	15.5
8-2	8-2	0.75	2805	66.0	0.87	1.90	5.0	2.0	1.9	0.00207	14.5 ¹⁾
K21RW 90 L	K20RW 80 G	0.25	665	44.0	0.61	1.35	2.6	2.4	2.8	0.00260	18.0
8-2	8-2	1.00	2810	69.0	0.89	2.40	5.8	2.2	1.8	0.00260	17.0 ¹⁾
K21RW 100 L	K20RW 90 L	0.33	685	47.0	0.54	1.90	2.6	2.8	2.9	0.00400	23.5
8-2	8-2	1.30	2835	72.0	0.87	3.00	5.8	2.0	2.1	0.00400	22.5 ¹⁾
K21RW 100 LX	K20RW 100 S	0.55	680	53.0	0.61	2.45	2.8	1.9	2.3	0.00725	30.0
8-2	8-2	2.20	2840	73.0	0.87	5.00	6.1	2.4	2.5	0.00725	30.0
K21RW 112 M	K20RW 100 L	0.75	680	57.0	0.60	3.15	3.0	1.9	2.4	0.00900	37.0
8-2	8-2	3.00	2840	75.0	0.90	6.45	6.1	2.0	2.0	0.00900	36.0 ¹⁾
K21RW 112 MX	K20RW 100 LX	1.0	665	60.0	0.64	3.75	2.8	1.9	2.0	0.0111	45
8-2	8-2	4.0	2820	75.0	0.91	8.45	6.1	2.1	2.0	0.0111	44.0 ¹⁾
K21R 132 S	K20R 112 M	1.1	725	61.5	0.57	4.5	3.7	1.5	2.4	0.015	50
8-2	8-2	4.5	2850	78.0	0.92	9.1	6.0	1.8	2.1	0.015	50
K21R 132 M	K20R 132 S	1.3	730	64.0	0.50	5.9	3.6	1.5	2.6	0.028	69
8-2	8-2	5.5	2910	80.5	0.85	11.50	6.3	1.6	2.4	0.028	69
K21R 160 M	K20R 132 M	1.8	730	68.5	0.50	7.6	3.8	1.5	2.6	0.035	86
8-2	8-2	7.5	2920	83.0	0.89	14.5	7.0	1.7	2.5	0.035	86
K21R 160 L	K20R 160 S	2.7	735	77.5	0.54	9.3	4.6	1.7	2.8	0.078	120
8-2	8-2	11.0	2930	84.5	0.87	21.5	7.2	1.8	2.6	0.078	120
K21R 180 M	K20R 160 M	3.7	735	76.0	0.59	12	4.4	1.5	2.5	0.090	136
8-2	8-2	15.0	2930	84.5	0.84	30.5	7.1	1.9	2.7	0.090	136
K21R 180 L	K20R 180 S	4.6	735	78.0	0.55	15.5	4.3	1.4	2.5	0.138	170
8-2	8-2	18.5	2935	86.5	0.90	34.5	6.9	1.5	2.4	0.138	170
K21R 200 L	K20R 180 M	5.5	735	80.0	0.52	19	4.6	1.6	2.7	0.168	200
8-2	8-2	22.0	2945	88.0	0.92	39	7.8	1.7	2.8	0.168	200
K21R 225 S	K20R 200 M	7.5	740	82.0	0.47	28	4.6	1.6	2.8	0.275	270
8-2	8-2	30.0	2950	88.5	0.90	54.5	7.8	1.7	2.6	0.275	270
K21R 225 M	K20R 200 L	9.2	740	82.5	0.50	32	4.6	1.5	2.6	0.313	300
8-2	8-2	37.0	2950	89.0	0.90	66.5	7.8	1.7	2.6	0.313	300
K21R 250 M	K20R 225 M	11.0	740	83.5	0.58	33	5.4	1.7	2.7	0.525	375
8-2	8-2	45.0	2950	90.0	0.91	79.5	8.1	1.6	2.7	0.525	375
K21R 280 S	K20R 250 S	13.0	740	85.0	0.60	37	6.5	2.0	2.8	0.95	520
8-2	8-2	55.0	2955	92.0	0.92	94	7.6	1.4	2.4	0.95	520
K21R 280 M	K20R 250 M	18.0	740	86.0	0.63	48	6.2	2.0	2.6	1.11	580
8-2	8-2	75.0	2960	92.0	0.92	128	8.3	1.6	2.6	1.11	580
K21R 315 S	K20R 280 S	22.0	740	87.5	0.64	56.5	6.6	2.0	2.6	1.96	740
8-2	8-2	90.0	2965	92.0	0.92	153	8.1	1.2	2.7	1.96	740
K21R 315 M	K20R 280 M	24.5	740	87.0	0.64	63.5	6.7	2.0	2.7	2.27	840
8-2	8-2	100	2965	92.5	0.92	170	8.9	1.2	2.7	2.27	840
K21R 315 MX	K20R 315 S	28	740	87.0	0.68	68.5	6.2	1.9	2.3	2.73	1000
8-2	8-2	110	2965	92.0	0.92	188	8.1	1.3	2.6	2.73	1000
K21R 315 MY	K20R 315 M	37	745	88.5	0.67	90	6.6	2.0	2.6	4.82	1200
8-2	8-2	145	2970	92.4	0.93	244	8.5	1.4	2.7	4.82	1200
K21R 315 L	K20R 317 L	42.5	745	89.0	0.65	106	6.5	1.9	2.7	5.93	1450
8-2	8-2	170	2975	93.0	0.93	284	8.5	1.4	2.7	5.93	1450

¹⁾ weights for K20R
 Δ-circuit on request

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with two separate windings, Y/Y-circuit
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
		kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 750/3000 rpm – 8-2 pole version													
K21R	132 S	K20R	112 M	0.42	735	55.0	0.57	1.9	3.5	1.4	2.8	0.015	50
	8-2L		8-2L	4.5	2870	82.0	0.94	8.4	6.6	2.2	2.4		
K21R	132 M	K20R	132 S	0.65	735	58.0	0.57	2.8	3.5	1.4	2.6	0.028	69
	8-2L		8-2L	7.0	2830	86.0	0.93	12.5	6.2	1.7	2.2		
K21R	160 M	K20R	132 M	0.8	735	59.0	0.57	3.4	3.6	1.4	2.6	0.035	86
	8-2L		8-2L	9.0	2900	87.5	0.93	16	6.5	1.8	2.3		
K21R	160 L	K20R	160 S	1.2	735	70.0	0.69	3.6	4.0	1.5	2.0	0.078	120
	8-2L		8-2L	13.0	2925	84.0	0.87	25.5	6.2	1.8	2.3		
K21R	180 M	K20R	160 M	1.5	735	68.0	0.71	4.5	4.0	1.6	2.2	0.090	136
	8-2L		8-2L	17.0	2910	85.5	0.92	31	6.0	1.6	2.0		
K21R	180 L	K20R	180 S	1.9	740	68.0	0.61	6.6	4.2	1.3	2.5	0.138	170
	8-2L		8-2L	22.0	2925	89.5	0.93	38	7.0	2.0	2.4		
K21R	200 L	K20R	180 M	2.5	740	74.0	0.63	7.7	4.6	1.4	2.5	0.168	200
	8-2L		8-2L	27.0	2920	90.0	0.93	46.5	6.7	1.8	2.2		
K21R	225 S	K20R	200 M	3.2	740	79.0	0.59	9.9	4.8	1.5	2.6	0.275	270
	8-2L		8-2L	32.0	2950	90.0	0.93	55	7.8	1.9	2.6		
K21R	225 M	K20R	200 L	3.6	740	77.0	0.62	11	4.6	1.3	2.4	0.313	300
	8-2L		8-2L	37.0	2950	90.5	0.93	63.5	7.7	1.9	2.5		
K21R	250 M	K20R	225 M	4.0	740	79.0	0.66	11	5.5	1.8	2.5	0.525	375
	8-2L		8-2L	45.0	2945	91.0	0.93	76.5	7.0	1.9	2.2		
K21R	280 S	K20R	250 S	5.2	740	82.0	0.64	14.5	6.0	2.0	2.5	0.950	520
	8-2L		8-2L	55.0	2965	91.0	0.93	94	7.5	1.5	2.5		
K21R	280 M	K20R	250 M	6.5	740	83.0	0.66	17	5.4	1.7	2.3	1.11	580
	8-2L		8-2L	75.0	2960	91.5	0.93	127	7.0	1.6	2.3		
K21R	315 S	K20R	280 S	8.0	740	84.0	0.69	20	6.3	2.0	2.3	1.96	740
	8-2L		8-2L	90.0	2960	92.0	0.93	152	7.2	1.3	2.4		
K21R	315 M	K20R	280 M	10.0	745	81.0	0.69	26	6.0	1.9	2.3	2.27	840
	8-2L		8-2L	110	2965	93.0	0.93	184	7.5	1.5	2.5		
K21R	315 MX	K20R	315 S	13.0	745	80.0	0.65	36	6.3	2.1	2.5	2.73	1000
	8-2L		8-2L	132	2060	93.5	0.93	219	7.8	1.7	2.5		
K21R	315 MY	K20R	315 M	17.0	745	83.0	0.67	44	7.2	2.4	2.6	4.82	1200
	8-2L		8-2L	160	2970	93.5	0.93	266	8.0	1.8	2.7		

 Δ -circuit on request

Three-phase motors with squirrel-cage rotor

variable speed for constant load torque

with one Δ/YY -Dahlander winding

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 750/1500 rpm – 8-4 pole version												
K21R 71 K	K20R 63 K	0.09	660	31.0	0.64	0.66	2.0	2.0	2.0	2.1	0.00050	6.6
8-4	8-4	0.12	1445	61.0	0.59	0.48	4.0	2.4	2.4	3.0		6.3 ¹⁾
K21R 71 G	K20R 63 G	0.12	660	35.5	0.63	0.77	2.2	1.9	1.9	2.1	0.00060	8.3
8-4	8-4	0.20	1425	65.5	0.72	0.61	4.2	1.8	1.8	2.3		6.9 ¹⁾
K21R 80 K	K20R 71 K	0.18	685	44.0	0.70	0.85	2.5	1.6	1.6	2.0	0.00130	10.5
8-4	8-4	0.30	1400	67.0	0.87	0.74	3.8	1.4	1.4	1.6		9.9 ¹⁾
K21R 80 G	K20R 71 G	0.25	670	45.0	0.69	1.17	2.4	1.3	1.3	1.7	0.00175	12.0
8-4	8-4	0.40	1400	73.0	0.84	0.94	4.1	1.3	1.3	1.8		11.3 ¹⁾
K21R 90 S	K20R 80 K	0.35	700	53.5	0.65	1.45	2.8	1.5	1.5	1.8	0.00300	15.0
8-4	8-4	0.55	1420	70.0	0.88	1.30	4.3	1.4	1.4	1.9		14.0 ¹⁾
K21R 90 L	K20R 80 G	0.44	695	56.0	0.60	1.89	2.8	1.5	1.5	1.8	0.00375	18.0
8-4	8-4	0.75	1410	72.0	0.86	1.74	4.2	1.3	1.3	1.7		17.0 ¹⁾
K21R 100 L	K20R 90 L	0.70	720	62.5	0.55	2.95	3.5	1.8	1.8	2.3	0.00625	24.0
8-4	8-4	1.10	1455	78.5	0.85	2.35	6.0	1.9	1.9	2.3		22.5 ¹⁾
K21R 100 LX	K20R 100 S	1.00	705	70.0	0.68	3.00	3.7	1.5	1.5	2.0	0.00900	28.0
8-4	8-4	1.50	1420	84.0	0.85	3.00	5.6	1.3	1.3	2.0		28.0 ¹⁾
K21R 112 M	K20R 100 L	1.40	705	68.5	0.66	4.40	4.0	1.8	1.8	2.3	0.01225	33.5
8-4	8-4	2.20	1435	78.5	0.90	4.50	5.8	1.3	1.3	2.2		32.5 ¹⁾
K21R 132 S	K20R 112 M	1.7	710	72.0	0.72	4.7	4.3	1.7	1.5	2.5	0.018	46
8-4	8-4	2.6	1435	79.0	0.91	5.2	5.8	1.5	1.3	2.5		
K21R 132 M	K20R 112 MX	2.2	715	72.0	0.71	6.2	4.4	1.8	1.7	2.6	0.023	53
8-4	8-4	3.7	1430	78.0	0.93	7.4	5.4	1.4	1.2	2.3		
K21R 132 MX	K20R 132 S	3.1	725	76.0	0.70	8.4	4.1	1.6	1.5	2.3	0.043	70
8-4	8-4	4.8	1450	82.0	0.91	9.3	5.6	1.5	1.1	2.3		
K21R 160 M	K20R 132 M	4.3	720	77.0	0.71	11.5	4.3	1.7	1.6	2.4	0.053	86
8-4	8-4	6.5	1450	83.0	0.91	12.5	6.2	1.7	1.3	2.4		
K21R 160 L	K20R 160 S	6.2	725	82.0	0.76	14.5	4.7	1.8	1.6	2.2	0.113	114
8-4	8-4	9.0	1455	83.0	0.91	17	6.0	1.7	1.3	2.4		
K21R 180 L	K20R 160 M	8.5	720	83.0	0.79	18.5	4.3	1.7	1.5	2.0	0.145	138
8-4	8-4	12.5	1450	85.0	0.91	23.5	5.4	1.6	1.2	2.0		
K21R 200 L	K20R 180 S	11.0	730	86.0	0.78	23.5	5.0	1.8	1.5	2.1	0.228	175
8-4	8-4	16.0	1460	86.0	0.91	29.5	6.2	1.8	1.2	2.2		
K21R 200 LX	K20R 180 M	13.0	730	87.0	0.79	27.5	5.3	1.9	1.6	2.3	0.268	200
8-4	8-4	19.0	1460	88.0	0.92	34	6.9	1.6	1.2	2.7		
K21R 225 M	K20R 200 M	17.5	730	88.0	0.78	37	5.7	2.2	1.8	2.4	0.443	265
8-4	8-4	25.0	1470	88.0	0.92	44.5	7.4	2.1	1.0	2.6		
K21R 250 M	K20R 225 M	24.0	730	89.0	0.81	48	5.6	2.0	1.6	2.2	0.825	360
8-4	8-4	30.0	1470	89.0	0.92	53	8.2	2.5	1.4	2.8		
K21R 280 S	K20R 250 S	28.0	735	90.0	0.78	57.5	5.4	2.1	1.5	1.9	1.28	465
8-4	8-4	38.0	1475	89.5	0.90	68	7.2	2.1	1.2	2.4		
K21R 280 M	K20R 250 M	34.0	737	90.5	0.79	68.5	5.4	2.1	1.5	2.1	1.48	520
8-4	8-4	45.0	1478	90.0	0.90	80	7.7	2.4	1.3	2.5		
K21R 315 S	K20R 280 S	42.0	740	92.0	0.81	81.5	5.7	1.6	1.3	2.0	2.63	690
8-4	8-4	55.0	1480	92.0	0.92	94	8.5	1.9	1.2	2.5		
K21R 315 M	K20R 280 M	55.0	740	92.5	0.79	109	5.8	1.7	1.5	2.1	3.33	800
8-4	8-4	75.0	1485	92.5	0.91	129	7.7	2.0	1.3	2.6		
K21R 315 MX	K20R 315 S	70.0	742	92.5	0.76	144	7.0	2.3	1.8	2.5	3.60	880
8-4	8-4	105	1485	91.5	0.89	186	8.5	2.5	1.6	3.0		
K21R 315 MY	K20R 315 M	85.0	740	93.8	0.78	168	7.0	2.3	1.9	2.7	6.00	1050
8-4	8-4	125	1485	92.6	0.90	216	8.5	2.5	1.6	2.8		
K21R 315 L	K20R 315 L	120	730	Data on inquiry							6.76	1250
8-4	8-4	150	1485									

¹⁾ weights for K20R

Three-phase motors with squirrel-cage rotor

variable speed with increased load for constant load torque,
with one Δ/YY -Dahlander winding
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 750/1500 rpm – 8-4 pole version												
K21R 132 S 8-4	K20R 112 M 8-4	2.2 3.3	705 1425	71.0 76.0	0.75 0.93	6 6.7	3.5 4.6	1.5 1.3	1.5 1.2	2.1 2.0	0.018	46
K21R 132 M 8-4	K20R 112 MX 8-4	2.6 4.2	710 1430	73.0 79.0	0.72 0.93	7.1 8.3	4.1 4.9	1.7 1.4	1.7 1.3	2.5 2.3	0.023	53
K21R 132 MX 8-4	K20R 132 S 8-4	4.0 6.0	720 1445	76.0 80.0	0.68 0.89	11 12	3.5 4.8	1.6 1.5	1.5 1.2	2.1 2.1	0.043	70
K21R 160 M 8-4	K20R 132 M 8-4	5.0 7.8	715 1440	76.0 83.0	0.71 0.91	13.5 15	4.4 5.5	1.8 1.6	1.7 1.2	2.2 2.2	0.053	86
K21R 160 L 8-4	K20R 160 S 8-4	7.0 11.0	725 1450	82.0 83.0	0.76 0.92	16 21	4.5 5.4	2.0 1.8	1.6 1.3	2.2 2.3	0.113	114
K21R 180 L 8-4	K20R 160 M 8-4	10.0 16.0	725 1445	83.0 85.0	0.75 0.90	23 30	4.8 5.4	2.0 1.8	1.7 1.2	2.2 2.3	0.145	138
K21R 200 L 8-4	K20R 180 S 8-4	15.0 21.0	725 1455	86.0 85.0	0.80 0.91	31.5 39	4.0 5.5	1.6 1.7	1.4 1.1	1.9 2.1	0.228	175
K21R 200 LX 8-4	K20R 180 M 8-4	17.5 25.0	720 1440	86.0 84.0	0.76 0.89	38.5 48.5	4.7 6.2	1.8 1.5	1.5 1.1	2.2 2.5	0.268	200
K21R 225 M 8-4	K20R 200 M 8-4	22.0 30.0	725 1455	87.0 87.0	0.79 0.89	46 56	5.1 6.6	2.0 1.9	1.7 0.9	2.2 2.4	0.443	265
K21R 250 M 8-4	K20R 225 M 8-4	28.0 38.0	730 1470	90.0 89.5	0.77 0.90	58.5 68	5.2 7.1	2.0 2.5	1.6 1.4	2.2 2.8	0.825	360
K21R 280 S 8-4	K20R 250 S 8-4	35.0 50.0	735 1475	91.0 89.0	0.78 0.90	71 90	4.8 6.1	2.0 2.0	1.5 1.2	1.8 2.3	1.28	465
K21R 280 M 8-4	K20R 250 M 8-4	45.0 60.0	735 1475	90.0 90.0	0.79 0.88	91.5 109	5.5 7.2	2.1 1.9	1.5 1.3	2.2 2.6	1.48	520
K21R 315 S 8-4	K20R 280 S 8-4	55.0 80.0	740 1480	92.0 91.0	0.79 0.91	109 139	6.0 7.0	1.6 1.7	1.5 1.3	2.2 2.4	2.63	690
K21R 315 M 8-4	K20R 280 M 8-4	75.0 100	740 1485	92.0 91.0	0.79 0.90	149 176	5.1 7.0	1.6 1.9	1.3 1.2	1.9 2.4	3.33	800
K21R 315 MX 8-4	K20R 315 S 8-4	80.0 115	740 1485	93.0 91.5	0.77 0.90	161 202	6.5 7.5	2.0 1.9	1.7 1.3	2.5 2.8	3.60	880
K21R 315 MY 8-4	K20R 315 M 8-4	100 140	740 1485	93.7 92.7	0.80 0.91	193 240	6.5 7.5	1.9 2.0	1.7 1.4	2.3 2.5	6.00	1050
K21R 315 L 8-4	K20R 315 L 8-4	120 150	740 1485	Data on inquiry							6.76	1250

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with one Y/YY-Dahlander winding
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m			
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg			
Synchronous speed 750/1500 rpm – 8-4 pole version														
K21R	71 K	K20R	63 K	0.05	680	39.0	0.62	0.30	1.9	1.4	1.4	1.7	0.00050	6.6
	8-4L		8-4L	0.20	1430	61.0	0.67	0.71	3.8	1.7	1.7	2.2		6.6 ¹⁾
K21R	71 G	K20R	63 G	0.075	670	40.0	0.62	0.44	2.1	1.2	1.2	1.7	0.00060	8.1
	8-4L		8-4L	0.30	1425	60.0	0.67	1.08	3.7	1.4	1.4	2.1		7.4 ¹⁾
K21R	80 K	K20R	71 K	0.12	695	50.0	0.70	0.49	2.6	1.2	1.2	2.0	0.00130	10.5
	8-4L		8-4L	0.50	1400	65.0	0.85	1.31	3.8	1.3	1.3	2.0		9.9 ¹⁾
K21R	80 G	K20R	71 G	0.18	685	56.0	0.66	0.70	2.6	1.5	1.5	1.8	0.00175	12.0
	8-4L		8-4L	0.70	1405	68.0	0.83	1.79	4.2	1.6	1.6	2.0		11.3 ¹⁾
K21R	90 S	K20R	80 K	0.25	700	59.0	0.63	0.97	2.7	1.1	1.1	1.5	0.00300	15.0
	8-4L		8-4L	1.00	1420	70.0	0.81	2.55	4.5	1.5	1.5	1.8		14.0 ¹⁾
K21R	90 L	K20R	80 G	0.37	690	63.0	0.64	1.33	2.6	1.2	1.2	1.4	0.00375	18.0
	8-4L		8-4L	1.50	1400	70.0	0.84	3.70	1.6	1.7	1.7	1.9		17.0 ¹⁾
K21R	100 L	K20R	90 L	0.50	700	61.0	0.60	1.80	2.8	1.2	1.2	1.9	0.00625	23.5
	8-4L		8-4L	2.00	1415	74.0	0.81	4.80	5.0	1.3	1.3	1.6		22.5 ¹⁾
K21R	100 LX	K20R	100 S	0.65	710	68.0	0.58	2.38	3.2	1.3	1.3	2.0	0.00725	30.0
	8-4L		8-4L	2.50	1440	81.0	0.81	5.50	7.0	1.4	1.4	2.0		30.0 ¹⁾
K21R	112 M	K20R	100 L	0.90	710	69.0	0.57	3.30	3.3	1.7	1.7	2.3	0.00900	37.0
	8-4L		8-4L	3.60	1440	81.0	0.81	7.90	6.3	2.2	2.2	2.5		36.0 ¹⁾
K21R	132 S	K20R	112 M	1.1	715	72.0	0.58	3.8	4.0	1.4	1.2	2.0	0.015	50
	8-4LF		8-4LF	4.5	1450	80.0	0.76	10.5	6.5	2.3	2.0	3.2		
K21R	132 MX	K20R	132 S	1.8	710	76.0	0.79	4.5	3.6	1.3	1.0	1.7	0.043	70
	8-4L		8-4L	6.5	1440	80.0	0.91	13	5.8	2.0	1.0	2.2		
K21R	160 M	K20R	132 M	2.3	720	80.0	0.76	5.5	3.6	1.5	1.2	1.7	0.053	86
	8-4L		8-4L	9.0	1445	79.5	0.88	18.5	5.4	1.8	1.2	2.3		
K21R	160 L	K20R	160 S	3.5	725	82.0	0.68	9.1	3.2	1.5	1.0	1.6	0.078	120
	8-4LF		8-4LF	12.5	1465	86.0	0.83	25.5	7.0	2.4	1.9	2.9		
K21R	180 M	K20R	160 M	4.5	725	83.0	0.69	11.5	4.0	1.5	1.3	1.8	0.090	136
	8-4LF		8-4LF	16.0	1470	87.0	0.82	32.5	7.5	2.4	1.8	3.0		
K21R	180 L	K20R	180 S	5.0	730	84.0	0.67	13	5.0	1.8	1.5	2.1	0.138	170
	8-4LF		8-4LF	20.0	1475	88.0	0.82	40	6.2	1.8	1.2	2.2		
K21R	200 L	K20R	180 M	7.2	730	87.0	0.69	17.5	5.3	1.9	1.6	2.3	0.168	200
	8-4LF		8-4LF	26.0	1470	89.0	0.83	51	6.9	1.6	1.2	2.7		
K21R	225 S	K20R	200 M	9.5	735	87.5	0.67	23.5	5.7	2.2	1.8	2.4	0.275	270
	8-4LF		8-4LF	35.0	1478	89.0	0.78	73	7.4	2.1	1.0	2.6		
K21R	225 M	K20R	200 L	11.5	735	89.0	0.67	28	5.6	2.0	1.6	2.2	0.313	300
	8-4LF		8-4LF	42.0	1478	90.0	0.78	86.5	8.2	2.5	1.4	2.8		
K21R	250 M	K20R	225 M	12.0	740	89.0	0.63	31	5.4	2.1	1.5	1.9	0.53	375
	8-4LF		8-4LF	48.0	1485	91.0	0.82	93	7.2	2.1	1.2	2.4		
K21R	280 S	K20R	250 S	14.0	738	90.0	0.80	28	5.4	2.1	1.5	2.1	1.28	465
	8-4L		8-4L	50.0	1480	86.0	0.86	97.5	7.7	2.4	1.3	2.5		
K21R	280 M	K20R	250 M	17.0	738	90.0	0.82	33	5.7	1.6	1.3	2.0	1.48	520
	8-4L		8-4L	60.0	1478	88.0	0.88	112	8.5	1.9	1.2	2.5		
K21R	315 S	K20R	280 S	21.0	742	92.0	0.78	42	5.8	1.7	1.5	2.1	2.63	690
	8-4L		8-4L	80.0	1485	91.0	0.89	143	7.7	2.0	1.3	2.6		
K21R	315 M	K20R	280 M	28.0	740	92.0	0.80	55	7.0	2.3	1.8	2.5	3.33	800
	8-4L		8-4L	95.0	1485	91.0	0.91	166	8.5	2.5	1.6	3.0		
K21R	315 MX	K20R	315 S	36.0	740	92.5	0.78	72	7.0	2.3	1.9	2.7	3.60	880
	8-4L		8-4L	110	1485	90.0	0.87	203	8.5	2.5	1.6	2.8		
K21R	315 MY	K20R	315 M	44.0	738	93.3	0.80	85	7.0	2.3	1.8	2.5	6.00	1050
	8-4L		8-4L	135	1485	93.0	0.90	233	8.5	2.5	1.6	2.7		
K21R	315 L	K20R	315 L	48.0	742	Data on inquiry					6.67	1250		
	8-4L		8-4L	160	1490									
K21R	315 LX	K20R	315 LX	55.0	745	Data on inquiry					8.60	1630		
	8-4L		8-4L	220	1491									

1) weights for K20R

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with two separate windings, Y/Y-circuit
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 750/1500 rpm – 8-4 pole version												
K21R 132 S K20R	112 M	0.9	720	65.0	0.65	3.7	4.0	1.4	1.4	2.3	0.015	50
8-4LZ	8-4LZ	3.6	1455	80.0	0.80	6.2	5.9	1.5	1.0	2.9		
K21R 132 M K20R	132 S	1.1	735	65.0	0.55	4.4	3.8	2.1	1.9	2.8	0.028	69
8-4LZ	8-4LZ	4.5	1455	83.0	0.82	9.5	5.0	1.3	1.1	2.2		
K21R 160 M K20R	132 M	1.4	735	69.0	0.54	5.4	4.0	2.2	2.1	2.8	0.035	86
8-4LZ	8-4LZ	6.0	1470	84.5	0.82	12.5	6.4	1.8	1.4	2.7		
K21R 160 L K20R	160 S	2.2	735	75.5	0.67	6.3	4.3	1.7	1.5	2.2	0.078	120
8-4LZ	8-4LZ	9.0	1470	87.0	0.87	17	6.6	2.0	1.6	2.6		
K21R 180 M K20R	160 M	3.0	735	80.0	0.64	8.5	4.8	2.2	1.8	2.5	0.090	136
8-4LZ	8-4LZ	11.0	1485	87.0	0.86	21	7.2	2.0	1.7	2.9		
K21R 180 L K20R	180 S	4.5	740	80.5	0.65	12.5	4.5	1.7	1.6	2.3	0.138	170
8-4LZ	8-4LZ	16.0	1475	89.0	0.85	30.5	6.8	1.9	1.7	2.7		
K21R 200 L K20R	180 M	5.0	740	82.0	0.65	13.5	5.0	1.7	1.7	2.7	0.168	200
8-4LZ	8-4LZ	18.5	1475	90.5	0.86	34.5	7.3	1.9	1.5	2.9		
K21R 225 S K20R	200 M	7.0	740	84.0	0.56	21.5	5.3	2.2	2.0	3.0	0.275	270
8-4LZ	8-4LZ	28.0	1480	90.0	0.80	56	7.4	2.0	1.8	3.0		
K21R 225 M K20R	200 L	9.5	740	84.0	0.55	29.5	5.2	2.3	2.1	3.1	0.313	300
8-4LZ	8-4LZ	35.0	1480	90.0	0.78	72	7.6	2.2	1.8	3.1		
K21R 250 M K20R	225 M	11.5	737	85.5	0.65	30	4.5	1.4	1.2	1.6	0.525	375
8-4LZ	8-4LZ	42.0	1480	92.5	0.84	78	7.8	2.2	1.6	2.6		
K21R 280 S K20R	250 S	14.0	740	88.0	0.63	36.5	4.6	1.4	1.1	1.6	0.950	520
8-4LZ	8-4LZ	48.0	1485	93.5	0.85	87	8.3	2.2	1.8	2.6		
K21R 280 M K20R	250 M	19.0	740	86.0	0.63	50.5	4.4	1.3	1.1	1.6	1.11	580
8-4LZ	8-4LZ	70.0	1465	92.0	0.82	134	8.0	2.4	1.9	2.7		
K21R 315 S K20R	280 S	23.0	740	86.5	0.63	61	5.0	1.2	1.2	1.6	1.96	740
8-4LZ	8-4LZ	83.0	1485	93.5	0.88	146	6.7	1.4	1.3	1.9		
K21R 315 M K20R	280 M	28.0	742	88.0	0.68	67.5	5.9	1.9		2.3	2.27	840
8-4LZ	8-4LZ	95.0	1485	92.5	0.87	170	7.8	1.9		2.5		
K21R 315 MX K20R	315 S	36.0	742	85.5	0.61	99.5	5.0	1.4	1.3	1.7	2.73	1000
8-4LZ	8-4LZ	110	1483	93.5	0.84	202	6.4	1.3	1.3	2.0		
K21R 315 MY K20R	315 M	40.0	745	87.0	0.65	102	6.0	1.5		1.8	4.82	1200
8-4LZ	8-4LZ	160	1485	94.0	0.86	286	8.0	1.6		2.2		

Δ-circuit on request

Three-phase motors with squirrel-cage rotor

variable speed for constant load torque

with two separate windings, Y/Y-circuit

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 750/1000 rpm – 8-6 pole version											
K21R 132 S 8-6	K20R 112 M 8-6	1.3 1.8	720 970	65.0 75.0	0.70 0.73	4.1 4.7	4.2 6.0	1.5 1.7	2.3 2.5	0.018	46
K21R 132 M 8-6	K20R 112 MX 8-6	2.3 3.0	720 970	69.0 74.0	0.71 0.74	6.8 7.9	4.0 5.2	1.5 1.6	2.3 2.6	0.023	53
K21R 132 MX 8-6	K20R 132 S 8-6	2.8 4.0	720 965	73.0 76.0	0.74 0.81	7.5 9.4	4.4 4.6	1.8 1.5	2.5 2.4	0.043	70
K21R 160 M 8-6	K20R 132 M 8-6	4.0 5.5	715 975	73.5 78.5	0.76 0.81	10.5 12.5	4.3 4.8	1.7 1.5	2.4 2.4	0.053	86
K21R 160 L 8-6	K20R 160 S 8-6	6.0 8.0	720 975	80.0 82.0	0.76 0.77	14 18.5	5.0 6.0	1.9 1.8	2.5 2.4	0.113	114
K21R 180 L 8-6	K20R 160 M 8-6	8.0 10.5	720 970	81.0 83.0	0.81 0.85	17.5 21.5	5.2 5.1	2.0 1.7	2.5 2.2	0.145	138
K21R 200 L 8-6	K20R 180 S 8-6	10.5 13.0	720 975	83.0 85.0	0.83 0.83	22 26.5	5.0 5.9	1.8 1.7	2.2 2.3	0.228	175
K21R 200 LX 8-6	K20R 180 M 8-6	11.0 15.0	730 980	84.0 85.0	0.74 0.79	25.5 32	6.4 6.4	2.2 2.0	2.5 2.5	0.268	200
K21R 225 M 8-6	K20R 200 M 8-6	14.0 18.5	735 985	86.0 86.0	0.81 0.83	29 37.5	6.5 7.0	2.0 3.0	2.6 3.0	0.443	265
K21R 250 M 8-6	K20R 225 M 8-6	19.0 25.0	735 985	Data on inquiry						0.825	360
K21R 280 S 8-6	K20R 250 S 8-6	24.0 30.0	740 985	89.0 89.0	0.83 0.87	47 56	6.0 6.8	2.0 2.0	2.5 2.5	1.28	465
K21R 280 M 8-6	K20R 250 M 8-6	30.0 38.0	740 985	89.0 89.0	0.81 0.82	60 75	6.6 7.0	2.2 2.0	2.3 2.3	1.48	520
K21R 315 S 8-6	K20R 280 S 8-6	36.0 45.0	742 988	91.0 92.0	0.79 0.86	72.5 82	7.0 5.9	2.4 1.3	2.6 2.2	2.63	690
K21R 315 M 8-6	K20R 280 M 8-6	60.0 80.0	740 988	90.0 92.0	0.77 0.85	125 148	7.3 6.5	2.1 1.7	2.3 2.4	3.33	800
K21R 315 MX 8-6	K20R 315 S 8-6	65.0 87.0	740 990	90.0 90.0	0.81 0.85	129 164	6.4 7.0	2.0 1.8	2.1 2.4	3.60	880
K21R 315 MY 8-6	K20R 315 M 8-6	80.0 110	740 990	92.0 92.0	0.80 0.86	157 201	7.2 6.8	2.5 1.5	2.5 1.9	6.00	1050
K21R 315 L 8-6	K20R 315 L 8-6	80.0 120	740 990	Data on inquiry						6.76	1250

Δ -circuit on request

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with two separate windings, Y/Y-circuit
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 750/1000 rpm – 8-6 pole version												
K21R 71 G	K20R 63 G	0.05	685	30.0	0.65	0.37	1.9	1.7	1.7	2.0	0.00060	8.3
8-6L	8-6L	0.11	895	36.0	0.79	0.56	2.1	1.2	1.2	1.4		6.9 ¹⁾
K21R 80 K	K20R 71 K	0.09	715	34.0	0.64	0.60	2.3	1.7	1.7	2.4	0.00130	11
8-6L	8-6L	0.18	960	48.0	0.60	0.90	3.1	2.0	1.8	2.6		10 ¹⁾
K21R 80 G	K20R 71 G	0.12	700	44.0	0.68	0.58	2.4	1.5	1.5	1.9	0.00175	12.5
8-6L	8-6L	0.25	950	57.0	0.67	0.94	3.4	1.7	1.7	2.1		11.8 ¹⁾
K21R 90 S	K20R 80 K	0.24	710	47.0	0.70	1.05	2.4	1.1	1.0	1.5	0.00325	18.0
8-6L	8-6L	0.48	950	63.5	0.68	0.94	3.3	1.3	1.3	1.8		15.0 ¹⁾
K21R 90 L	K20R 80 G	0.33	705	48.0	0.66	1.05	2.6	1.3	1.3	1.8	0.00425	19.0
8-6L	8-6L	0.66	950	65.0	0.66	1.60	3.7	1.6	1.6	2.0		18.0 ¹⁾
K21R 100 L	K20R 90 L	0.45	710	51.5	0.68	1.50	2.8	1.5	1.5	1.7	0.00625	24.0
8-6L	8-6L	0.90	940	66.0	0.77	2.25	3.5	1.3	1.2	1.6		22.5 ¹⁾
K21R 100 LX	K20R 100 S	0.60	695	53.5	0.75	1.85	3.6	1.5	1.5	1.7	0.00900	28.0
8-6L	8-6L	1.20	910	70.5	0.83	2.55	3.5	1.3	1.2	1.6		28.0 ¹⁾
K21R 112 M	K20R 100 L	0.80	715	59.5	0.67	2.15	3.2	1.5	1.5	2.3	0.01225	33.5
8-6L	8-6L	1.60	955	76.0	0.76	2.95	4.7	1.5	1.5	2.3		32.5 ¹⁾
K21R 112 MX	K20R 100 LX	1.00	700	63.0	0.75	2.90	4.0	1.2	1.1	1.6	0.01390	37.0
8-6L	8-6L	2.20	940	76.0	0.78	4.00	4.4	1.4	1.3	1.9		35 ¹⁾
K21R 132 S	K20R 112 M	1.0	710	60.0	0.79	3.05	3.6	1.1	1.0	1.9	0.018	46
8-6L	8-6L	2.2	955	71.5	0.81	5.45	5.0	1.4	1.3	2.5		
K21R 132 M	K20R 112 MX	1.7	715	61.5	0.74	5.4	4.5	1.9	1.9	2.9	0.023	53
8-6L	8-6L	3.5	950	73.0	0.81	8.5	4.5	1.3	1.2	2.4		
K21R 132 MX	K20R 132 S	2.2	725	70.0	0.74	6.1	4.4	1.6	1.5	2.4	0.043	70
8-6L	8-6L	4.5	970	76.5	0.78	11	5.5	1.8	1.6	2.7		
K21R 160 M	K20R 132 M	2.5	730	72.0	0.75	6.7	4.5	1.7	1.7	2.4	0.053	86
8-6L	8-6L	5.5	965	81.0	0.83	12	5.1	1.6	1.4	2.3		
K21R 160 L	K20R 160 S	4.5	730	78.0	0.80	10.5	5.0	1.9	1.8	2.5	0.113	114
8-6L	8-6L	9.0	970	82.0	0.84	19	5.0	1.5	1.3	2.2		
K21R 180 L	K20R 160 M	6.0	730	77.0	0.83	13.5	4.6	1.7	1.5	2.1	0.145	138
8-6L	8-6L	12.0	970	83.5	0.86	24	5.5	1.6	1.3	2.3		
K21R 200 L	K20R 180 S	7.0	730	78.0	0.85	15	4.3	1.3	1.3	1.8	0.228	175
8-6L	8-6L	17.0	965	86.5	0.87	32.5	4.8	1.3	1.4	2.0		
K21R 200 LX	K20R 180 M	10.0	730	80.0	0.82	22	5.7	2.0	1.2	2.6	0.268	200
8-6L	8-6L	21.0	965	87.0	0.87	40	5.2	1.7	1.7	2.2		
K21R 225 M	K20R 200 M	12.0	735	82.0	0.85	25	6.3	2.0	1.7	2.7	0.443	265
8-6L	8-6L	26.0	980	87.0	0.85	50.5	6.9	2.2	1.7	3.0		
K21R 250 M	K20R 225 M	15.0	725	85.0	0.85	30	4.4	1.6	1.4	1.7	0.825	360
8-6L	8-6L	35.0	975	89.0	0.87	65	5.4	1.6	1.3	2.0		
K21R 280 S	K20R 250 S	20.0	740	86.0	0.82	41	6.5	2.1	1.6	2.6	1.28	465
8-6L	8-6L	45.0	985	90.0	0.83	87	6.5	2.1	1.4	2.6		
K21R 280 M	K20R 250 M	25.0	740	86.0	0.82	51	5.2	1.8	1.6	2.1	1.48	520
8-6L	8-6L	55.0	985	90.5	0.86	102	5.7	1.8	1.4	2.1		
K21R 315 S	K20R 280 S	30.0	745	89.5	0.79	61	6.3	2.0	1.4	2.3	2.63	690
8-6L	8-6L	65.0	990	93.0	0.85	119	7.1	1.8	1.3	2.6		
K21R 315 M	K20R 280 M	35.0	740	88.0	0.84	68.5	4.2	1.7	1.4	2.0	3.33	800
8-6L	8-6L	75.0	990	92.0	0.86	137	7.4	1.9	1.6	2.6		
K21R 315 MX	K20R 315 S	40.0	740	91.0	0.79	80.5	4.0	1.4	1.2	1.7	3.60	880
8-6L	8-6L	85.0	990	92.0	0.82	163	6.5	1.5	1.4	2.2		
K21R 315 MY	K20R 315 M	55.0	745	90.0	0.81	109	4.5	1.5	1.2	1.9	6.00	1050
8-6L	8-6L	115	990	94.0	0.82	215	7.0	1.6	1.4	2.3		

¹⁾ weights for K20R
 Δ -circuit on request

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with two separate windings, Y/Y-circuit
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 500/3000 rpm – 12-2 pole version											
K21R 132 S K20R 112 M	0.25	485	34.0	0.54	2	2.2	1.7		2.5	0.015	50
12-2L 12-2L	4.5	2870	82.0	0.93	8.5	6.6	2.2		2.4		
K21R 132 M K20R 132 S	0.35	490	42.0	0.43	2.8	2.3	1.6		2.5	0.028	69
12-2L 12-2L	7.0	2890	84.0	0.93	13	5.8	1.5		2.0		
K21R 160 M K20R 132 M	0.45	490	44.0	0.44	3.4	2.4	1.5		2.5	0.035	86
12-2L 12-2L	9.0	2895	86.0	0.93	16	6.2	1.7		2.2		
K21R 160 L K20R 160 S	0.55	495	46.0	0.44	3.9	2.9	2.0		2.5	0.078	120
12-2L 12-2L	12.0	2915	87.0	0.93	21.5	6.8	2.0		2.3		
K21R 180 M K20R 160 M	0.65	490	53.0	0.47	3.8	3.0	1.7		2.5	0.090	136
12-2L 12-2L	13.0	2920	87.0	0.93	23	7.0	2.0		2.3		
K21R 180 L K20R 180 S	0.8	495	46.0	0.47	5.3	2.7	1.4		2.5	0.138	170
12-2L 12-2L	17.0	2930	89.0	0.93	29.5	6.9	1.7		2.3		
K21R 200 L K20R 180 M	1.1	495	52.0	0.44	6.9	2.9	1.7		2.5	0.168	200
12-2L 12-2L	22.0	2940	90.0	0.93	38	8.0	2.0		2.5		
K21R 225 S K20R 200 M	1.5	495	59.0	0.37	9.9	3.0	1.6		2.5	0.275	270
12-2L 12-2L	28.0	2935	90.0	0.93	48.5	6.3	1.5		2.0		
K21R 225 M K20R 200 L	1.7	495	57.0	0.38	11.5	3.0	1.6		2.5	0.313	300
12-2L 12-2L	34.0	2940	90.0	0.93	58.5	6.8	1.6		2.1		
K21R 250 M K20R 225 M	2.0	495	62.0	0.42	11	3.8	2.0		2.5	0.525	375
12-2L 12-2L	39.0	2940	90.0	0.92	68	5.8	1.4		2.0		
K21R 280 S K20R 250 S	2.5	495	67.0	0.40	13.5	4.0	2.1		2.5	0.950	520
12-2L 12-2L	50.0	2965	90.0	0.92	87	8.3	1.7		2.5		
K21R 280 M K20R 250 M	3.5	495	71.0	0.45	16	3.8	1.6		2.2	1.11	580
12-2L 12-2L	68.0	2960	90.0	0.92	119	7.7	1.6		2.2		
K21R 315 S K20R 280 S	4.0	495	72.0	0.45	18	4.8	2.3		2.5	1.96	740
12-2L 12-2L	80.0	2965	91.0	0.93	136	8.0	1.5		2.5		
K21R 315 M K20R 280 M	4.5	495	71.0	0.49	18.5	4.6	2.0		2.4	2.27	840
12-2L 12-2L	90.0	2960	92.0	0.92	153	6.8	1.3		2.2		
K21R 315 MX K20R 315 S	5.5	495	71.0	0.50	22.5	4.5	2.0		2.3	2.73	1000
12-2L 12-2L	105	2970	92.0	0.93	177	9.5	2.0		2.5		
K21R 315 MY K20R 315 M	6.5	496	74.0	0.50	25.5	4.7	2.1		2.3	4.82	1200
12-2L 12-2L	125	2970	92.0	0.93	211	7.7	1.7		2.5		

Δ-circuit on request



Three-phase motors with squirrel-cage rotor

variable speed for constant load torque
 with one Δ/YY -Dahlander winding
 with surface ventilation, mode of operation S1, continuous duty
 insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 500/1000 rpm – 12-6 pole version												
K21R 90 L	80 G	0.20	465	40.0	0.48	1.50	2.1	2.1	2.1	2.3	0.00425	19.0
12-6	12-6	0.40	960	73.0	0.67	1.18	4.5	1.8	1.8	2.3		18.0 ¹⁾
K21R 100 L	90 L	0.30	450	41.0	0.53	2.00	1.9	1.3	1.2	1.6	0.00625	24.0
12-6	12-6	0.60	955	71.0	0.73	1.67	3.8	1.6	1.5	1.8		22.5 ¹⁾
K21R 100 LX	100 S	0.50	460	49.5	0.57	2.60	2.6	1.7	1.7	2.3	0.00900	28.0
12-6	12-6	1.00	950	71.5	0.80	2.55	4.5	1.5	1.5	2.1		28.0 ¹⁾
K21R 112 M	100 L	0.60	470	49.0	0.49	3.60	2.8	2.5	2.5	2.9	0.01225	33.5
12-6	12-6	1.20	965	76.0	0.72	3.15	5.5	2.0	1.9	2.6		32.5 ¹⁾
K21R 112 MX	100 LX	0.80	455	52.0	0.56	3.95	2.5	1.8	1.8	2.1	0.01390	37.0
12-6	12-6	1.50	960	76.0	0.77	3.70	4.9	1.8	1.6	2.3		35 ¹⁾
K21R 132 S	112 M	0.7	475	55.0	0.55	3.3	2.9	1.7	1.6	2.5	0.018	46
12-6	12-6	1.0	970	79.0	0.78	2.3	6.0	1.8	1.7	2.9		
K21R 132 M	112 MX	0.9	475	56.0	0.52	4.5	3.0	1.9	1.9	2.9	0.023	53
12-6	12-6	1.4	970	81.0	0.79	3.2	6.2	1.9	1.9	3.0		
K21R 132 MX	132 S	1.3	480	62.0	0.53	5.7	2.4	1.6	1.5	2.2	0.043	70
12-6	12-6	2.0	975	82.0	0.82	4.3	5.5	1.7	1.4	2.7		
K21R 160 M	132 M	1.9	475	64.0	0.57	7.5	3.0	1.6	1.5	1.9	0.053	86
12-6	12-6	3.0	965	83.0	0.84	6.2	5.4	1.6	1.4	2.1		
K21R 160 L	160 S	3.2	480	73.0	0.60	10.5	3.3	1.7	1.5	2.0	0.113	114
12-6	12-6	5.0	975	84.0	0.88	9.8	5.5	1.7	1.4	2.3		
K21R 180 L	160 M	4.5	480	75.0	0.60	14.5	3.1	1.9	1.7	1.9	0.145	138
12-6	12-6	7.5	970	85.0	0.88	14.5	5.8	1.8	1.5	2.1		
K21R 200 L	180 S	5.5	485	82.0	0.60	16	3.9	1.9	1.3	2.2	0.228	175
12-6	12-6	8.8	980	88.0	0.87	16.5	6.3	1.8	1.4	2.4		
K21R 200 LX	180 M	6.5	485	81.0	0.60	19.5	4.4	2.0	1.8	2.4	0.268	200
12-6	12-6	10.5	980	87.0	0.87	20	6.8	2.0	1.5	2.7		
K21R 225 M	200 M	9.0	485	83.0	0.62	25	4.4	2.2	2.0	2.7	0.443	265
12-6	12-6	14.0	980	88.0	0.87	26.5	7.1	2.4	1.6	3.0		
K21R 250 M	225 M	11.0	485	86.0	0.65	28.5	4.1	1.7	1.4	1.8	0.825	360
12-6	12-6	17.5	980	89.0	0.88	32.5	6.3	1.8	1.3	2.3		
K21R 280 S	250 S	13.5	490	87.0	0.62	36	4.3	2.1	1.6	1.9	1.28	465
12-6	12-6	21.0	987	90.0	0.87	38.5	7.0	2.0	1.4	2.3		
K21R 280 M	250 M	16.5	492	87.0	0.60	45.5	4.9	2.3	1.9	2.4	1.48	520
12-6	12-6	26.0	990	90.5	0.87	47.5	7.8	2.4	1.7	2.7		
K21R 315 S	280 S	22.0	494	88.0	0.60	60	4.6	1.6	1.4	2.1	2.63	690
12-6	12-6	35.0	990	92.0	0.85	64.5	6.7	1.6	1.3	2.3		
K21R 315 M	280 M	32.0	493	89.5	0.60	86	4.2	1.7	1.4	2.0	3.33	800
12-6	12-6	48.0	991	93.5	0.86	86	7.4	1.9	1.6	2.6		
K21R 315 MX	315 S	48.0	490	89.5	0.66	117	4.0	1.4	1.2	1.7	3.60	880
12-6	12-6	70.0	987	92.6	0.87	125	6.5	1.5	1.4	2.2		
K21R 315 MY	315 M	55.0	490	90.0	0.68	130	4.5	1.5	1.2	1.9	6.00	1050
12-6	12-6	85.0	985	92.6	0.88	151	7.0	1.6	1.4	2.3		
K21R 315 L	315 L	65.0	490	Data on inquiry							6.76	1250
12-6	12-6	95.0	985									

¹⁾ weights for K20R

Three-phase motors with squirrel-cage rotor

variable speed with increased output for constant load torque

with one Δ/YY -Dahlander winding

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 500/1000 rpm – 12-6 pole version												
K21R 132 S 12-6	K20R 112 M 12-6	0.9 1.3	473 950	56.0 77.0	0.66 0.85	3.5 2.9	2.8 4.8	1.5 1.4	1.4 1.3	1.8 2.0	0.018	46
K21R 132 M 12-6	K20R 112 MX 12-6	1.1 1.7	470 955	57.0 79.0	0.59 0.84	4.7 3.7	2.9 5.1	1.5 1.5	1.5 1.5	2.5 2.3	0.023	53
K21R 132 MX 12-6	K20R 132 S 12-6	1.6 2.5	475 965	61.0 81.0	0.54 0.85	7 5.2	2.3 4.9	1.4 1.5	1.3 1.2	1.9 2.3	0.043	70
K21R 160 M 12-6	K20R 132 M 12-6	2.3 3.6	470 955	59.0 81.0	0.57 0.83	9.9 7.7	2.9 5.2	1.5 1.6	1.4 1.4	1.7 2.0	0.053	86
K21R 160 L 12-6	K20R 160 S 12-6	3.7 6.0	476 968	71.0 83.0	0.60 0.87	12.5 12	3.1 3.1	1.6 1.6	1.4 1.3	1.8 1.8	0.113	114
K21R 180 L 12-6	K20R 160 M 12-6	5.5 9.0	476 963	74.0 84.0	0.63 0.86	17 18	5.6 5.3	1.6 1.6	1.4 1.4	1.5 1.8	0.145	138
K21R 200 L 12-6	K20R 180 S 12-6	7.5 11.0	478 975	80.0 87.0	0.64 0.88	21 20.5	3.5 5.3	1.6 1.5	1.1 1.1	1.7 1.9	0.228	175
K21R 200 LX 12-6	K20R 180 M 12-6	9.5 15.0	480 975	80.0 87.0	0.63 0.89	27 28	3.9 5.9	1.6 1.7	1.4 1.1	1.8 2.1	0.268	200
K21R 225 M 12-6	K20R 200 M 12-6	11.0 18.0	482 973	82.0 88.0	0.63 0.87	30.5 34	4.1 6.0	2.1 2.1	1.9 1.4	2.4 2.4	0.443	265
K21R 250 M 12-6	K20R 225 M 12-6	13.0 22.0	485 978	81.0 88.0	0.61 0.88	38 41	3.8 6.5	1.8 1.9	1.4 1.4	2.0 2.3	0.825	360
K21R 280 S 12-6	K20R 250 S 12-6	16.0 28.0	488 981	86.0 89.0	0.61 0.87	44 52	4.3 6.6	2.2 1.9	1.7 1.3	1.9 2.0	1.28	465
K21R 280 M 12-6	K20R 250 M 12-6	20.0 35.0	487 987	86.0 90.0	0.61 0.88	55 64	4.8 7.1	2.4 2.3	2.0 1.6	2.3 2.3	1.48	520
K21R 315 S 12-6	K20R 280 S 12-6	27.0 50.0	494 985	89.0 92.0	0.62 0.88	70.5 89	4.4 5.7	1.6 1.4	1.4 1.1	2.1 2.0	2.63	690
K21R 315 M 12-6	K20R 280 M 12-6	35.0 60.0	491 985	89.0 92.0	0.59 0.86	96 109	4.3 7.3	1.8 1.8	1.5 1.5	1.9 2.4	3.33	800
K21R 315 MX 12-6	K20R 315 S 12-6	52.0 80.0	491 985	89.0 92.0	0.63 0.87	134 144	4.5 7.4	1.8 1.8	1.6 1.7	2.0 2.5	3.60	880
K21R 315 MY 12-6	K20R 315 M 12-6	58.0 95.0	491 985	90.0 93.0	0.66 0.88	141 168	4.9 7.3	1.8 1.7	1.4 1.5	2.1 2.3	6.00	1050

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with one Y/YY-Dahlander winding
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_S/M	M_K/M	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 500/1000 rpm – 12-6 pole version											
K21R 80 K K20R 71 K	0.05	425	30.0	0.75	0.32	1.7	1.0		1.2	0.00130	11.0
12-6L 12-6L	0.20	940	53.0	0.74	0.74	3.0	1.4		2.0		10.0 ¹⁾
K21R 80 G K20R 71 G	0.075	425	36.0	0.69	0.44	1.9	1.2		1.4	0.00175	12.5
12-6L 12-6L	0.30	935	60.0	0.72	1.00	3.5	1.5		2.0		11.5 ¹⁾
K21R 90 S K20R 80 K	0.10	455	35.0	0.55	0.75	1.7	1.0		1.2	0.00325	16.0
12-6L 12-6L	0.40	965	58.5	0.58	1.70	3.9	1.8		2.3		15.0 ¹⁾
K21R 90 L K20R 80 G	0.12	460	40.0	0.49	0.88	1.8	1.2		1.6	0.00425	19.0
12-6L 12-6L	0.55	965	66.0	0.60	2.00	4.1	2.0		2.6		18.0 ¹⁾
K21R 100 L K20R 90 L	0.18	460	46.0	0.52	1.09	1.9	1.4		1.6	0.00625	24.0
12-6L 12-6L	1.10	940	72.0	0.77	2.85	4.0	1.4		1.8		
K21R 100 LX K20R 100 S	0.33	450	49.0	0.62	1.55	2.5	1.4		2.2	0.00960	28.0
12-6L 12-6L	1.30	955	65.0	0.69	4.20	4.6	1.4		2.0		
K21R 112 M K20R 100 L	0.45	450	52.0	0.63	2.00	2.9	1.2		1.5	0.01225	33.5
12-6L 12-6L	1.80	955	69.0	0.74	5.10	4.5	1.5		2.0		32.5 ¹⁾
K21R 132 S K20R 112 M	0.35	470	61.0	0.61	1.4	3.0	1.7		2.2	0.018	46
12-6L 12-6L	1.7	950	77.0	0.85	3.7	4.4	1.4		2.0		
K21R 132 M K20R 112 MX	0.5	470	58.0	0.60	2.1	2.7	1.4		1.9	0.023	53
12-6L 12-6L	2.3	950	78.0	0.83	5.1	5.0	1.5		2.3		
K21R 132 MX K20R 132 S	0.7	480	69.0	0.59	2.5	2.5	1.4		1.8	0.043	70
12-6L 12-6L	3.3	965	82.0	0.85	6.8	4.7	1.6		2.2		
K21R 160 M K20R 132 M	0.9	480	71.0	0.58	3.2	2.5	1.4		1.5	0.053	86
12-6L 12-6L	4.4	960	82.0	0.85	9.1	5.0	1.6		2.0		
K21R 160 L K20R 160 S	1.1	485	75.0	0.60	3.5	3.0	1.9		1.8	0.113	114
12-6L 12-6L	5.5	980	84.0	0.83	11.5	6.5	2.5		2.7		
K21R 180 L K20R 160 M	2.0	485	77.0	0.60	6.2	3.1	1.9		1.8	0.145	138
12-6L 12-6L	9.0	975	84.0	0.84	18.5	6.2	2.3		2.6		
K21R 200 L K20R 180 S	2.3	485	82.0	0.60	6.7	4.0	1.9		2.5	0.228	175
12-6L 12-6L	10.0	980	88.5	0.85	19	6.5	1.6		2.5		
K21R 200 LX K20R 180 M	3.0	485	83.0	0.62	8.4	4.4	1.7		2.2	0.268	200
12-6L 12-6L	13.0	980	88.0	0.85	25	6.7	2.0		2.6		
K21R 225 M K20R 200 M	3.9	488	83.0	0.67	10	3.6	1.3		1.8	0.443	265
12-6L 12-6L	17.0	980	87.0	0.88	32	5.0	1.4		2.1		
K21R 250 M K20R 225 M	5.0	490	83.0	0.58	15	4.8	2.1		2.3	0.825	360
12-6L 12-6L	22.0	985	89.5	0.83	42.5	7.9	2.2		2.5		
K21R 280 S K20R 250 S	6.0	490	85.0	0.59	17.5	4.0	1.8		2.1	1.28	465
12-6L 12-6L	26.0	990	90.0	0.84	49.5	6.2	1.6		2.3		
K21R 280 M K20R 250 M	7.5	490	88.0	0.70	17.5	3.7	1.6		1.8	1.48	520
12-6L 12-6L	30.0	990	90.5	0.88	54.5	6.0	1.5		2.3		
K21R 315 S K20R 280 S	12.0	490	87.0	0.63	31.5	4.2	1.5		1.9	2.63	690
12-6L 12-6L	52.0	990	91.0	0.85	97	6.8	1.9		2.1		
K21R 315 M K20R 280 M	15.0	490	90.0	0.63	38	5.2	2.3		1.8	3.33	800
12-6L 12-6L	60.0	990	93.0	0.87	107	7.7	2.2		2.4		
K21R 315 MX K20R 315 S	18.0	495	90.0	0.60	48	5.2	2.3		1.9	3.60	880
12-6L 12-6L	80.0	990	93.0	0.88	141	7.2	2.0		2.2		
K21R 315 MY K20R 315 M	20.0	490	90.0	0.63	51	5.0	2.0		1.7	6.00	1050
12-6L 12-6L	90.0	990	93.0	0.86	162	6.5	1.7		1.8		

¹⁾ weights for K20R

Three-phase motors with squirrel-cage rotor

variable speed for constant load torque

with two separate windings, Y/ Δ /YY-circuit

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 750/1500/3000 rpm – 8-4-2 pole version												
K21R 80 G 8-4-2	K20R 71 G 8-4-2	0.10 0.18 0.30	700 1465 2925	37.0 55.5 64.0	0.59 0.60 0.80	0.66 0.78 0.85	2.3 3.9 5.0	1.5 1.7 1.2	1.5 1.7 1.0	2.3 3.00 2.0	0.00107 23.5 30.0	11.7
K21RW 100 L 8-4-2	K20RW 90 L 8-4-2	0.37 0.75 1.50	660 1425 2745	50.0 70.5 66.5	0.67 0.73 0.95	1.60 2.10 3.45	2.4 4.8 4.1	1.8 2.0 1.4	1.8 2.2 1.1	1.8 2.45 1.4	0.00400 30.0	23.5
K21RW 100 LX 8-4-2	K20RW 100 S 8-4-2	0.55 1.50 1.80	680 1405 2850	53.0 72.0 71.0	0.61 0.81 0.89	2.45 3.70 4.15	2.8 4.7 5.6	2.2 1.8 2.1	2.2 1.8 1.7	2.3 2.1 2.1	0.00725 37.0	30.0
K21RW 112 M 8-4-2	K20RW 100 L 8-4-2	0.70 2.00 2.40	690 1410 2880	59.0 75.0 75.0	0.56 0.80 0.87	3.05 4.80 5.3	3.0 5.0 6.1	2.7 2.0 2.0	2.7 1.7 1.4	2.7 2.1 2.0	0.009 46	37.0
K21R 132 S 8-4-2	K20R 112 M 8-4-2	1.1 1.5 1.8	720 1460 2900	66.0 76.0 69.0	0.74 0.89 0.92	3.3 3.2 4.1	3.6 5.6 5.3	1.4 1.3 1.5	1.3 1.0 1.0	2.3 2.3 2.3	0.018 53	46
K21R 132 M 8-4-2	K20R 112 MX 8-4-2	1.6 2.2 2.8	720 1450 2900	65.0 77.0 71.0	0.75 0.91 0.93	4.7 4.5 6.1	4.1 4.8 4.9	1.4 1.1 0.8	1.3 1.0 0.8	2.4 2.2 2.1	0.023 70	53
K21R 132 MX 8-4-2	K20R 132 S 8-4-2	2.2 2.8 3.5	725 1470 2920	72.0 79.0 69.0	0.75 0.89 0.92	5.9 5.7 8.0	4.1 6.2 5.9	1.6 1.6 1.5	1.4 1.1 0.9	2.2 2.5 2.2	0.043 86	70
K21R 160 M 8-4-2	K20R 132 M 8-4-2	2.8 3.8 4.5	725 1470 2930	73.0 81.0 72.0	0.75 0.90 0.91	7.4 7.5 9.9	3.4 5.1 5.6	1.6 1.4 1.3	1.5 1.1 0.9	2.0 2.3 2.5	0.053 120	86
K21R 160 L 8-4-2	K20R 160 S 8-4-2	3.7 5.2 6.5	730 1475 2950	78.0 84.0 80.0	0.72 0.87 0.92	9.5 10.5 12.5	3.8 6.4 7.1	1.5 1.5 1.7	1.3 1.2 0.7	1.8 2.5 2.2	0.078 136	120
K21R 180 M 8-4-2	K20R 160 M 8-4-2	4.4 6.5 7.5	730 1475 2950	80.0 85.0 80.0	0.72 0.88 0.92	11.0 12.5 14.5	4.0 6.1 7.2	1.6 1.5 1.7	1.4 1.2 0.8	1.8 2.3 2.5	0.090 170	136
K21R 180 L 8-4-2	K20R 180 S 8-4-2	5.3 7.7 9.2	730 1480 2960	83.0 87.0 83.0	0.71 0.83 0.92	13.0 15.5 17.5	3.7 7.5 8.5	1.2 1.2 2.0	1.1 1.4 0.9	1.8 2.9 2.6	0.138 200	170
K21R 200 L 8-4-2	K20R 180 M 8-4-2	7.0 10.5 12.5	730 1480 2940	82.0 89.0 85.0	0.69 0.89 0.93	18 19 23	4.0 7.0 8.6	1.2 1.4 1.6	1.1 1.1 0.6	1.9 2.5 2.7	0.168 270	200
K21R 225 S 8-4-2	K20R 200 M 8-4-2	8.8 12.5 15.5	735 1480 2970	86.0 89.0 83.0	0.66 0.86 0.93	22.5 23.5 29.0	4.6 8.0 9.0	1.4 1.6 1.7	1.3 1.3 0.7	2.0 2.9 3.0	0.275 300	270
K21R 225 M 8-4-2	K20R 200 L 8-4-2	11.0 15.5 19.0	735 1480 2970	86.0 90.0 83.0	0.67 0.86 0.93	27.5 29.0 35.5	4.6 7.7 8.8	1.4 1.5 1.8	1.4 1.2 0.7	2.0 2.8 2.7	0.313 375	300
K21R 250 M 8-4-2	K20R 225 M 8-4-2	13.0 19.0 23.0	740 1485 2970	88.0 90.0 82.0	0.63 0.84 0.92	34.0 36.5 44.0	5.0 7.3 8.3	1.7 1.6 1.6	1.3 1.3 0.5	1.8 2.3 2.3	0.525 520	375
K21R 280 S 8-4-2	K20R 250 S 8-4-2	18.0 25.0 31.0	740 1487 2970	89.5 90.5 84.0	0.60 0.82 0.92	48.5 48.5 58.0	5.0 6.9 8.3	1.7 1.7 1.1	1.4 1.1 0.9	1.8 2.3 2.6	0.95 580	520
K21R 280 M 8-4-2	K20R 250 M 8-4-2	22.0 30.0 38.0	740 1487 2970	89.0 90.5 84.0	0.60 0.82 0.91	59.5 58.5 72.0	4.7 6.4 7.7	1.5 1.3 1.4	1.2 1.1 0.8	1.6 2.1 2.4	1.1 1450	580
K21R 315 S 8-4-2	K20R 280 S ¹⁾ 8-4-2	30.0 44.0 54.0	745 1485 2975	88.0 89.0 89.5	0.55 0.89 0.92	89.5 80.0 94.5	5.6 8.5 9.2	1.5 1.4 1.2	1.5 2.6 2.9	2.3 2.6 2.9	1.96 840	740
K21R 315 M 8-4-2	K20R 280 M ¹⁾ 8-4-2	35.0 50.0 62.0	745 1490 2975	88.0 89.5 90.0	0.56 0.89 0.93	103 90.5 107	5.6 8.5 9.3	1.5 1.4 1.2	1.5 2.6 2.9	2.3 2.6 2.9	2.27 1000	840
K21R 315 MX 8-4-2	K20R 315 S ¹⁾ 8-4-2	40.0 60.0 75.0	745 1485 2975	88.5 90.0 90.5	0.59 0.90 0.93	111 107 129	5.4 8.0 9.0	1.3 1.5 1.2	1.3 2.5 2.9	2.2 2.5 2.9	2.73 1200	1000
K21R 315 MY 8-4-2	K20R 315 M ¹⁾ 8-4-2	48.0 70.0 84.0	745 1490 2985	90.0 91.0 91.5	0.63 0.91 0.93	122 122 142	5.9 8.0 9.1	1.5 1.5 1.2	1.5 2.5 2.9	2.3 2.5 2.9	4.82 1450	1200
K21R 315 L 8-4-2	K20R 315 L ¹⁾ 8-4-2	55.0 80.0 100.0	745 1490 2985	91.0 91.5 92.0	0.65 0.91 0.94	134 139 167	5.8 8.3 9.5	1.5 1.6 1.2	1.5 2.5 3.0	2.1 2.5 3.0	5.93 1450	1450

¹⁾ draft ratings

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with two separate windings, Y/YYY-circuit
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I_N	M_A/M_N	M_S/M_N	M_R/M_N	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 750/1500/3000 rpm – 8-4-2 pole version											
K21RW 80 K 8-4-2L	0.04 0.12 0.4	695 1355 2775	24.0 63.0 62.0	0.63 0.81 0.86	0.39 0.34 1.08	1.8 3.2 4.1	2.0 1.5 1.2	2.0 1.4 1.1	2.5 1.6 1.9	0.00087	10.6
K21R 80 G 8-4-2L	0.05 0.15 0.5	715 1440 2910	24.0 70.0 68.0	0.68 0.75 0.79	0.44 0.41 1.35	2.0 4.3 5.7	1.25 1.6 2.5	1.2 1.5 2.3	2.5 2.2 3.6	0.00107	11.7
K21R 90 S 8-4-2L	0.06 0.20 0.9	725 1445 2870	21.0 73.0 72.0	0.77 0.80 0.91	0.54 0.5 2	1.9 5.1 5.3	1.20 1.7 1.3	1.1 1.6 1.2	2.2 2.4 2.0	0.00207	15.5
K21R 90 L 8-4-2L	0.11 0.30 1.2	710 1440 2880	28.0 75.0 75.0	0.77 0.82 0.91	0.74 0.7 2.55	2.1 5.2 5.9	1.20 1.7 1.6	1.1 1.7 1.3	2.0 2.4 2.2	0.00260	18.0
K21R 100 L 8-4-2L	0.15 0.37 1.7	720 1455 2880	30.0 76.0 73.0	0.74 0.78 0.91	0.98 0.9 3.7	2.1 5.6 6.0	1.20 1.7 1.7	1.1 1.6 1.3	1.7 2.3 1.8	0.00400	23.5
K21R 100 LX 8-4-2L	0.18 0.45 2.2	725 1465 2900	32.0 80.0 78.0	0.72 0.75 0.90	1.15 1.08 4.5	2.1 5.4 6.9	1.10 2.2 1.7	1.1 2.0 1.2	1.7 2.8 2.0	0.00725	30
K21R 112 M 8-4-2L	0.22 0.55 3.0	725 1465 2900	32.0 80.0 80.0	0.71 0.75 0.92	1.4 1.32 5.9	2.3 7.0 6.7	1.10 2.2 1.7	1.0 2.0 1.2	1.6 3.1 2.0	0.009	37
K21R 132 S 8-4-2L	0.23 0.7 2.7	728 1465 2908	59.0 77.0 64.0	0.69 0.88 0.89	0.8 1.5 6.8	3.5 6.3 4.5	1.4 1.4 1.3	1.4 1.4 1.3	2.5 2.7 2.2	0.018	46
K21R 132 M 8-4-2L	0.35 1.0 4.0	727 1455 2900	60.0 78.0 67.0	0.69 0.89 0.90	1.2 2.1 9.6	4.2 6.4 4.9	1.3 1.5 1.4	1.3 1.5 1.4	2.5 3.0 2.4	0.023	53
K21R 132 MX 8-4-2L	0.45 1.3 5.2	735 1470 2905	70.0 80.0 72.0	0.71 0.89 0.88	1.3 2.6 12.0	5.0 7.0 5.0	1.8 1.5 1.3	1.8 1.5 1.3	2.7 2.8 2.1	0.043	70
K21R 160 M 8-4-2L	0.6 1.8 7.0	730 1475 2925	70.0 83.0 71.0	0.77 0.87 0.83	1.6 3.6 17.0	4.0 7.7 6.0	1.5 2.1 1.9	1.5 1.9 1.9	2.2 3.4 2.8	0.053	86
K21R 160 L 8-4-2L	0.9 2.9 11.0	730 1475 2945	76.0 84.0 80.0	0.74 0.88 0.91	2.3 5.7 22.0	4.0 6.4 6.5	1.5 1.8 1.8	1.5 1.8 1.8	2.0 2.5 2.5	0.078	120

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
with two separate windings, Y/Y/YY-circuit
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P		n	η	$\cos \varphi$	I	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	J	m	
	kW		rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 750/1500/3000 rpm – 8-4-2 pole version													
K21R	180 M	K20R	160 M	1.2	731	77.2	0.73	3.1	4.3	1.7	2.1	0.09	136
	8-4-2L		8-4-2L	3.8	1476	85.5	0.89	7.2	6.6	1.9	2.6		
				15.0	2942	83.5	0.92	28.0	6.3	1.7	2.8		
K21R	180 L	K20R	180 S	1.4	737	79.7	0.66	3.8	4.5	1.4	2.3	0.138	170
	8-4-2L		8-4-2L	4.3	1482	86.4	0.85	8.5	7.4	1.5	3.1		
				16.0	2959	84.7	0.91	30.0	7.6	1.5	2.3		
K21R	200 L	K20R	180 M ¹⁾	2.0	740	73.0	0.48	8.2	4.3	1.3	2.8	0.168	200
	8-4-2L		8-4-2L	6.3	1475	88.0	0.88	11.5	5.8	1.1	2.2		
				24.0	2940	88.0	0.92	43.0	6.5	1.1	2.5		
K21R	225 S	K20R	200 M ¹⁾	2.5	740	74.0	0.48	10.0	4.4	1.2	3.2	0.275	270
	8-4-2L		8-4-2L	8.0	1475	88.0	0.89	14.5	6.6	1.1	2.7		
				30.0	2945	87.0	0.87	57.0	6.9	1.2	2.9		
K21R	225 M	K20R	200 L ¹⁾	3.5	740	74.0	0.51	13.5	4.3	1.1	2.8	0.313	300
	8-4-2L		8-4-2L	12.0	1465	89.0	0.90	21.5	5.5	1.0	2.3		
				40.0	2940	88.0	0.87	75.5	6.6	1.1	2.9		
K21R	250 M	K20R	225 M ¹⁾	4.0	745	69.0	0.54	15.5	4.9	1.4	2.7	0.525	375
	8-4-2L		8-4-2L	13.0	1480	90.0	0.88	23.5	6.5	1.3	2.4		
				50.0	2940	89.5	0.90	89.5	6.5	1.1	2.6		
K21R	280 S	K20R	250 S ¹⁾	5.0	745	74.5	0.57	17.0	4.8	1.2	2.4	0.95	520
	8-4-2L		8-4-2L	16.0	1485	91.0	0.87	29.0	6.8	1.2	2.4		
				60.0	2965	91.0	0.91	105	7.3	1.0	2.6		
K21R	280 M	K20R	250 M ¹⁾	6.0	745	75.0	0.56	20.5	4.9	1.2	2.5	1.1	580
	8-4-2L		8-4-2L	19.0	1485	91.0	0.88	34.0	7.1	1.3	2.4		
				73.0	2970	91.5	0.91	127	7.6	1.1	2.7		
K21R	315 S	K20R	280 S ¹⁾	7.5	745	77.5	0.57	24.5	5.6	1.3	2.6	1.96	740
	8-4-2L		8-4-2L	23.0	1490	91.0	0.88	41.5	8.6	1.4	2.7		
				88.0	2975	91.0	0.91	153	8.7	1.0	3.1		
K21R	315 M	K20R	280 M ¹⁾	8.5	745	79.0	0.56	27.5	5.7	1.4	2.7	2.27	840
	8-4-2L		8-4-2L	27.0	1485	91.5	0.89	48.0	7.9	1.3	2.6		
				103	2975	91.5	0.92	177	8.4	1.0	2.9		
K21R	315 MX	K20R	315 S ¹⁾	10.0	745	79.5	0.57	32.0	5.7	1.3	2.6	2.73	1000
	8-4-2L		8-4-2L	30.0	1485	91.0	0.89	53.5	7.5	1.3	2.5		
				110	2975	92.0	0.92	188	8.6	1.1	3.0		
K21R	315 MY	K20R	315 M ¹⁾	12.0	745	83.5	0.65	32.0	6.2	1.5	2.5	4.82	1200
	8-4-2L		8-4-2L	35.0	1490	92.0	0.90	61.0	6.6	1.3	2.2		
				120	2980	93.0	0.93	200	8.0	1.0	2.7		
K21R	315 L	K20R	315 L ¹⁾	15.0	745	84.0	0.65	39.5	6.1	1.4	2.5	5.93	1450
	8-4-2L		8-4-2L	42.0	1490	92.0	0.90	73.0	7.5	1.4	2.4		
				145	2985	93.0	0.93	242	9.3	1.2	3.0		

¹⁾ draft ratings

Three-phase motors with squirrel-cage rotor

variable speed for constant load torque

with two separate windings, $\Delta/Y/YY$ -circuit

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I_N	M_A/M_N	M_S/M_N	M_R/M_N	J	m			
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg			
Synchronous speed 750/1000/1500 rpm – 8-6-4 pole version														
K21R	100 LX 8-6-4	K20R	100 S 8-6-4	0.60 0.8 1.1	730 970 1460	56.0 66.0 72.0	0.53 0.66 0.82	2.85 2.65 2.65	4.0 4.5 6.5	a.A. 1.8 a.A.	a.A. 1.3 a.A.	a.A. 2.2 a.A.	0.009	28
K21R	112 M 8-6-4	K20R	100 L 8-6-4	0.9 1.2 1.8	725 970 1450	59.5 65.0 78.0	0.52 0.72 0.85	4.2 3.7 3.9	3.8 4.1 6.1	2.5 1.3 1.6	2.3 1.0 1.5	3.2 1.7 2.2	0.01225	37
K21R	132 S 8-6-4	K20R	112 M 8-6-4	0.9 1.1 1.4	730 970 1460	63.0 71.0 77.0	0.65 0.75 0.88	3.2 3.0 3.0	4.0 4.0 6.0	1.7 1.2 1.4	1.6 1.1 1.3	2.8 2.5 2.6	0.018	46
K21R	132 M 8-6-4	K20R	112 MX 8-6-4	1.2 1.5 2.0	720 970 1450	63.0 70.0 74.0	0.73 0.76 0.93	3.8 4.1 4.2	3.7 4.0 4.3	1.6 1.3 1.2	1.6 1.2 1.1	2.3 2.5 2.2	0.023	53
K21R	132 MX 8-6-4	K20R	132 S 8-6-4	1.6 2.1 2.8	735 980 1460	66.0 76.0 79.0	0.65 0.75 0.90	5.4 5.3 5.7	4.2 5.0 5.9	1.9 1.5 1.3	1.7 1.3 1.0	2.6 2.6 2.3	0.043	70
K21R	160 M 8-6-4	K20R	132 M 8-6-4	2.3 2.9 3.9	730 980 1465	71.0 78.0 80.0	0.67 0.79 0.90	7.0 6.8 7.8	4.4 5.0 6.0	1.9 1.5 1.3	1.7 1.3 1.0	2.7 2.6 2.3	0.053	86
K21R	160 L 8-6-4	K20R	160 S 8-6-4	3.4 4.0 5.8	730 980 1460	78.0 80.0 80.0	0.78 0.84 0.93	8.1 8.6 11.5	4.9 5.1 5.2	1.7 1.2 1.2	1.6 1.1 0.9	2.5 2.1 2.0	0.113	114
K21R	180 L 8-6-4	K20R	160 M 8-6-4	4.8 5.5 8.0	730 980 1460	78.0 82.0 80.0	0.79 0.85 0.93	11.0 11.5 15.5	4.7 5.5 4.8	1.6 1.3 1.2	1.4 1.0 0.7	2.1 2.1 1.8	0.145	138
K21R	200 L 8-6-4	K20R	180 S 8-6-4	5.9 6.6 9.0	735 985 1470	82.0 85.0 83.0	0.81 0.84 0.94	13.0 13.5 16.5	5.7 6.3 6.6	1.9 1.6 1.7	1.5 1.3 1.0	2.4 2.5 2.4	0.228	175
K21R	200 LX 8-6-4	K20R	180 M 8-6-4	7.0 7.9 11.0	735 985 1470	83.0 86.0 85.0	0.78 0.82 0.94	15.5 16.0 20.0	6.0 7.1 6.8	2.0 1.8 1.8	1.7 1.4 1.4	2.7 3.0 2.6	0.268	200
K21R	225 M 8-6-4	K20R	200 M 8-6-4	9.5 10.5 15.0	735 985 1475	85.0 87.0 86.0	0.79 0.83 0.92	20.5 21.0 27.5	6.8 7.3 7.6	2.2 2.0 2.1	1.8 1.6 1.1	2.6 3.0 2.7	0.443	265
K21R	250 M 8-6-4	K20R	225 M 8-6-4	11.5 13.0 18.5	740 990 1480	85.0 89.0 86.0	0.79 0.84 0.92	24.5 25.0 33.5	7.1 8.2 8.1	2.4 2.2 2.2	1.8 1.8 1.2	2.8 3.1 2.6	0.825	360
K21R	280 S 8-6-4	K20R	250 S 8-6-4	14.0 16.0 20.0	740 992 1483	88.0 89.0 86.0	0.80 0.84 0.92	28.5 31.0 36.5	6.5 7.4 7.9	2.2 1.9 2.0	1.6 1.3 1.0	2.4 2.7 2.5	1.28	465
K21R	280 M 8-6-4	K20R	250 M 8-6-4	17.0 20.0 25.0	742 990 1485	88.0 89.0 87.0	0.77 0.84 0.92	36.0 38.5 45.0	7.3 7.7 9.8	2.6 2.2 2.6	2.0 1.4 1.4	2.9 2.9 3.0	1.48	520
K21R	315 S 8-6-4	K20R	280 S 8-6-4	24.0 27.0 37.0	744 992 1487	88.0 91.0 89.0	0.77 0.80 0.92	51.0 53.5 65.0	7.0 8.0 8.5	2.2 1.9 1.9	1.9 1.6 1.4	2.8 3.2 2.8	2.63	690
K21R	315 M 8-6-4	K20R	280 M 8-6-4	30.0 36.0 45.0	742 992 1485	89.0 91.5 89.0	0.79 0.84 0.92	61.5 67.5 79.5	6.5 6.5 7.5	1.8 1.4 1.6	1.6 1.2 1.1	2.4 2.4 2.4	3.33	800
K21R	315 MX 8-6-4	K20R	315 S 8-6-4	45.0 55.0 68.0	741 990 1485	90.5 91.8 91.0	0.80 0.86 0.93	89.5 101 116	7.0 6.0 8.0	2.2 1.2 2.0	1.7 1.0 1.4	2.4 2.1 2.4	3.6	880
K21R	315 MY 8-6-4	K20R	315 M 8-6-4	55.0 68.0 80.0	743 992 1488	92.6 93.4 92.3	0.80 0.86 0.92	107 122 136	7.5 7.0 8.5	1.9 1.7 2.2	1.9 1.3 1.5	2.6 2.6 2.7	6	1050

Three-phase motors with squirrel-cage rotor

variable speed for quadratically increasing load torque, fan drives
 with two separate windings, Y/Y/YY-circuit
 with surface ventilation, mode of operation S1, continuous duty
 insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 750/1000/1500 rpm – 8-6-4 pole version											
K21R 80 K 8-6-4L	K20R 71 K 8-6-4L	0.05 0.06 0.21	715 970 1450	32.0 46.0 58.0	0.71 0.63 0.76	0.32 0.3 0.69	2.0 2.8 3.6	1.2 1.6 1.1	1.2 1.6 1.1	1.8 2.4 1.8	0.00130 12.5
K21R 80 G 8-6-4L	K20R 71 G 8-6-4L	0.09 0.12 0.37	690 945 1430	38.0 52.0 62.0	0.68 0.72 0.76	0.5 0.46 1.12	2.1 2.8 3.7	1.3 1.3 1.1	1.3 1.2 1.1	1.8 1.8 1.9	0.00175
K21R 90 S 8-6-4L	K20R 80 K 8-6-4L	0.15 0.22 0.7	715 965 1430	49.0 50.0 67.0	0.59 0.70 0.80	0.74 0.9 1.87	2.4 3.0 4.0	1.4 1.2 1.2	1.4 1.2 1.2	2.0 1.9 1.6	0.00325 16
K21R 90 L 8-6-4L	K20R 80 G 8-6-4L	0.22 0.3 0.95	705 965 1425	55.0 55.0 71.0	0.63 0.71 0.82	0.92 1.11 2.36	2.7 3.2 4.4	1.4 1.2 1.2	1.4 1.2 1.2	2.0 2.0 2.0	0.00425 19
K21R 100 L 8-6-4L	K20R 90 L 8-6-4L	0.37 0.55 1.5	715 970 1445	60.0 49.0 70.0	0.61 0.71 0.81	1.45 1.8 3.8	2.8 3.0 4.7	1.4 1.2 1.2	1.3 1.1 1.1	1.7 1.7 1.8	0.00625 24
K21R 100 LX 8-6-4L	K20R 100 S 8-6-4L	0.45 0.7 1.9	715 970 1435	65.0 63.0 69.0	0.64 0.71 0.84	1.55 2.26 4.7	3.5 4.2 4.8	1.4 1.2 1.1	1.4 1.1 1.1	2.1 2.0 1.9	0.00900 28
K21R 112 M 8-6-4L	K20R 100 L 8-6-4L	0.75 1.1 2.6	710 965 1440	66.0 63.0 70.0	0.68 0.80 0.85	2.4 3.35 6.6	3.6 3.7 5.0	1.6 1.1 1.4	1.6 1.1 1.4	2.2 1.7 2.7	0.01225 33.5
K21R 132 S 8-6-4L	K20R 112 M 8-6-4L	0.75 1.1 3.0	725 980 1458	65.0 63.0 73.1	0.70 0.66 0.85	2.4 3.8 7.0	3.9 4.6 5.0	1.4 1.4 1.2	1.4 1.4 1.2	2.5 2.9 2.2	0.018 46
K21R 132 M 8-6-4L	K20R 112 MX 8-6-4L	1.0 1.4 4.0	725 980 1455	67.0 68.5 69.0	0.68 0.75 0.85	3.2 3.9 9.8	4.6 4.9 6.1	1.7 1.4 1.7	1.7 1.4 1.7	2.8 2.8 2.7	0.023 53
K21R 132 MX 8-6-4L	K20R 132 S 8-6-4L	1.2 1.7 5.0	730 983 1463	77.3 68.8 79.8	0.68 0.71 0.88	3.3 5.0 10.5	4.7 4.7 6.0	1.6 1.1 1.5	1.6 1.1 1.5	2.9 2.6 3.0	0.043 70
K21R 160 M 8-6-4L	K20R 132 M 8-6-4L	1.9 2.5 7.5	723 983 1453	79.0 70.0 80.0	0.75 0.70 0.90	4.6 7.4 15.0	4.3 4.9 5.7	1.4 1.4 1.6	1.4 1.4 1.6	2.4 2.8 2.7	0.053 86
K21R 160 L 8-6-4L	K20R 160 S 8-6-4L	2.5 4.0 11.0	729 984 1450	83.0 76.0 83.0	0.80 0.77 0.92	5.4 9.9 21.0	5.8 5.3 5.7	2.2 1.3 1.8	2.2 1.3 1.8	2.6 2.7 2.5	0.113 114
K21R 180 L 8-6-4L	K20R 160 M 8-6-4L	3.5 5.0 14.0	722 985 1441	83.0 74.0 83.0	0.84 0.76 0.94	7.2 13.0 26.0	4.9 5.4 5.3	1.8 1.2 1.8	1.8 1.2 1.8	2.1 2.6 2.3	0.145 138
K21R 200 L 8-6-4L	K20R 180 S 8-6-4L	4.0 6.5 18.0	735 985 1470	84.0 80.0 82.0	0.78 0.82 0.89	8.8 14.5 35.5	6.0 6.0 7.5	2.1 1.5 2.3	2.1 1.5 2.3	2.8 2.7 3.2	0.228 175
K21R 200 LX 8-6-4L	K20R 180 M 8-6-4L	5.5 7.5 22.0	735 990 1460	86.0 76.0 84.0	0.80 0.78 0.90	11.5 18.5 42.0	5.1 6.1 6.1	1.4 1.4 1.7	1.4 1.4 1.7	2.6 2.8 2.9	0.268 200
K21R 225 M 8-6-4L	K20R 200 M 8-6-4L	7.0 10.0 30.0	735 985 1460	86.5 81.5 86.0	0.82 0.83 0.92	14.0 21.5 54.5	6.2 6.8 7.1	1.7 1.5 1.8	1.7 1.5 1.8	3.2 2.9 3.5	0.443 265
K21R 250 M 8-6-4L	K20R 225 M 8-6-4L	8.0 12.0 35.0	738 988 1472	88.0 84.0 87.0	0.81 0.85 0.93	16.0 24.5 62.5	5.7 6.6 6.5	1.5 1.4 1.7	1.5 1.4 1.7	2.7 2.6 3.0	0.825 360
K21R 280 S 8-6-4L	K20R 250 S 8-6-4L	10.0 15.0 44.0	740 990 1475	89.0 88.0 89.0	0.81 0.85 0.92	20.0 29.0 78.0	5.7 6.5 7.0	2.0 1.6 2.0	2.0 1.6 2.0	2.4 2.6 2.5	1.28 465
K21R 280 M 8-6-4L	K20R 250 M 8-6-4L	16.0 22.0 65.0	740 993 1475	90.0 86.0 88.0	0.82 0.81 0.90	31.5 45.5 118	5.6 6.8 6.9	1.6 1.5 1.9	1.6 1.5 1.9	2.6 2.8 3.2	1.48 520
K21R 315 S 8-6-4L	K20R 280 S 8-6-4L	18.0 28.0 80.0	744 995 1485	91.5 85.5 90.5	0.77 0.79 0.90	37.0 59.5 142	5.6 7.4 6.9	1.6 1.5 1.9	1.6 1.5 1.9	2.3 2.9 2.7	2.63 690
K21R 315 M 8-6-4L	K20R 280 M 8-6-4L	23.0 35.0 100	745 995 1485	92.5 87.5 91.5	0.79 0.83 0.90	45.5 69.5 175	7.0 8.5 9.2	1.8 1.6 2.0	1.8 1.6 2.0	2.5 3.0 2.9	3.33 800
K21R 315 MX 8-6-4L	K20R 315 S 8-6-4L	25.0 35.0 100	740 995 1480	90.0 87.5 91.5	0.82 0.84 0.92	49.0 69.0 171	5.5 7.0 8.5	1.5 1.2 2.0	1.5 1.2 2.0	1.9 2.3 2.4	3.6 880
K21R 315 MY 8-6-4L	K20R 315 M 8-6-4L	28.0 42.0 120	742 992 1484	92.6 88.6 92.3	0.83 0.87 0.93	52.5 78.5 202	5.8 6.8 7.1	1.4 1.4 1.6	1.4 1.4 1.6	2.3 2.4 2.8	6 1050

Three-phase motors with squirrel-cage rotor

variable speed for constant load torque

with two separate windings, $\Delta/\Delta/YY/YY$ -circuit

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P	n	η	$\cos \varphi$	I	I_A/I_N	M_A/M_N	M_S/M_N	M_R/M_N	J	m		
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg		
Synchronous speed 500/750/1000/1500 rpm – 12-8-6-4 pole version													
K21R 160 L 12-8-6-4	K20R 12-8-6-4	160 S	1.9	480	64.0	0.70	6.1	2.9	1.4	1.3	1.7	0.113	114
			2.5	735	76.0	0.74	6.4	4.5	1.4	1.3	2.3		
			3.0	975	76.0	0.89	6.4	4.5	1.1	1.0	1.9		
			3.7	1475	81.0	0.92	7.2	6.2	1.2	0.9	2.3		
K21R 180 L 12-8-6-4	K20R 12-8-6-4	160 M	2.6	480	66.0	0.70	8.1	3.2	1.5	1.3	1.7	0.145	138
			3.6	735	79.0	0.76	8.7	4.8	1.5	1.4	2.1		
			4.0	975	78.0	0.90	8.2	4.8	1.3	1.0	1.9		
			5.4	1475	82.0	0.92	10.5	6.0	1.5	0.9	2.2		
K21R 200 L 12-8-6-4	K20R 12-8-6-4	180 S	3.2	485	75.0	0.66	9.3	4.0	2.0	1.8	2.4	0.228	175
			4.2	740	80.0	0.74	10.0	5.8	1.8	1.5	2.8		
			5.0	980	83.0	0.89	9.8	6.3	1.8	1.3	2.4		
			6.5	1480	82.0	0.91	12.5	7.4	1.6	0.9	3.0		
K21R 200 LX 12-8-6-4	K20R 12-8-6-4	180 M	3.8	490	75.0	0.64	11.5	4.3	1.9	1.6	2.3	0.268	200
			5.0	740	81.0	0.72	12.5	5.9	1.8	1.6	2.9		
			5.9	985	83.0	0.87	12.0	6.6	1.8	1.5	2.6		
			7.7	1480	84.0	0.90	14.5	7.6	1.7	1.1	2.8		
K21R 225 M 12-8-6-4	K20R 12-8-6-4	200 M	5.2	490	78.0	0.64	15.0	4.7	2.1	1.9	2.5	0.443	265
			6.9	740	84.0	0.76	15.5	6.0	1.6	1.4	2.6		
			8.1	985	86.0	0.88	15.5	7.3	1.9	1.4	2.8		
			10.5	1480	85.0	0.92	19.5	7.3	1.5	0.7	2.5		
K21R 250 M 12-8-6-4	K20R 12-8-6-4	225 M	6.5	490	81.0	0.67	17.5	4.2	1.7	1.4	1.7	0.825	360
			8.5	740	85.0	0.77	18.5	5.8	1.7	1.4	2.2		
			10.0	980	85.0	0.88	19.5	6.3	1.8	1.2	2.1		
			13.0	1480	85.0	0.92	24.0	7.0	1.5	0.7	2.2		
K21R 280 S 12-8-6-4	K20R 12-8-6-4	250 S	7.8	492	82.0	0.65	21.0	4.6	2.1	1.6	2.1	1.28	465
			10.0	745	86.0	0.74	22.5	6.4	2.0	1.5	2.7		
			12.0	990	86.0	0.88	23.0	6.8	2.0	1.4	2.4		
			15.5	1488	85.0	0.91	29.0	7.9	1.9	0.9	2.6		
K21R 280 M 12-8-6-4	K20R 12-8-6-4	250 M	9.6	493	82.0	0.65	26.0	4.4	2.1	1.7	2.2	1.48	520
			12.5	743	86.0	0.75	28.0	6.3	2.1	1.5	2.7		
			15.0	990	87.0	0.89	28.0	7.2	2.1	1.4	2.3		
			19.0	1488	85.0	0.92	35.0	8.1	1.9	0.9	2.7		
K21R 315 S 12-8-6-4	K20R 12-8-6-4	280 S	13.0	495	84.0	0.62	36.0	4.9	1.8	1.6	2.2	2.630	690
			17.0	744	89.0	0.74	37.5	6.5	1.4	1.3	2.5		
			20.0	991	89.0	0.87	37.5	7.5	1.7	1.4	2.4		
			26.0	1488	86.0	0.91	48.0	8.0	1.2	0.8	2.5		
K21R 315 M 12-8-6-4	K20R 12-8-6-4	280 M	18.0	494	84.0	0.64	48.5	4.4	1.6	1.4	2.0	3.33	800
			22.0	745	90.0	0.74	47.5	6.3	1.3	1.2	2.5		
			26.0	992	90.0	0.87	48.0	7.5	1.8	1.4	2.4		
			32.0	1490	90.0	0.91	56.5	8.1	1.4	0.9	2.5		
K21R 315 MX 12-8-6-4	K20R 12-8-6-4	315 S	26.0	493	85.0	0.66	67.0	4.5	1.5	1.4	1.8	3.60	880
			32.0	744	89.0	0.75	69.0	6.0	1.3	1.2	2.2		
			38.0	991	90.0	0.88	69.5	7.0	1.6	1.2	2.1		
			45.0	1490	90.0	0.92	78.5	7.5	1.3	0.7	2.5		
K21R 315 MY 12-8-6-4	K20R 12-8-6-4	315 M	32.0	490	87.0	0.70	76.0	4.3	1.4	1.1	1.6	6.00	1050
			38.0	745	92.4	0.76	78.0	6.5	1.8	1.6	2.5		
			45.0	990	91.4	0.89	80.0	7.0	1.6	1.5	2.1		
			55.0	1491	92.5	0.92	93.5	8.5	1.6	1.4	2.8		

Three-phase motors with squirrel-cage rotor

built-in motor without shaft

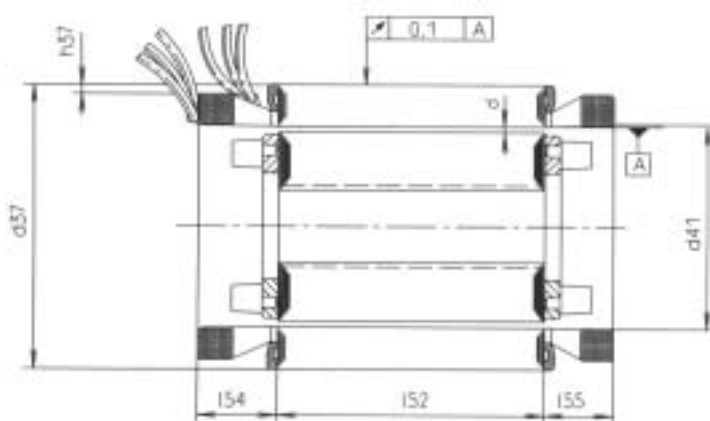
main dimensions for wound stator core

Design selection data

Type	size	d ₃₇	d ₃₇ turn-over dim. +0.6; -0.6	d ₄₁ min. dim. pole number				h ₃₇ min. dim.	l ₅₂ +0.5 / -1.0 pole number				l ₅₄ max. dim. pole number				l ₅₅ max. dim. pole number				air gap perm. deviation +10%; -10% pole number			
				2	4	6	8		2	4	6	8	2	4	6	8	2	4	6	8	2	4	6	8
KPR	56 K	84	83.8	49	54	54	-	3.5	37	37	49	-	27	25	25	-	27	25	25	-	0.27	0.2	0.2	-
KPR	56 G	84	83.8	49	54	54	-	3.5	47	49	62	-	27	25	25	-	27	25	25	-	0.27	0.2	0.2	-
KPR	63 K	96	95.8	56	62	62	62	4	43	45	62	62	31	31	24	24	31	29	24	24	0.25	0.2	0.2	0.2
KPR	63 G	96	95.8	56	62	62	62	4	59	62	76	73	31	31	24	24	31	29	24	24	0.25	0.2	0.2	0.2
KPR	71 K	110	109.8	63	70	76	76	4	60	63	66	66	36	35	30	30	35	33	30	30	0.3	0.2	0.2	0.2
KPR	71 G	110	109.8	63	70	76	76	4	81	81	91	91	36	35	30	30	35	33	30	30	0.3	0.2	0.2	0.2
KPR	80 K	126	125.8	73	82	88	88	5	80	80	89	80	43	39	36	36	42	38	35	35	0.35	0.25	0.25	0.25
KPR	80 G	126	125.8	73	82	88	88	5	108	104	120	104	43	39	36	36	42	38	35	35	0.35	0.25	0.25	0.25
KPR	90 L	140	139.8	82	90	98	98	4.5	110	110	120	110	45	43	35	35	45	42	35	35	0.45	0.3	0.25	0.25
KPR	100 S	158	157.8	92	103	-	112	4.5	112	112	-	100	56	49	-	40	53	48	-	40	0.55	0.35	0.3	0.3
KPR	100 L	158	157.8	92	103	112	112	4.5	146	146	139	139	56	49	41	41	53	48	40	40	0.55	0.35	0.3	0.3
KPR	112 M	176	175.8	99	111	121	121	5.5	162	142	122	122	61	64	59	59	61	56	51	51	0.6	0.35	0.3	0.3
KPR	112MX	176	175.8	-	-	121	121	5.5	-	-	162	162	-	-	59	59	-	-	51	51	-	-	0.3	0.3
KPR	132 S	206	205.8	-	129	143	143	6	-	139	153	153	-	71	66	66	-	61	56	56	-	0.45	0.35	0.35
KPR	132 M	206	205.8	121	129	143	143	6	162	196	196	196	66	71	66	66	66	61	56	56	0.6	0.45	0.35	0.35
KPR	160 S	255	254.8	148	159	177	177	6.5	154	168	163	163	76	83	78	78	76	71	66	66	0.7	0.45	0.4	0.4
KPR	160 M	255	254.8	148	159	177	177	6.5	193	198	213	213	76	83	78	78	76	71	66	66	0.7	0.45	0.4	0.4
KPR	180 S	288	287.8	168	179	201	201	6.5	177	193	207	207	81	88	83	83	81	76	71	71	0.9	0.55	0.45	0.45
KPR	180M	288	287.8	168	179	201	201	6.5	227	251	251	251	81	88	83	83	81	76	71	71	0.9	0.55	0.45	0.45
KPR	200 M	322	321.8	187	201	225	225	9	213	253	253	253	99	99	96	96	99	91	81	81	1.0	0.65	0.45	0.45
KPR	200 L	322	321.8	187	201	-	-	9	253	293	-	-	99	99	-	-	99	91	-	-	1.0	0.65	-	-
KPR	225 M	362	361.8	211	227	253	253	11	251	284	264	264	115	112	107	107	115	97	92	92	1.2	0.7	0.5	0.5
KPR	250 S	410	409.8	241	259	289	289	14	255	313	255	255	135	125	115	110	135	105	95	90	1.2	0.8	0.55	0.55
KPR	250 M	410	409.8	241	259	289	289	14	283	367	318	318	135	125	115	110	135	105	95	90	1.2	0.8	0.55	0.55
K10R	280S	465	464.8	273	296	329	329	14	306	351	306	306	170	145	145	140	140	120	120	115	1.45	1.0	0.7	0.7
K10R	280M	465	464.8	273	296	329	329	14	361	406	386	386	170	145	145	140	140	120	120	115	1.45	1.0	0.7	0.7
K10R	315S	465	464.8	273	296	329	329	14	441	486	416	416	170	145	135	135	140	120	115	115	1.45	1.1	0.7	0.7
K10R	315M	520	519.8	306	341	376	376	14	446	486	406	406	185	145	145	145	165	125	125	125	1.6	1.0	0.7	0.7
K10R	315L	520	519.8	306	341	376	376	14	576	606	456	456	185	145	145	145	165	125	125	125	1.6	1.0	0.7	0.7
K10R	315LX	520	519.8	306	341	376	376	14	696	696	586	486	185	145	145	145	165	125	125	125	1.6	1.0	0.7	0.7
K22R	355MY	610	609.8	352	376	409	421	24	432	492	442	442	225	175	175	175	185	145	145	140	1.9	1.5	0.9	0.8
K22R	355M	610	609.8	352	-	409	421	24	477	-	492	492	225	-	175	175	185	-	145	140	1.9	-	0.9	0.8

1) type designation KPR remains unchanged for these components, technical state K20R is valid
 2) tolerance for the fitting stator bore size 112 and lower = H7, size 132 = P7, size 160 and bigger = S7

Version with thermal sensors on request



Three-phase motors with squirrel-cage rotor

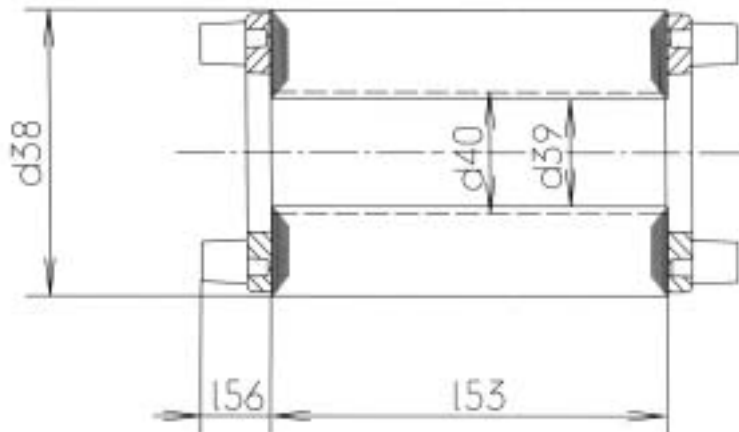
built-in motor without shaft
main dimensions for rotor body

Design selection data

Type	size	d ₃₈								d ₃₉								d ₄₀								l ₅₃ ⁵⁾								l ₅₆							
		finished dim ¹⁾				delivery dim.				delivery dim. ²⁾				finished dim max. ³⁾				pole number				pole number				pole number															
		2	4	6	8	2	4	6	8	2	4	6	8	2	4	6	8	2	4	6	8	2	4	6	8	2	4	6	8												
KPR	56 K	45.5	50.6	50.6	-	46	51	51	-	17	17	17	17	19	20	20	20	37	37	49	-	12	10	10	-																
KPR	56 G	45.5	50.6	50.6	-	46	51	51	-	17	17	17	17	19	20	20	20	41	49	62	-	12	10	10	-																
KPR	63 K	52.5	58.6	58.6	58.6	53	59	59	59	20	20	20	20	23	23	24	24	43	45	54	62	16.5	15.5	8.5	8.5																
KPR	63 G	52.5	58.6	58.6	58.6	53	59	59	59	20	20	20	20	23	23	24	24	59	62	76	73	16.5	15	8.5	8.5																
KPR	71 K	59.4	66.6	72.6	72.6	60	67	73	73	25	25	25	25	27	27	30	30	60	63	66	66	18	18	13	13																
KPR	71 G	59.4	66.6	72.6	72.6	60	67	73	73	25	25	25	25	27	27	30	30	81	81	91	91	17.5	17.5	12.5	12.5																
KPR	80 K	68.3	77.5	85.5	85.5	69	78	86	86	30	30	30	30	32	34	36	36	80	80	89	80	19	18.5	13	13																
KPR	80 G	68.3	77.5	85.5	85.5	69	78	86	86	30	30	30	30	32	34	36	36	108	104	120	104	19	18.5	13	13																
KPR	90 L	77.1	85.4	94.5	94.5	78	86	95	95	32	32	32	32	34	36	40	40	110	110	120	110	26	26	21	26																
KPR	100 S	86.9	98.3	-	106.4	88	-	107	107	35	35	35	35	37	39	43	43	112	112	-	100	33.5	33.5	-	20																
KPR	100 L	86.9	98.3	106.4	106.4	88	107	107	107	35	35	35	35	37	39	43	43	146	146	139	139	33.5	33.5	20	20																
KPR	112 M	96.8	109.3	119.4	119.4	98	110	120	120	44	44	44	44	46	46	52	52	160	140	120	120	32.5	32.5	32.5	32.5																
KPR	112MX	-	-	119.4	119.4	-	-	120	120	-	-	44	44	-	-	52	52	-	-	160	160	-	-	32.5	32.5																
KPR	132 S	-	127.1	141.3	141.3	-	128	142	142	-	52	52	52	-	54	60	60	-	137	151	151	-	32.5	32.5	32.5																
KPR	132 M	118.8	127.1	141.3	141.3	120	128	142	142	52	52	52	52	54	54	60	60	160	194	194	194	32.5	32.5	32.5	32.5																
KPR	160 S	145.6	157.2	175.2	175.2	147	158	176	176	55	62	62	62	58	66	68	68	151	165	160	160	35	35	35	35																
KPR	160 M	145.6	157.2	175.2	175.2	147	158	176	176	55	62	62	62	58	66	68	68	190	195	210	210	35	35	35	35																
KPR	180 S	165.2	176.9	199.1	199.1	167	178	200	200	62	72	72	72	65	76	80	80	174	191	204	204	55	43.5	43.5	43.5																
KPR	180M	165.2	176.9	199.1	199.1	167	178	200	200	62	72	72	72	65	76	80	80	224	248	248	248	55	43.5	43.5	43.5																
KPR	200 M	184	198.7	223.1	223.1	186	200	224	224	75	85	85	85	78	90	95	95	210	250	250	250	55	45	45	45																
KPR	200 L	184	198.7	-	-	186	200	-	-	75	85	-	-	78	90	-	-	250	290	-	-	55	45	-	-																
KPR	225 M	207.6	224.6	251	251	210	226	252	252	85	95	95	95	88	110	105	105	247	280	260	260	57.5	49	49	49																
KPR	250 S	237.6	256.4	286.9	286.9	240	258	288	288	95	105	105	105	98	110	110	110	252	310	252	252	65	50	50	50																
KPR	250 M	237.6	256.4	286.9	286.9	240	258	288	288	95	105	105	105	98	110	110	110	280	364	315	315	65	50	50	50																
K10R	280S	269.1	293	326.6	326.6	272	295	328	328	105	115	115	115	108	120	120	120	300	345	300	300	70	65	65	65																
K10R	280M	269.1	293	326.6	326.6	272	295	328	328	105	115	115	115	108	120	120	120	355	400	380	380	70	65	65	65																
K10R	315S	269.1	292.8	326.6	326.6	272	295	328	328	105	115	115	115	108	120	120	120	435	480	410	410	70	65	65	65																
K10R	315M	6)	6)	373.6	373.6	6)	6)	375	375	6)	6)	130	130	6)	6)	135	135	6)	6)	400	400	6)	6)	65	65																
K10R	315L	6)	6)	373.6	373.6	6)	6)	375	375	6)	6)	130	130	6)	6)	135	135	6)	6)	450	450	6)	6)	65	65																
K10R	315LX	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)															
K22R	355MY	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)															
K22R	355M	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)	6)															

After pressing onto the shaft, the rotor body must be turned over to final dimension d38 and must be balanced dynamically. The permissible remaining unbalance must be stated by the user depending on the field of application.

- 1) tolerance finished dimension js8
- 2) size of knurling and tolerance for knurled shaft diameter acc. to manufacturer's data
- 3) maximum permissible core bore (only valid for shafts with knurled seat)
- 4) type designation KPR remains unchanged for these components, technical state K20R is valid
- 5) tolerance +/-0.5
- 6) rotor body on request



Three-phase motors with squirrel-cage rotor

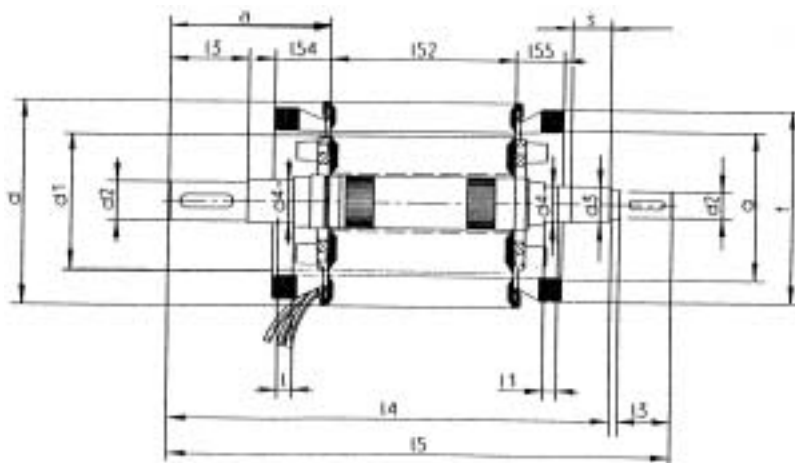
built-in motor with shaft

Design selection data

Type	size	a +0.5-0.5	d +0.05-0.05	d _{1js8} end	d _{2k6} N-end	d ₃	d _{1js5}	f	g	l	l ₁	l ₃	l _{4-0.3}	l _{5-0.3}	s			
K21R 63	K2	71.5	83.8	45.5	11	11	11.9 _{eb}	12	77	49	19	19	23	173	205	12		
K20R 56	K4	71.5	83.8	50.6	11	11	11.9 _{eb}	12	77	54	19	19	23	173	205	12		
	K6	65.5	83.8	50.66	11	11	11.9 _{eb}	12	77	54	19	19	23	173	205	12		
	G2	66.5	83.8	45.5	11	11	11.9 _{eb}	12	77	49	19	19	23	173	205	12		
	G4	65.5	83.8	50.6	11	11	11.9 _{eb}	12	77	54	19	19	23	173	205	12		
	G6	59	83.8	50.66	11	11	11.9 _{eb}	12	77	54	19	19	23	173	205	12		
K21R 71 K20R 63	K2	84	95.8	52.5	14	14	14.9 _{eb}	15	88	59	20	20	30	197.5	238.5	13		
	K4	83	95.8	58.6	14	14	14.9 _{eb}	15	88	62	20	20	30	197.5	238.5	13		
	K6	78.5	95.8	58.66	14	14	14.9 _{eb}	15	88	63	20	20	30	197.5	238.5	13		
	K8	74.5	95.8	58.6	14	14	14.9 _{eb}	15	88	62	20	20	30	197.5	238.5	13		
	G2	76	95.8	52.5	14	14	14.9 _{eb}	15	88	59	20	20	30	197.5	238.5	13		
	G4	74.5	95.8	58.6	14	14	14.9 _{eb}	15	88	62	20	20	30	197.5	238.5	13		
	G6	67.5	95.8	58.66	14	14	14.9 _{eb}	15	88	63	20	20	30	197.5	238.5	13		
	G8	69	95.8	58.6	14	14	14.9 _{eb}	15	88	62	20	20	30	197.5	238.5	13		
K21R 80 K20R 71	K2	101	109.8	59.4	19	19	19.9 _{eb}	20	102	65	23	23	40	240	293	14		
	K4	99.5	109.8	66.6	19	19	19.9 _{eb}	20	102	70	23	23	40	240	293	14		
	K6	98	109.8	72.6	19	19	19.9 _{eb}	20	102	76	23	23	40	240	293	14		
	K8	98	109.8	72.6	19	19	19.9 _{eb}	20	102	76	23	23	40	240	293	14		
	G2	90.5	109.8	59.4	19	19	19.9 _{eb}	20	102	65	23	23	40	240	293	14		
	G4	90.5	109.8	66.6	19	19	19.9 _{eb}	20	102	70	23	23	40	240	293	14		
	G6	85.5	109.8	72.6	19	19	19.9 _{eb}	20	102	76	23	23	40	240	293	14		
	G8	85.5	109.8	72.6	19	19	19.9 _{eb}	20	102	76	23	23	40	240	293	14		
K21R 90 K20R 80	S2	108	125.8	68.3	24 ¹⁾	22 ²⁾	24.9 _{eb}	25	116	74	25	25	50	264.5	330	14		
	S4	108	125.8	77.5	24 ¹⁾	22 ²⁾	24.9 _{eb}	25	116	82	25	25	50	264.5	330	14		
	S6	103.5	125.8	85.5	24 ¹⁾	22 ²⁾	24.9 _{eb}	25	116	90	25	25	50	264.5	330	14		
	S8	108	125.8	85.5	24 ¹⁾	22 ²⁾	24.9 _{eb}	25	116	90	25	25	50	264.5	330	14		
	L2	105	125.8	68.3	24 ¹⁾	22 ²⁾	24.9 _{eb}	25	116	74	25	25	50	264.5	352	14		
	L4	107	125.8	77.5	24 ¹⁾	22 ²⁾	24.9 _{eb}	25	116	82	25	25	50	264.5	352	14		
	L6	99	125.8	85.5	24 ¹⁾	22 ²⁾	24.9 _{eb}	25	116	90	25	25	50	264.5	352	14		
	L8	107	125.8	85.5	24 ¹⁾	22 ²⁾	24.9 _{eb}	25	116	90	25	25	50	264.5	352	14		
K21R 100 K20R 100	LX4.8	122	139.8	77.1	28 ¹⁾	24 ²⁾	24.9 _{eb}	25	131	82	28	26	50	60	50	316.5	386	16
	S4.8	122	139.8	85.4	28 ¹⁾	24 ²⁾	24.9 _{eb}	25	131	90	28	26	50	60	50	316.5	386	16
				94.5	28 ¹⁾	24 ²⁾	24.9 _{eb}	25	131	99	28	26	50	60	50	316.5	386	16
				94.5	28 ¹⁾	24 ²⁾	24.9 _{eb}	25	131	99	28	26	50	60	50	316.5	386	16
K21R 100 K20R 100	LX4.8	134	157.8	98.3	28	28	29.6 ^{+0.3} _{+0.1}	30	149	103	28	28	60	50	334	425	18	
	S4.8	140	157.8	106.4	28	28	29.6 ^{+0.3} _{+0.1}	30	149	112	28	28	60	50	334	425	18	
K21R 112M; K20R 100S2		134	157.8	86.9	28	28	29.6 ^{+0.3} _{+0.1}	30	149	92	28	28	60	50	344	425	18	
	KP21R 112M;	134	157.8	98.3	28	28	29.6 ^{+0.3} _{+0.1}	30	149	103	28	28	60	50	378	425	18	
K20R 100L4 KP21R 112M;		120	157.8	106.4	28	28	29.6 ^{+0.3} _{+0.1}	30	149	112	28	28	60	50	344	425	18	
	K20R 100L6	120	157.8	106.4	28	28	29.6 ^{+0.3} _{+0.1}	30	149	112	28	28	60	50	344	425	18	
K21R 112M; K20R 100L8		120	157.8	106.4	28	28	29.6 ^{+0.3} _{+0.1}	30	149	112	28	28	60	50	344	425	18	
	K20R 100L8	120	157.8	106.4	28	28	29.6 ^{+0.3} _{+0.1}	30	149	112	28	28	60	50	344	425	18	

¹⁾ Dimension for K21R

²⁾ Dimension for K20R



Energy saving motors, 2- and 4-pole according to CEMEP "High Efficiency" eff 1

Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series

WE1R, W21R

mounting dimensions and output correlation acc. to DIN 42673 bzw. 42677

Sizes

56 – 315

Output range

1.1 – 90 kW, 2- and 4pole "High Efficiency" eff 1 acc. to CEMEP
0.06 – 315 kW with increased efficiencies

Degree of protection

IP 55 acc. to DIN EN 60034- 5

Cooling method

IC 411 acc. to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

series 56 up to 132T -20 °C up to +40 °C
from shaft height 132 -40 °C up to +40 °C



Energy saving motors in accordance to CEMEP "High Efficiency" eff 1

Efficiency determination in accordance to EN 60034-2

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Typ	P _B kW	n _B rpm	EFF- -	η _B %	η _{3/4} %	cosφ _B -	I _B 400 V A	I _k /I _B -	M _k /M _B -	M _s /M _B -	M _k /M _B -	J kgm ²	m kg
Synchronous speed 3000 rpm – 2-pole version													
W21R 56 K 2	0.09	2830	-	73.0	73	0.81	0.22	5.0	2.3	2.2	2.6	0.00015	4.8
W21R 56 G 2	0.12	2820	-	70.0	69	0.82	0.30	4.7	2.0	1.9	2.2	0.00015	4.8
W21R 63 K 2	0.18	2840	-	75.0	74	0.82	0.42	5.7	2.4	2.3	2.7	0.00025	6.3
W21R 63 G 2	0.25	2860	-	78.0	77	0.84	0.55	6.0	2.2	2.1	2.5	0.00032	7
W21R 71 K 2	0.37	2860	-	81.5	78	0.86	0.76	7.1	2.9	2.7	3.1	0.00057	10
W21R 71 G 2	0.55	2870	-	83.0	80	0.85	1.13	7.4	3.0	2.7	3.3	0.00072	11.2
W21R 80 K 2	0.75	2880	-	84.0	84.5	0.88	1.46	7.7	2.2	2.1	2.7	0.00132	15
WE1R 80 G 2	1.1	2885	1	83.7	85	0.88	2.15	7.8	2.5	2.3	2.8	0.00170	18
WE1R 90 S 2	1.5	2910	1	86.4	84.6	0.86	2.90	9.0	2.8	2.4	3.4	0.00275	23.5
WE1R 90 L 2	2.2	2880	1	85.8	86.5	0.87	4.25	8.0	2.5	2.3	2.9	0.00275	23.5
WE1R 100 L 2	3	2910	1	87.7	87.7	0.85	5.80	7.5	2.0	1.7	2.8	0.00450	31
WE1R 112 MX2	4	2910	1	88.9	89.7	0.87	7.50	7.8	2.1	1.6	2.9	0.00550	38
WE1R 132 S2T	5.5	2900	1	89.2	89.4	0.85	10.5	7.0	2.0	1.5	2.7	0.00680	46
WE1R 132 SX2	7.5	2910	1	89.5	89.2	0.91	13.5	7.0	2.1	1.5	2.7	0.0168	75
WE1R 160 M2	11.0	2930	1	90.5	89.9	0.88	20.0	8.5	2.7	2.1	3.6	0.0258	100
WE1R 160 MX2	15.0	2935	1	91.3	91.0	0.92	26.0	7.3	2.1	1.6	2.7	0.0675	140
WE1R 160 L2	18.5	2930	1	91.8	91.7	0.91	32.0	7.5	2.2	1.6	2.8	0.0675	140
WE1R 180 M2	22	2942	1	92.7	92.8	0.90	38.0	6.6	1.8	1.4	2.6	0.105	175
WE1R 200 L2	30	2942	1	93.0	93.1	0.91	51.0	7.2	1.9	1.5	2.9	0.128	210
WE1R 200 LX2	37	2945	1	93.7	93.7	0.92	62.0	7.8	2.1	1.5	3.0	0.154	235
WE1R 225 M2	45	2945	1	93.7	93.7	0.89	78.0	7.4	1.8	1.5	3.0	0.360	300
WE1R 250 M2	55	2957	1	94.5	94.4	0.89	94.5	8.4	2.4	2.0	3.1	0.375	385
WE1R 280 S2	75	2972	1	95.2	95.0	0.90	126	8.0	2.1	1.7	3.0	0.65	510
WE1R 280 M2	90	2970	1	95.2	95.1	0.91	150	7.4	1.9	1.6	2.7	0.68	550
W21R 315 S2	110	2970	-	95.9	95.9	0.89	186	8.3	1.7	1.6	2.6	1.21	730
W21R 315 M2	132	2975	-	96.0	96.2	0.89	223	9.2	1.9	1.8	2.9	1.44	820
W21R 315 MX2	160	2970	-	96.1	96.1	0.90	267	8.2	1.6	1.5	2.4	1.76	955
W21R 315 MY2	200	2984	-	96.0	95.8	0.88	342	9.4	2.5	1.9	2.8	2.82	1200
W21R 315 L2	250	2980	-	96.0	96.0	0.93	404	8.6	2.3	1.7	2.4	3.66	1450
W21R 315 LX2	315	2980	-	96.8	96.8	0.95	494	9.8	2.8	1.9	2.7	4.43	1630

Synchronous speed 1500 rpm – 4-pole version

W21R 56 K 4	0.06	1400	-	65.0	63.5	0.66	0.2	3.5	2.3	2.2	2.6	0.00024	4.8
W21R 56 G 4	0.09	1370	-	64.0	63	0.72	0.28	3.3	1.8	1.7	2.1	0.00024	4.8
W21R 63 K 4	0.12	1400	-	67.0	66.5	0.71	0.36	3.8	2.0	1.9	2.3	0.00040	6.3
W21R 63 G 4	0.18	1425	-	70.0	70	0.64	0.58	4.0	2.3	2.2	2.5	0.00050	7.1
W21R 71 K 4	0.25	1430	-	77.0	75	0.71	0.66	5.6	2.5	2.3	2.9	0.00087	9.9
W21R 71 G 4	0.37	1430	-	80.0	77	0.68	0.98	6.2	2.8	2.6	3.2	0.00107	11
W21R 80 K 4	0.55	1430	-	80.5	80.5	0.80	1.23	6.0	2.4	2.3	2.7	0.00207	14.5
W21R 80 G 4	0.75	1430	-	82.0	82.5	0.80	1.65	7.0	2.9	2.8	3.2	0.00260	17
WE1R 90 S 4	1.1	1435	1	83.8	83.8	0.79	2.40	6.8	2.4	2.2	2.9	0.00400	23
WE1R 90 LV 4	1.5	1445	1	85.0	84.2	0.79	3.30	6.3	2.4	2.3	3.0	0.00450	24
WE1R 100 L4	2.2	1455	1	86.4	86.0	0.76	4.80	9.3	3.2	3.0	3.6	0.00900	36
WE1R 100 LX4	3.0	1455	1	87.4	87.8	0.77	6.45	9.0	3.3	3.1	3.9	0.01100	45
WE1R 112M4	4.0	1456	1	89.0	89.2	0.86	7.5	8.6	2.7	2.4	4.2	0.0170	56
WE1R 132 S4	5.5	1465	1	89.6	89.4	0.86	10.5	7.4	2.3	1.8	3.2	0.035	90
WE1R 132 M4	7.5	1470	1	90.3	89.9	0.82	14.5	8.5	2.8	2.2	4.0	0.035	92
WE1R 160 M4	11.0	1472	1	91.0	90.4	0.83	21.0	8.5	2.8	2.3	3.4	0.078	124
WE1R 160 L4	15.0	1470	1	91.8	91.5	0.88	27.0	8.5	2.8	2.2	3.3	0.115	165
WE1R 180 M4	18.5	1477	1	93.0	92.7	0.86	33.5	7.0	1.9	1.7	2.9	0.168	210
WE1R 180 L4	22	1478	1	93.0	92.5	0.82	42.0	7.7	2.3	1.9	3.3	0.168	210
WE1R 200 L4	30	1479	1	93.4	93.0	0.81	57.0	7.8	2.2	2.0	3.1	0.275	280
WE1R 225 S4	37	1475	1	93.7	93.5	0.84	68.0	7.3	2.3	1.9	2.9	0.313	320
WE1R 225 M4	45	1480	1	94.8	94.7	0.84	81.5	8.1	2.0	1.9	2.6	0.525	390
WE1R 250 M4	55	1485	1	95.0	94.7	0.82	102	8.0	1.9	1.8	2.4	0.95	535
WE1R 280 S4	75	1483	1	95.4	95.5	0.82	138	7.4	1.7	1.6	2.2	0.95	550
WE1R 280 M4	90	1484	1	95.5	95.5	0.82	166	7.9	2.2	1.9	2.4	1.10	605
W21R 315 S4	110	1485	-	95.7	95.8	0.81	204	8.4	1.8	1.5	2.7	1.96	760
W21R 315 M4	132	1484	-	96.2	96.3	0.83	239	7.9	1.8	1.6	2.5	2.27	850
W21R 315 MX4	160	1482	-	95.8	96.0	0.84	289	7.4	1.6	1.5	2.2	2.73	975
W21R 315 MY4	200	1490	-	96.2	96.2	0.88	341	8.3	1.7	1.2	2.4	4.82	1270
W21R 315 L4	250	1490	-	96.7	96.8	0.86	432	8.0	1.4	1.2	2.4	5.93	1450
W21R 315 LX4	315	1489	-	96.3	96.3	0.84	562	8.5	1.9	1.2	2.5	6.82	1630



Energy saving motors Efficiency determination in accordance to EN 60034-2

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Typ	P _B	n _B	η _B	η _{3/4}	cosφ _B	I _B	I _k /I _B	M _k /M _B	M _S /M _B	M _k /M _B	J	m
	kW	rpm	%	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version												
W21R 71 K 6	0.18	935	69.0		0.72	0.52	4.2	2.4		2.6	0.00130	10
W21R 71 G 6	0.25	940	72.0		0.70	0.72	4.6	2.8		3.0	0.00175	11.5
W21R 80 K 6	0.37	945	75.5		0.74	0.96	4.7	2.2		2.6	0.00325	15
W21R 80 G 6	0.55	945	76.0	76.5	0.70	1.49	4.2	2.0	1.9	3.5	0.00425	18
W21R 90 S 6	0.75	955	78.0	78.0	0.70	1.98	4.7	2.3	2.2	2.4	0.00625	24
W21R 90 LV6	1.1	950	79.0	79.0	0.71	2.83	5.3	2.5	2.4	2.8	0.00720	26
W21R 100 LX6	1.5	955	83.0	83.0	0.76	3.44	5.9	2.6	2.4	3.0	0.01400	36
W21R 112 MV6	2.2	955	83.0	83.0	0.71	5.4	6.2	2.7	2.6	3.5	0.01550	48
W21R 132 S6	3.0	961	85.0	85.7	0.80	6.5	5.9	2.2	2.1	3.2	0.023	54
W21R 132 M6	4.0	967	88.0	87.4	0.82	8.0	5.2	1.7	1.5	2.4	0.043	76
W21R 132 MX6	5.5	969	87.5	87.5	0.78	11.5	5.5	2.5	2.0	3.0	0.053	85
W21R 160 M6	7.5	976	89.0	88.0	0.81	15.0	6.3	2.4	2.2	3.0	0.113	118
W21R 160 L6	11.0	972	90.0	89.8	0.85	21.0	5.8	2.4	2.1	2.7	0.145	135
W21R 180 L6	15.0	975	91.0	90.0	0.85	28.0	6.3	2.4	2.0	2.9	0.228	183
W21R 200 L6	18.5	978	91.5	91.4	0.85	34.5	7.2	2.6	2.4	3.4	0.268	206
W21R 200 LX6	22	979	92.5	92.3	0.87	39.5	6.9	2.6	2.1	3.2	0.443	278
W21R 225 M6	30	985	93.0	92.6	0.85	54.5	7.0	2.6	2.3	3.1	0.825	360
W21R 250 M6	37	985	93.5	93.3	0.84	68.5	6.4	2.2	1.9	2.6	1.28	468
W21R 280 S6	45	983	94.0	94.0	0.85	81.0	6.2	2.1	1.8	2.5	1.48	545
W21R 280 M6	55	989	95.2	94.5	0.85	98.0	6.5	1.7	1.5	2.3	2.63	710
W21R 315 S6	75	987	95.2	94.5	0.86	132	6.6	2.0	1.6	2.4	3.33	804
W21R 315 M6	90	990	95.6	94.6	0.86	158	9.0	2.3	2.0	2.8	3.60	1148
W21R 315 MX6	110	990	96.1	95.9	0.87	190	8.0	2.4	1.8	2.5	6.00	1210
W21R 315 MY6	132	990	95.0	94.7	0.88	228	7.5	2.0		2.4	6.00	1250
W21R 315 L6	160	985	95.3	95.0	0.89	272	7.5	2.3		2.4	6.67	1250
W21R 315 LX6	200	990	95.0	94.7	0.87	349	8.3	2.2		2.7	8.60	1460

Synchronous speed 750 rpm – 8-pole version

W21R 80 K 8	0.18	710	68.0		0.61	0.63	3.5	1.9		2.6	0.00300	14
W21R 80 G 8	0.25	705	70.0		0.63	0.82	3.5	1.9		2.4	0.00375	17
W21R 90 S 8	0.37	700	73.0	73	0.63	1.16	3.1	1.7	1.6	1.8	0.00625	23
W21R 90 LV8	0.55	710	74.0		0.66	1.65	3.8	1.7		2.4	0.00720	25
W21R 100 S 8	0.75	715	77.0	75.5	0.62	2.27	4.6	2.6	2.5	3.0	0.01225	33.5
W21R 100 LX8	1.1	710	79.0	78	0.63	3.20	4.3	2.0	1.9	2.6	0.01300	36
W21R 112 MV8	1.5	700	78.0	78.5	0.65	4.25	3.8	1.7	1.6	2.2	0.01390	48
W21R 132 S8	2.2	715	81.5	81	0.70	5.6	5.5	2.0		3.0	0.0180	53
W21R 132 M8	3.0	717	84.8	84.3	0.74	6.9	4.4	1.5		2.4	0.0430	70
W21R 160 M8	4	718	85.7	85.2	0.72	9.3	4.6	1.6		2.5	0.0530	86
W21R 160 MX8	5.5	719	87.3	86.9	0.81	11	4.6	1.6		2.2	0.1130	114
W21R 160 L8	7.5	725	89.0	88.5	0.77	16	5.5	2.0		2.8	0.1450	136
W21R 180 L8	11	730	89.8	88.8	0.76	23	5.8	2.0		2.9	0.2280	175
W21R 200 L8	15	727	90.0	89.5	0.77	31	5.6	2.0		2.8	0.2680	200
W21R 225 S8	18.5	730	91.1	90.1	0.79	37	5.6	1.7		2.8	0.44	265
W21R 225 M8	22	733	91.7	90.5	0.78	44.5	5.6	1.8		2.6	0.83	360
W21R 250 M8	30	737	92.8	92.5	0.78	59.5	5.5	1.8		2.5	1.35	465
W21R 280 S8	37	736	93.0	92.5	0.79	72.5	5.4	1.8		2.4	1.55	520
W21R 280 M8	45	740	93.9	93.4	0.81	85	6.7	2.2		2.5	2.63	690
W21R 315 S8	55	740	94.6	94.1	0.81	104	6.9	2.3		2.6	3.33	800
W21R 315 M8	75	740	93.3	93	0.81	143	6	2		2.3	3.33	800
W21R 315 MX8	90	740	93.5	93	0.81	172	6	1.9		2.2	3.60	880
W21R 315 MY8	110	740	94.6	94.1	0.81	207	6.5	2.1		2.4	6.00	1050
W21R 315 L8	132	740	95	94.5	0.83	242	6.3	2		2.1	6.76	1250
W21R 315 LX8	160	740	95.2	94.7	0.79	307	7.2	2.2		2.5	8.71	1430

Energy saving motors according to EPAct

Motor selection data, 60 Hz, 2- and 4pole
3600/1800 rpm

Motor selection data 50 Hz, 2- and 4pole
3000/1500 rpm

Series

WE1R ..EP

mounting dimensions and output correlation acc. to DIN 42673 and 42677

Sizes

80 – 315

Output range

1.0 – 500 Hp

Degree of protection

IP 55 acc. to DIN EN 60034-5

Cooling method

IC 411 acc. to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

shaft height 56 up to 132T -20 °C up to +40 °C

from shaft height 132 -40 °C up to +40 °C



Energy saving motors, High Efficiency acc. to CSA C 390 and NEMA MG 1, Table 12-10

Efficiency testing acc. to IEE 112-1996, method B
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55, design A

Motor selection data

Design point 480 V, 60 Hz

Typ	P _B		n _B	η _{nom}	cosφ _B	I _B	I _A /I _B	M _A /M _B	M _S /M _B	M _K /M _B	J	m	CL
	Hp	kW	rpm	%	-	480 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 3600 rpm – 2-pole version													
WE1R 80K 2 EP	1.0	0.75	3510	86.0	0.85	1.23	9.3	2.8	2.3	3.2	0.00132	15	L
WE1R 80G 2 EP	1.5	1.12	3510	87.1	0.86	1.8	10.0	3.3	2.9	3.5	0.00170	18	M
WE1R 90S 2 EP	2.0	1.49	3530	88.4	0.83	2.44	10.5	2.8	2.4	3.9	0.00275	23.5	M
WE1R 90L 2 EP	3.0	2.24	3510	88.5	0.84	3.62	8.4	2.2	2.0	3.2	0.00275	23.5	K
WE1R 112 MX2 EP	5.0	3.73	3540	88.9	0.82	6.2	10.6	2.7	2.5	3.9	0.0055	38	M
WE1R 112 MV2 EP	7.5	5.59	3520	90.0	0.86	8.7	10.0	2.7	2.5	3.7	0.0068	46	L
WE1R 132 S2 EP	10.0	7.46	3503	89.5	0.87	11.5	6.5	1.7	1.2	2.8	0.0127	58	H
WE1R 160 MY2 EP	15.0	11.19	3510	90.2	0.91	16.5	7.0	2.6	2.0	3.1	0.0196	86	H
WE1R 160 M2 EP	20.0	14.91	3515	90.2	0.89	22.5	7.8	2.5	2.2	3.6	0.0258	100	J
WE1R 160 MX2 EP	25.0	18.64	3542	91.0	0.91	27.0	8.0	2.1	1.7	3.1	0.0675	140	J
WE1R 160 L2 EP	30.0	22.37	3544	91.0	0.90	33.0	8.2	2.4	1.8	3.1	0.0675	140	J
WE1R 180 M2 EP	40.0	29.83	3549	91.7	0.90	43.5	7.0	1.9	1.4	2.9	0.105	175	H
WE1R 200 L2 EP	50.0	37.29	3552	92.4	0.90	54.0	8.4	2.1	1.6	3.3	0.128	210	J
WE1R 200 LX2 EP	60.0	44.74	3552	93.0	0.90	64.5	8.3	2.2	1.8	3.6	0.154	240	J
WE1R 225 M2 EP	75.0	55.93	3550	93.0	0.89	82.0	7.7	2.1	1.9	3.2	0.360	300	J
WE1R 250 M2 EP	90.0	67.11	3556	93.6	0.90	97	8.0	2.2	1.9	2.9	0.375	385	J
WE1R 250 M2 EP	100.0	74.57	3549	93.6	0.90	107	7.2	2.0	1.7	2.6	0.375	385	H
WE1R 280 S2 EP	100.0	74.57	3577	93.6	0.89	108	9.8	2.6	2.2	3.8	0.650	513	K
WE1R 280 S2 EP	125.0	93.21	3569	94.5	0.90	132	7.9	2.1	1.8	3.0	0.650	513	H
WE1R 280 M2 EP	150.0	111.86	3567	94.5	0.91	156	7.4	1.9	1.6	2.8	0.680	550	H
WE1R 315 S2 EP	180.0	134.23	3580	95.0	0.89	191	9.0	1.6	1.5	2.9	1.21	730	J
WE1R 315 M2 EP	200.0	149.14	3578	95.0	0.90	210	9.1	1.6	1.4	2.7	1.44	820	K
WE1R 315 MX2 EP	250.0	186.43	3572	95.4	0.90	261	8.5	1.7	1.6	2.6	1.76	955	J
WE1R 315 MY2 EP	300.0	223.71	3580	95.4	0.88	321	10.0	3.0	2.0	3.1	2.82	1200	J
WE1R 315 MY2 EP	350.0	261.00	3578	95.4	0.89	371	8.7	2.6	1.7	2.7	2.82	1200	J
WE1R 315 L2 EP	400.0	298.28	3584	95.4	0.92	409	9.6	2.0	1.2	2.4	3.66	1450	K
WE1R 315 LX2 EP	450.0	335.57	3584	95.4	0.93	455	12.2	3.8	2.0	3.3	4.43	1630	L
WE1R 315 LX2 EP	500.0	372.85	3580	95.4	0.93	505	11.0	3.4	1.9	2.9	4.43	1630	L

Synchronous speed 1800 rpm – 4-pole version

WE1R 80G 4 EP	1.0	0.75	1740	82.5	0.78	1.39	7.8	3.0	2.8	3.5	0.0026	17	K
WE1R 90S 4 EP	1.5	1.12	1745	84.0	0.77	2.08	7.4	2.9	2.3	3.4	0.0040	23	K
WE1R 90LV 4 EP	2.0	1.49	1750	84.0	0.74	2.9	8.5	3.4	3.0	3.9	0.0050	24	L
WE1R 100L 4 EP	3.0	2.24	1755	87.5	0.76	4.05	9.5	3.7	3.3	4.4	0.0090	36	M
WE1R 112 MX 4 EP	5.0	3.73	1750	87.5	0.79	6.49	8.0	2.8	2.6	3.3	0.0110	45	K
WE1R 132 SY4 EP	7.5	5.59	1770	89.5	0.85	8.8	7.7	2.6	2.3	3.7	0.028	70	J
WE1R 132 S4 EP	10.0	7.46	1757	89.5	0.86	11.5	6.3	1.9	1.6	2.9	0.035	90	G
WE1R 132 M4 EP	15.0	11.19	1758	91.0	0.84	17.5	7.3	2.3	1.7	3.2	0.035	92	J
WE1R 160 M4 EP	20.0	14.91	1757	91.0	0.83	23.5	7.2	2.8	2.2	3.0	0.078	124	J
WE1R 160 L4 EP	25.0	18.64	1767	92.4	0.89	28.0	7.5	2.5	1.9	2.9	0.115	165	H
WE1R 180 M4 EP	30.0	22.37	1775	92.4	0.85	34.5	7.4	2.3	1.8	2.9	0.168	210	J
WE1R 180 L4 EP	40.0	29.83	1774	93.0	0.83	46.5	7.1	2.3	1.8	2.9	0.168	210	H
WE1R 200 L4 EP	50.0	37.29	1778	93.0	0.81	59.5	7.5	2.3	1.9	3.0	0.275	280	J
WE1R 225 S4 EP	60.0	44.74	1776	93.6	0.84	68.5	7.8	2.2	1.9	3.1	0.313	320	J
WE1R 225 M4 EP	75.0	55.93	1781	94.1	0.83	86.0	8.1	2.1	2.0	2.5	0.525	390	J
WE1R 250 M4 EP	90.0	67.11	1784	94.5	0.82	104	8.1	2.0	1.9	2.6	0.525	535	J
WE1R 250 M4 EP	100.0	74.57	1782	94.5	0.83	115	7.4	1.8	1.7	2.4	0.525	535	J
WE1R 280 S4 EP	125.0	93.21	1780	94.5	0.82	145	7.3	1.9	1.6	2.3	0.95	550	J
WE1R 280 M4 EP	150.0	111.86	1784	95.0	0.82	173	8.1	2.2	1.9	2.7	1.10	605	J
WE1R 315 S4 EP	180.0	134.23	1785	95.0	0.81	210	8.4	1.7	1.4	2.6	1.96	758	K
WE1R 315 M4 EP	200.0	149.14	1787	95.0	0.82	230	8.8	1.7	1.6	2.7	2.27	849	K
WE1R 315 MX4 EP	250.0	186.43	1786	95.0	0.84	281	7.7	1.7	1.6	2.2	2.73	990	J
WE1R 315 MY4 EP	300.0	223.71	1793	95.4	0.87	324	9.2	1.9	1.4	2.6	4.82	1270	K
WE1R 315 L4 EP	400.0	298.28	1790	95.4	0.86	437	8.4	1.7	1.3	2.5	5.93	1450	J
WE1R 315 LX4 EP	450.0	335.57	1792	95.4	0.82	516	9.5	1.8	1.3	2.9	6.82	1630	L

(CL = Code Letter)



Energy saving motors, High Efficiency acc. to CSA C 390 and NEMA MG 1, Table 12-10

Efficiency testing acc. to IEE 112-1996, method B
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55, design A

Motor selection data

Design point 400 V, 50 Hz

Typ	P _B		n _B	η _{nom}	cosφ _B	I _B 400 V	I _A /I _B	M _A /M _B	M _S /M _B	M _K /M _B	J	m	CL
	Hp	kW											
Synchronous speed 3000 rpm – 2-pole version													
WE1R 80K 2 EP	1.0	0.75	2880	84.2	0.88	1.46	7.6	2.4	2.3	2.6	0.0013	15.0	J
WE1R 80G 2 EP	1.5	1.12	2880	85.4	0.89	2.12	8.0	2.6	2.3	2.8	0.0017	18.0	J
WE1R 90S 2 EP	2.0	1.49	2910	87.1	0.86	2.85	9.1	3.0	2.9	3.6	0.0028	23.5	L
WE1R 90L 2 EP	3.0	2.24	2875	86.1	0.88	4.25	7.7	2.4	2.3	2.8	0.0028	23.5	J
WE1R 112 MX2 EP	5.0	3.73	2920	88.6	0.86	7.05	8.8	2.2	2.0	3.2	0.0055	38	K
WE1R 112 MV2 EP	7.5	5.59	2890	88.6	0.87	10.5	7.9	2.3	2.1	3.1	0.0068	46	J
WE1R 132 S2 EP	7.5	5.59	2914	88.5	0.86	11.0	6.9	1.8	1.3	3.0	0.0110	58	H
WE1R 132 SX2 EP	10.0	7.46	2910	89.5	0.90	13.5	7.3	2.2	1.8	3.2	0.0168	73	H
WE1R 160 M2 EP	15.0	11.19	2930	90.2	0.89	20.0	8.3	2.7	2.4	4.0	0.0258	100	J
WE1R 160 MX2 EP	20.0	14.91	2947	90.2	0.92	26.0	7.8	2.2	1.7	3.0	0.0675	140	H
WE1R 160 L2 EP	25.0	18.64	2936	91.0	0.91	32.5	7.8	2.2	1.8	3.2	0.0675	140	J
WE1R 180 M2 EP	30.0	22.37	2949	91.0	0.89	40.0	7.4	1.9	1.5	3.0	0.105	175	H
WE1R 200 L2 EP	40.0	29.83	2950	91.7	0.90	52.0	8.0	1.7	1.5	2.8	0.128	210	J
WE1R 200 LX2 EP	50.0	37.29	2950	92.4	0.91	64.0	8.3	2.2	1.8	3.6	0.154	240	J
WE1R 225 M2 EP	60.0	44.74	2946	93.0	0.89	79.0	7.8	2.1	1.9	3.3	0.360	300	J
WE1R 250 M2 EP	75.0	55.93	2955	93.0	0.90	97	7.8	2.1	1.8	2.8	0.375	385	J
WE1R 280 S2 EP	100.0	74.57	2970	93.6	0.90	128	8.0	2.2	1.8	3.1	0.650	513	J
WE1R 280 M2 EP	125.0	93.21	2968	94.5	0.91	157	7.2	1.9	1.5	2.7	0.68	550	H
WE1R 315 S2 EP	150.0	111.86	2975	94.5	0.89	192	8.8	1.5	1.5	2.8	1.21	730	J
WE1R 315 M2 EP	180.0	134.23	2974	95.0	0.89	229	8.2	1.4	1.2	2.4	1.44	820	J
WE1R 315 MX2 EP	200.0	149.14	2972	95.0	0.90	252	8.7	1.7	1.6	2.6	1.76	955	J
WE1R 315 MY2 EP	250.0	186.43	2985	95.4	0.88	321	9.8	3.0	2.0	3.0	2.82	1200	K
WE1R 315 MY2 EP	300.0	223.71	2981	95.4	0.88	383	8.2	2.5	1.6	2.5	2.82	1200	J
WE1R 315 L2 EP	350.0	261.00	2985	95.4	0.92	429	9.0	1.9	1.2	2.3	3.66	1450	J
WE1R 315 LX2 EP	400.0	298.28	2984	95.4	0.92	491	11.2	3.5	1.9	3.0	4.43	1630	L
WE1R 315 LX2 EP	450.0	335.57	2981	95.4	0.92	552	9.9	3.1	1.7	2.7	4.43	1630	K

Synchronous speed 1500 rpm – 4-pole version

WE1R 80G 4 EP	1.0	0.75	1430	82.5	0.80	1.65	6.8	2.9	2.8	3.2	0.0026	17	J
WE1R 90S 4 EP	1.5	1.12	1450	84.0	0.74	2.57	7.5	3.3	3.2	3.9	0.0040	23	K
WE1R 90LV 4 EP	2.0	1.49	1445	84.0	0.77	3.31	7.3	3.2	3.0	3.5	0.0050	24	K
WE1R 100L 4 EP	3.0	2.24	1460	87.5	0.72	5.25	9.4	3.9	3.6	4.4	0.0090	36	M
WE1R 112 MX 4 EP	5.0	3.73	1450	87.5	0.77	8.0	8.8	3.5	2.7	4.0	0.0110	45	K
WE1R 132 S4 EP	7.5	5.59	1461	89.5	0.86	10.5	6.5	2.3	1.8	3.2	0.035	90	H
WE1R 132 M4 EP	10.0	7.46	1465	89.5	0.81	14.8	7.9	2.6	2.0	3.7	0.035	92	K
WE1R 160 M4 EP	15.0	11.19	1462	91.0	0.83	21.5	7.6	3.1	2.6	3.4	0.078	124	J
WE1R 160 L4 EP	20.0	14.91	1467	91.0	0.89	26.5	7.7	2.8	2.1	3.1	0.115	165	J
WE1R 180 M4 EP	25.0	18.64	1475	92.4	0.85	34.5	6.9	2.1	1.8	2.8	0.168	210	H
WE1R 180 L4 EP	30.0	22.37	1478	92.4	0.82	42.5	7.7	2.3	2.0	3.2	0.168	210	J
WE1R 200 L4 EP	40.0	29.83	1479	93.0	0.81	57.0	7.7	2.3	2.0	3.2	0.275	280	J
WE1R 225 S4 EP	50.0	37.29	1477	93.0	0.84	69.0	7.1	2.0	1.8	2.9	0.313	320	H
WE1R 225 M4 EP	60.0	44.74	1480	93.6	0.83	83.0	8.0	2.2	2.1	2.6	0.525	390	J
WE1R 250 M4 EP	75.0	55.93	1485	94.1	0.82	105	7.9	2.0	1.8	2.5	0.525	535	J
WE1R 280 S4 EP	100.0	74.57	1482	94.5	0.83	137	7.4	2.0	1.8	2.5	0.95	550	J
WE1R 280 M4 EP	125.0	93.21	1480	94.5	0.82	174	7.6	2.3	1.8	2.4	1.10	605	J
WE1R 315 S4 EP	150.0	111.86	1484	95.0	0.81	210	8.2	1.8	1.5	2.6	1.96	758	J
WE1R 315 M4 EP	175.0	130.50	1484	95.0	0.83	239	8.0	1.8	1.7	2.5	2.27	849	J
WE1R 315 MX4 EP	200.0	149.14	1484	95.0	0.84	270	8.0	1.8	1.6	2.3	2.73	990	J
WE1R 315 MY4 EP	250.0	186.43	1491	95.0	0.87	326	8.8	1.8	1.3	2.5	4.82	1270	J
WE1R 315 L4 EP	350.0	261.00	1489	95.4	0.87	454	7.6	1.4	1.1	2.3	5.93	1450	H
WE1R 315 LX4 EP	400.0	298.28	1490	95.4	0.84	537	8.8	2.0	1.2	2.6	6.82	1630	K

(CL = Code Letter)

Motors for inverter feeding

Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series

K21R, KU1R, mounting dimensions acc. to DIN 42673 and 42677
K20R, K22R, KU0R, KU2R acc. to Transnorm version
K21F, K22F, K20F, KU1F, KU2F, KU0F – the mechanical version of the motors
KU.R/KU.F is equal to the basic version K2.R/K2.F

Sizes

63 – 355

Output range

0.18 – 430 kW

Degree of protection

IP 55 acc. to DIN EN 60034-5, higher degrees of protection as an option

Cooling method

IC 411 (K..R) or IC 416 (K..F) acc. to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

sizes 56 up to 132T -20 °C up to +40 °C
sizes 132 -40 °C up to +40 °C



Three-phase motors with squirrel-cage rotor

surface ventilation, insulation class F(F), degree of protection IP 55

Motor selection data

Inverter Operation, Operating Data, 50 Hz

Operation on the Cooling method	Mains		Inverter										IC 416 forced ventilation			
			IC 411 self-ventilation										constant			
Torque character.	-	-	constant		constant		constant		constant		constant		constant			
Frequency	50 Hz	50 Hz	20 - 50 Hz		10 - 50 Hz		5 - 50 Hz		50 - 87 Hz		5 - 87 Hz ¹⁾					
Control range	-	-	1 : 2.5		1 : 5		1 : 10									
Speed range	-	-	1200-3000 rpm		600-3000 rpm		300-3000 rpm		3000-5220 rpm		300-5220 rpm					
Type	P _B	P _{FU}	M _{FU}	P _{FU (50 Hz)}	M _{FU}	P _{FU (50 Hz)}	M _{FU}	P _{FU (50 Hz)}	M _{FU}	P _{FU (87 Hz)}	M _{FU}	P _{FU (50 Hz)}	M _{FU}	J	m	
	kW	kW	Nm	kW	Nm	kW	Nm	kW	Nm	kW	Nm	kW	Nm	kgm ²	kg	
Synchronous speed 3000 rpm – 2pole																
K21 63 K2	K20 56 K2	0.18	0.18	0.62	0.18	0.62	0.13	0.43	0.11	0.37	0.32	0.61	0.18	0.44	0.00013	4.9
K21 63 G2	K20 56 G2	0.25	0.25	0.86	0.25	0.86	0.18	0.61	0.15	0.52	0.43	0.82	0.25	0.62	0.00015	5.2
K21 71 K2	K20 63 K2	0.37	0.37	1.28	0.37	1.28	0.27	0.93	0.24	0.83	0.65	1.24	0.37	0.97	0.00025	6.7
K21 71 G2	K20 63 G2	0.55	0.55	1.91	0.55	1.9	0.4	1.40	0.36	1.25	0.95	1.82	0.55	1.46	0.00032	7.6
K21 80 K2	K20 71 K2	0.75	0.75	2.5	0.74	2.5	0.54	1.80	0.43	1.50	1.3	2.50	0.75	2.10	0.00057	10.7
K21 80 G2	K20 71 G2	1.1	1.1	3.7	1.1	3.7	0.8	2.70	0.64	2.20	1.95	3.70	1.10	3.20	0.00072	11.5
K21 90 S2	K20 80 K2	1.5	1.5	5.0	1.5	5	1.2	4.00	0.9	3.00	2.65	5	1.5	3.5	0.00132	16.0
K21 90 L2	K20 80 G2	2.2	2.2	7.4	2.2	7.4	1.8	5.90	1.34	4.50	4	7.6	2.2	5.2	0.0017	19.0
K21 100 L2	K20 90 L2	3.0	3.0	10.0	3	10	2.5	8.30	1.9	6.50	5.3	10	3	7.9	0.00275	25.0
K21 112 M2	K20 100 S2	4.0	4.0	13.2	4	13.23	3.5	11.7	2.7	8.80	7	13.1	4	10.1	0.0045	32
K21 132 S2 T	K20 100 L2	5.5	5.5	18.2	5.5	18.1	4.7	15.5	3.9	13.0	9.7	18.2	5.5	16.3	0.0055	40
K21 132 S2	K20 112 MY2	5.5	5	17.2	5.2	17.2	4.7	15.5	5.4	17.9	9	16.9	5.1	9.7	0.0081	52
K21 132 SX2 T	(K20 100 LV2)	7.5	7.5	25	7.5	24.9	6.5	21.7	5.4	17.9	13	24.4	7.5	22.8	0.0068	46
K21 132 SX2	K20 112 M2	7.5	7.5	24.8	7.3	24	7.1	23.5	6	19.8	13	24.3	7.5	14.3	0.0110	57
K21 160 M2	K20 132 M2	11.0	11	36.5	11	36.5	10	33.0	8.4	28.0	16.5	30.8	10.5	19.7	0.0258	81
K21 160 MX2	K20 160 S2	15.0	15	49.4	14.9	49	15	49.4	13.5	44.5	24.5	45.5	14.8	28	0.0575	118
K21 160 L2	K20 160 M2	18.5	18.5	60.9	18.5	60.9	18.5	60.9	16.4	54.0	29	54	16.7	31	0.0675	134
K21 180 M2	K20 180 S2	22	22	72.1	22	71.9	22	72.1	20.9	68.5	37	68.6	20	37	0.105	165
K21 200 L2	K20 180 M2	30	30	97.8	30	98	30	97.8	28.2	92.0	52	96.4	29	54	0.128	195
K21 200 LX2	K20 200 M2	37	37	120	37	120	37	120	35.4	115	63	116.6	32	59	0.193	255
K21 225 M2	K20 200 L2	45	45	146	45	146	45	146	42.2	137	75	138.5	38.5	71	0.220	290
Frequency										50 - 60 Hz		5 - 60 Hz ¹⁾				
Speed range										3000 - 3600 rpm		300 - 3600 rpm				
K21 250 M2	K20 225 M2	55	55	178	55	178	55	178	51	165	76	161	55	117	0.375	360
K21 280 S2	K20 250 S2	75	74	238	74	238	74	238	69.5	224	96	212	71	157	0.650	490
K21 280 M2	K20 250 M2	90	87	280	87	280	87	280	80.7	260	108	239	87	193	0.675	510
K21 315 S2	K20 280 S2	110	110	354	110	354	110	354	110	354	141	353	110	276	1.21	720
K21 315 M2	K20 280 M2	132	132	424	132	424	132	424	132	424	169	424	132	332	1.44	800
K21 315 MX2	K20 315 S2	160	160	515	160	514	160	514	160	514	192	514	160	424	1.76	980
K21 315 MY2	K20 315 M2	200	192	616	192	616	192	616	192	616	223	596	192	508	2.82	1170
K21 315 L2	K20 315 L2	250	220	706	220	706	220	706	220	706	250	668	220	583	3.66	1460
K21 315 LX2	K20 315 LX2	315	270	867	270	867	270	867	270	867	300	801	270	716	4.43	1630
K22 355 MY2		315	315	1008	315	1007	315	1007	297	950	370	987	315	835	4.10	1900
K22 355 M2		355	330	1058	330	1057	330	1057	306	980	380	1014	330	875	4.20	2000
K22 355 MX2		400	355	1138	355	1138	355	1138	355	1138	390	1040	355	942	5.50	2200
K22 355 LY2		450	370	1186	370	1186	370	1186	370	1186	400	1067	370	981	7.1	2400
K22 355 L2		500	370	1186	370	1186	370	1186	370	1186	400	1067	370	981	7.1	2400

Inverter output voltage up to 420 V

¹⁾ Field-weakening

Type designation at self-ventilation K21R, K20R, K22R
 Type designation at forced-ventilation K21F, K20F, K22F

Inverter output voltage > 420 V

Type designation at self-ventilation KU1R, KU0R, KU2R
 Type designation at forced-ventilation KU1F, KU0F, KU2F



Three-phase motors with squirrel-cage rotor

surface ventilation, insulation class F(F), degree of protection IP 55

Motor selection data

Inverter Operation, Operating Data, 50 Hz

Operation on the Cooling method	Mains		Inverter													
	IC 411 self-ventilation										IC 416 forced ventilation					
Torque character.	-	-	constant		constant		constant		constant		constant					
Frequency	50 Hz	50 Hz	20 - 50 Hz		10 - 50 Hz		5 - 50 Hz		50 - 87 Hz		5 - 87 Hz ¹⁾					
Control range	-	-	1 : 2.5		1 : 5		1 : 10									
Speed range	-	-	600 - 1500 rpm		300 - 1500 rpm		150 - 1500 rpm		1500 - 2610 rpm		150 - 2610 rpm					
Type	P _B	P _{FU}	M _{FU}	P _{FU (50 Hz)}	M _{FU}	P _{FU (50 Hz)}	M _{FU}	P _{FU (50 Hz)}	M _{FU}	P _{FU (87 Hz)}	M _{FU}	P _{FU (50 Hz)}	M _{FU}	J	m	
Synchronous speed 1500 rpm – 4pole	kW		kW		Nm		kW		Nm		kW		Nm		kgm ²	kg
K21 63 K4	K20 56 K4	0.12	0.12	0.84	0.12	0.83	0.07	0.51	0.06	0.4	0.22	0.85	0.12	0.47	0.00019	4.8
K21 63 G4	K20 56 G4	0.18	0.18	1.27	0.18	1.26	0.11	0.77	0.09	0.61	0.33	1.28	0.18	0.73	0.00024	5.2
K21 71 K4	K20 63 K4	0.25	0.25	1.76	0.24	1.72	0.16	1.14	0.12	0.84	0.43	1.65	0.25	0.92	0.00040	6.8
K21 71 G4	K20 63 G4	0.37	0.37	2.62	0.36	2.57	0.24	1.7	0.18	1.26	0.65	2.51	0.37	1.41	0.00050	7.8
K21 80 K4	K20 71 K4	0.55	0.55	3.7	0.55	3.7	0.44	3	0.25	1.7	0.95	3.60	0.55	1.90	0.00087	10.6
K21 80 G4	K20 71 G4	0.75	0.75	5.1	0.75	5.11	0.61	4.16	0.34	2.35	1.35	5.14	0.75	2.60	0.00107	11.7
K21 90 S4	K20 80 K4	1.1	1.1	7.5	1.1	7.35	0.87	5.9	0.55	3.7	2.65	10.0	1.1	3.7	0.00207	15.5
K21 90 L4	K20 80 G4	1.5	1.5	10.2	1.5	10	1.18	8.06	0.75	5.09	2.7	10.3	1.5	5.2	0.00260	18.0
K21 100 L4	K20 90 L4	2.2	2.2	14.9	2.2	14.9	1.74	11.8	1.25	8.47	4	15.2	2.2	10.8	0.00400	23.5
K21 100 LX4	K20 100 S4	3.0	3.0	19.8	3	19.8	2.7	18	2.1	14.1	5.2	19.4	3.0	15.5	0.00725	30
K21 112 M4	K20 100 L4	4.0	4.0	26.6	4	26.6	3.7	24.3	2.9	19.1	7	26.3	4.0	21.0	0.00900	37
K21 132 S4 T	K20 100 LX4	5.5	5.5	36.9	5.2	35.1	4.4	29.6	3.4	22.7	9.7	36.5	5.5	32.0	0.01100	47
K21 132 S4	K20 112 M4	5.5	5.5	37	5.5	36.5	4.8	31.7	4.4	29.2	9.5	35.6	5.7	23	0.01500	50
K21 132 M4	K20 132 S4	7.5	7.5	49.4	7.5	49.4	6.6	43.5	6.3	41.5	12.5	46.6	7.5	28.6	0.0280	70
K21 160 M4	K20 132 M4	11.0	11.0	72.7	11	72.7	9.4	62	8.3	55	17.5	65.3	12.1	46.0	0.0350	92
K21 160 L4	K20 160 S4	15.0	15.0	98.5	15	98.5	14.2	93	12.7	83.5	23.5	87.3	14.1	53.0	0.0780	120
K21 180 M4	K20 160 M4	18.5	18.5	121	18.5	121	16	105	14.5	95	28.5	106	16.2	61	0.0900	136
K21 180 L4	K20 180 S4	22	22	144	22	144	20	130	17	113	35.5	132	17.1	72	0.1380	170
K21 200 L4	K20 180 M4	30	29	190	29	190	26	170	23	150	46.5	173	23.4	87	0.1680	200
K21 225 S4	K20 200 M4	37	37	240	37	240	36	231	32	209	62	230	28.6	106	0.2750	270
K21 225 M4	K20 200 L4	45	45	292	45	293	43	278	38	248	73	271	33.0	122	0.313	300
K21 250 M4	K20 225 M4	55	55	357	55	357	52	340	47	305	87	322	41	151	0.525	375
K21 280 S4	K20 250 S4	75	75	486	75	486	74	476	67	432	128	473	55	204	0.950	520
K21 280 M4	K20 250 M4	90	90	583	90	583	88	570	80	520	150	554	66	243	1.10	580
K21 315 S4	K20 280 S4	110	110	710	110	710	110	710	110	710	190	701	88	324	1.96	740
K21 315 M4	K20 280 M4	132	132	852	132	852	132	852	132	852	225	830	101	374	2.27	840
K21 315 MX4	K20 315 S4	160	160	1029	160	1029	160	1029	145	930	260	957	110	407	2.73	1000
K21 315 MY4	K20 315 M4	200	200	1286	200	1286	200	1286	192	1235	337	1240	138	506	4.82	1200
K21 315 L4	K20 315 L4	250	250	1608	250	1608	250	1608	239	1540	410	1509	165	605	5.93	1510
K21 315 LX4	K20 315 LX4	315	285	1833	277	1780	277	1780	264	1700	450	1656	197	725	6.82	1630
K22 355 MY4		315	315	2019	315	2018	315	2018	293	1879	507	1866	254	935	5.60	1950
K22 355 M4		355	355	2275	355	2275	355	2275	328	2100	550	2024	340	1250	7.9	2150
K22 355 MX4		400	390	2500	390	2500	390	2500	368	2358	588	2164	390	1437	9.5	2400
K22 355 LY4		450	430	2756	430	2755	413	2650	390	2500	620	2277	409	1505	10	2500
K22 355 L4		500	410	2628	410	2628	394	2528	390	2500	540	1987	390	1435	10	2500

Inverter output voltage up to 420 V *) Field-weakening
 Type designation at self-ventilation K21R, K20R, K22R
 Type designation at forced-ventilation K21F, K20F, K22F

Inverter output voltage > 420 V
 Type designation at self-ventilation KU1R, KU0R, KU2R
 Type designation at forced-ventilation KU1F, KU0F, KU2F

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Three-phase motors with squirrel-cage rotor

surface ventilation, insulation class F(F), degree of protection IP 55

Motor selection data

Inverter Operation, Operating Data, 50 Hz

Operation on the Cooling method	Mains		Inverter										IC 416 forced ventilation				
			IC 411 self-ventilation										constant				
Torque character.	-	-	constant		constant	constant	constant	constant	constant	constant	constant	constant	constant	constant	constant	constant	
Frequency	50 Hz	50 Hz	20 - 50 Hz		10 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	5 - 50 Hz	
Control range	-	-	1 : 2.5		1 : 5	1 : 10	1 : 10	1 : 10	1 : 10	1 : 10	1 : 10	1 : 10	1 : 10	1 : 10	1 : 10	1 : 10	
Speed range	-	-	400 - 1000 rpm		200 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	100 - 1000 rpm	
Type	P _B	P _{FU}	M _{FU}	P _{FU} (50 Hz)	M _{FU}	P _{FU} (50 Hz)	M _{FU}	P _{FU} (50 Hz)	M _{FU}	P _{FU} (50 Hz)	M _{FU}	P _{FU} (87 Hz)	M _{FU}	P _{FU} (50 Hz)	M _{FU}	J	m
	kW	kW	Nm	kW	Nm	kW	Nm	kW	Nm	kW	Nm	kW	Nm	kW	Nm	kgm ²	kg
Synchronous speed 1000 rpm – 6pole																	
K21 63 K6	K20 56 K6	0.09	0.09	0.98	0.08	0.87	0.07	0.71	0.05	0.56	0.16	0.94	0.09	0.95	0.00024	4.9	
K21 63 G6	K20 56 G6	0.12	0.12	1.31	0.11	1.17	0.09	0.96	0.07	0.76	0.22	1.29	0.12	1.28	0.00027	5.7	
K21 71 K6	K20 63 K6	0.18	0.16	1.66	0.15	1.60	0.1	1.06	0.07	0.75	0.31	1.78	0.18	1.12	0.00045	7.4	
K21 71 G6	K20 63 G6	0.25	0.22	2.30	0.21	2.22	0.14	1.49	0.1	1.05	0.4	2.31	0.25	1.64	0.00060	8.3	
K21 80 K6	K20 71 K6	0.37	0.37	3.9	0.35	3.7	0.23	2.43	0.18	1.87	0.65	3.75	0.37	2.80	0.00130	11.0	
K21 80 G6	K20 71 G6	0.55	0.55	5.8	0.52	5.5	0.34	3.62	0.27	2.83	1	5.79	0.55	4.20	0.00175	12.5	
K21 90 S6	K20 80 K6	0.75	0.75	7.7	0.65	6.6	0.5	5.1	0.39	4	1.35	7.7	0.8	5.9	0.00325	16.0	
K21 90 L6	K20 80 G6	1.1	1.1	11.4	0.9	9.8	0.74	7.63	0.57	5.93	1.95	11.2	1.1	8.8	0.00425	19.0	
K21 100 L6	K20 90 L6	1.5	1.5	15.2	1.5	15.3	1.2	12.5	0.95	9.64	2.7	15.3	1.5	14.7	0.00625	24.0	
K21 112 M6	K20 100 L6	2.2	2.2	22.4	2.2	22.4	1.8	18.5	1.4	14.4	4	22.7	2.2	21.6	0.01225	33.5	
K21 132 S6T		3.0	3.0	30.8	3	30.8	2.5	25.2	2	20.4	5.3	30.2	3.0	30.8	0.01390	39.0	
K21 132 S6	K20 112 M6	3.0	3	31	3	30.8	2.8	28.3	2.1	21.6	5	28.4	3.0	17.3	0.0180	46	
K21 132 M6	K20 112 MX6	4.0	4.0	40.6	4	40.6	3.7	37.4	2.8	28.5	6.3	35.8	4.0	22.9	0.0230	53	
K21 132 MX6	K20 132 S6	5.5	5.5	55.9	5.5	55.9	5.1	51.4	4.3	44	8	45.1	5.0	28.0	0.0430	70	
K21 160 M6	K20 132 M6	7.5	7.5	75.8	7.5	75.8	6.9	70	5.9	60	11.8	66.5	6.6	37.5	0.0530	86	
K21 160 L6	K20 160 S6	11.0	11.0	111	11	111.0	10	101	9.4	94	17	95.5	9.2	52.0	0.1130	114	
K21 180 L6	K20 160 M6	15.0	15.0	148	15	148.0	13.6	135	12.6	125	20.5	114	14.5	82	0.1450	136	
K21 200 L6	K20 180 S6	18.5	18.5	183	18	183	17	169	16	157	27.5	154	16.5	92	0.228	175	
K21 200 LX6	K20 180 M6	22	22	218	22	218	20	200	19	188	32	179	21	118	0.268	200	
K21 225 M6	K20 200 M6	30	30	295	30	295	30	295	29	286	48	268	25	142	0.443	265	
K21 250 M6	K20 225 M6	37	37	362	37	362	37	362	36	350	64	357	30	166	0.825	360	
K21 280 S6	K20 250 S6	45	45	441	45	441	45	441	45	441	75	418	33	184	1.28	465	
K21 280 M6	K20 250 M6	55	55	539	55	539	55	539	55	539	90	501	42	232	1.48	520	
K21 315 S6	K20 280 S6	75	75	731	75	731	75	731	75	731	118	657	56	310	2.63	690	
K21 315 M6	K20 280 M6	90	90	873	90	873	90	873	90	873	156	864	71	396	3.33	800	
K21 315 MX6	K20 315 S6	110	110	1066	110	1066	107	1040	100	970	173	958	88	490	3.60	880	
K21 315 MY6	K20 315 M6	132	132	1280	132	1280	132	1280	132	1280	212	1174	101	561	6.00	1050	
K21 315 L6	K20 315 L6	160	160	1551	160	1551	160	1551	160	1551	250	1384	121	671	6.67	1250	
K21 315 LX6	K20 315 LX6	200	185	1794	185	1794	185	1794	175	1700	290	1606	142	785	8.6	1460	
K22 355 MY6		200	200	1929	200	1929	200	1929	185	1780	296	1634	180	995	8.1	1550	
K22 355 M6		250	250	2412	250	2412	250	2412	238	2300	350	1932	220	1215	8.2	1650	
K22 355 MX6		315	300	2894	300	2894	300	2894	298	2870	444	2451	280	1545	12.1	2200	
K22 355 LY6		355	315	3023	315	3023	315	3023	315	3023	500	2760	300	1658	14.0	2400	

Inverter output voltage up to 420 V

Type designation at self-ventilation K21R, K20R, K22R
 Type designation at forced-ventilation K21F, K20F, K22F

*) Field-weakening

Inverter output voltage > 420 V

Type designation at self-ventilation KU1R, KU0R, KU2R
 Type designation at forced-ventilation KU1F, KU0F, KU2F

Three-phase motors with squirrel-cage rotor

surface ventilation, insulation class F(F), degree of protection IP 55

Motor selection data

Inverter Operation, Operating Data, 50 Hz

Operation on the Cooling method	Mains		Inverter										J kgm ²	m kg		
	50 Hz	50 Hz	IC 411 self-ventilation				IC 416 forced ventilation									
Torque character.	-	-	constant		constant		constant		constant		constant		constant			
Frequency	50 Hz	50 Hz	20 - 50 Hz		10 - 50 Hz		5 - 50 Hz		50 - 87 Hz		5 - 87 Hz ¹⁾					
Control range	-	-	1 : 2.5		1 : 5		1 : 10									
Speed range	-	-	300 - 750 rpm		150 - 750 rpm		75 - 750 rpm		750 - 1305 rpm		75 - 1305 rpm					
Type	P _B kW	P _{FU} kW	M _{FU} Nm	P _{FU} (50 Hz) kW	M _{FU} Nm	P _{FU} (50 Hz) kW	M _{FU} Nm	P _{FU} (50 Hz) kW	M _{FU} Nm	P _{FU} (87 Hz) kW	M _{FU} Nm	P _{FU} (50 Hz) kW	M _{FU} Nm			
Synchronous speed 750 rpm. – 8pole																
K21 71 K8	K20 63 K8	0.09	0.09	1.31	0.08	1.11	0.04	0.65	0.03	0.4	0.16	1.26	0.09	0.98	0.00050	6.6
K21 71 G8	K20 63 G8	0.12	0.12	1.76	0.1	1.51	0.06	0.88	0.04	0.54	0.22	1.74	0.12	1.33	0.00060	8.1
K21 80 K8	K20 71 K8	0.18	0.18	2.47	0.17	2.4	0.15	2.1	0.11	1.45	0.33	2.51	0.18	2.40	0.00130	10.5
K21 80 G8	K20 71 G8	0.25	0.25	3.46	0.25	3.43	0.23	3.12	0.15	2.07	0.43	3.30	0.25	3.46	0.00175	12.0
K21 90 S8	K20 80 K8	0.37	0.37	5.0	0.36	4.9	0.24	3.3	0.19	2.6	0.65	4.93	0.37	4.50	0.00300	15.0
K21 90 L8	K20 80 G8	0.55	0.55	7.6	0.54	7.52	0.37	5.09	0.29	3.97	0.95	7.26	0.55	6.90	0.00375	18.0
K21 100 L8	K20 90 L8	0.75	0.75	10.3	0.7	9.63	0.49	6.8	0.36	4.98	1.35	10.3	0.8	9.0	0.00625	23.0
K21 100 LX8	K20 100 S8	1.1	1.1	15.3	1.1	15.3	0.86	12	0.6	8.4	1.95	15.0	1.1	15.0	0.00900	28.0
K21 112 M8	K20 100 L8	1.5	1.5	20.8	1.5	20.8	1.2	16.5	0.83	11.5	2.7	20.6	1.5	20.5	0.01225	33.5
K21 132 S8T		2.2	2.1	29.5	1.6	22.8	1.3	18.7	1.05	14.7	4.0	30.9	2.2	27.9	0.01390	39.0
K21 132 S8	K20 112 M8	2.2	2.2	30	2.2	30	1.9	25.8	1.65	22.5	3.8	29	2.0	16	0.01800	46
K21 132 M8	K20 112 MX8	3.0	3.0	40.9	3	40.9	2.6	34.8	2.2	30	5.2	39.7	2.6	20	0.0230	53
K21 160 M8	K20 132 S8	4.0	4.0	54.6	4	54.6	3.6	48.6	3.2	43.7	7	53.1	2.9	22	0.0430	70
K21 160 MX8	K20 132 M8	5.5	5.5	75	5.5	75	4.9	67	4.4	60	9.6	72.8	4.0	31	0.0530	86
K21 160 L8	K20 160 S8	7.5	7.5	102	7.5	102	6.6	89.8	6.2	83.6	12.5	93.6	5.8	42	0.1130	114
K21 180 L8	K20 160 M8	11.0	11.0	147	11	147	9.7	130	9	120	18	135	8.2	62	0.1450	136
K21 200 L8	K20 180 S8	15.0	15.0	200	14	184	12.6	168	11.4	152	22	165	12	90	0.228	175
	K20 180 M8	18.5	18.5	247	17	225	15.3	205	13.9	185	26.5	198	14	108	0.268	200
K21 225 S8		18.5	18.5	244	17	225	15.6	205	14	185	25.8	192	14	108	0.440	265
K21 225 M8	K20 200 M8	22	22	290	20	264	18.3	241	16.5	217	30	224	18	135	0.440	265
K21 250 M8	K20 225 M8	30	30	392	30	392	29	380	26	345	46	341	23	172	0.825	360
K21 280 S8	K20 250 S8	37	37	481	37	481	37	481	37	481	60	444	27	203	1.35	465
K21 280 M8	K20 250 M8	45	45	585	45	585	45	585	45	585	72	533	33	244	1.55	520
K21 315 S8	K20 280 S8	55	55	710	55	710	55	710	55	710	96	708	41	300	2.63	690
K21 315 M8	K20 280 M8	75	75	968	75	968	75	968	75	968	130	959	53	390	3.33	800
K21 315 MX8	K20 315 S8	90	90	1169	90	1169	90	1169	85	1100	140	1032	69	510	3.60	880
K21 315 MY8	K20 315 M8	110	110	1429	110	1429	110	1429	106	1373	190	1401	82	609	6.00	1100
K21 315 L8	K20 315 L8	132	132	1715	132	1715	132	1715	127	1650	225	1659	97	715	6.76	1250
K21 315 LX8	K20 315 LX8	160	145	1871	145	1871	145	1871	145	1871	230	1696	119	879	8.71	1430
K22 355 MY8		160	160	2051	160	2051	160	2051	153	1960	210	1543	150	1104	9.3	1500
K22 355 M8		200	200	2564	200	2564	200	2564	184	2360	250	1837	190	1402	9.5	1600
K22 355 MX8		250	225	2884	225	2884	225	2884	225	2884	294	2160	207	1527	13.4	2200
K22 355 LY8		280	230	2948	230	2948	230	2948	230	2948	310	2277	225	1660	15.8	2400

Inverter output voltage up to 420 V

Type designation at self-ventilation K21R, K20R, K22R
Type designation at forced-ventilation K21F, K20F, K22F

^{*)} Field-weakening

Inverter output voltage > 420 V

Type designation at self-ventilation KU1R, KU0R, KU2R
Type designation at forced-ventilation KU1F, KU0F, KU2F

Brake motors

Motor selection data 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series

B21R, B20R, B22R

Mounting dimensions and output correlation acc. to DIN 42673 and 42677

Sizes

63 – 355

Output range

0.18 – 500 kW

Brakes

Double-face spring-pressure brakes

Brake manufacturer and type

Stromag: BZFM, 4BZFM

Lenze: BFK 458

PINTSCH BAMAG: KFB

Mayr: ./800.410.3

KEB: ../08.2. 0

Degrees of protection

IP 55 acc. to DIN EN 60034-5, higher degrees of protection as an option

Cooling method

IC 411 acc. to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

shaft heights 56 up to 132T -20 °C up to +40 °C

from shaft height 132 -40 °C up to +40 °C



Three-phase brake motors with squirrel-cage rotor Electromagnetic spring applied brake, series BZF./4BZFM, manufacturer Stromag

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P _B	M _B	n _B	η _B	η _{3/4}	cosφ _B	I _B	I _N /I _B	M _K /M _B	M _S /M _B	M _K /M _B	Brake type	M _{Br}	M _{Br} /M _B	FI	for c/h	n _{max}	J	m
		kW	Nm	rpm	%	%	-	400 V A	-	-	-	-							kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version																				
B21R 63 K2	B20R 56 K2	0.18	0.62	2790	67.1		0.76	0.51	4.1	1.9	1.9	2.2	BZFM 0.25	3	4.9	18	120	3600	0.00017	6.7
B21R 63 G2	B20R 56 G2	0.25	0.85	2800	68.1		0.72	0.74	4.2	2.2	2.2	2.4	BZFM 0.25	3	3.5	19	120	3600	0.00019	7.0
B21R 71 K2	B20R 63 K2	0.37	1.3	2780	71.5		0.79	0.94	4.4	2.1	2.1	2.3	BZFM 0.25	3	2.4	21	120	3600	0.00029	8.9
B21R 71 K2	B20R 63 K2	0.37	1.3	2780	71.5		0.79	0.94	4.4	2.1	2.1	2.3	BZFM 0.63	6.3	5.0	18	120	3600	0.00034	9.5
B21R 71 G2	B20R 63 G2	0.55	1.9	2775	74.3		0.81	1.32	5.1	2.3	2.1	2.6	BZFM 0.25	3	1.6	17	120	3600	0.00036	9.4
B21R 71 G2	B20R 63 G2	0.55	1.9	2775	74.3		0.81	1.32	5.1	2.3	2.1	2.6	BZFM 0.63	6.3	3.3	14	120	3600	0.00041	10.4
B21R 80 K2	B20R 71 K2	0.75	2.5	2825	77.5		0.81	1.72	5.9	2.4	2.4	2.4	BZFM 0.63	6.3	2.5	11	120	3600	0.00066	13.5
B21R 80 K2	B20R 71 K2	0.75	2.5	2825	77.5		0.81	1.72	5.9	2.4	2.4	2.4	BZFM 1.6	13.5	5.3	10	120	3600	0.00077	15.2
B21R 80 G2	B20R 71 G2	1.1	3.7	2835	77.8		0.8	2.55	6.0	2.4	2.3	2.6	BZFM 0.63	6.3	1.7	7	120	3600	0.00081	14.3
B21R 80 G2	B20R 71 G2	1.1	3.7	2835	77.8		0.8	2.55	6.0	2.4	3.3	2.6	BZFM 1.6	13.5	3.6	6	120	3600	0.00092	16.0
B21R 90 S2	B20R 80 K2	1.5	5.0	2840	81.2		0.86	3.1	7.0	2.5	2.5	2.8	BZFM 1.6	13.5	2.7	7	120	3600	0.00152	20.5
B21R 90 S2	B20R 80 K2	1.5	5.0	2840	81.2		0.86	3.1	7.0	2.5	2.5	2.8	BZFM 2.5	27	5.4	5	120	3600	0.00162	22.2
B21R 90 L2	B20R 80 G2	2.2	7.4	2850	82.0		0.85	4.55	7.5	2.8	2.3	2.9	BZFM 1.6	13.5	1.8	6	120	3600	0.0019	23.5
B21R 90 L2	B20R 80 G2	2.2	7.4	2850	82.0		0.85	4.55	7.5	2.8	2.3	2.9	BZFM 2.5	27	3.7	4	120	3600	0.002	25.2
B21R 100 L2	B20R 90 L2	3	10.0	2865	83.4		0.84	6.15	6.8	2.4	2.2	2.8	BZFM 2.5	27	2.7	3	120	3600	0.00305	31.5
B21R 100 L2	B20R 90 L2	3	10.0	2865	83.4		0.84	6.15	6.8	2.4	2.2	2.8	BZFM 4	37	3.7	3	120	3600	0.00321	33.8
B21R 112 M2	B20R 100 S2	4	13.2	2900	85.0		0.81	8.4	7.0	2.2	2.1	2.9	BZFM 4	37	2.8	3	80	3600	0.00496	40.8
B21R 112 M2	B20R 100 S2	4	13.2	2900	85.0		0.81	8.4	7.0	2.2	2.1	2.9	BZFM 6.3	65	4.9	2	80	3600	0.0052	43.4
B21R 132 S2T	B20R 100 L2	5.5	18.2	2890	86.3		0.84	11.0	7.5	2.4	2.2	3.0	BZFM 4	37	2.0	6	80	3600	0.00596	46.8
B21R 132 S2T	B20R 100 L2	5.5	18.2	2890	86.3		0.84	11.0	7.5	2.4	2.2	3.0	BZFM 6.3	65	3.6	4	80	3600	0.0062	49.4
B21R 132 S2	B20R 112 MY2	5.5	18	2860	85.7	85.7	0.86	11	5.5	1.8	1.6	2.2	BZFA 8	80	4.4		6000	0.0108	66	
B21R 132 SX2	B20R 112 M2	7.5	25	2880	87.0	87.0	0.86	14.5	7.0	2.3	1.8	2.8	BZFA 8	80	3.2		6000	0.0137	71	
B21R 160 M2	B20R 132 M2	11.0	36	2900	88.5	88.5	0.90	20	7.0	2.4	2.0	3.0	BZFA 16	160	4.4		6000	0.032	104	
B21R 160 MX2	B20R 160 S2	15.0	49	2930	89.4	89.4	0.90	27	7.1	2.2	1.7	2.9	BZFA 25	250	5.1		5000	0.072	150	
B21R 160 L2	B20R 160 M2	18.5	61	2920	90.5	89.5	0.92	32	7.2	2.1	1.6	2.8	BZFA 25	250	4.1		5000	0.082	166	
B21R 180 M2	B20R 180 S2	22	72	2935	91.8	91.0	0.92	37.5	6.8	1.7	1.4	2.6	BZFA 40	400	5.6		4500	0.1319	217	
B21R 200 L2	B20R 180 M2	30	97	2940	92.8	92.0	0.92	50.5	7.3	2.0	1.6	2.9	BZFA 40	400	4.1		4500	0.1549	247	
B21R 200 LX2	B20R 200 M2	37	120	2940	93.0	92.0	0.90	64	7.0	1.8	1.3	2.4	BZFA 40	400	3.3		4500	0.2199	306.7	
B21R 225 M2	B20R 200 L2	45	146	2940	93.7	93.0	0.91	76	7.5	1.8	1.4	2.7	4BZFM 25	380	2.6		3600	0.36	290	
B21R 250 M2	B20R 225 M2	55	178	2955	93.7	92.5	0.91	93	7.5	2.0	1.5	2.6	4BZFM 40	400	2.2		3600	0.3883	446	
B21R 280 S2	B20R 250 S2	75	241	2970	94.6	93.5	0.92	124	7.5	2.0	1.6	2.6	4BZFM 63	630	2.6		4000	0.6771	606	
B21R 280 M2	B20R 250 M2	90	289	2970	94.7	94.2	0.91	151	8.5	2.2	1.8	2.8	4BZFM 63	630	2.2		4000	0.7021	626	
B21R 315 S2	B20R 280 S2	110	353	2975	95.4	94.5	0.91	183	8.5	1.5	1.3	2.5	4BZFM 100	1000	2.8		3600	1.2466	881	
B21R 315 M2	B20R 280 M2	132	424	2975	95.4	94.5	0.91	219	8.5	2.0	1.8	2.7	4BZFM 100	1000	2.4		3600	1.4766	963	
B21R 315 MX2	B20R 315 S2	160	514	2975	96.0	95.2	0.93	259	8.5	2.0	1.6	2.6	4BZFM 160	1600	3.1		3200	1.83	1185	
B21R 315 MY2	B20R 315 M2	200	643	2970	96.0	95.2	0.92	327	8.2	2.6	2.0	2.6	4BZFM 160	1600	2.5		3200	2.89	1380	
B21R 315 L2	B20R 315 L2	250	803	2973	96.1	96.3	0.93	404	7.3	2.1	1.4	2.0	4BZFM 160	1600	2		3200	3.73	1660	
B21R 315 LX2	B20R 315 LX2	315	1011	2975	96.7	96.7	0.92	511	7.4	2.4	1.4	2.0	4BZFM 160	1600	1.6		3200	4.5	1830	



Three-phase brake motors with squirrel-cage rotor Electromagnetic spring applied brake, series BZF./4BZFM, manufacturer Stromag

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P _B	M _B	n _B	η _B	η _{3/4}	cosφ _B	I _B	I _N /I _B	M _A /M _B	M _S /M _B	M _K /M _B	Brake type	M _{Br}	M _{Br} /M _B	Fl	for c/h	n _{max}	J	m
		kW	Nm	rpm	%	%	-	400 V A	-	-	-	-							kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version																				
B21R 63 K4	B20R 56 K4	0.12	0.84	1370	57.5		0.68	0.44	3.2	1.9	1.8	2.2	BZFM 0.25	3	3.6	43	240	3600	0.00023	6.6
B21R 63 G4	B20R 56 G4	0.18	1.3	1360	61.0		0.66	0.65	3.3	2.0	2.0	2.3	BZFM 0.25	3	2.4	37	240	3600	0.00028	7.0
B21R 71 K4	B20R 63 K4	0.25	1.7	1385	64.6		0.72	0.78	3.6	1.8	1.8	2.1	BZFM 0.25	3	1.7	23	240	3600	0.00044	8.6
B21R 71 K4	B20R 63 K4	0.25	1.7	1385	64.6		0.72	0.78	3.6	1.8	1.8	2.1	BZFM 0.63	6.3	3.7	20	240	3600	0.00049	9.6
B21R 71 G4	B20R 63 G4	0.37	2.6	1370	67.8		0.74	1.06	3.8	2.0	2.0	2.2	BZFM 0.25	3	1.2	21	240	3600	0.00054	9.6
B21R 71 G4	B20R 63 G4	0.37	2.6	1370	67.8		0.74	1.06	3.8	2.0	2.0	2.2	BZFM 0.63	6.3	2.4	18	240	3600	0.00059	10.6
B21R 80 K4	B20R 71 K4	0.55	3.8	1400	71.5		0.69	1.60	4.1	2.1	2.0	2.3	BZFM 0.63	6.3	1.7	15	240	3600	0.00096	13.4
B21R 80 K4	B20R 71 K4	0.55	3.8	1400	71.5		0.69	1.60	4.1	2.1	2.0	2.3	BZFM 1.6	13.5	3.6	12	240	3600	0.00107	15.1
B21R 80 G4	B20R 71 G4	0.75	5.1	1400	73.5		0.7	2.10	4.6	2.2	2.1	2.3	BZFM 0.63	6.3	1.2	29	120	3600	0.00116	14.5
B21R 80 G4	B20R 71 G4	0.75	5.1	1400	73.5		0.7	2.10	4.6	2.2	2.1	2.3	BZFM 1.6	13.5	2.6	26	120	3600	0.00127	16.2
B21R 90 S4	B20R 80 K4	1.1	7.5	1410	76.6		0.79	2.62	5.5	2.3	2.2	2.5	BZFM 1.6	13.5	1.8	27	120	3600	0.00227	20.0
B21R 90 S4	B20R 80 K4	1.1	7.5	1410	76.6		0.79	2.62	5.5	2.3	2.2	2.5	BZFM 2.5	27	3.6	23	120	3600	0.00237	21.7
B21R 90 L4	B20R 80 G4	1.5	10.2	1400	78.8		0.81	3.40	5.5	2.5	2.4	2.6	BZFM 1.6	13.5	1.3	20	120	3600	0.0028	22.5
B21R 90 L4	B20R 80 G4	1.5	10.2	1400	78.8		0.81	3.40	5.5	2.5	2.4	2.6	BZFM 2.5	27	2.6	17	120	3600	0.0029	24.2
B21R 100 L4	B20R 90 L4	2.2	14.9	1410	81.2		0.79	4.95	6.0	2.5	2.3	2.7	BZFM 2.5	27	1.8	14	120	3600	0.0043	29.7
B21R 100 L4	B20R 90 L4	2.2	14.9	1410	81.2		0.79	4.95	6.0	2.5	2.3	2.7	BZFM 4	37	2.5	11	120	3600	0.00446	32.3
B21R 100 LX4	B20R 100 S4	3	20.0	1430	82.6		0.79	6.65	6.5	2.5	2.2	2.9	BZFM 4	37	1.8	12	120	3600	0.00771	38.8
B21R 100 LX4	B20R 100 S4	3	20.0	1430	82.6		0.79	6.65	6.5	2.5	2.2	2.9	BZFM 6.3	65	3.2	10	120	3600	0.00795	41.4
B21R 112 M4	B20R 100 L4	4	26.6	1435	84.2		0.78	8.8	6.9	2.6	2.5	3.2	BZFM 4	37	1.4	5	120	3600	0.00946	45.8
B21R 112 M4	B20R 100 L4	4	26.6	1435	84.2		0.78	8.8	6.9	2.6	2.5	3.2	BZFM 6.3	65	2.4	2	120	3600	0.0097	48.4
B21R 132 S4	B20R 112 M4	5.5	36	1440	85.7	85.7	0.89	11.0	6.5	1.9	1.7	3.0	BZFA 8	80	3.2			3600	0.0177	64
B21R 132 M4	B20R 132 S4	7.5	49	1450	87.0	86	0.84	15	6.0	2.0	1.7	2.9	BZFA 16	160	3.3			3600	0.0342	93
B21R 160 M4	B20R 132 M4	11.0	72	1450	88.4	88	0.85	21	6.8	2.2	1.9	3.3	BZFA 16	160	2.2			3600	0.0412	115
B21R 160 L4	B20R 160 S4	15.0	98	1465	89.4	89	0.86	28	7.3	2.5	2.0	3.0	BZFA 25	250	2.6			3600	0.0925	152
B21R 180 M4	B20R 160 M4	18.5	121	1460	90.0	89.5	0.86	34.5	6.8	2.5	2.0	2.9	BZFA 25	250	2.1			3000	0.1045	168
B21R 180 L4	B20R 180 S4	22	143	1465	90.5	90.5	0.84	42	6.5	2.0	1.8	2.6	BZFA 40	400	2.8			3000	0.1649	222
B21R 200 L4	B20R 180 M4	30	196	1465	91.5	91	0.85	55.5	7.0	2.0	1.7	2.4	BZFA 40	400	2			3000	0.1949	252
B21R 225 S4	B20R 200 M4	37	240	1470	92.5	91.5	0.86	67	7.0	2.0	1.7	2.5	4BZFM 63	630	2.6			3000	0.3021	379
B21R 225 M4	B20R 200 L4	45	292	1470	93.0	92.5	0.86	81	7.0	2.0	1.7	2.5	4BZFM 63	630	2.2			3000	0.3401	410
B21R 250 M4	B20R 225 M4	55	356	1475	93.5	93	0.86	98.5	7.0	2.2	1.7	2.3	4BZFM 63	800	2.2			3000	0.5521	487
B21R 280 S4	B20R 250 S4	75	484	1480	94.1	93.5	0.86	134	7.0	2.0	1.7	2.2	4BZFM 63	800	1.7			3000	0.9771	637
B21R 280 M4	B20R 250 M4	90	581	1480	94.6	93.5	0.86	160	7.0	2.1	1.6	2.2	4BZFM 100	1000	1.7			3000	1.1366	736
B21R 315 S4	B20R 280 S4	110	707	1485	95.1	94.5	0.86	194	7.5	1.8	1.6	2.2	4BZFM 100	1000	1.4			3000	1.9966	901
B21R 315 M4	B20R 280 M4	132	849	1485	95.1	94.5	0.86	233	7.0	1.8	1.5	2.2	4BZFM 160	1600	1.9			3000	2.34	1030
B21R 315 MX4	B20R 315 S4	160	1032	1480	95.0	94.8	0.87	279	7.0	1.8	1.5	2.0	4BZFM 160	1600	1.6			3000	2.8	1195
B21R 315 MY4	B20R 315 M4	200	1286	1485	96.0	95	0.88	342	7.5	2.0	1.8	2.4	4BZFM 160	1600	1.2			3000	4.89	1400
B21R 315 L4	B20R 315 L4	250	1608	1485	96.1	95	0.90	417	8.0	2.0	1.6	2.3	4BZFM 160	1600	1			3000	6	1650
B21R 315 LX4	B20R 315 LX4	315	2019	1490	96.5	95.5	0.88	535	8.6	1.9	1.5	2.5	4BZFM 160	2000	1			3000	6.89	1840





Three-phase brake motors with squirrel-cage rotor Electromagnetic spring applied brake, series BZF./4BZFM, manufacturer Stromag

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P_B	M_B	n_B	η_B	$\eta_{3/4}$	$\cos\phi_B$	I_B	I_N/I_B	M_A/M_B	M_S/M_B	M_K/M_B	Brake type	M_{Br}	M_{Br}/M_B	FI	for c/h	n_{max}	J	m
	kW	Nm	rpm	%	%	-	400 V A	-	-	-	-							kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version																			
B21R 63 G6	B20R 56 G6	0.12	1.3	880	50.5	0.56	0.59	2.5	2.0	2.0	2.3	BZFM 0.25	3.0	2.3	35	240	3600	0.00031	7.5
B21R 71 K6	B20R 63 K6	0.18	1.9	925	52.0	0.51	0.88	2.8	1.6	1.6	2.1	BZFM 0.25	3.0	1.6	50	240	3600	0.00049	9.2
B21R 71 K6	B20R 63 K6	0.18	1.9	925	58.0	0.51	0.88	2.8	1.6	1.6	2.1	BZFM 0.63	6.3	3.4	50	240	3600	0.00054	10.2
B21R 71 G6	B20R 63 G6	0.25	2.6	915	60.0	0.55	1.1	2.9	2.0	2.0	2.2	BZFM 0.25	3.0	1.1	50	240	3600	0.00064	10.2
B21R 71 G6	B20R 63 G6	0.25	2.6	915	60.0	0.55	1.1	2.9	2.0	2.0	2.2	BZFM 0.63	6.3	2.4	50	240	3600	0.00069	11.1
B21R 80 K6	B20R 71 K6	0.37	3.9	915	66.0	0.66	1.22	3.4	2.0	2.0	2.0	BZFM 0.63	6.3	1.6	38	120	3600	0.00139	13.8
B21R 80 K6	B20R 71 K6	0.37	3.9	915	66.0	0.66	1.22	3.4	2.0	2.0	2.0	BZFM 1.6	13.5	3.5	35	120	3600	0.0015	15.5
B21R 80 G6	B20R 71 G6	0.55	5.7	915	68.0	0.67	1.73	3.7	2.3	2.2	2.4	BZFM 0.63	6.3	1.1	41	120	3600	0.00184	15.3
B21R 80 G6	B20R 71 G6	0.55	5.7	915	68.0	0.67	1.73	3.7	2.3	2.2	2.4	BZFM 1.6	13.5	2.4	38	120	3600	0.00195	17.0
B21R 90 S6	B20R 80 K6	0.75	7.7	935	70.0	0.64	2.43	4.5	2.4	2.4	2.6	BZFM 1.6	13.5	1.8	23	120	3600	0.00345	20.5
B21R 90 S6	B20R 80 K6	0.75	7.7	935	70.0	0.64	2.43	4.5	2.4	2.4	2.6	BZFM 2.5	27.0	3.5	21	120	3600	0.00355	22.2
B21R 90 L6	B20R 80 G6	1.1	11.2	935	73.0	0.69	3.15	4.6	2.2	2.2	2.6	BZFM 1.6	13.5	1.2	19	120	3600	0.00445	23.5
B21R 90 L6	B20R 80 G6	1.1	11.2	935	73.0	0.69	3.15	4.6	2.2	2.2	2.6	BZFM 2.5	27	2.4	17	120	3600	0.00455	25.2
B21R 100 L6	B20R 90 L6	1.5	15.2	945	76.4	0.73	3.90	4.6	2.1	2.0	2.4	BZFM 2.5	27	1.8	20	120	3600	0.00655	30.2
B21R 100 L6	B20R 90 L6	1.5	15.2	945	76.4	0.73	3.90	4.6	2.1	2.0	2.4	BZFM 4	37	2.4	19	120	3600	0.00671	32.8
B21R 112 M6	B20R 100 L6	2.2	22.1	950	79.8	0.74	5.35	5.3	2.2	2.1	2.7	BZFM 4	37	1.7	13	120	3600	0.01271	42.3
B21R 112 M6	B20R 100 L6	2.2	22.1	950	79.8	0.74	5.35	5.3	2.2	2.1	2.7	BZFM 6.3	65	2.9	11	120	3600	0.01295	44.9
B21R 132 S6	B20R 112 M6	3.0	30	955	78.2	0.82	6.8	5.7	1.8	1.6	2.7	BZFA 8	80	2.7		2400	0.0207	59.9	
B21R 132 M6	B20R 112 MX6	4.0	40	955	80.0	0.80	9	6.0	2.2	2.0	3.1	BZFA 8	80	2.0		2400	0.0257	66.9	
B21R 132 MX6	B20R 132 S6	5.5	55	955	83.0	0.83	11.5	5.0	1.8	1.5	2.3	BZFA 16	160	2.9		2400	0.0492	92.5	
B21R 160 M6	B20R 132 M6	7.5	75	960	85.0	0.82	15.5	5.5	2.0	1.6	2.5	BZFA 16	160	2.1		2400	0.0592	108.5	
B21R 160 L6	B20R 160 S6	11.0	109	965	85.2	0.85	21.5	5.0	2.0	1.7	2.3	BZFA 25	250	2.3		2400	0.1275	145.8	
B21R 180 L6	B20R 160 M6	15.0	149	965	86.0	0.85	30.5	6.0	2.4	2.1	2.7	BZFA 25	250	1.7		2000	0.1595	167.8	
B21R 200 L6	B20R 180 S6	18.5	182	970	88.1	0.87	35	5.5	2.0	1.7	2.4	BZFA 40	400	2.2		2000	0.2549	226.7	
B21R 200 LX6	B20R 180 M6	22	217	970	88.8	0.87	41	6.2	2.2	1.8	2.6	BZFA 40	400	1.8		2000	0.2949	251.7	
B21R 225 M6	B20R 200 M6	30	294	973	90.4	0.89	54	6.5	2.2	1.7	2.5	4BZFM 63	630	2.1		2000	0.4701	374	
B21R 250 M6	B20R 225 M6	37	362	975	91.0	0.89	66	6.5	2.2	1.7	2.3	4BZFM 63	800	2.2		2000	0.8521	472	
B21R 280 S6	B20R 250 S6	45	439	980	92.0	0.87	81	6.0	2.0	1.5	2.0	4BZFM 100	1000	2.3		2000	1.3166	618	
B21R 280 M6	B20R 250 M6	55	536	980	92.5	0.88	97.5	6.5	2.3	1.7	2.4	4BZFM 100	1000	1.9		2000	1.5166	675	
B21R 315 S6	B20R 280 S6	75	727	985	93.7	0.87	133	7.0	2.0	1.6	2.4	4BZFM 160	1600	2.2		2000	2.7	880	
B21R 315 M6	B20R 280 M6	90	868	990	94.4	0.88	156	7.0	2.0	1.7	2.4	4BZFM 160	1600	1.8		2000	3.4	990	
B21R 315 MX6	B20R 315 S6	110	1061	990	94.0	0.88	192	7.5	2.2	1.7	2.6	4BZFM 160	1600	1.5		2000	3.67	1070	
B21R 315 MY6	B20R 315 M6	132	1273	990	95.0	0.88	228	7.5	2.0	1.7	2.4	4BZFM 160	2000	1.6		2000	6.07	1245	
B21R 315 L6	B20R 315 L6	160	1551	985	95.3	0.89	272	7.5	2.3	1.9	2.4	4BZFM 160	2000	1.3		2000	6.74	1450	
B21R 315 LX6	B20R 315 LX6	200	1929	990	95.0	0.87	349	8.3	2.2	2.0	2.7	4BZFM 160	2000	1		2000	8.67	1660	



Three-phase brake motors with squirrel-cage rotor Electromagnetic spring applied brake, series BZF./4BZFM, manufacturer Stromag

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P_B kW	M_B Nm	n_B rpm	η_B %	$\eta_{3/4}$ %	$\cos\phi_B$ -	I_B 400 V A	I_N/I_B -	M_A/M_B -	M_S/M_B -	M_K/M_B -	Brake type	M_{Br}	M_{Br}/M_B	FI	for c/h	n_{max}	J kgm ²	m kg
Synchronous speed 750 rpm – 8-pole version																			
B21R 71 G8	B20R 63 G8	0.12	1.7	670	46.5	0.51	0.73	2.3	1.8	1.8	2.1	BZFM 0.25	3.0	1.8	30	240	3600	0.00064	9.9
B21R 71 G8	B20R 63 G8	0.12	1.7	670	46.5	0.51	0.73	2.3	1.8	1.8	2.1	BZFM 0.63	6.3	3.7	30	240	3600	0.00069	10.9
B21R 80 K8	B20R 71 K8	0.18	2.5	690	56.5	0.59	0.78	2.8	2.0	2.0	2.2	BZFM 0.63	6.3	2.5	38	240	3600	0.00139	13.4
B21R 80 K8	B20R 71 K8	0.18	2.5	690	56.5	0.59	0.78	2.8	2.0	2.0	2.2	BZFM 1.6	13.5	5.4	35	240	3600	0.0015	15.0
B21R 80 G8	B20R 71 G8	0.25	3.4	695	58.0	0.56	1.12	3.0	2.3	2.3	2.5	BZFM 0.63	6.3	1.8	50	240	3600	0.00184	14.8
B21R 80 G8	B20R 71 G8	0.25	3.4	695	58.0	0.56	1.12	3.0	2.3	2.3	2.5	BZFM 1.6	13.5	3.9	50	240	3600	0.00195	16.5
B21R 90 S8	B20R 80 K8	0.37	5.0	700	61.5	0.54	1.60	3.0	1.9	1.9	2.1	BZFM 1.6	13.5	2.7	36	120	3600	0.0032	19.5
B21R 90 S8	B20R 80 K8	0.37	5.0	700	61.5	0.54	1.60	3.0	1.9	1.9	2.1	BZFM 2.5	27.0	5.3	34	120	3600	0.0033	21.2
B21R 90 L8	B20R 80 G8	0.55	7.6	695	64.5	0.6	2.04	3.2	1.9	1.9	2.2	BZFM 1.6	13.5	1.8	39	120	3600	0.00395	22.5
B21R 90 L8	B20R 80 G8	0.55	7.6	695	64.5	0.6	2.04	3.2	1.9	1.9	2.2	BZFM 2.5	27	3.6	37	120	3600	0.00405	24.2
B21R 100 L8	B20R 90 L8	0.75	10.2	705	67.0	0.60	2.70	3.3	2.0	2.0	2.3	BZFM 2.5	27	2.7	26	120	3600	0.00655	28.2
B21R 100 L8	B20R 90 L8	0.75	10.2	705	67.0	0.60	2.70	3.3	2.0	2.0	2.3	BZFM 4	37	3.6	24	120	3600	0.00671	32.8
B21R 100 LX8	B20R 100 S8	1.1	14.9	705	73.0	0.67	3.25	4.0	2.0	2.0	2.4	BZFM 4	37	2.5	38	120	3600	0.00946	36.8
B21R 100 LX8	B20R 100 S8	1.1	14.9	705	73.0	0.67	3.25	4.0	2.0	2.0	2.4	BZFM 6.3	65	4.4	37	120	3600	0.0097	39.8
B21R 112 M8	B20R 100 L8	1.5	20.3	705	75.5	0.7	4.1	4.4	2.2	2.1	2.5	BZFM 4	37	1.8	28	120	3600	0.01271	42.3
B21R 112 M8	B20R 100 L8	1.5	20.3	705	75.5	0.7	4.1	4.4	2.2	2.1	2.5	BZFM 6.3	65	3.2	26	120	3600	0.01295	44.9
B21R 132 S8	B20R 112 M8	2.2	30	705	75.5	73.5	0.76	5.5	4.5	1.7	1.6	2.3	BZFA 8	80	2.7		1800	0.0207	60
B21R 132 M8	B20R 112 MX8	3.0	41	705	78.0	76.5	0.75	7.4	4.5	1.7	1.6	2.3	BZFA 8	80	2.0		1800	0.0257	67
B21R 160 M8	B20R 132 S8	4.0	54	710	79.3	79	0.78	9.3	4.0	1.6	1.3	1.9	BZFA 16	160	3.0		1800	0.0492	93
B21R 160 MX8	B20R 132 M8	5.5	74	710	81.4	80.5	0.78	12.5	4.5	1.7	1.6	2.1	BZFA 16	160	2.2		1800	0.0592	109
B21R 160 L8	B20R 160 S8	7.5	99	725	83.0	81.5	0.78	16.5	4.5	1.8	1.6	2.1	BZFA 25	250	2.5		1800	0.1275	146
B21R 180 L8	B20R 160 M8	11.0	146	720	85.0	84	0.78	24	4.5	2.0	1.7	2.1	BZFA 25	250	1.7		1500	0.1595	168
B21R 200 L8	B20R 180 S8	15.0	198	725	86.5	85	0.79	31.5	5.0	2.0	1.7	2.3	BZFA 40	400	2.0		1500	0.2549	227
B21R 225 S8		18.5	244	725	87.5	87	0.80	38	5.0	1.9	1.7	2.2	BZFA 40	400	1.6		1500	0.2949	252
B21R 225 M8	B20R 180 M8	18.5	244	725	89.2	88	0.83	36	5.5	2.0	1.6	2.2	BZFA 40	400	1.6		1500	0.4669	317
B21R 225 M8	B20R 200 M8	22	290	725	89.2	89	0.84	42.5	5.0	1.8	1.5	2.2	4BZFM 63	630	2.2		1500	0.4671	374
B21R 250 M8	B20R 225 M8	30	393	730	90.2	90	0.79	61	5.5	2.2	1.8	2.2	4BZFM 63	800	2		1500	0.8521	472
B21R 280 S8	B20R 250 S8	37	481	735	91.0	90	0.80	73.5	5.5	2.0	1.5	2.0	4BZFM 100	1000	2.1		1500	1.3866	618
B21R 280 M8	B20R 250 M8	45	585	735	91.5	90.5	0.77	92	6.0	2.3	1.8	2.4	4BZFM 100	1000	1.7		1500	1.5866	675
B21R 315 S8	B20R 280 S8	55	710	740	93.1	92	0.80	107	6.5	1.8	1.6	2.3	4BZFM 160	1600	2.3		1500	2.7	880
B21R 315 M8	B20R 280 M8	75	968	740	93.3	93	0.81	143	6.0	2.0	1.6	2.3	4BZFM 160	1600	1.7		1500	3.4	990
B21R 315 MX8	B20R 315 S8	90	1161	740	93.5	93	0.81	172	6.0	1.9	1.6	2.2	4BZFM 160	1600	1.4		1500	3.67	1070
B21R 315 MY8	B20R 315 M8	110	1420	740	94.6	94	0.81	207	6.5	2.1	1.8	2.4	4BZFM 160	2000	1.4		1500	6.07	1245
B21R 315 L8	B20R 315 L8	132	1704	740	95.0	94.3	0.83	242	6.3	2.0	1.7	2.1	4BZFM 160	2000	1.2		1500	6.74	1450
B21R 315 LX8	B20R 315 LX8	160	2065	740	95.2	94.5	0.79	307	7.2	2.2	1.9	2.5	4BZFM 160	2000	1		1500	8.67	1660

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Three-phase brake motors with squirrel-cage rotor Electromagnetic spring applied brake, series BFK 458, manufacturer Lenze

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P_B	M_B	n_B	η_B	$\eta_{3/4}$	$\cos\phi_B$	I_B	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	Brake type	M_{Br}	M_{Br}/M_B	Fl	for c/h	n_{max}	J	m
		kW	Nm	rpm	%	%	-	400 V A	-	-	-	-							kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version																				
B21R 63 K2	B20R 56 K2	0.18	0.62	2790	67.1		0.76	0.51	4.1	1.9	1.9	2.2	BFK458-6	4	6.5	25	120		0.000145	5.7
B21R 63 G2	B20R 56 G2	0.25	0.85	2800	68.1		0.72	0.74	4.2	2.2	2.2	2.4	BFK458-6	4	4.7	25	120		0.000165	6.0
B21R 71 K2	B20R 63 K2	0.37	1.3	2780	71.5		0.79	0.94	4.4	2.1	2.1	2.3	BFK458-6	4	3.1	24	120		0.000265	7.5
B21R 71 G2	B20R 63 G2	0.55	1.9	2775	74.3		0.81	1.32	5.1	2.3	2.1	2.6	BFK458-6	4	2.1	19	120		0.000335	8.4
B21R 80 K2	B20R 71 K2	0.75	2.5	2825	77.5		0.81	1.72	5.9	2.4	2.4	2.4	BFK458-6	4	1.6	15	120		0.000585	11.5
B21R 80 K2	B20R 71 K2	0.75	2.5	2825	77.5		0.81	1.72	5.9	2.4	2.4	2.4	BFK458-8	8	3.2	13	120		0.00063	12.1
B21R 80 G2	B20R 71 G2	1.1	3.7	2835	77.8		0.8	2.55	6.0	2.4	2.3	2.6	BFK458-6	4	1.1	9	120		0.000735	12.3
B21R 80 G2	B20R 71 G2	1.1	3.7	2835	77.8		0.8	2.55	6.0	2.4	2.3	2.6	BFK458-8	8	2.2	7	120		0.00078	12.9
B21R 90 S2	B20R 80 K2	1.5	5.0	2840	81.2		0.86	3.1	7.0	2.5	2.5	2.8	BFK458-6	4	0.8	10	120		0.001335	16.8
B21R 90 S2	B20R 80 K2	1.5	5.0	2840	81.2		0.86	3.1	7.0	2.5	2.5	2.8	BFK458-8	8	1.6	8	120		0.00138	17.4
B21R 90 S2	B20R 80 K2	1.5	5.0	2840	81.2		0.86	3.1	7.0	2.5	2.5	2.8	BFK458-10	16	3.2	6	120		0.00152	18.5
B21R 90 L2	B20R 80 G2	2.2	7.4	2850	82.0		0.85	4.55	7.5	2.8	2.3	2.9	BFK458-6	4	0.5	9	120		0.001715	19.8
B21R 90 L2	B20R 80 G2	2.2	7.4	2850	82.0		0.85	4.55	7.5	2.8	2.3	2.9	BFK458-8	8	1.1	7	120		0.00176	20.4
B21R 90 L2	B20R 80 G2	2.2	7.4	2850	82.0		0.85	4.55	7.5	2.8	2.3	2.9	BFK458-10	16	2.2	5	120		0.0019	21.5
B21R 100 L2	B20R 90 L2	3	10.0	2865	83.4		0.84	6.15	6.8	2.4	2.2	2.8	BFK458-8	8	0.8	6	120		0.00281	26.4
B21R 100 L2	B20R 90 L2	3	10.0	2865	83.4		0.84	6.15	6.8	2.4	2.2	2.8	BFK458-10	16	1.6	5	120		0.00295	27.5
B21R 100 L2	B20R 90 L2	3	10.0	2865	83.4		0.84	6.15	6.8	2.4	2.2	2.8	BFK458-12	32	3.2	3	120		0.0032	29.0
B21R 112 M2	B20R 100 S2	4	13.2	2900	85.0		0.81	8.4	7.0	2.2	2.1	2.9	BFK458-10	16	1.2	4	80		0.0047	34.5
B21R 112 M2	B20R 100 S2	4	13.2	2900	85.0		0.81	8.4	7.0	2.2	2.1	2.9	BFK458-12	32	2.5	3	80		0.00495	36.0
B21R 112 M2	B20R 100 S2	4	13.2	2900	85.0		0.81	8.4	7.0	2.2	2.1	2.9	BFK458-14	60	4.6	2	80		0.00513	37.6
B21R 132 S2T	B20R 100 L2	5.5	18.2	2890	86.3		0.84	11.0	7.5	2.4	2.2	3.0	BFK458-10	16	0.9	7	80		0.0057	40.5
B21R 132 S2T	B20R 100 L2	5.5	18.2	2890	86.3		0.84	11.0	7.5	2.4	2.2	3.0	BFK458-12	32	1.8	6	80		0.00595	42.0
B21R 132 S2T	B20R 100 L2	5.5	18.2	2890	86.3		0.84	11.0	7.5	2.4	2.2	3.0	BFK458-14	60	3.3	5	80		0.00613	43.6
B21R 132 S2	B20R 112 MY2	5.5	18	2860	85.7	85.7	0.86	11	5.5	1.8	1.6	2.2	BFK458-14	40	2.2		6000		0.0086	63
B21R 132 SX2	B20R 112 M2	7.5	25	2880	87.0	87.0	0.86	14.5	7.0	2.3	1.8	2.8	BFK458-14	60	2.4		6000		0.0115	68
B21R 160 M2	B20R 132 M2	11.0	36	2900	88.5	88.5	0.90	20	7.0	2.4	2.0	3.0	BFK458-16	80	2.2		5300		0.0269	96
B21R 160 MX2	B20R 160 S2	15.0	49	2930	89.4	89.4	0.90	27	7.1	2.2	1.7	2.9	BFK458-18	150	3.1		4400		0.0604	137
B21R 160 L2	B20R 160 M2	18.5	61	2920	90.5	89.5	0.92	32	7.2	2.1	1.6	2.8	BFK458-18	150	2.5		4400		0.0704	153
B21R 180 M2	B20R 180 S2	22	72	2935	91.8	91.0	0.92	37.5	6.8	1.7	1.4	2.6	BFK458-20	260	3.6		3700		0.1123	193
B21R 200 L2	B20R 180 M2	30	97	2940	92.8	92.0	0.92	50.5	7.3	2.0	1.6	2.9	BFK458-20	260	2.7		3700		0.1353	220
B21R 200 LX2	B20R 200 M2	37	120	2940	93.0	92.0	0.90	64	7.0	1.8	1.3	2.4	BFK458-25	400	3.3		3000		0.213	290
B21R 225 M2	B20R 200 L2	45	146	2940	93.7	93.0	0.91	76	7.5	1.8	1.4	2.7	BFK458-25	400	2.7		3000		0.380	325
B21R 250 M2	B20R 225 M2	55	178	2955	93.7	92.5	0.91	93	7.5	2.0	1.5	2.6	BFK458-25	400	2.2		3000		0.395	395
B21R 280 S2	B20R 250 S2	75	241	2970	94.6	93.5	0.92	124	7.5	2.0	1.6	2.6	BFK458-25	400	1.7		3000		0.670	525
B21R 280 M2	B20R 250 M2	90	289	2970	94.7	94.2	0.91	151	8.5	2.2	1.8	2.8	BFK458-25	400	1.4		3000		0.695	545



Three-phase brake motors with squirrel-cage rotor Electromagnetic spring applied brake, series BFK 458, manufacturer Lenze

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P _B	M _B	n _B	η _B	η _{3/4}	cosφ _B	I _B	I _N /I _B	M _A /M _B	M _S /M _B	M _K /M _B	Brake type	M _{Br}	M _{Br} /M _B	Fl	for c/h	n _{max}	J	m
		kW	Nm	rpm	%	%	-	400 V A	-	-	-	-							kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version																				
B21R 63 K4	B20R 56 K4	0.12	0.84	1370	57.5		0.68	0.44	3.2	1.9	1.8	2.2	BFK458-6	4	4.8	40	240		0.000205	5.6
B21R 63 G4	B20R 56 G4	0.18	1.3	1360	61.0		0.66	0.65	3.3	2.0	2.0	2.3	BFK458-6	4	3.2	40	240		0.000255	6.0
B21R 71 K4	B20R 63 K4	0.25	1.7	1385	64.6		0.72	0.78	3.6	1.8	1.8	2.1	BFK458-6	4	2.4	25	240		0.000415	7.6
B21R 71 G4	B20R 63 G4	0.37	2.6	1370	67.8		0.74	1.06	3.8	2.0	2.0	2.2	BFK458-6	4	1.5	23	240		0.000515	8.7
B21R 80 K4	B20R 71 K4	0.55	3.8	1400	71.5		0.69	1.60	4.1	2.1	2.0	2.3	BFK458-6	4	1.1	20	240		0.000885	11.4
B21R 80 K4	B20R 71 K4	0.55	3.8	1400	71.5		0.69	1.60	4.1	2.1	2.0	2.3	BFK458-8	8	2.1	17	240		0.00093	12.0
B21R 80 G4	B20R 71 G4	0.75	5.1	1400	73.5		0.7	2.10	4.6	2.2	2.1	2.3	BFK458-6	4	0.8	34	120		0.001085	12.5
B21R 80 G4	B20R 71 G4	0.75	5.1	1400	73.5		0.7	2.10	4.6	2.2	2.1	2.3	BFK458-8	8	1.6	30	120		0.00113	13.1
B21R 90 S4	B20R 80 K4	1.1	7.5	1410	76.6		0.79	2.62	5.5	2.3	2.2	2.5	BFK458-6	4	0.5	32	120		0.002085	16.3
B21R 90 S4	B20R 80 K4	1.1	7.5	1410	76.6		0.79	2.62	5.5	2.3	2.2	2.5	BFK458-8	8	1.1	29	120		0.00213	16.9
B21R 90 S4	B20R 80 K4	1.1	7.5	1410	76.6		0.79	2.62	5.5	2.3	2.2	2.5	BFK458-10	16	2.1	26	120		0.00227	18.0
B21R 90 L4	B20R 80 G4	1.5	10.2	1400	78.8		0.81	3.40	5.5	2.5	2.4	2.6	BFK458-6	4	0.4	25	120		0.002615	18.8
B21R 90 L4	B20R 80 G4	1.5	10.2	1400	78.8		0.81	3.40	5.5	2.5	2.4	2.6	BFK458-8	8	0.8	23	120		0.00266	19.4
B21R 90 L4	B20R 80 G4	1.5	10.2	1400	78.8		0.81	3.40	5.5	2.5	2.4	2.6	BFK458-10	16	1.6	20	120		0.0028	20.5
B21R 100 L4	B20R 90 L4	2.2	14.9	1410	81.2		0.79	4.95	6.0	2.5	2.3	2.7	BFK458-8	8	0.5	18	120		0.00406	24.9
B21R 100 L4	B20R 90 L4	2.2	14.9	1410	81.2		0.79	4.95	6.0	2.5	2.3	2.7	BFK458-10	16	1.1	16	120		0.0042	26.0
B21R 100 L4	B20R 90 L4	2.2	14.9	1410	81.2		0.79	4.95	6.0	2.5	2.3	2.7	BFK458-12	32	2.1	13	120		0.00445	27.5
B21R 100 LX4	B20R 100 S4	3	20.0	1430	82.6		0.79	6.65	6.5	2.5	2.2	2.9	BFK458-10	16	0.8	15	120		0.00745	32.5
B21R 100 LX4	B20R 100 S4	3	20.0	1430	82.6		0.79	6.65	6.5	2.5	2.2	2.9	BFK458-12	32	1.6	13	120		0.0077	34.0
B21R 100 LX4	B20R 100 S4	3	20.0	1430	82.6		0.79	6.65	6.5	2.5	2.2	2.9	BFK458-14	60	3	12	120		0.00788	35.6
B21R 112 M4	B20R 100 L4	4	26.6	1435	84.2		0.78	8.8	6.9	2.6	2.5	3.2	BFK458-10	16	0.6	10	120		0.0092	39.5
B21R 112 M4	B20R 100 L4	4	26.6	1435	84.2		0.78	8.8	6.9	2.6	2.5	3.2	BFK458-12	32	1.2	7	120		0.00945	41.0
B21R 112 M4	B20R 100 L4	4	26.6	1435	84.2		0.78	8.8	6.9	2.6	2.5	3.2	BFK458-14	60	2.2	5	120		0.00963	42.6
B21R 132 S4	B20R 112 M4	5.5	36	1440	85.7	85.7	0.89	11.0	6.5	1.9	1.7	3.0	BFK458-16	80	2.2		5300		0.0161	65
B21R 132 M4	B20R 132 S4	7.5	49	1450	87.0	86	0.84	15	6.0	2.0	1.7	2.9	BFK458-16	90	1.8		5300		0.0291	84
B21R 160 M4	B20R 132 M4	11.0	72	1450	88.4	88	0.85	21	6.8	2.2	1.9	3.3	BFK458-18	150	2.1		3600		0.0379	105
B21R 160 L4	B20R 160 S4	15.0	98	1465	89.4	89	0.86	28	7.3	2.5	2.0	3.0	BFK458-20	260	2.6		3600		0.0853	148
B21R 180 M4	B20R 160 M4	18.5	121	1460	90.0	89.5	0.86	34.5	6.8	2.5	2.0	2.9	BFK458-20	260	2.1		3000		0.0973	164
B21R 180 L4	B20R 180 S4	22	143	1465	90.5	90.5	0.84	42	6.5	2.0	1.8	2.6	BFK458-25	400	2.8		3000		0.1453	198
B21R 200 L4	B20R 180 M4	30	196	1465	91.5	91	0.85	55.5	7.0	2.0	1.7	2.4	BFK458-25	400	2		3000		0.188	240
B21R 225 S4	B20R 200 M4	37	240	1470	92.5	91.5	0.86	67	7.0	2.0	1.7	2.5	BFK458-25	400	1.7		3000		0.2950	305
B21R 225 M4	B20R 200 L4	45	292	1470	93.0	92.5	0.86	81	7.0	2.0	1.7	2.5	BFK458-25	400	1.4		3000		0.3330	335
B21R 250 M4	B20R 225 M4	55	356	1475	93.5	93	0.86	98.5	7.0	2.2	1.7	2.3	BFK458-25	400	1.1		3000		0.5450	410
B21R 280 S4	B20R 250 S4	75	484	1480	94.1	93.5	0.86	134	7.0	2.0	1.7	2.2	BFK458-25	400	0.8		3000		0.9700	555
B21R 280 M4	B20R 250 M4	90	581	1480	94.6	93.5	0.86	160	7.0	2.1	1.6	2.2	BFK458-25	400	0.7		3000		1.1200	615

Three-phase brake motors with squirrel-cage rotor Electromagnetic spring applied brake, series KFB/SFB, manufacturer Pintsch Bamag

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P_B	M_B	n_B	η_B	$\eta_{3/4}$	$\cos\phi_B$	I_B	I_M/I_B	M_K/M_B	M_S/M_B	M_K/M_B	Brake type	M_{Br}	M_{Br}/M_B	n_{max}	J	m
	kW	Nm	rpm	%	%	-	400 V A	-	-	-	-					kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version																	
B21R 160 M2 B20R 132 M2	11.0	36	2900	88.5	88.5	0.90	20	7.0	2.4	2.0	3.0	KFB 10	100	2.8	6000	0.0275	103
B21R 160 MX2 B20R 160 S2	15.0	49	2930	89.4	89.4	0.90	27	7.1	2.2	1.7	2.9	KFB 18	180	3.7	6000	0.0617	156
B21R 160 L2 B20R 160 M2	18.5	61	2920	90.5	89.5	0.92	32	7.2	2.1	1.6	2.8	KFB 18	180	3	6000	0.0717	172
B21R 180 M2 B20R 180 S2	22	72	2935	91.8	91.0	0.92	37.5	6.8	1.7	1.4	2.6	KFB 30	300	4.2	6000	0.1105	221
B21R 200 L2 B20R 180 M2	30	97	2940	92.8	92.0	0.92	50.5	7.3	2.0	1.6	2.9	KFB 30	300	3.1	5000	0.1335	252
B21R 200 LX2 B20R 200 M2	37	120	2940	93.0	92.0	0.90	64	7.0	1.8	1.3	2.4	KFB 40	400	3.3	5000	0.1998	319
B21R 225 M2 B20R 200 L2	45	146	2940	93.7	93.0	0.91	76	7.5	1.8	1.4	2.7	KFB 40	400	2.7	5000	0.3668	355
B21R 250 M2 B20R 225 M2	55	178	2955	93.7	92.5	0.91	93	7.5	2.0	1.5	2.6	KFB 63	630	3.5	4500	0.3925	447
B21R 280 S2 B20R 250 S2	75	241	2970	94.6	93.5	0.92	124	7.5	2.0	1.6	2.6	KFB 63	630	2.6	4300	0.6675	581
B21R 280 M2 B20R 250 M2	90	289	2970	94.7	94.2	0.91	151	8.5	2.2	1.8	2.8	KFB 63/82	820	2.8	4300	0.6925	602
B21R 315 S2 B20R 280 S2	110	353	2975	95.4	94.5	0.91	183	8.5	1.5	1.3	2.5	KFB 63/82	820	2.3	3800	1.2275	818
B21R 315 M2 B20R 280 M2	132	424	2975	95.4	94.5	0.91	219	8.5	2.0	1.8	2.7	KFB 100	1000	2.4	3800	1.476	932
B21R 315 MX2 B20R 315 S2	160	514	2975	96.0	95.2	0.93	259	8.5	2.0	1.6	2.6	KFB 100	1000	1.9	3600	1.796	1118
B21R 315 MY2 B20R 315 M2	200	643	2970	96.0	95.2	0.92	327	8.2	2.6	2.0	2.6	KFB 160	1600	2.5	3600	2.87	1378
B21R 315 L2 B20R 315 L2	250	803	2973	96.1	96.3	0.93	404	7.3	2.1	1.4	2.0	KFB 160	1600	2	3600	3.71	1677
B21R 315 LX2 B20R 315 LX2	315	1011	2975	96.7	96.7	0.92	511	7.4	2.4	1.4	2.0	KFB 160	1600	1.6	3600	4.48	1852
B22R 355 MY2	315	1008	2984	96.7	96.1	0.90	520	7.6	1.3	1.0	2.7	KFB 160	1600	1.6	3600	4.15	2130
B22R 355 M2	355	1137	2983	96.8	96.7	0.91	580	7.5	1.3	1.0	2.3	KFB 160	1600	1.4	3600	4.25	2233
B22R 355 MX2	400	1280	2984	96.9	96.9	0.91	649	7.5	1.3	1.0	2.6	KFB 160	1600	1.3	3600	5.55	2439
B22R 355 LY2	450	1441	2983	97.1	97.1	0.91	730	7.7	1.5	1.0	2.6	KFB 160	1600	1.1	3600	7.15	2645
B22R 355 L2	500	1599	2986	97.2	97.2	0.92	809	8.2	1.8	0.9	2.6	KFB 160	1600	1	3600	7.15	2645

Synchronous speed 1500 rpm – 4-pole version

B21R 132 M4 B20R 132 S4	7.5	49	1450	87.0	86	0.84	15	6.0	2.0	1.7	2.9	KFB 10	180	3.7	3600	0.0297	92
B21R 160 M4 B20R 132 M4	11.0	72	1450	88.4	88	0.85	21	6.8	2.2	1.9	3.3	KFB 18	180	2.5	3600	0.0392	129
B21R 160 L4 B20R 160 S4	15.0	98	1465	89.4	89	0.86	28	7.3	2.5	2.0	3.0	KFB 30	300	3.1	3600	0.0835	175
B21R 180 M4 B20R 160 M4	18.5	121	1460	90.0	89.5	0.86	34.5	6.8	2.5	2.0	2.9	KFB 30	300	2.5	3000	0.0955	192
B21R 180 L4 B20R 180 S4	22	143	1465	90.5	90.5	0.84	42	6.5	2.0	1.8	2.6	KFB 40	400	2.8	3000	0.1448	232
B21R 200 L4 B20R 180 M4	30	196	1465	91.5	91	0.85	55.5	7.0	2.0	1.7	2.4	KFB 40/52	520	2.7	3000	0.1748	263
B21R 225 S4 B20R 200 M4	37	240	1470	92.5	91.5	0.86	67	7.0	2.0	1.7	2.5	KFB 63	630	2.6	3000	0.2925	354
B21R 225 M4 B20R 200 L4	45	292	1470	93.0	92.5	0.86	81	7.0	2.0	1.7	2.5	KFB 63	630	2.2	3000	0.3305	385
B21R 250 M4 B20R 225 M4	55	356	1475	93.5	93	0.86	98.5	7.0	2.2	1.7	2.3	KFB 63/82	820	2.3	3000	0.5425	462
B21R 280 S4 B20R 250 S4	75	484	1480	94.1	93.5	0.86	134	7.0	2.0	1.7	2.2	KFB 100	1000	2.1	3000	0.986	645
B21R 280 M4 B20R 250 M4	90	581	1480	94.6	93.5	0.86	160	7.0	2.1	1.6	2.2	KFB 100	1000	1.7	3000	1.136	707
B21R 315 S4 B20R 280 S4	110	707	1485	95.1	94.5	0.86	194	7.5	1.8	1.6	2.2	KFB 160	1600	2.3	3000	2.01	935
B21R 315 M4 B20R 280 M4	132	849	1485	95.1	94.5	0.86	233	7.0	1.8	1.5	2.2	KFB 160	1600	1.9	3000	2.32	1038
B21R 315 MX4 B20R 315 S4	160	1032	1480	95.0	94.8	0.87	279	7.0	1.8	1.5	2.0	KFB 160	1600	1.6	3000	2.78	1203
B21R 315 MY4 B20R 315 M4	200	1286	1485	96.0	95	0.88	342	7.5	2.0	1.8	2.4	SFB 250	2500	1.9	2800	4.96	1551
B21R 315 L4 B20R 315 L4	250	1608	1485	96.1	95	0.90	417	8.0	2.0	1.6	2.3	SFB 250	2500	1.6	2800	6.07	1870
B21R 315 LX4 B20R 315 LX4	315	2019	1490	96.5	95.5	0.88	535	8.6	1.9	1.5	2.5	SFB 250	2500	1.2	2800	6.96	1994
B22R 355 MY4	315	2019	1490	96.5	96.3	0.85	554	7.1	1.2	0.9	2.7	SFB 250/330	3300	1.6	2800	5.74	2324
B22R 355 M4	355	2275	1490	96.8	96.6	0.85	623	8.1	1.8	0.9	3.1	SFB 250/330	3300	1.5	2800	8.04	2530
B22R 355 MX4	400	2557	1494	96.8	96.5	0.84	710	8.6	1.3	1.0	3.4	SFB 250/330	3300	1.3	2800	9.64	2787
B22R 355 LY4	450	2884	1490	96.8	96.7	0.82	818	8.0	1.2	0.9	3.1	SFB 250/330	3300	1.1	2800	10.14	2890
B22R 355 L4	500	3205	1490	96.7	96.4	0.79	945	7.8	1.1	0.9	3.0	SFB 250/330	3300	1	2800	10.14	2890





Three-phase brake motors with squirrel-cage rotor Electromagnetic spring applied brake, series KFB/SFB, manufacturer Pintsch Bamag

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Typ		P_B	M_B	n_B	η_B	$\eta_{3/4}$	$\cos\phi_B$	I_B	I_N/I_B	M_N/M_B	M_S/M_B	M_K/M_B	Brake type	M_{Br}	M_{Br}/M_B	n_{max}	J	m	
		kW	Nm	rpm	%	%	-	400 V A	-	-	-	-					kgm ²	kg	
Synchronous speed 1000 rpm – 6-pole version																			
B21R 132 MX6	B20R 132 S6	5.5	55	955	83.0	82	0.83	11.5	5.0	1.8	1.5	2.3	KFB 18	180	3.3	2400	0.0472	106	
B21R 160 M6	B20R 132 M6	7.5	75	960	85.0	82	0.82	15.5	5.5	2.0	1.6	2.5	KFB 30/25	250	3.3	2400	0.0585	140	
B21R 160 L6	B20R 160 S6	11.0	109	965	85.2	85	0.86	21.5	5.0	2.0	1.7	2.3	KFB 30	300	2.8	2400	0.1185	169	
B21R 180 L6	B20R 160 M6	15.0	149	965	86.0	85	0.83	30.5	6.0	2.4	2.1	2.7	KFB 30	300	2	2000	0.1505	192	
B21R 200 L6	B20R 180 S6	18.5	182	970	88.1	87.5	0.87	35	5.5	2.0	1.7	2.4	KFB 40	400	2.2	2000	0.2348	237	
B21R 200 LX6	B20R 180 M6	22	217	970	88.8	88	0.87	41	6.2	2.2	1.8	2.6	KFB 40/52	520	2.4	2000	0.2748	263	
B21R 225 M6	B20R 200 M6	30	294	973	90.4	90	0.89	54	6.5	2.2	1.7	2.5	KFB 63	630	2.1	2000	0.4605	349	
B21R 250 M6	B20R 225 M6	37	362	975	91.0	91	0.89	66	6.5	2.2	1.7	2.3	KFB 63/82	820	2.3	2000	0.8425	447	
B21R 280 S6	B20R 250 S6	45	439	980	92.0	91.5	0.87	81	6.0	2.0	1.5	2.0	KFB 100	1000	2.3	2000	1.316	588	
B21R 280 M6	B20R 250 M6	55	536	980	92.5	92	0.88	97.5	6.5	2.3	1.7	2.4	KFB 100	1000	1.9	2000	1.516	645	
B21R 315 S6	B20R 280 S6	75	727	985	93.7	93	0.87	133	7.0	2.0	1.6	2.4	KFB 160	1600	2.2	2000	2.68	884	
B21R 315 M6	B20R 280 M6	90	868	990	94.4	93.5	0.88	156	7.0	2.0	1.7	2.4	KFB 160	1600	1.8	2000	3.38	997	
B21R 315 MX6	B20R 315 S6	110	1061	990	94.0	93.5	0.88	192	7.5	2.2	1.7	2.6	KFB 160	1600	1.5	2000	3.65	1079	
B21R 315 MY6	B20R 315 M6	132	1273	990	95.0	94.7	0.88	228	7.5	2.0	1.7	2.4	SFB 250	2500	2	2000	6.14	1397	
B21R 315 L6	B20R 315 L6	160	1551	985	95.3	94.7	0.89	272	7.5	2.3	1.9	2.4	SFB 250	2500	1.6	2000	6.81	1603	
B21R 315 LX6	B20R 315 LX6	200	1929	990	95.0	95	0.87	349	8.3	2.2	2.0	2.7	SFB 250	2500	1.3	2000	8.74	1819	
B22R 355 MY6		200	1921	994	96.0	96	0.85	354	6.8	1.4	1.0	2.5	SFB 250/330	3300	1.7	2000	8.24	1912	
B22R 355 M6		250	2409	991	96.0	95.5	0.84	448	7.4	1.5	1.1	2.7	SFB 250/330	3300	1.4	2000	8.34	2015	
B22R 355 MX6		315	3023	995	96.6	96.4	0.85	546	7.8	1.7	1.1	2.7	SFB 250/330	3300	1.1	2000	12.24	2581	
B22R 355 LY6		355	3411	994	96.6	96	0.84	628	7.8	1.6	1.2	2.9	SFB 250/330	3300	1	2000	14.14	2787	

Synchronous speed 750 rpm – 8-pole version

B21R 160 M8	B20R 132 S8	4.0	54	710	79.3	79	0.78	9.3	4.0	1.6	1.3	1.9	KFB 18	180	3.3	1800	0.0472	106
B21R 160 MX8	B20R 132 M8	5.5	74	710	81.4	80.5	0.78	12.5	4.5	1.7	1.6	2.1	KFB 18	180	2.4	1800	0.0572	123
B21R 160 L8	B20R 160 S8	7.5	99	725	83.0	81.5	0.78	16.5	4.5	1.8	1.6	2.1	KFB 30	300	3	1800	0.1185	169
B21R 180 L8	B20R 160 M8	11.0	146	720	85.0	84	0.78	24	4.5	2.0	1.7	2.1	KFB 30	300	2.1	1500	0.1505	192
B21R 200 L8	B20R 180 S8	15.0	198	725	86.5	85	0.79	31.5	5.0	2.0	1.7	2.3	KFB 40	400	2	1500	0.2348	237
B21R 225 S8		18.5	244	725	87.5	87	0.80	38	5.0	1.9	1.7	2.2	KFB 40/52	520	2.1	1500	0.2748	263
	B20R 180 M8	18.5	244	725	89.2	88	0.83	36	5.5	2.0	1.6	2.2	KFB 40/52	520	2.1	1500	0.4468	330
B21R 225 M8	B20R 200 M8	22	290	725	89.2	89	0.84	42.5	5.0	1.8	1.5	2.2	KFB 63	630	2.2	1500	0.4575	349
B21R 250 M8	B20R 225 M8	30	393	730	90.2	90	0.79	61	5.5	2.2	1.8	2.2	KFB 63/82	820	2.1	1500	0.8425	447
B21R 280 S8	B20R 250 S8	37	481	735	91.0	90	0.80	73.5	5.5	2.0	1.5	2.0	KFB 100	1000	2.1	1500	1.386	588
B21R 280 M8	B20R 250 M8	45	585	735	91.5	90.5	0.77	92	6.0	2.3	1.8	2.4	KFB 100	1000	1.7	1500	1.586	645
B21R 315 S8	B20R 280 S8	55	710	740	93.1	92	0.80	107	6.5	1.8	1.6	2.3	KFB 160	1600	2.3	1500	2.68	884
B21R 315 M8	B20R 280 M8	75	968	740	93.3	93	0.81	143	6.0	2.0	1.6	2.3	KFB 160	1600	1.7	1500	3.38	997
B21R 315 MX8	B20R 315 S8	90	1161	740	93.5	93	0.81	172	6.0	1.9	1.6	2.2	KFB 160	1600	1.4	1500	3.65	1079
B21R 315 MY8	B20R 315 M8	110	1420	740	94.6	94	0.81	207	6.5	2.1	1.8	2.4	SFB 250	2500	1.8	1500	6.14	1397
B21R 315 L8	B20R 315 L8	132	1704	740	95.0	94.3	0.83	242	6.3	2.0	1.7	2.1	SFB 250	2500	1.5	1500	6.9	1603
B21R 315 LX8	B20R 315 LX8	160	2065	740	95.2	94.5	0.79	307	7.2	2.2	1.9	2.5	SFB 250	2500	1.2	1500	8.85	1788
B22R 355 MY8		160	2054	744	95.2	95	0.80	308	6.8	1.3	0.9	2.5	SFB 250	2500	1.2	1500	9.44	1860
B22R 355 M8		200	2571	743	95.6	95.3	0.77	395	6.5	1.6	1.1	2.7	SFB 250	2500	1	1500	9.64	1963
B22R 355 MX8		250	3209	744	95.9	95.7	0.79	472	6.6	1.6	1.2	2.8	SFB 250	2500	0.8	1500	13.54	2581
B22R 355 LY8		280	3594	744	95.8	95.3	0.74	565	7.2	1.9	1.2	3.0	SFB 250	2500	0.7	1500	15.94	2787

Motors in ship version

Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Motor selection data, 60 Hz, 2- up to 8pole
3600/1800/1200/900 rpm

Series

KPER/K11R, mounting dimensions and
output correlation acc. to DIN 42673 and 42677
KPR/K10R, Transnorm version

Size

56 – 355

Output range

0.09 up to 490 kW

Degrees of protection

IP 55 acc. to DIN EN 60034-5, higher degrees of protection as an option

Cooling method

IC 411 acc. to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

acc. to Classification Authorities

**The motors have been manufactured and tested and
are available according to the Rules of the following Classification Authorities**

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

Three-phase motors with squirrel-cage rotor for sea-going vessels

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 380 V, 50 Hz

Type		P_B GL, RRS	P_B BV, DNV LR, ABS CCS	n_B	η_B	$\cos\phi_B$	I_B 380 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	rpm	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version													
KPER 63 K2	KPR 56 K2	0.18	0.18	2765	66.0	0.81	0.51	4.1	1.7	1.7	2.0	0.00013	4.9
KPER 63 G2	KPR 56 G2	0.25	0.25	2775	66.0	0.80	0.72	4.2	2.0	2.0	2.2	0.00015	5.2
KPER 71 K2	KPR 63 K2	0.37	0.37	2745	70.0	0.86	0.93	4.2	1.9	1.9	2.1	0.00025	6.7
KPER 71 G2	KPR 63 G2	0.55	0.55	2970	74.0	0.82	1.38	5.0	1.9	1.9	2.3	0.00032	7.6
KPER 80 K2	KPR 71 K2	0.75	0.75	2795	77.0	0.85	1.74	5.6	2.2	2.2	2.3	0.00057	10.7
KPER 80 G2	KPR 71 G2	1.1	1.1	2810	76.0	0.85	2.59	5.6	2.2	2.1	2.4	0.00072	11.5
KPER 90 S2	KPR 80 K2	1.5	1.5	2830	79.0	0.86	3.35	6.7	2.3	2.3	2.6	0.00132	16.0
KPER 90 L2	KPR 80 G2	2.2	2.2	2830	81.0	0.89	4.65	7.0	2.6	2.1	2.6	0.0017	19.0
KPER 100 L2	KPR 90 L2	3.0	3.0	2840	82.0	0.88	6.35	6.4	1.8	2.1	2.5	0.00275	25.0
KPER 112 M2	KPR 100 S2	4.0	4.0	2885	83.0	0.86	8.50	6.7	1.8	1.9	2.6	0.0045	32
KPER 112 MX2	KPR 100 L2	5.5	5.5	2875	85.0	0.88	11.2	7.0	2.2	2.0	2.7	0.0055	38
K11R 132 S2	K10R 112MY2	5.5	5.5	2860	85.7	0.86	11.5	5.5	1.8	1.6	2.2	0.0081	52
K11R 132 SX2	K10R 112 M2	7.5	-	2900	87.0	0.86	15	6.6	1.8	1.3	2.5	0.0110	57
K11R 132 SX2	K10R 112 M2	-	7.1	2905	87.0	0.86	14.5	6.8	1.9	1.4	2.6	0.0110	57
K11R 160 M2	K10R 132 M2	11	11	2900	88.5	0.90	21	7	2.4	2	2.4	0.0258	81
K11R 160 MX2	K10R 160 S2	15	15	2930	89.4	0.90	28.5	7.1	2.2	1.7	2.9	0.0575	118
K11R 160 L2	K10R 160 M2	18.5	18.5	2920	90.5	0.92	34	7.2	2.1	1.6	2.6	0.0675	134
K11R 180 M2	K10R 180 S2	22	22	2935	91.8	0.92	39.5	6.8	1.7	1.4	2.6	0.105	165
K11R 200 L2	K10R 180 M2	30	30	2940	92.8	0.92	53.5	7.3	2	1.6	2.9	0.128	195
K11R 200 LX2	K10R 200 M2	37	37	2940	93.0	0.90	67	7	1.8	1.3	2.4	0.193	255
K11R 225 M2	K10R 200 L2	45	45	2940	93.7	0.91	80	7.5	1.8	1.4	2.7	0.220	290
K11R 250 M2	K10R 225 M2	55	55	2955	93.7	0.91	98	7.5	2	1.5	2.6	0.375	360
K11R 280 S2	K10R 250 S2	75	75	2970	94.6	0.92	131	7.5	2	1.6	2.6	0.650	490
K11R 280 M2	K10R 250 M2	90	90	2970	94.7	0.91	159	8.5	2.2	1.8	2.8	0.675	510
K11R 315 S2	K10R 280 S2	110	110	2975	95.4	0.91	193	8.5	1.5	1.3	2.5	1.21	720
K11R 315 M2	K10R 280 M2	132	132	2975	95.4	0.91	231	8.5	2	1.8	2.7	1.44	800
K11R 315 MX2	K10R 315 S2	160	160	2975	96.0	0.93	272	8.5	2	1.6	2.6	1.76	980
K11R 315 MY2	K10R 315 M2	200	200	2970	96.0	0.92	344	8.2	2.6	2	2.6	2.82	1170
K11R 315 L2	K10R 315 L2	250	250	2973	96.1	0.93	425	7.3	2.1	1.4	2	3.66	1460
K11R 315 LX2	K10R 315 LX2	280	280	2965	96.7	0.92	478	8.2	2.6	1.6	2.2	4.43	1630
K22R 355 M2		315	315	2985								4.20	2000
K22R 355 MX2		355	355	2985								5.50	2200
K22R 355 LY2		400	400	2985								7.10	2400
K22R 355 L2		450	450	2985								7.10	2400

Three-phase motors with squirrel-cage rotor for sea-going vessels

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 440 V, 60 Hz

Type		P_B GL, RRS	P_B BV, DNV LR, ABS CCS	n_B	η_B	$\cos\phi_B$	I_B 440 V	I_A/I_B	M_A/M_B	M_S/M_B	M_R/M_B	J	m
		kW	kW	rpm	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 3600 rpm – 2-pole version													
KPER 63 K2	KPR 56 K2	0.21	0.21	3370	70.0	0.80	0.49	4.4	2.0	1.8	2.3	0.00013	4.9
KPER 63 G2	KPR 56 G2	0.30	0.30	3390	74.0	0.76	0.70	4.3	2.0	2.0	2.3	0.00015	5.2
KPER 71 K2	KPR 63 K2	0.44	0.44	3350	74.0	0.85	0.92	4.4	1.9	1.7	2.0	0.00025	6.7
KPER 71 G2	KPR 63 G2	0.65	0.65	3380	78.0	0.81	1.35	5.3	1.9	1.9	2.1	0.00032	7.6
KPER 80 K2	KPR 71 K2	0.90	0.90	3400	80.0	0.85	1.74	5.6	2.1	2.0	2.2	0.00057	10.7
KPER 80 G2	KPR 71 G2	1.3	1.3	3400	79.0	0.85	2.54	5.8	2.0	2.0	2.3	0.00072	11.5
KPER 90 S2	KPR 80 K2	1.8	1.8	3440	82.0	0.85	3.40	6.4	2.2	2.0	2.3	0.00132	16.0
KPER 90 L2	KPR 80 G2	2.6	2.6	3420	82.0	0.88	4.75	7.3	2.4	1.9	2.4	0.0017	19.0
KPER 100 L2	KPR 90 L2	3.6	3.6	3430	85.0	0.88	6.30	6.6	2.0	1.9	2.3	0.00275	25.0
KPER 112 M2	KPR 100 S2	4.8	4.8	3470	85.0	0.86	8.85	7.0	1.7	1.7	2.4	0.0045	32
KPER 112 MX2	KPR 100 L2	6.6	6.6	3460	85.0	0.89	11.5	8.0	2.0	1.8	2.5	0.0055	38
K11R 132 S2	K10R 112MY2	6.6	6.6	3430	85.7	0.85	12	5.5	1.7	1.5	2.2	0.0081	52
K11R 132 SX2	K10R 112 M2	9	-	3480	87.0	0.86	16	6.6	1.8	1.3	2.4	0.0110	57
K11R 132 SX2	K10R 112 M2	-	8.1	3485	87.0	0.86	14	7.3	1.9	1.6	2.6	0.0110	57
K11R 160 M2	K10R 132 M2	13	13	3480	88.0	0.90	21.5	7	2.4	1.9	3	0.0258	81
K11R 160 MX2	K10R 160 S2	18	18	3530	89.6	0.90	29.5	7.1	2.2	1.7	2.9	0.0575	118
K11R 160 L2	K10R 160 M2	22	22	3515	90.0	0.92	35	6.5	1.9	1.4	2.6	0.0675	134
K11R 180 M2	K10R 180 S2	26	26	3525	91.8	0.92	40.5	6.3	1.5	1.3	2.3	0.105	165
K11R 200 L2	K10R 180 M2	36	36	3535	92.5	0.92	55.5	6.9	2	1.5	2.7	0.128	195
K11R 200 LX2	K10R 200 M2	44	44	3535	93.0	0.91	68	6.5	1.6	1.2	2.3	0.193	255
K11R 225 M2	K10R 200 L2	54	54	3530	93.5	0.90	84	7	1.7	1.3	2.5	0.220	290
K11R 250 M2	K10R 225 M2	66	66	3545	93.5	0.90	103	6.8	1.8	1.4	2.3	0.375	360
K11R 280 S2	K10R 250 S2	90	90	3565	94.0	0.92	137	6.8	1.8	1.4	2.4	0.650	490
K11R 280 M2	K10R 250 M2	105	105	3565	94.5	0.91	160	7.6	2	1.6	2.6	0.675	510
K11R 315 S2	K10R 280 S2	132	132	3970	95.0	0.91	200	7.5	1.3	1.2	2.3	1.21	720
K11R 315 M2	K10R 280 M2	158	158	3570	95.4	0.91	239	7.7	1.8	1.6	2.3	1.44	800
K11R 315 MX2	K10R 315 S2	190	190	3570	96.0	0.92	282	7.6	1.8	1.5	2.4	1.76	980
K11R 315 MY2	K10R 315 M2	225	225	3568	95.8	0.91	339	8	2.6	2	2.6	2.82	1170
K11R 315 L2	K10R 315 L2	280	280	3570	96.0	0.92	416	6.6	1.9	1.3	1.8	3.66	1460
K11R 315 LX2	K10R 315 LX2	310	310	3580	96.7	0.91	462	8.8	2.9	1.7	2.4	4.43	1630
K22R 355 M2		340	340	3585								4.20	2000
K22R 355 MX2		390	390	3585								5.50	2200
K22R 355 LY2		440	440	3585								7.10	2400
K22R 355 L2		490	490	3585								7.10	2400

Three-phase motors with squirrel-cage rotor for sea-going vessels

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 380 V, 50 Hz

Type		P_B GL, RRS	P_B BV, DNV LR, ABS CCS	n_B	η_B	$\cos\phi_B$	I_B 380 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	rpm	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version													
KPER 63 K4	KPR 56 K4	0.12	0.12	1360	56.0	0.72	0.45	3.1	1.7	1.6	2.0	0.00019	4.8
KPER 63 G4	KpR 56 G4	0.18	0.18	1340	60.0	0.73	0.62	3.2	1.8	1.8	2.1	0.00024	5.2
KPER 71 K4	KPR 63 K4	0.25	0.25	1370	64.0	0.77	0.77	3.5	1.6	1.6	1.9	0.00040	6.8
KPER 71 G4	KPR 63 G4	0.37	0.37	1345	66.0	0.80	1.06	3.6	1.8	1.8	2.0	0.00050	7.8
KPER 80 K4	KPR 71 K4	0.55	0.55	1390	68.0	0.77	1.60	4.2	2.0	1.9	2.1	0.00087	10.6
KPE 80 G4	KPR 71 G4	0.75	0.75	1380	70.0	0.76	2.15	4.4	2.1	2.0	2.2	0.00107	11.7
KPER 90 S4	KPR 80 K4	1.1	1.1	1400	75.0	0.84	2.65	5.0	2.1	2.0	2.2	0.00207	15.5
KPER 90 L4	KPR 80 G4	1.5	1.5	1390	76.0	0.86	3.50	5.2	2.3	2.2	2.4	0.00260	18.0
KPER 100 L4	KPR 90 L4	2.2	2.2	1410	80.0	0.81	5.15	5.8	2.7	2.5	2.8	0.00400	23.5
KPER 100 LX4	KPR 100 S4	3.0	3.0	1425	82.0	0.82	6.80	6.1	2.1	1.9	2.6	0.00725	30
KPER 112 M4	KPR 100 L4	4.0	4.0	1425	82.0	0.82	9.00	6.7	2.4	2.3	3.0	0.00900	37
K11R 132 S4	K10R 112 M4	5.5	5.5	1440	83	0.89	11.5	6.5	1.9	1.7	3	0.01500	50
K11R 132 M4	K10R 132 S4	7.5	7.5	1450	86	0.84	16	6	2	1.7	2.9	0.0280	70
K11R 160 M4	K10R 132 M4	11	11	1450	86	0.85	23	6.8	2.2	1.9	3.3	0.0350	92
K11R 160 L4	K10R 160 S4	15	15	1465	88	0.86	30	7.3	2.5	2	3	0.0780	120
K11R 180 M4	K10R 160 M4	18.5	-	1460	88.5	0.86	37	6.8	2.5	2	2.9	0.0900	136
K11R 180 M4	K10R 160 M4	-	17.5	1460	88.5	0.86	35	7.2	2.6	2.1	3.1	0.0900	136
K11R 180 L4	K10R 180 S4	22	22	1465	90.5	0.84	44	6.5	2	1.8	2.6	0.1380	170
K11R 200 L4	K10R 180 M4	30	-	1465	91.5	0.85	58.5	7	2	1.7	2.4	0.1680	200
K11R 200 L4	K10R 180 M4	-	30	1465	91.5	0.85	58.5	7	2	1.7	2.4	0.1680	200
K11R 225 S4	K10R 200 M4	37	37	1470	92.5	0.86	70.5	7	2	1.7	2.5	0.2750	270
K11R 225 M4	K10R 200 L4	45	-	1470	93	0.86	85.5	7	2	1.7	2.5	0.3130	300
K11R 225 M4	K10R 200 L4	-	43	1470	93	0.86	81.5	7.3	2.1	1.8	2.6	0.3130	300
K11R 250 M4	K10R 225 M4	55	-	1475	93.5	0.86	104	7	2.2	1.7	2.3	0.5250	375
K11R 250 M4	K10R 225 M4	-	55	1475	93.5	0.86	104	7	2.2	1.7	2.3	0.5250	375
K11R 280 S4	K10R 250 S4	75	75	1480	94.1	0.86	141	7	2	1.7	2.2	0.9500	520
K11R 280 M4	K10R 250 M4	90	90	1480	94.6	0.86	168	7	2.1	1.6	2.2	1.10	580
K11R 315 S4	K10R 280 S4	110	110	1485	95.1	0.86	204	7.5	1.8	1.6	2.2	1.96	740
K11R 315 M4	K10R 280 M4	132	132	1485	95.1	0.86	245	7	1.8	1.5	2.2	2.27	840
K11R 315 MX4	K10R 315 S4	160	160	1480	95	0.87	294	7	1.8	1.5	2	2.73	1000
K11R 315 MY4	K10R 315 M4	200	200	1485	96	0.88	360	7.5	2	1.8	2.4	4.82	1200
K11R 315 L4	K10R 315 L4	250	250	1485	96.1	0.9	439	8	2	1.6	2.3	5.93	1450
K11R 315 LX4	K10R 315 LX4	280	280	1490	96.5	0.88	501	8.6	1.9	1.5	2.5	6.82	1630
K22R 355 M4		315	315	1492								7.9	2150
K22R 355 MX4		355	355	1495								9.5	2400
K22R 355 LY4		400	400	1495								10.0	2500

Three-phase motors with squirrel-cage rotor for sea-going vessels

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 440 V, 60 Hz

Type		P_B GL, RRS	P_B BV, DNV LR, ABS CCS	n_B	η_B	$\cos\phi_B$	I_B 440 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	rpm	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 1800 rpm – 4-pole version													
KPER 63 K4	KPR 56 K4	0.14	0.14	1660	61.0	0.70	0.43	3.2	1.7	1.7	2.1	0.00019	4.8
KPER 63 G4	KpR 56 G4	0.21	0.21	1660	65.0	0.68	0.62	3.3	1.9	1.9	2.2	0.00024	5.2
KPER 71 K4	KPR 63 K4	0.30	0.30	1660	67.0	0.76	0.77	3.7	1.6	1.6	1.8	0.00040	6.8
KPER 71 G4	KPR 63 G4	0.44	0.44	1660	71.0	0.77	1.06	3.9	1.8	1.8	2.0	0.00050	7.8
KPER 80 K4	KPR 71 K4	0.65	0.65	1690	74.0	0.75	1.54	4.5	2.0	1.7	2.1	0.00087	10.6
KPE 80 G4	KPR 71 G4	0.90	0.90	1685	76.0	0.76	2.05	4.8	1.9	1.8	2.0	0.00107	11.7
KPER 90 S4	KPR 80 K4	1.3	1.3	1700	78.0	0.83	2.65	5.2	1.9	1.8	2.2	0.00207	15.5
KPER 90 L4	KPR 80 G4	1.8	1.8	1690	80.0	0.84	3.50	5.2	2.1	2.0	2.2	0.00260	18.0
KPER 100 L4	KPR 90 L4	2.6	2.6	1705	82.0	0.80	5.20	6.2	2.5	2.3	2.6	0.00400	23.5
KPER 100 LX4	KPR 100 S4	3.6	3.6	1715	82.0	0.83	6.95	6.2	1.9	1.8	2.5	0.00725	30
KPER 112 M4	KPR 100 L4	4.8	4.8	1720	85.0	0.83	9.00	6.6	2.3	2.1	2.8	0.00900	37
K11R 132 S4	K10R 112 M4	6.6	6.6	1730	84	0.9	11.5	6.1	1.6	1.5	2.7	0.01500	50
K11R 132 M4	K10R 132 S4	9	9	1745	86	0.85	16	5.6	1.8	1.5	2.6	0.0280	70
K11R 160 M4	K10R 132 M4	13	13	1750	88	0.86	22.5	6.5	2	1.7	3	0.0350	92
K11R 160 L4	K10R 160 S4	18	18	1760	89	0.87	30.5	7	2.3	1.8	2.7	0.0780	120
K11R 180 M4	K10R 160 M4	22	-	1755	89.5	0.87	37	6.3	2.3	1.8	2.6	0.0900	136
K11R 180 M4	K10R 160 M4	-	20	1755	89.5	0.87	33.5	7	2.5	2	2.9	0.0900	136
K11R 180 L4	K10R 180 S4	26	26	1765	90.5	0.85	44.5	6.1	1.8	1.6	2.4	0.1380	170
K11R 200 L4	K10R 180 M4	36	-	1765	92	0.86	59.5	6.6	1.8	1.6	2.2	0.1680	200
K11R 200 L4	K10R 180 M4	-	34	1765	92	0.86	56.5	6.9	1.9	1.7	2.3	0.1680	200
K11R 225 S4	K10R 200 M4	44	44	1765	92.5	0.86	72.5	6.6	1.8	1.5	2.3	0.2750	270
K11R 225 M4	K10R 200 L4	54	-	1770	92	0.86	89.5	6.5	1.8	1.5	2.3	0.3130	300
K11R 225 M4	K10R 200 L4	-	49.5	1770	92	0.86	82	7.1	2	1.6	2.5	0.3130	300
K11R 250 M4	K10R 225 M4	66	-	1770	92.5	0.86	109	6.5	2	1.5	2	0.5250	375
K11R 250 M4	K10R 225 M4	-	63	1770	92.5	0.86	104	6.8	2.1	1.6	2.1	0.5250	375
K11R 280 S4	K10R 250 S4	90	90	1777	94	0.85	148	6.5	1.8	1.6	1.9	0.9500	520
K11R 280 M4	K10R 250 M4	105	105	1777	94.4	0.86	170	6.5	1.9	1.4	1.9	1.10	580
K11R 315 S4	K10R 280 S4	132	132	1780	95	0.85	214	7.3	1.6	1.4	2	1.96	740
K11R 315 M4	K10R 280 M4	158	158	1777	95	0.85	257	6.6	1.6	1.3	2	2.27	840
K11R 315 MX4	K10R 315 S4	190	190	1775	94.5	0.86	307	6.6	1.6	1.4	1.8	2.73	1000
K11R 315 MY4	K10R 315 M4	225	225	1785	96	0.88	349	7.4	1.9	1.8	2.3	4.82	1200
K11R 315 L4	K10R 315 L4	280	280	1785	96.1	0.88	434	7.4	1.9	1.5	2.2	5.93	1450
K11R 315 LX4	K10R 315 LX4	310	310	1790	96.8	0.88	478	8.8	1.9	1.6	2.5	6.82	1630
K22R 355 M4		340	340	1790								7.9	2150
K22R 355 MX4		390	390	1790								9.5	2400
K22R 355 LY4		440	440	1790								10.0	2500

Three-phase motors with squirrel-cage rotor for sea-going vessels

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 380 V, 50 Hz

Type		P_B GL, RRS	P_B BV, DNV LR, ABS CCS	n_B	η_B	$\cos\phi_B$	I_B 380 V	I_A/I_B	M_A/M_B	M_S/M_B	M_K/M_B	J	m
		kW	kW	rpm	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version													
KPER 63 K6	KPR 56 K6	0.09	0.09	880	49.0	0.62	0.45	2.4	1.9	1.9	2.2	0.00024	4.9
KPER 63 G6	KPR 56 G6	0.12	0.12	865	50.0	0.64	0.57	2.4	1.8	1.8	2.0	0.00027	5.7
KPER 71 K6	KPR 63 K6	0.18	0.18	920	60.0	0.56	0.82	2.8	1.5	1.5	1.8	0.00045	7.4
KPER 71 G6	KPR 63 G6	0.25	0.25	900	60.0	0.59	1.07	2.8	1.8	1.8	2.0	0.00060	8.3
KPER 80 K6	KPR 71 K6	0.37	0.37	905	63.0	0.73	1.23	3.3	1.8	1.8	1.8	0.00130	11.0
KPER 80 G6	KPR 71 G6	0.55	0.55	895	66.0	0.73	1.74	3.5	2.0	2.0	2.2	0.00175	12.5
KPER 90 S6	KPR 80 K6	0.75	0.75	930	70.0	0.70	2.32	4.4	2.1	2.1	2.4	0.00325	16.0
KPER 90 L6	KPR 80 G6	1.1	1.1	925	73.0	0.73	3.15	4.5	2.0	2.0	2.2	0.00425	19.0
KPER 100 L6	KPR 90 L6	1.5	1.5	935	76.0	0.75	4.00	4.5	1.9	1.8	2.2	0.00625	24.0
KPER 112 M6	KPR 100 L6	2.2	2.2	940	78.0	0.80	5.35	5.1	2.0	1.9	2.5	0.01225	33.5
K11R 132 S6	K10R 112 M6	3	3	955	78.2	0.82	7.1	5.7	1.8	1.6	2.7	0.0180	46
K11R 132 M6	K10R 112 MX6	4	4	955	80	0.8	9.5	6	2.2	2	3.1	0.0230	53
K11R 132 MX6	K10R 132 S6	5.5	5.5	955	83	0.83	12	5	1.8	1.5	2.3	0.0430	70
K11R 160 M6	K10R 132 M6	7.5	7.5	960	85	0.82	16.5	5.5	2	1.6	2.5	0.0530	86
K11R 160 L6	K10R 160 S6	11	11	965	85.2	0.86	23	5	2	1.7	2.3	0.1130	114
K11R 180 L6	K10R 160 M6	14	-	965	86	0.83	30	6	2.4	2.1	2.7	0.1450	136
K11R 180 L6	K10R 160 M6	-	13.5	965	86	0.83	28.5	6.3	2.5	2.2	2.8	0.1450	136
K11R 200 L6	K10R 180 S6	18.5	18.5	970	88.1	0.87	36.5	5.5	2	1.7	2.4	0.2280	175
K11R 200 LX6	K10R 180 M6	22	22	970	88.8	0.87	43.5	6.2	2.2	1.8	2.6	0.2680	200
K11R 225 M6	K10R 200 M6	30	30	973	90.4	0.89	56.5	6.5	2.2	1.7	2.5	0.4430	265
K11R 250 M6	K10R 225 M6	37	37	975	91	0.89	69.5	6.5	2.2	1.7	2.3	0.8250	360
K11R 280 S6	K10R 250 S6	45	45	980	92	0.87	85.5	6	2	1.5	2	1.28	465
K11R 280 M6	K10R 250 M6	55	55	980	92.5	0.88	103	6.5	2.3	1.7	2.4	1.48	520
K11R 315 S6	K10R 280 S6	75	75	985	93.7	0.87	140	7	2	1.6	2.4	2.63	690
K11R 315 M6	K10R 280 M6	90	90	990	94.4	0.88	165	7	2	1.7	2.4	3.33	800
K11R 315 MX6	K10R 315 S6	110	110	990	94	0.88	202	7.5	2.2	1.7	2.6	3.60	880
K11R 315 MY6	K10R 315 M6	132	132	990	95	0.88	240	7.5	2	1.7	2.4	6.00	1050
K11R 315 L6	K10R 315 L6	160	160	985	95.3	0.89	287	7.5	2.3	1.9	2.4	6.67	1250
K11R 315 LX6	K10R 315 LX6	200	200	990	95	0.87	368	8.3	2.2	2	2.7	8.6	1460
K22R 355 M6		220	220	994								8.2	1650
K22R 355 MX6		250	250	990								12.1	2200
K22R 355 LY6		315	315	990								14.0	2400

Synchronous speed 750 rpm – 8-pole version

KPER 71 K8	KPR 63 K8	0.09	0.09	665	42.0	0.57	0.57	2.1	1.7	1.7	1.9	0.00050	6.6
KPER 71 G8	KPR 63 G8	0.12	0.12	660	45.0	0.58	0.70	2.3	1.6	1.6	2.0	0.00060	8.1
KPER 80 K8	KPR 71 K8	0.18	0.18	675	55.0	0.65	0.76	2.7	1.8	1.8	2.0	0.00130	10.5
KPER 80 G8	KPR 71 G8	0.25	0.25	685	58.0	0.61	1.07	3.0	2.1	2.1	2.3	0.00175	12.0
KPER 90 S8	KPR 80 K8	0.37	0.37	695	59.0	0.61	1.56	2.9	1.7	1.7	1.9	0.00300	15.0
KPER 90 L8	KPR 80 G8	0.55	0.55	690	63.0	0.64	2.07	3.1	1.7	1.7	2.0	0.00375	18.0
KPER 100 L8	KPR 90 L8	0.75	0.75	700	67.0	0.62	2.75	3.2	1.8	1.8	2.1	0.00625	23.0
KPER 100 LX8	KPR 100 S8	1.1	1.1	695	72.0	0.70	3.30	3.9	1.8	1.8	2.2	0.00900	28.0
KPER 112 M8	KPR 100 L8	1.5	1.5	695	74.0	0.73	4.20	4.1	2.0	1.9	2.3	0.01225	33.5
K11R 132 S8	K10R 112 M8	2.2	2.2	705	75.5	0.76	5.8	4.5	1.7	1.6	2.3	0.01800	46
K11R 132 M8	K10R 112 MX8	3	3	705	78	0.75	7.8	4.5	1.7	1.6	2.3	0.0230	53
K11R 160 M8	K10R 132 S8	4	4	710	79.3	0.78	9.8	4	1.6	1.3	1.9	0.0430	70
K11R 160 MX8	K10R 132 M8	5.5	5.5	710	81.4	0.78	13	4.5	1.7	1.6	2.1	0.0530	86
K11R 160 L8	K10R 160 S8	7.5	7.5	725	83	0.78	17.5	4.5	1.8	1.6	2.1	0.1130	114
K11R 180 L8	K10R 160 M8	11	-	720	85	0.78	25	4.5	2	1.7	2.1	0.1450	136
K11R 180 L8	K10R 160 M8	-	10.5	720	85	0.78	24	4.7	2.1	1.8	2.2	0.1450	136
K11R 200 L8	K10R 180 S8	15	15	725	86.5	0.79	33.5	5	2	1.7	2.3	0.228	175
	K10R 180 M8	18.5	-	725	87.5	0.8	40	5	1.9	1.7	2.2	0.268	
	K10R 180 M8	-	17.5	725	87.5	0.8	38	5.3	2	1.8	2.3	0.268	
K11R 225 S8		18.5	-	725	89.2	0.83	38	5.5	2	1.6	2.2	0.440	265
K11R 225 S8		-	17.5	725	89.2	0.83	36	5.8	2.1	1.7	2.3	0.440	265
K11R 225 M8	K10R 200 M8	22	22	725	89.2	0.84	44.5	5	1.8	1.5	2.2	0.440	265
K11R 250 M8	K10R 225 M8	30	30	730	90.2	0.79	64	5.5	2.2	1.8	2.2	0.825	360
K11R 280 S8	K10R 250 S8	37	37	735	91	0.8	77	5.5	2	1.5	2	1.35	465
K11R 280 M8	K10R 250 M8	45	45	735	91.5	0.77	97	6	2.3	1.8	2.4	1.55	520
K11R 315 S8	K10R 280 S8	55	55	740	93.1	0.8	112	6.5	1.8	1.6	2.3	2.63	690
K11R 315 M8	K10R 280 M8	75	75	740	93.3	0.81	151	6	2	1.6	2.3	3.33	800
K11R 315 MX8	K10R 315 S8	90	90	740	93.5	0.81	181	6	1.9	1.6	2.2	3.60	880
K11R 315 MY8	K10R 315 M8	110	110	740	94.6	0.81	218	6.5	2.1	1.8	2.4	6.00	1050
K11R 315 L8	K10R 315 L8	132	132	740	95	0.83	254	6.3	2	1.7	2.1	6.76	1250
K11R 315 LX8	K10R 315 LX8	160	160	740	95.2	0.79	323	7.2	2.2	1.9	2.5	8.71	1430
K22R 355 M8		180	180	745								9.5	1600
K22R 355 MX8		200	200	745								13.4	2200
K22R 355 LY8		250	250	745								15.8	2400

Three-phase motors with squirrel-cage rotor for sea-going vessels

with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 440 V, 60 Hz

Type		P _B GL, RRS	P _B BV, DNV LR, ABS CCS	n _B	η _B	cosφ _B	I _B 440 V	I _A /I _B	M _A /M _B	M _S /M _B	M _K /M _B	J	m
		kW	kW	rpm	%	-	A	-	-	-	-	kgm ²	kg
Synchronous speed 1200 rpm – 6-pole version													
KPER 63 K6	KPR 56 K6	0.105	0.105	1085	53.0	0.58	0.45	2.7	1.9	1.9	2.2	0.00024	4.9
KPER 63 G6	KPR 56 G6	0.14	0.14	1080	56.0	0.57	0.58	2.5	1.9	1.9	2.1	0.00027	5.7
KPER 71 K6	KPR 63 K6	0.21	0.21	1120	65.0	0.53	0.80	3.2	1.4	1.4	1.7	0.00045	7.4
KPER 71 G6	KPR 63 G6	0.30	0.30	1100	64.0	0.58	1.06	3.2	1.6	1.6	1.8	0.00060	8.3
KPER 80 K6	KPR 71 K6	0.44	0.44	1110	67.0	0.74	1.17	3.6	1.7	1.6	1.7	0.00130	11.0
KPER 80 G6	KPR 71 G6	0.65	0.65	1110	71.0	0.71	1.70	3.8	1.9	1.8	2.0	0.00175	12.5
KPER 90 S6	KPR 80 K6	0.90	0.90	1130	73.0	0.68	2.40	4.7	1.9	1.9	2.2	0.00325	16.0
KPER 90 L6	KPR 80 G6	1.3	1.3	1120	75.0	0.70	3.25	4.5	1.8	1.8	2.0	0.00425	19.0
KPER 100 L6	KPR 90 L6	1.8	1.8	1130	79.0	0.75	4.00	4.8	1.7	1.6	2.0	0.00625	24.0
KPER 112 M6	KPR 100 L6	2.6	2.6	1140	81.0	0.81	5.20	5.8	1.8	1.7	2.3	0.01225	33.5
K11R 132 S6	K10R 112 M6	3.6	3.6	1155	80	0.8	7.4	5.5	1.7	1.4	2.4	0.0180	46
K11R 132 M6	K10R 112 MX6	4.8	4.8	1152	81	0.79	9.8	5.8	2	1.8	2.7	0.0230	53
K11R 132 MX6	K10R 132 S6	6.6	6.6	1145	83	0.82	12.5	4.8	1.6	1.3	2	0.0430	70
K11R 160 M6	K10R 132 M6	9	9	1145	85	0.82	17	5.2	1.8	1.4	2.2	0.0530	86
K11R 160 L6	K10R 160 S6	13	13	1155	85.5	0.86	23	4.6	1.8	1.5	2	0.1130	114
K11R 180 L6	K10R 160 M6	16	-	1165	87	0.83	29	5.8	2.2	1.9	2.6	0.1450	136
K11R 180 L6	K10R 160 M6	-	15.5	1165	87	0.83	28	6	2.3	2	2.7	0.1450	136
K11R 200 L6	K10R 180 S6	21	21	1168	88.4	0.87	36	5.5	1.9	1.6	2.3	0.2280	175
K11R 200 LX6	K10R 180 M6	26	26	1170	89.3	0.87	44	5.9	1.9	1.6	2.5	0.2680	200
K11R 225 M6	K10R 200 M6	34	34	1170	90.3	0.88	56	5.9	1.8	1.5	2.4	0.4430	265
K11R 250 M6	K10R 225 M6	42	42	1172	91.5	0.88	68.5	5.8	2	1.6	2.1	0.8250	360
K11R 280 S6	K10R 250 S6	54	54	1180	92	0.87	88.5	5.5	1.8	1.4	1.8	1.28	465
K11R 280 M6	K10R 250 M6	66	66	1180	92.5	0.88	106	6.5	2.2	1.7	2.2	1.48	520
K11R 315 S6	K10R 280 S6	90	90	1182	93.5	0.87	145	6.5	1.8	1.4	2.2	2.63	690
K11R 315 M6	K10R 280 M6	108	108	1185	94.5	0.87	172	6.5	1.8	1.5	2.1	3.33	800
K11R 315 MX6	K10R 315 S6	132	132	1185	94	0.88	209	7	2	1.6	2.4	3.60	880
K11R 315 MY6	K10R 315 M6	158	158	1190	95	0.88	248	7	1.9	1.6	2.3	6.00	1050
K11R 315 L6	K10R 315 L6	190	190	1185	95.2	0.89	294	7	2.2	1.8	2.3	6.67	1250
K11R 315 LX6	K10R 315 LX6	230	230	1185	95.2	0.89	356	7.7	2	1.8	2.5	8.6	1460
K22R 355 M6		240	240	1190								8.2	1650
K22R 355 MX6		270	270	1190								12.1	2200
K22R 355 LY6		340	340	1190								14.0	2400

Synchronous speed 900 rpm – 8-pole version

KPER 71 K8	KPR 63 K8	0.105	0.105	820	50.0	0.54	0.51	2.3	1.6	1.6	1.7	0.00050	6.6
KPER 71 G8	KPR 63 G8	0.14	0.14	815	51.0	0.53	0.68	2.5	1.5	1.5	1.8	0.00060	8.1
KPER 80 K8	KPR 71 K8	0.21	0.21	830	60.0	0.62	0.74	2.8	1.6	1.6	1.8	0.00130	10.5
KPER 80 G8	KPR 71 G8	0.30	0.30	835	62.0	0.60	1.06	3.1	1.9	1.9	2.1	0.00175	12.0
KPER 90 S8	KPR 80 K8	0.44	0.44	850	65.0	0.57	1.56	3.6	1.6	1.6	1.7	0.00300	15.0
KPER 90 L8	KPR 80 G8	0.65	0.65	840	70.0	0.60	2.03	3.7	1.7	1.7	1.8	0.00375	18.0
KPER 100 L8	KPR 90 L8	0.90	0.90	850	69.0	0.63	2.70	3.7	1.6	1.6	1.9	0.00625	23.0
KPER 100 LX8	KPR 100 S8	1.3	1.3	850	76.0	0.69	3.25	4.2	1.6	1.6	2.0	0.00900	28.0
KPER 112 M8	KPR 100 L8	1.8	1.8	840	78.0	0.73	4.15	4.2	1.8	1.7	2.1	0.01225	33.5
K11R 132 S8	K10R 112 M8	2.6	2.6	855	76.5	0.74	6	4.3	1.6	1.5	2.2	0.01800	46
K11R 132 M8	K10R 112 MX8	3.6	3.6	850	78	0.76	8	4.2	1.5	1.4	2.1	0.0230	53
K11R 160 M8	K10R 132 S8	4.8	4.8	850	79.5	0.75	10.5	3.8	1.4	1.1	1.7	0.0430	70
K11R 160 MX8	K10R 132 M8	6.6	6.6	860	82.3	0.77	13.5	4.1	1.5	1.4	2	0.0530	86
K11R 160 L8	K10R 160 S8	9	9	870	83.5	0.79	18	4	1.6	1.4	1.9	0.1130	114
K11R 180 L8	K10R 160 M8	13	-	865	86	0.78	25.5	4.1	1.8	1.6	2	0.1450	136
K11R 180 L8	K10R 160 M8	-	12	865	86	0.78	23.5	4.4	2	1.7	2.2	0.1450	136
K11R 200 L8	K10R 180 S8	18	18	875	87.4	0.79	34	4.7	1.8	1.5	2	0.228	175
	K10R 180 M8	21	-	865	87.5	0.82	38.5	4	1.8	1.6	2	0.268	200
	K10R 180 M8	-	20	865	87.5	0.82	36.5	4.2	1.9	1.7	2.1	0.268	200
K11R 225 S8		22	-	875	89	0.81	40	5	1.8	1.4	2	0.440	265
K11R 225 S8		-	20	875	89	0.81	36.5	5.5	2	1.5	2.2	0.440	265
K11R 225 M8	K10R 200 M8	26	26	870	89.5	0.84	45.5	4.7	1.6	1.4	2	0.440	265
K11R 250 M8	K10R 225 M8	36	36	880	90.5	0.78	67	5.1	2	1.6	2	0.825	360
K11R 280 S8	K10R 250 S8	44	44	882	90.5	0.8	79.5	4.9	1.9	1.4	1.9	1.35	465
K11R 280 M8	K10R 250 M8	54	54	884	91.5	0.78	99.5	5.5	2.1	1.6	2.1	1.55	520
K11R 315 S8	K10R 280 S8	66	66	889	93.3	0.8	116	6.1	1.6	1.5	2	2.63	690
K11R 315 M8	K10R 280 M8	90	90	879	93	0.81	157	5.7	1.8	1.4	2	3.33	800
K11R 315 MX8	K10R 315 S8	108	108	883	93.5	0.81	187	5.4	1.6	1.4	1.8	3.60	880
K11R 315 MY8	K10R 315 M8	132	132	888	94.5	0.81	226	6.3	1.9	1.7	2.3	6.00	1050
K11R 315 L8	K10R 315 L8	158	158	890	94.8	0.82	267	6	1.9	1.6	2	6.76	1250
K11R 315 LX8	K10R 315 LX8	190	190	890	95.3	0.8	327	6.8	2	1.7	2.3	8.71	1430
K22R 355 M8		200	200	890								9.5	1600
K22R 355 MX8		220	220	890								13.4	2200
K22R 355 LY8		270	270	890								15.8	2400

Forced-ventilated motors, cooling method IC 416

Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series
K21F, K20F, K22F
mounting dimensions acc. to DIN 42673 and 42677

Sizes
63 – 355

Output range
0.09 – 500 kW

Forced-ventilation unit
version with axial fan
version with radial fan

Degrees of protection
IP 55 nach DIN EN 60034-5, for version with radial fan higher degrees of protection as an option

Cooling method
IC 416 acc. to DIN 60034-6

Type of construction
IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures
shaft heights 56 up to 132T -20 °C up to +40 °C
from shaft height 132 -40 °C up to +40 °C

Non-ventilated motors, cooling method IC 410

Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series

K210

fixing dimensions acc. to DIN 42673, 42677

K200, K220

Transnorm version

Sizes

56 – 355

Output range

0.04 – 250 kW

Degrees of protection

IP 55 acc. to DIN EN 60034-5, higher degrees of protection as an option

Cooling method

IC 410 acc. to DIN 60034-6

Types of mounting

IM B3, IM B35, IM B5 and derived types of mounting acc. to DIN EN 60034-7

Ambient temperatures

Sizes 56 up to 132T -20 °C up to +40 °C

From size 132 -40 °C up to +40 °C



Three-phase motors with squirrel-cage rotor

non-ventilated with surface cooling, cooling method IC 410

mode of operation S1, continuous duty, insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type	P _B	n _B	η _B	cosφ _B	I _B	I _K /I _B	M _K /M _B	M _S /M _B	M _K /M _B	J	m	
	kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg	
Synchronous speed 3000 rpm – 2-pole version												
K210 63 K2U	K200 56 K2U	0.09	2815	66.6	0.79	0.25	4.8	2.5	2.3	2.9	0.00013	4.8
K210 63 G2U	K200 56 G2U	0.12	2855	64.8	0.74	0.36	5.1	2.8	2.7	3	0.00015	5.1
K210 71 K2U	K200 63 K2U	0.18	2810	71.4	0.87	0.42	8.5	3.6	3.6	3.9	0.00025	6.5
K210 71 G2U	K200 63 G2U	0.25	2860	79.1	0.8	0.57	6.5	2.7	2.7	3.1	0.00032	7.4
K210 80 K2U	K200 71 K2U	0.37	2850	79.8	0.87	0.77	6.4	2.8	2.2	2.4	0.00057	10.4
K210 80 G2U	K200 71 G2U	0.55	2850	79.6	0.89	1.12	7.2	2.7	2.4	2.6	0.00072	11.2
K210 90 S2U	K200 80 K2U	0.75	2880	79.9	0.88	1.54	8.8	3.4	3.2	3.5	0.00132	15.7
K210 90 L2U	K200 80 G2U	1.1	2850	81.6	0.89	2.2	7.6	2.6	2.6	2.7	0.0017	18.7
K210 100 L2U	K200 90 L2U	1.4	2920	84.7	0.86	2.8	10.5	3.5	3.4	4	0.00275	24.5
K210 112 M2U	K200 100 S2U	2.05	2930	87.3	0.82	4.1	9.3	2.6	2.5	3.7	0.0045	31.4
K210 112 MX2U	K200 100 L2U	2.8	2935	89.4	0.85	5.3	10.8	3.0	2.6	4.1	0.0055	37.4
K210 132 SX2	K200 112 M2	3	2895	89.5	0.91	5.7	7.4	2.0		2.8	0.0110	57
K210 160 M2	K200 132 M2	4	2900	91.0	0.94	7.2	7.3	1.7		2.9	0.0258	81
K210 160 MX2	K200 160 S2	5.5	2935	91.5	0.93	9.9	7.8	1.9		2.9	0.0575	118
K210 160 L2	K200 160 M2	7.5	2935	92.5	0.93	13.2	8.1	2.1		3.0	0.0675	134
K210 180 M2	K200 180 S2	8.8	2935	92.5	0.93	19.3	7.7	2.0		2.6	0.105	165
K210 200 L2	K200 180 M2	12	2940	93.5	0.93	21	8.1	2.0		2.7	0.128	195
K210 200 LX2	K200 200 M2	15	2945	92.5	0.92	25.5	7.7	1.7		2.5	0.193	255
K210 225 M2	K200 200 L2	18.5	2945	93.0	0.92	31	8.0	1.8		2.6	0.220	290
K210 250 M2	K200 225 M2	22	2955	93.5	0.92	37	8.1	1.9		2.6	0.375	360
K210 280 S2	K200 250 S2	32	2965	93.5	0.93	53	8.9	1.9		2.7	0.650	490
K210 280 M2	K200 250 M2	40	2965	94.0	0.93	66	9.0	1.9		2.7	0.675	510
K210 315 S2	K200 280 S2	49	2970	94.0	0.93	81	8.8	1.6		2.7	1.21	720
K210 315 M2	K200 280 M2	59	2970	94.5	0.93	97	9.2	1.7		2.8	1.44	800
K210 315 MX2	K200 315 S2	70	2970	95.0	0.94	114	9.6	1.9		2.7	1.76	980
K210 315 MY2	K200 315 M2	90	2975	95.5	0.94	145	8.7	2.0		2.7	2.82	1170
K210 315 L2	K200 315 L2	120	2980	96.0	0.94	192	9.7	2.5		2.7	3.66	1460
K210 315 LX2	K200 315 LX2	145	2980	96.0	0.94	232	9.7	2.7		2.7	4.43	1630
K220 355 MY2		145	2985								4.10	1900
K220 355 M2		160	2985								4.20	2000
K220 355 MX2		180	2985								5.50	2200
K220 355 LY2		200	2985								7.10	2400
K220 355 L2		230	2985								7.10	2400

Synchronous speed 1500 rpm – 4-pole version

K210 63 K4U	K200 56 K4U	0.06	1400	57.6	0.66	0.23	3.2	2.1	2.1	2.4	0.00019	4.7
K210 63 G4U	K200 56 G4U	0.09	1395	61.8	0.67	0.31	3.7	2.5	2.5	2.7	0.00024	5.1
K210 71 K4U	K200 63 K4U	0.12	1400	64.9	0.72	0.37	4.0	2.0	2.0	2.4	0.00040	6.6
K210 71 G4U	K200 63 G4U	0.18	1390	67.9	0.76	0.5	4.4	2.3	2.3	2.5	0.00050	7.6
K210 80 K4U	K200 71 K4U	0.25	1425	70.5	0.77	0.67	5.5	2.4	2.2	2.6	0.00087	10.3
K210 80 G4U	K200 71 G4U	0.37	1415	75.9	0.78	0.9	6.0	2.7	2.3	2.7	0.00107	11.4
K210 90 S4U	K200 80 K4U	0.55	1425	78.4	0.79	1.28	6.2	2.5	2.0	2.7	0.00207	15.2
K210 90 L4U	K200 80 G4U	0.75	1420	79.4	0.82	1.66	6.5	2.7	2.7	2.9	0.00260	17.7
K210 100 L4U	K200 90 L4U	1	1440	82.1	0.74	2.4	8.3	3.8	3.6	4.2	0.00400	23.0
K210 100 LX4U	K200 100 S4U	1.5	1450	83.5	0.78	3.3	8.3	2.9	2.9	3.7	0.00725	29.4
K210 112 M4U	K200 100 L4U	2	1455	86.0	0.76	4.4	8.9	3.2	3.2	4.2	0.00900	36.4
K210 132 S4	K200 112 M4	2.3	1440	88.0	0.87	4.6	7.5	2.5		3.0	0.015	50
K210 132 M4	K200 132 S4	3.0	1445	89.0	0.86	5.9	6.6	2.2		2.3	0.028	69
K210 160 M4	K200 132 M4	4.4	1455	90.0	0.86	8.4	7.0	2.0		2.8	0.035	86
K210 160 L4	K200 160 S4	5.5	1465	91.5	0.89	10.4	7.7	2.5		3.0	0.078	120
K210 180 M4	K200 160 M4	8.0	1465	92.0	0.89	14.8	7.5	2.4		2.9	0.090	136
K210 180 L4	K200 180 S4	8.8	1470	93.0	0.89	16.1	8.5	2.4		2.9	0.138	170
K210 200 L4	K200 180 M4	11.0	1470	93.0	0.88	20.2	8.5	2.5		2.9	0.168	200
K210 225 S4	K200 200 M4	15.0	1475	92.5	0.88	26.5	7.8	2.0		2.4	0.275	270
K210 225 M4	K200 200 L4	18.5	1475	92.5	0.88	33.0	7.6	2.0		2.4	0.313	300
K210 250 M4	K200 225 M4	22	1475	93.0	0.89	38.5	7.7	2.1		2.5	0.525	375
K210 280 S4	K200 250 S4	32	1480	93.5	0.89	56.0	8.2	2.3		2.5	0.95	520
K210 280 M4	K200 250 M4	40	1480	94.0	0.89	69.5	8.5	2.5		2.5	1.10	580
K210 315 S4	K200 280 S4	50	1480	94.0	0.89	86.0	8.9	2.3		2.5	1.96	740
K210 315 M4	K200 280 M4	60	1480	94.5	0.89	103.0	9.1	2.4		2.6	2.27	840
K210 315 MX4	K200 315 S4	70	1480	94.5	0.89	121.0	9.9	2.7		2.8	2.73	1000
K210 315 MY4	K200 315 M4	95	1485	96.0	0.91	158.0	9.0	2.3		2.5	4.82	1200
K210 315 L4	K200 315 L4	132	1485	96.0	0.91	219.0	9.1	2.4		2.6	5.93	1450
K210 315 LX4	K200 315 LX4	150	1485	96.0	0.90	252.0	10.0	2.8		2.9	6.82	1630
K220 355 MY4		150	1490								5.60	1950
K220 355 LY4		160	1485								10.0	2500
K220 355 L4		180	1485								10.0	2500



Three-phase motors with squirrel-cage rotor

non-ventilated with surface cooling, cooling method IC 410

mode of operation S1, continuous duty, insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz

Type		P _B	n _B	η _B	cosφ _B	I _B	I _A /I _B	M _A /M _B	M _S /M _B	M _K /M _B	J	m
		kW	rpm	%	-	400 V A	-	-	-	-	kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version												
K210 63 K6U	K200 56 K6U	0.04	920	48.7	0.52	0.23	2.5	2.1	2.1	2.6	0.00024	4.8
K210 63 G6U	K200 56 G6U	0.06	905	52.5	0.56	0.29	2.5	2.0	2.0	2.3	0.00027	5.6
K210 71 K6U	K200 63 K6U	0.09	940	59.5	0.50	0.44	3.2	2.1	2.1	2.6	0.00045	7.2
K210 71 G6U	K200 63 G6U	0.12	920	58.2	0.55	0.54	3.0	2.0	2.0	2.4	0.00060	8.1
K210 80 K6U	K200 71 K6U	0.18	940	62.8	0.66	0.63	4.3	2.3	2.3	2.8	0.00130	10.7
K210 80 G6U	K200 71 G6U	0.25	945	69.2	0.61	0.86	4.6	2.9	2.9	3.1	0.00175	12.2
K210 90 S6U	K200 80 K6U	0.37	940	72.3	0.67	1.1	4.8	2.0	2.0	2.5	0.00325	15.7
K210 90 L6U	K200 80 G6U	0.55	940	74.6	0.70	1.52	4.6	2.0	2.0	2.4	0.00425	18.7
K210 100 L6U	K200 90 L6U	0.75	960	78.5	0.66	2.1	5.1	2.3	2.3	2.7	0.00625	23.5
K210 112 M6U	K200 100 L6U	1.1	960	78.9	0.73	2.8	6.6	2.6	2.5	3.5	0.01225	32.9
K210 132 S6	K200 112 M6	1.5	960	82.5	0.78	3.5	7.0	2.9		3.6	0.018	46
K210 132 M6	K200 112 MX6	1.9	960	84.5	0.79	4.3	7.7	3.4		3.7	0.023	53
K210 132 MX6	K200 132 S6	2.6	960	86.0	0.85	5.4	6.5	2.7		2.8	0.043	70
K210 160 M6	K200 132 M6	3.5	960	87.0	0.84	7.1	7.2	3.1		3.2	0.053	86
K210 160 L6	K200 160 S6	4.8	965	89.0	0.88	9.1	7.4	2.7		3.0	0.113	114
K210 180 L6	K200 160 M6	6.5	970	90.0	0.88	12.3	7.8	3.0		3.2	0.145	136
K210 200 L6	K200 180 S6	7.6	975	91.0	0.88	14.3	7.5	2.4		3.2	0.228	175
K210 200 LX6	K200 180 M6	9.5	975	91.0	0.92	17.1	7.7	2.4		3.2	0.268	200
K210 225 M6	K200 200 M6	12.5	970	90.5	0.90	22.0	6.5	1.9		2.5	0.443	265
K210 250 M6	K200 225 M6	16.5	975	91.5	0.89	29.5	6.8	2.0		2.6	0.825	360
K210 280 S6	K200 250 S6	22	980	92.0	0.88	39.5	6.6	2.0		2.4	1.28	465
K210 280 M6	K200 250 M6	27	980	92.5	0.88	48.0	7.1	2.2		2.6	1.48	520
K210 315 S6	K200 280 S6	37	985	93.0	0.89	65.0	7.4	2.0		2.4	2.63	690
K210 315 M6	K200 280 M6	44	985	93.5	0.89	76.5	7.8	2.2		2.5	3.33	800
K210 315 MX6	K200 315 S6	48	985	93.5	0.89	84.0	8.6	2.5		2.7	3.60	880
K210 315 MY6	K200 315 M6	75	985	94.0	0.89	130.0	8.0	2.2		2.5	6.00	1050
K210 315 L6	K200 315 L6	90	985	95.0	0.90	153.0	7.9	2.2		2.4	6.67	1250
K210 315 LX6	K200 315 LX6	110	985	95.0	0.90	187.0	8.6	2.4		2.6	8.60	1460
K220 355 MY6		110	995								8.1	1550
K220 355 M6		140	995								8.2	1650
K220 355 MX6		160	995								12.1	2200
K220 355 LY6		170	995								14.0	2400

Synchronous speed 750 rpm – 8-pole version

K210 71 K8U	K200 63 K8U	0.04	695	40.2	0.54	0.27	2.3	2.2	2.2	2.7	0.00050	6.4
K210 71 G8U	K200 63 G8U	0.06	680	42.2	0.54	0.38	2.3	2.3	2.3	2.6	0.00060	7.9
K210 80 K8U	K200 71 K8U	0.09	705	49.5	0.60	0.44	3.0	2.0	2.0	2.6	0.00130	10.2
K210 80 G8U	K200 71 G8U	0.12	705	53.3	0.57	0.57	3.3	2.5	2.5	3.0	0.00175	11.7
K210 90 S8U	K200 80 K8U	0.18	705	60.5	0.58	0.74	3.3	1.9	1.9	2.2	0.00300	14.7
K210 90 L8U	K200 80 G8U	0.25	705	67.8	0.56	0.95	3.5	2.0	2.0	2.4	0.00375	17.7
K210 100 L8U	K200 90 L8U	0.37	710	62.5	0.60	1.43	3.2	1.7	1.7	2.1	0.00625	22.5
K210 100 LX8U	K200 100 S8U	0.55	710	72.9	0.63	1.73	4.5	2.5	2.5	2.7	0.00900	27.4
K210 112 M8U	K200 100 L8U	0.75	710	75.1	0.69	2.1	4.5	2.2	2.2	2.8	0.01225	32.9
K210 132 S8	K200 112 M8	1.1	720	77.5	0.66	3.3	5.5	2.8		3.5	0.018	46
K210 132 M8	K200 112 MX8	1.5	715	79.5	0.70	4.1	5.3	2.6		3.1	0.023	53
K210 160 M8	K200 132 S8	1.8	720	83.5	0.72	4.5	5.3	2.6		3.0	0.043	70
K210 160 MX8	K200 132 M8	2.5	720	84.0	0.74	6.0	5.0	2.3		2.7	0.053	86
K210 160 L8	K200 160 S8	3.6	725	86.5	0.79	8.0	5.4	2.3		2.9	0.113	114
K210 180 L8	K200 160 M8	5.0	725	87.5	0.79	11.0	5.5	2.3		2.8	0.145	136
K210 200 L8	K200 180 S8	6.5	725	89.0	0.81	13.8	6.1	2.2		2.8	0.228	175
K210 225 S8	K200 180 M8	7.5	730	89.5	0.80	15.9	6.5	2.4		3.0	0.440	265
K210 225 M8	K200 200 M8	9.0	730	90.0	0.81	18.0	5.9	1.8		2.6	0.440	265
K210 250 M8	K200 225 M8	13.0	735	90.0	0.81	26.0	5.9	1.9		2.5	0.825	360
K210 280 S8	K200 250 S8	17.5	735	91.0	0.76	36.5	6.1	2.0		2.7	1.35	465
K210 280 M8	K200 250 M8	22	735	91.0	0.76	46.0	6.3	2.1		2.8	1.55	520
K210 315 S8	K200 280 S8	28	735	92.0	0.79	55.5	6.8	2.1		2.4	2.63	690
K210 315 M8	K200 280 M8	35	740	92.0	0.80	68.5	6.8	2.1		2.4	3.33	800
K210 315 MX8	K200 315 S8	37	740	92.5	0.80	72.5	7.2	2.2		2.6	3.60	880
K210 315 MY8	K200 315 M8	55	740	93.0	0.82	104.0	7.3	2.1		2.4	6.00	1050
K210 315 L8	K200 315 L8	68	740	93.5	0.82	128.0	7.6	2.2		2.5	6.76	1250
K210 315 LX8	K200 315 LX8	85	740	94.0	0.82	159.0	7.7	2.3		2.5	8.6	1430
K220 355 MY8		85	740								9.3	1500
K220 355 M8		90	745								9.5	1600
K220 355 MX8		110	745								13.4	2200
K220 355 LY8		140	745								15.8	2400

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**Explosion protected motors for type of protection
"Increased safety", EEx e II 2G**



Motor selection data for design voltage range A, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Motor selection data for design voltage range A, 60 Hz, 2- up to 8pole
3600/1800/1200/900 rpm

Motor selection data for wide design voltage range A, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Summary EG certificates of conformity and EG certificates of sample tests

Series

KPER/K11R/K12R

Mounting dimensions acc. to DIN 42673 sh. 2 and DIN 42677 sh. 2,
KPR/K10R

Transnorm version on request

Sizes

63 – 355

Power range

0.12 – 335 kW

Degrees of protection

IP 54, IP 55, IP 56, IP 65 acc. to DIN EN 60034-5

Cooling method

IC 411 acc. to DIN EN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

-40°C up to +40°C (depending on the Certificate, deviations possible)

Explosion-protected version in accordance to Apparatus Group II, Category 2

EN 50 014 (DIN VDE 0170/0171 part 1) General Requirements

EN 50 019 (DIN VDE 0170/0171 part 6) Increased safety "e"

Temperature class T1 up to T3; T4 available on request

The motor design version is certified in an EG-Sample Test Certificate.

Three-phase motors with squirrel-cage rotor Increased-safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz, EEx e II 2G

Type	P	Tempe- rature class	n	η	cos ϕ	I	I_k/I_N	M_k/M_N	M_s/M_N	M_k/M_N	t_E -time	J	m		
	kW		rpm	%	-	400 V A					T3 s	T1,T2 s	kgm ²	kg	
Synchronous speed 3000 rpm – 2-pole version															
KPER	63 K2	0.18	T1-T3	2870	61.0	0.80	0.53	3.7	1.6	1.6	2.0	29	30	0.00013	4.9
KPER	63 G2	0.25	T1-T3	2800	65.0	0.74	0.75	4.1	1.9	1.9	2.2	13	15	0.00015	5.2
KPER	71 K2	0.37	T1-T3	2740	67.0	0.84	0.97	4.1	1.7	1.7	2.2	16	18	0.00025	6.7
KPER	71 G2	0.55	T1-T3	2770	73.0	0.79	1.43	4.8	2.2	2.2	2.5	11	13	0.00032	7.6
KPER	80 K2	0.75	T1-T3	2810	74.0	0.84	1.76	5.3	1.9	1.9	2.4	14	16	0.00057	10.7
KPER	80 G2	1.10	T1-T3	2830	77.0	0.82	2.60	5.6	2.5	2.3	2.5	8	10	0.00072	11.5
KPER	90 S2	1.30	T1-T3	2850	78.0	0.88	2.75	6.5	2.4	2.0	2.6	14	16	0.00132	16
KPER	90 L2	1.85	T1-T3	2870	83.0	0.86	3.85	7.4	3.0	3.0	3.2	9	12	0.00170	19
KPER	100 L2	2.50	T1-T3	2870	82.0	0.87	5.20	6.8	2.5	2.4	2.7	13	16	0.00275	25
KPER	112 M2	3.30	T1-T3	2910	85.0	0.82	6.90	7.7	2.3	2.1	3.1	11	16	0.0045	32
KPER	112 MX2	4.10	T1-T3	2910	87.0	0.87	8.10	7.9	2.5	1.9	3.3	11	18	0.0055	38
K11R	132 S2	4.6	T1-T3	2900	87.5	0.88	8.6	7.0	1.4	1.2	2.8	13	29	0.0110	57
K11R	132 SX2	5.5	T1-T3	2925	89.0	0.86	10.4	8.5	1.9	1.3	3.3	6	16	0.0110	57
K12R	132 SX2	5.5	T1-T3	2930	89.5	0.92	9.6	7.4	2.1	1.3	2.6	18	35	0.0258	88
		6.6	T1,T2	2910	90.0	0.93	11.6	6.2	1.7	1.1	2.1		30	0.0258	88
K11R	160 M2	7.5	T1-T3	2945	87.5	0.90	13.7	6.9	1.9	1.6	2.7	21	40	0.0575	120
		9.5	T1,T2	2917	87.5	0.90	17.4	5.4	1.5	1.3	2.1		40	0.0575	120
K11R	160 MX2	10.0	T1-T3	2935	89.5	0.90	17.9	6.5	1.8	1.5	2.5	13	30	0.0575	120
		13.0	T1,T2	2900	88.0	0.90	23.5	5.0	1.4	1.1	1.9		20	0.0575	120
K11R	160 L2	12.5	T1-T3	2945	90.0	0.91	22.0	7.3	1.8	1.4	2.8	11	24	0.0675	138
		16.0	T1,T2	2920	89.5	0.91	28.5	5.6	1.4	1.1	2.2		20	0.0675	138
K11R	180 M2	15	T1-T3	2945	91.0	0.92	26.0	7.0	1.8	1.5	2.6	16	35	0.105	175
		19	T1,T2	2920	90.5	0.92	33.0	5.4	1.5	1.3	2.1		26	0.105	175
K11R	200 L2	20	T1-T3	2935	91.5	0.92	34.0	6.6	1.8	1.3	2.4	10	27	0.128	210
		25	T1,T2	2910	90.5	0.93	43.0	5.2	1.4	1.2	1.9		17	0.128	210
K11R	200 LX2	24	T1-T3	2950	93.0	0.90	41.0	7.0	1.6	1.2	2.5	10	26	0.193	255
		31	T1,T2	2925	91.5	0.90	54.0	5.3	1.4	1.2	2.2		16	0.193	255
K11R	225 M2	28	T1-T3	2970	93.0	0.91	47.5	7.6	1.5	1.0	2.6	15	30	0.375	360
		38	T1,T2	2950	93.0	0.91	65	5.4	1.2	0.9	2.0		27	0.375	360
K11R	250 M2	36	T1-T3	2970	93.2	0.93	60	7.2	1.9	1.5	2.6	19	40	0.650	490
		47	T1,T2	2955	93.0	0.92	79	5.4	1.4	1.1	1.9		35	0.650	490
K11R	280 S2	47	T1-T3	2970	93.7	0.88	82	7.1	1.4	1.3	2.2	25	50	1.21	730
		68	T1-T3	2975	94.0	0.89	117	7.8	1.4	1.3	2.3	9	23	1.21	730
K11R	280 M2	58	T1-T3	2975	94.1	0.88	101	7.1	1.4	1.3	2.1	18	40	1.44	815
		76	T1-T3	2970	94.5	0.90	130	6.6	1.1	1.0	1.7	13	30	1.44	815
K11R	315 S2	68	T1-T3	2975	95.0	0.90	116	7.5	1.8	1.6	2.3	11	28	1.44	850
		95	T1,T2	2960	94.5	0.89	162	5.8	1.4	1.3	1.8		18	1.44	850
K11R	315 M2	80	T1-T3	2975	95.3	0.90	134	7.5	1.8	1.6	2.2	12	29	1.76	970
		112	T1,T2	2960	95.0	0.89	191	7.5	1.2	1.2	2.1			1.76	970
K11R	315 MY2	110	T1-T3	2970	95.0	0.92	182	7.3	1.5	1.3	3.0	11	26	2.82	1150
		135	T1,T2											2.82	1150
K11R	315 L2	125	T1-T3	2980	95.0	0.93	202	7.5	1.4	1.2	2.5			3.66	1460
		165	T1,T2											3.66	1460
K11R	315 LX2	150	T1-T3	2985	95.8	0.95	240	8.0	1.1	0.9	2.7	12	30	4.43	1630
		200	T1,T2											4.43	1630
K22R	355 M2	190	T1-T3	2980	95.0	0.91	310	8.0	1.4	1.1	2.4			4.20	2000
		255	T1,T2											4.20	2000
K22R	355 MX2	220	T1-T3	2980	95.0	0.91	360	8.0	1.4	1.1	2.6			5.50	2200
		300	T1,T2											5.50	2200
K22R	355 L2	250	T1-T3	2980	95.0	0.91	400	8.0	1.3	1.0	2.5			9.50	2400
		335	T1,T2											9.50	2400

Other voltages and frequencies on request
Modifications of not yet certified motors are possible!

Three-phase motors with squirrel-cage rotor Increased-safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz, EEx e II 2G

Type	P kW	Tempe- rature class	n rpm	η %	cos φ -	I 400 V A	I _N /I _N	M _R /M _N	M _S /M _N	M _K /M _N	t _E -time		J kgm ²	m kg
											T3 s	T1,T2 s		
Synchronous speed 1500 rpm – 4-pole version														
KPER 63 K4 ¹⁾	0.12	T1-T3	1370	54.0	0.68	0.48	2.9	1.8	1.8	2.2	50	70	0.00019	4.8
KPER 63 G4	0.18	T1-T3	1360	60.0	0.69	0.63	3.2	1.9	1.9	2.2	30	35	0.00024	5.2
KPER 71 K4	0.25	T1-T3	1380	65.0	0.73	0.79	3.4	1.4	1.4	1.8	24	27	0.00040	6.8
KPER 71 G4	0.37	T1-T3	1370	67.0	0.75	1.08	3.6	1.6	1.6	2.0	18	21	0.00050	7.8
KPER 80 K4	0.55	T1-T3	1380	69.0	0.76	1.59	3.9	1.8	1.8	2.0	13	16	0.00087	10.6
KPER 80 G4	0.75	T1-T3	1390	72.0	0.74	2.00	4.4	2.0	2.0	2.3	14	17	0.00107	11.7
KPER 90 S4	1.00	T1-T3	1410	77.0	0.80	2.40	5.1	2.4	2.3	2.5	17	19	0.00207	15.5
KPER 90 L4	1.35	T1-T3	1410	79.0	0.81	3.10	5.5	2.3	1.8	2.5	12	14	0.00260	18
KPER 100 L4	2.0	T1-T3	1420	80.0	0.80	4.65	6.0	2.8	2.6	2.9	11	13	0.00400	23.5
KPER 100 LX4	2.5	T1-T3	1440	83.0	0.78	5.6	6.7	2.3	2.2	2.9	11	12	0.00725	30
KPER 112 M4	3.6	T1-T3	1440	85.0	0.77	8.1	7.0	2.8	2.1	2.9	7	9	0.0090	37
K11R 132 S4	5.0	T1-T3	1435	84.5	0.83	10.2	6.5	2.0	1.6	2.8	10	15	0.0150	53
K11R 132 M4	6.8	T1-T3	1455	87.5	0.82	13.6	6.1	2.1	1.8	2.7	12	29	0.0280	72
K11R 160 M4	10.0	T1-T3	1465	91.0	0.89	18.0	6.3	2.0	1.7	2.5	18	40	0.0780	123
K11R 160 L4	13.5	T1-T3	1470	90.5	0.86	25.0	7.7	2.5	2.0	3.0	9	26	0.0900	136
K11R 180 M4	15.0	T1-T3	1475	90.5	0.87	27.5	6.8	1.9	1.6	2.5	15	45	0.1380	180
K11R 180 L4	17.0	T1,T2	1465	90.5	0.88	31.0	6.0	1.7	1.4	2.3	35	35	0.1380	180
K11R 180 L4	17.5	T1-T3	1475	90.5	0.85	33	7.1	2.1	1.8	2.8	9	25	0.1380	185
K11R 200 L4	20.0	T1,T2	1470	90.5	0.86	37	6.3	1.8	1.6	2.4	24	24	0.1380	185
K11R 200 L4	24	T1-T3	1477	92.7	0.87	43	6.8	1.8	1.5	2.4	12	35	0.2750	270
K11R 225 S4	27	T1,T2	1470	92.5	0.88	48	6.0	1.6	1.5	2.2	30	30	0.2750	270
K11R 225 S4	30	T1-T3	1475	93.0	0.85	55	6.1	1.6	1.4	1.9	14	30	0.525	380
K11R 225 M4	33	T1,T2	1472	92.9	0.85	60	5.6	1.5	1.2	1.7	30	30	0.525	380
K11R 225 M4	36	T1-T3	1480	94.0	0.85	65	7.4	2.2	1.7	2.3	7	22	0.525	385
K11R 250 M4	40	T1,T2	1475	93.5	0.85	73	6.6	2.0	1.6	2.1	19	19	0.525	385
K11R 250 M4	44	T1-T3	1485	94.0	0.86	79	7.2	1.8	1.6	2.1	10	30	0.950	530
K11R 280 S4	50	T1,T2	1480	94.0	0.86	90	6.3	1.7	1.5	1.9	27	27	0.950	530
K11R 280 S4	58	T1-T3	1485	94.2	0.84	106	7.2	1.8	1.6	2.2	13	40	1.96	765
K11R 280 M4	68	T1,T2	1480	94.0	0.85	124	6.1	1.5	1.4	1.8	30	30	1.96	765
K11R 280 M4	70	T1-T3	1485	95.0	0.84	127	7.5	2.0	1.8	2.4	13	35	2.27	840
K11R 315 S4	80	T1,T2	1483	94.5	0.84	147	6.5	1.7	1.6	2.0	30	30	2.27	840
K11R 315 S4	84	T1-T3	1485	95.0	0.84	152	7.2	2.0	1.8	2.2	9	25	2.27	875
K11R 315 M4	100	T1,T2	1480	95.0	0.84	184	6.0	1.7	1.5	1.9	20	20	2.27	875
K11R 315 M4	100	T1-T3	1485	95.0	0.84	181	6.8	1.8	1.7	2.2	10	30	2.73	1000
K11R 315 MY4	120	T1,T2	1478	94.7	0.85	216	5.6	1.3	1.1	1.6	30	30	2.73	1000
K11R 315 L4	115	T1-T3	1489	95.4	0.85	205	7.1	1.5	1.4	2.4	14	35	4.82	1200
K11R 315 L4	135	T1,T2											4.82	1200
K11R 315 L4	135	T1-T3	1491	96.0	0.86	236	7.6	1.4	1.3	2.4	18	40	5.93	1450
K11R 315 LX4	165	T1,T2											5.93	1450
K11R 315 LX4	170	T1-T3	1490	96.0	0.85	300	7.1	1.2	1.0	2.3	18	45	6.82	1630
K22R 355 M4	200	T1,T2											6.82	1630
K22R 355 M4	215	T1-T3	1491	96.6	0.85	380	8.0	1.4	1.0	2.7	8	30	5.60	1950
K22R 355 MX4	245	T1,T2											5.60	1950
K22R 355 L4	240	T1-T3	1490	96.5	0.85	425	8.0	1.5	1.2	2.8			7.90	2150
K22R 355 L4	275	T1,T2											7.90	2150
K22R 355 L4	275	T1-T3	1490	96.5	0.85	485	8.0	1.6	1.2	2.8			9.50	2400
K22R 355 L4	315	T1,T2											9.50	2400

¹⁾ only available up to 380 V

Other voltages and frequencies on request

Modifications of not certified motors are possible!



Three-phase motors with squirrel-cage rotor Increased-safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz, EEx e II 2G

Type	P kW	Tempe- rature class	n rpm	η %	cos ϕ -	I 400 V A	I _k /I _N	M _k /M _N	M _s /M _N	M _k /M _N	t _E -time		J kgm ²	m kg
											T3 s	T1,T2 s		
Synchronous speed 1000 rpm – 6-pole version														
KPER 80 K6	0.37	T1-T3	920	62.0	0.70	1.30	3.2	2.0	1.8	2.0	26	28	0.00130	11
KPER 80 G6	0.55	T1-T3	910	66.0	0.69	1.75	3.6	2.1	2.1	2.2	22	26	0.00175	12.5
KPER 90 S6	0.65	T1-T3	925	69.0	0.71	1.95	3.4	1.8	1.7	1.9	30	35	0.00325	16
KPER 90 L6	0.95	T1-T3	925	71.0	0.71	2.70	3.9	2.1	2.0	2.2	23	27	0.00425	19
KPER 100 L6	1.4	T1-T3	940	75.0	0.73	3.75	4.2	2.1	2.0	2.3	20	24	0.00625	24
KPER 112 M6	1.9	T1-T3	950	79.0	0.74	4.7	5.3	2.2	2.0	2.4	18	21	0.01225	33.5
K11R 132 S6	2.6	T1-T3	950	80.5	0.79	5.9	5.3	1.8	1.8	2.8	19	22	0.018	49
K11R 132 M6	3.5	T1-T3	960	82.9	0.82	7.4	6.3	2.0	2.0	3.0	21	24	0.023	53
K11R 132 MX6	4.8	T1-T3	963	83.5	0.83	10.0	5.1	1.8	1.6	2.5	28	30	0.043	70
K11R 160 M6	6.6	T1-T3	965	84.5	0.84	13.4	5.4	1.9	1.6	2.5	30	35	0.053	89
K11R 160 L6	9.7	T1-T3	970	85.0	0.84	19.6	5.8	2.2	1.9	2.7	13	30	0.113	123
K11R 180 L6	13.2	T1-T3	975	89.0	0.87	24.5	6.5	2.2	2.0	2.9	23	50	0.228	190
K11R 200 L6	16.5	T1-T3	977	87.5	0.82	33.0	6.8	2.4	2.1	3.2	9	28	0.228	190
K11R 200 LX6	20	T1-T3	977	90.5	0.90	35.5	6.4	2.2	1.6	2.5	18	45	0.443	265
K11R 225 M6	27	T1-T3	975	91.0	0.88	49.0	5.7	2.1	1.8	2.3	13	40	0.825	360
K11R 250 M6	33	T1-T3	985	92.0	0.86	60	6.0	2.1	1.7	2.4	12	35	1.28	475
K11R 280 S6	40	T1-T3	990	93.9	0.86	71	7.0	1.9	1.8	2.5	24	55	2.63	715
K11R 280 M6	46	T1-T3	990	94.0	0.88	80	7.5	1.9	1.6	2.5	25	60	3.33	810
	50	T1,T2	988	94.0	0.88	87	6.9	1.8	1.5	2.3		60	3.33	810
K11R 315 S6	64	T1-T3	988	94.5	0.89	113	7.2	2.2	1.8	2.5	9	30	3.33	840
	68	T1,T2	987	94.0	0.89	118	6.9	2.1	1.7	2.3		28	3.33	840
K11R 315 M6	76	T1-T3	992	95.2	0.88	131	7.2	1.6	1.3	2.5	17	45	6.00	1080
	82	T1,T2	990	95.1	0.88	141	6.7	1.5	1.2	2.3		40	6.00	1080
K11R 315 MY6	85	T1-T3	990	95.2	0.87	149	6.9	1.6	1.4	2.5	15	40	6.00	1080
	92	T1,T2	987	95.0	0.87	160	6.4	1.5	1.3	2.3		35	6.00	1080
K11R 315 L6	95	T1-T3	985	95.0	0.88	165	7.5	2.0	1.4	2.3			6.67	1250
	100	T1,T2											6.67	1250
K11R 315 LX6	110	T1-T3	990	95.0	0.88	190	8.0	2.0	1.4	2.3			8.6	1460
	120	T1,T2											8.6	1460
K22R 355 M6	125	T1-T3	993	96.0	0.86	220	8.0	1.5	1.0	2.5			8.2	1650
	135	T1,T2											8.2	1650
K22R 355 MX6	160	T1-T3	993	96.0	0.85	285	8.0	1.5	1.0	2.5			10.1	2100
	175	T1,T2											10.1	2100
K22R 355 L6	200	T1-T3	993	96.0	0.85	355	8.0	1.5	1.0	2.5			14	2400
	215	T1,T2											14	2400

Synchronous speed 750 rpm – 8-pole version

KPER 80 K8	0.18	T1-T3	670	52.0	0.64	0.78	2.5	1.6	1.6	1.9	150	180	0.00130	10.5
KPER 80 G8	0.25	T1-T3	670	55.0	0.67	1.00	2.8	2.3	2.3	2.4	60	70	0.00175	12
KPER 90 S8	0.37	T1-T3	700	59.0	0.56	1.61	2.9	1.5	1.5	2.0	55	60	0.00300	15
KPER 90 L8	0.55	T1-T3	695	64.0	0.58	2.15	3.0	1.6	1.6	2.1	55	60	0.00375	18
KPER 100 L8	0.65	T1-T3	700	66.0	0.63	2.25	2.9	1.5	1.5	1.8	60	70	0.00625	23
KPER 100 LX8	0.95	T1-T3	705	74.0	0.68	2.75	4.1	2.0	2.0	2.5	60	70	0.00900	28
KPER 112 M8	1.3	T1-T3	700	75.0	0.67	3.9	4.1	1.7	1.7	1.9	50	60	0.01225	33.5
K11R 132 S8	1.9	T1-T3	700	75.0	0.75	4.9	3.9	1.6	1.6	2.2	30	35	0.018	49
K11R 132 M8	2.6	T1-T3	705	78.5	0.74	6.5	4.5	1.8	1.7	2.6	29	30	0.023	57
K11R 160 M8	3.5	T1-T3	720	80.0	0.72	8.7	4.3	1.8	1.7	2.4	40	45	0.043	80
K11R 160 MX8	4.8	T1-T3	720	81.5	0.74	11.6	4.5	1.9	1.8	2.4	40	50	0.053	90
K11R 160 L8	6.6	T1-T3	730	84.0	0.73	15.6	5.0	2.1	1.9	2.7	35	40	0.113	122
K11R 180 L8	9.7	T1-T3	725	85.0	0.73	22.5	5.1	2.3	2.0	2.6	12	40	0.145	140
K11R 200 L8	13.2	T1-T3	730	86.5	0.72	30.5	5.6	2.3	2.1	2.9	13	40	0.228	195
K11R 225 S8	16.5	T1-T3	730	88.5	0.81	33.5	6.0	2.2	1.9	2.8	20	50	0.440	275
K11R 225 M8	20	T1-T3	735	90.5	0.81	39.5	5.3	2.0	1.7	2.2	25	60	0.825	360
K11R 250 M8	27	T1-T3	737	90.5	0.80	54	5.7	2.3	1.7	2.3	13	40	1.35	472
K11R 280 S8	33	T1-T3	742	93.5	0.78	65	6.3	2.0	1.8	2.4	30	70	2.63	700
K11R 280 M8	40	T1-T3	740	93.8	0.79	78	6.5	2.0	1.8	2.4	30	75	3.33	805
K11R 315 S8	50	T1-T3	740	94.0	0.80	96	5.9	1.7	1.6	2.1	18	50	3.33	850
K11R 315 M8	68	T1-T3	740	94.0	0.80	131	6.3	2.1	1.9	2.6	9	35	3.60	880
K11R 315 MY8	80	T1-T3	742	94.5	0.80	154	6.4	1.4	1.2	2.3	12	30	6.00	1080
K11R 315 L8	95	T1-T3	740	94.5	0.81	180	6.0	1.8	1.7	2.2			6.76	1250
K11R 315 LX8	115	T1-T3	740	94.5	0.80	220	6.0	1.8	1.7	2.2			8.71	1430
K22R 355 M8	140	T1-T3	740	95.0	0.79	270	7.5	1.5	1.1	2.5			9.5	1600
K22R 355 MX8	180	T1-T3	740	95.5	0.79	350	7.5	1.5	1.1	2.5			11.6	2100
K22R 355 L8	210	T1-T3	740	95.5	0.79	400	7.5	1.5	1.1	2.5			15.8	2400

Three-phase motors with squirrel-cage rotor Increased-safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 480 V, 60 Hz, EEx e II 2G

Type	P kW	Tempe- rature class	n rpm	η %	cos φ -	I 480 V A	I _R /I _N	M _R /M _N	M _S /M _N	M _K /M _N	t _E -time		J kgm ²	m kg
											T3 s	T1,T2 s		
Synchronous speed 3600 rpm – 2-pole version														
KPER 63 K2 ²⁾	0.18	T1-T3	3410	63.0	0.75	0.55 ¹⁾	4.0	2.3	2.3	2.7	29	30	0.00013	4.9
KPER 63 G2	0.25	T1-T3	3400	66.0	0.74	0.62	4.5	2.9	2.9	3.6	13	15	0.00015	5.2
KPER 71 K2	0.37	T1-T3	3375	67.0	0.79	0.83	4.6	2.5	2.5	2.9	16	18	0.00025	6.7
KPER 71 G2	0.55	T1-T3	3410	73.0	0.74	1.25	5.3	2.8	2.8	3.4	11	13	0.00032	7.6
KPER 80 K2	0.75	T1-T3	3430	75.0	0.79	1.53	5.8	2.5	2.3	4.0	14	16	0.00057	10.7
KPER 80 G2	1.10	T1-T3	3450	77.0	0.76	2.25	6.2	2.3	2.3	2.5	8	10	0.00072	11.5
KPER 90 S2	1.30	T1-T3	3450	78.0	0.85	2.40	7.2	2.2	2.2	2.6	14	16	0.00132	16
KPER 90 L2	1.85	T1-T3	3480	81.0	0.83	3.35	8.1	3.0	3.0	3.2	9	12	0.00170	19
KPER 100 L2	2.50	T1-T3	3480	82.0	0.85	4.50	7.4	2.4	2.4	2.7	13	16	0.00275	25
KPER 112 M2	3.3	T1-T3	3525	86.0	0.77	6.00	8.4	2.1	2.1	2.8	11	16	0.00450	32
KPER 112 MX2	4.1	T1-T3	3510	87.0	0.84	7.00	8.6	1.9	1.9	3.0	11	18	0.00550	38
K11R 132 S2	5.3	T1-T3	3515	88.0	0.88	8.3	7.5	1.5	1.2	2.8	11	26	0.0110	57
K11R 132 SX2	6.3	T1-T3	3514	89.0	0.88	9.7	8.2	1.6	1.2	2.9	8	19	0.0110	57
K11R 160 M2	8.6	T1-T3	3545	87.7	0.91	13.0	7.5	2.0	1.7	2.8	20	40	0.0575	120
K11R 160 MX2	12.0	T1-T3	3520	89.5	0.90	18.0	6.8	1.8	1.5	2.5	10	24	0.0575	120
K11R 160 L2	14.0	T1-T3	3550	90.3	0.91	20.5	8.1	1.9	1.5	3.0	10	24	0.0675	138
K11R 180 M2	17.0	T1-T3	3550	91.0	0.93	24.0	7.5	1.9	1.6	2.8	13	30	0.1050	175
K11R 200 L2	23	T1-T3	3540	91.5	0.93	32.5	7.2	1.9	1.6	2.6	8	23	0.1280	210
K11R 200 LX2	27	T1-T3	3555	93.0	0.91	38.0	7.7	1.7	1.3	2.7	10	23	0.1930	255
K11R 225 M2	33	T1-T3	3570	93.0	0.91	47.0	7.8	1.6	1.2	2.7	13	30	0.375	360
K11R 250 M2	44	T1-T3	3570	92.5	0.93	62	7.1	1.8	1.4	2.4	13	35	0.65	490
K11R 280 S2	56	T1-T3	3575	93.5	0.89	81	7.2	1.5	1.3	1.8	22	45	1.21	730
K11R 280 M2	70	T1-T3	3570	94.0	0.89	100	7.2	1.3	1.2	2.2	21	35	1.44	815
K11R 315 S2	82	T1-T3	3576	94.5	0.90	116	8.2	1.9	1.8	2.6	15	21	1.44	850
K11R 315 M2	96	T1-T3	3575	95.0	0.89	142	7.6	1.8	1.6	2.3			1.76	970
K11R 315 MY2	132	T1-T3	3570	94.0	0.93	182	7.5	1.5	1.3	3.0	8	22	2.82	1150

Synchronous speed 1800 rpm – 4-pole version

KPER 63 K4 ²⁾	0.12	T1-T3	1670	56.0	0.68	0.46 ¹⁾	3.2	1.8	1.8	2.2	50	70	0.00019	4.8
KPER 63 G4	0.18	T1-T3	1660	60.0	0.69	0.52	3.5	2.2	2.2	2.5	30	35	0.00024	5.2
KPER 71 K4	0.25	T1-T3	1680	64.0	0.73	0.66	3.7	1.8	1.8	2.2	24	27	0.00040	6.8
KPER 71 G4	0.37	T1-T3	1670	67.0	0.75	0.90	3.9	1.8	1.8	2.4	18	21	0.00050	7.8
KPER 80 K4	0.55	T1-T3	1695	69.0	0.71	1.38	4.3	1.8	1.8	2.0	13	16	0.00087	10.6
KPER 80 G4	0.75	T1-T3	1690	72.0	0.74	1.70	4.8	2.0	1.9	2.3	14	17	0.00107	11.7
KPER 90 S4	1.00	T1-T3	1715	77.0	0.77	2.10	5.5	2.4	2.3	2.6	17	19	0.00207	15.5
KPER 90 L4	1.35	T1-T3	1720	79.0	0.78	2.70	6.0	2.3	2.0	2.5	12	14	0.00260	18
KPER 100 L4	2.0	T1-T3	1730	81.0	0.74	4.05	6.6	2.5	2.3	2.9	11	13	0.00400	23.5
KPER 100 LX4	2.5	T1-T3	1750	84.0	0.74	4.85	7.3	2.3	2.2	2.9	11	12	0.00725	30
KPER 112 M4	3.6	T1-T3	1750	85.0	0.73	7.00	7.7	2.8	2.4	2.9	7	9	0.0090	37
K11R 132 S4	5.8	T1-T3	1740	86.0	0.82	10.0	6.9	2.0	1.7	2.9	9	15	0.0150	53
K11R 132 M4	7.8	T1-T3	1760	88.5	0.80	13.2	6.5	2.2	1.9	2.8	9	27	0.0280	72
K11R 160 M4	12.0	T1-T3	1765	91.0	0.88	18.1	6.5	2.0	1.7	2.5	14	30	0.0780	123
K11R 160 L4	15.5	T1-T3	1775	91.0	0.85	24.0	7.9	2.6	2.1	3.2	7	23	0.0900	136
K11R 180 M4	17.0	T1-T3	1775	90.5	0.87	26.0	7.3	2.0	1.7	2.7	12	35	0.1380	180
K11R 180 L4	20	T1-T3	1775	91.0	0.84	32.0	7.6	2.2	1.9	2.9	7	23	0.1380	185
K11R 200 L4	28	T1-T3	1775	93.0	0.88	41.5	7.2	1.9	1.6	2.5	7	30	0.2750	270
K11R 225 S4	36	T1-T3	1775	93.4	0.85	55	6.2	1.7	1.4	1.9	12	30	0.525	380
K11R 225 M4	43	T1-T3	1780	93.9	0.85	65	7.5	2.2	1.7	2.3	7	18	0.525	385
K11R 250 M4	52	T1-T3	1785	94.0	0.85	78	7.4	1.9	1.6	2.2	9	26	0.95	530
K11R 280 S4	58	T1-T3	1785	94.0	0.84	88	7.8	1.7	1.6	2.1	13	40	1.96	765
K11R 280 M4	70	T1-T3	1785	94.0	0.84	107	7.2	1.8	1.6	2.2	9	30	1.96	765
K11R 280 M4	84	T1-T3	1785	94.0	0.83	129	7.5	1.7	1.6	2.3	8	29	2.27	840
K11R 315 S4	100	T1-T3	1785	95.0	0.84	152	7.3	2.1	1.9	2.3	6	21	2.27	875
K11R 315 M4	100	T1-T3	1782	94.0	0.84	150	7.4	1.8	1.7	2.2	10	30	2.73	1000
K11R 315 M4	120	T1-T3	1780	95.0	0.84	190	7.3	1.7	1.6	2.1			2.73	1000
K11R 315 MY4	132	T1-T3	1790	95.0	0.85	197	7.5	1.5	1.4	2.5	12	30	4.82	1200

¹⁾ Currents at 400 V²⁾ only available up to 460 V

Other voltages and frequencies on request

Modifications of not yet certified motors are possible!

Three-phase motors with squirrel-cage rotor Increased-safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design point 480 V, 60 Hz, EEx e II 2G

Type	P kW	Tempe- rature class	n rpm	η %	cos ϕ -	I 480 V A	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	t _E -time		J kgm ²	m kg
											T3 s	T1,T2 s		
Synchronous speed 1200 rpm – 6-pole version														
KPER 80 K6	0.37	T1-T3	1130	61.0	0.65	1.13	3.5	2.0	1.8	2.0	26	28	0.00130	11
KPER 80 G6	0.55	T1-T3	1110	66.0	0.69	1.46	4.0	2.1	2.1	2.2	22	26	0.00175	12.5
KPER 90 S6	0.65	T1-T3	1135	69.0	0.67	1.69	3.7	1.8	1.7	1.9	30	35	0.00325	16
KPER 90 L6	0.95	T1-T3	1125	71.5	0.71	2.25	4.3	2.1	2.0	2.2	23	27	0.00425	19
KPER 100 L6	1.4	T1-T3	1150	75.0	0.69	3.25	4.6	2.1	2.0	2.3	20	24	0.00625	24
KPER 112 M6	1.9	T1-T3	1155	79.0	0.71	4.10	5.8	2.2	2.0	2.4	18	21	0.01225	33.5
K11R 132 S6	3.0	T1-T3	1155	82.0	0.79	5.7	5.8	2.0	1.9	3.0	18	21	0.0180	49
K11R 132 M6	4.0	T1-T3	1160	84.5	0.80	7.1	6.9	2.2	2.1	3.3	20	23	0.0230	53
K11R 132 MX6	5.5	T1-T3	1166	85.5	0.82	9.5	5.8	1.9	1.7	2.6	26	29	0.0430	70
K11R 160 M6	7.6	T1-T3	1165	86.5	0.82	12.9	5.8	2.0	1.7	2.6	24	30	0.0530	89
K11R 160 L6	11.0	T1-T3	1170	86.0	0.82	18.7	6.3	2.3	2.1	2.9	11	29	0.1130	123
K11R 180 L6	15.0	T1-T3	1178	89.5	0.87	23.0	7.1	2.3	2.1	3.0	20	45	0.2280	190
K11R 200 L6	19.0	T1-T3	1175	88.0	0.80	32.5	7.0	2.6	2.1	3.3			0.2280	190
K11R 200 LX6	23	T1-T3	1178	90.5	0.90	34.0	6.8	2.2	1.7	2.5	14	40	0.4430	265
K11R 225 M6	32	T1-T3	1177	92.0	0.88	47.5	6.1	2.2	1.8	2.3	10	30	0.8250	360
K11R 250 M6	40	T1-T3	1181	93.0	0.88	59	6.5	2.1	1.5	2.2	12	26	1.2800	475
K11R 280 S6	48	T1-T3	1190	94.0	0.87	71	7.5	2.1	1.7	2.5			2.630	715
K11R 280 M6	55	T1-T3	1190	94.0	0.87	81	8.1	2.2	2.0	2.9			3.330	810
K11R 315 S6	76	T1-T3	1190	94.5	0.87	111	8.7	2.3	2.1	3.0			3.330	840
K11R 315 M6	90	T1-T3	1191	95.1	0.88	130	7.4	1.6	1.3	2.5	12	35	6.000	1080
K11R 315 MY6	100	T1-T3	1185	94.5	0.86	148	8.2	1.9	1.7	2.3			6.000	1080

Synchronous speed 900 rpm – 8-pole version

KPER 80 K8	0.18	T1-T3	820	52.0	0.64	0.65	2.7	1.6	1.6	1.9	150	180	0.00130	10.5
KPER 80 G8	0.25	T1-T3	830	56.0	0.62	0.87	3.1	2.3	2.3	2.4	60	70	0.00175	12
KPER 90 S8	0.37	T1-T3	850	59.0	0.56	1.34	3.2	1.5	1.5	2.0	55	60	0.00300	15
KPER 90 L8	0.55	T1-T3	845	64.0	0.58	1.78	3.3	1.6	1.6	2.1	55	60	0.00375	18
KPER 100 L8	0.65	T1-T3	855	67.0	0.60	1.95	3.3	1.5	1.5	1.8	60	70	0.00625	23
KPER 100 LX8	0.95	T1-T3	860	74.5	0.64	2.40	4.5	2.0	2.0	2.5	60	70	0.00900	28
KPER 112 M8	1.3	T1-T3	860	75.5	0.61	3.40	4.5	1.7	1.7	1.9	50	60	0.01225	33.5
K11R 132 S8	2.2	T1-T3	850	75.0	0.77	4.6	3.8	1.7	1.4	1.9	30	35	0.0180	49
K11R 132 M8	3.0	T1-T3	850	80.8	0.76	6.0	4.9	1.8	1.7	2.3	28	30	0.0230	57
K11R 160 M8	4.0	T1-T3	875	82.0	0.70	8.4	4.6	2.0	1.9	2.5	35	45	0.0430	80
K11R 160 MX8	5.5	T1-T3	870	83.5	0.71	11.2	4.9	2.0	1.9	2.5	35	45	0.0530	90
K11R 160 L8	7.6	T1-T3	880	84.5	0.71	15.3	5.4	2.3	2.0	2.8	25	35	0.1130	122
K11R 180 L8	11.0	T1-T3	875	85.5	0.71	22.0	5.5	2.5	2.1	2.9	10	35	0.1450	140
K11R 200 L8	15.0	T1-T3	880	87.5	0.70	29.5	5.7	2.4	2.2	3.1			0.2280	195
K11R 225 S8	19.5	T1-T3	885	89.0	0.80	33.0	6.2	2.3	2.0	2.9			0.4400	275
K11R 225 M8	24	T1-T3	885	91.0	0.80	39.7	5.4	2.1	1.8	2.2			0.8250	360
K11R 250 M8	32	T1-T3	888	92.3	0.79	53.0	6.4	2.0	1.5	2.1	11	29	1.3500	472
K11R 280 S8	40	T1-T3	895	93.5	0.78	66	6.3	1.9	1.7	2.3			2.630	700
K11R 280 M8	48	T1-T3	892	94.0	0.79	78	6.5	2.1	1.8	2.4			3.330	805
K11R 315 S8	60	T1-T3	890	94.0	0.81	95	6.0	1.7	1.6	2.1			3.330	850
K11R 315 M8	82	T1-T3	890	94.0	0.78	135	7.0	2.1	1.8	2.5			3.600	880
K11R 315 MY8	95	T1-T3	894	94.7	0.79	152	6.6	1.4	1.2	2.3	10	28	6.000	1080

Other voltages and frequencies on request

Modifications of not yet certified motors are possible!

Three-phase motors with squirrel-cage rotor Increased-safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Typ	P kW	Tempe- rature class	n rpm	η %	cos φ -	I 380...420 V A	I _k /I _N	M _k /M _N	M ₂ /M _N	M _k /M _N	t _E -time		J kgm ²	m kg
											T3 s	T1,T2 s		
Synchronous speed 3000 rpm – 2-pole version														
KPER 63 K2	0,18	T1-T3	2710...2810	61,0	0,85...0,75	0,53	3,7	1,6	1,6	2,0	29	30	0,00013	4,9
KPER 63 G2	0,25	T1-T3	2700...2760	65,0	0,88...0,83	0,62	4,2	1,9	1,9	2,2	13	15	0,00015	5,2
KPER 71 K2	0,37	T1-T3	2700...2780	67,0	0,89...0,79	0,97	4,1	1,7	1,7	2,2	16	18	0,00025	6,7
KPER 71 G2	0,55	T1-T3	2740...2810	73,0	0,84...0,74	1,43	4,8	2,2	2,2	2,5	11	13	0,00032	7,6
KPER 80 K2	0,75	T1-T3	2780...2830	74,0	0,88...0,79	1,76	5,3	1,9	1,9	2,4	14	16	0,00057	10,7
KPER 80 G2	1,10	T1-T3	2800...2850	77,0	0,86...0,76	2,60	5,6	2,5	2,3	2,5	8	10	0,00072	11,5
KPER 90 S2	1,30	T1-T3	2830...2860	78,0	0,90...0,85	2,75	6,5	2,4	2,2	2,6	14	16	0,00132	16
KPER 90 L2	1,85	T1-T3	2850...2880	83,0	0,89...0,83	3,85	7,4	3,0	3,0	3,2	9	12	0,00170	19
KPER 100 L2	2,50	T1-T3	2850...2880	82,0	0,89...0,85	5,2	6,8	2,5	2,4	2,7	13	16	0,00275	25
KPER 112 M2	3,30	T1-T3	2905...2925	85,0	0,85...0,77	6,9	7,7	2,3	2,1	3,1	11	16	0,00450	32
KPER 112 MX2	4,10	T1-T3	2900...2920	87,0	0,89...0,84	8,1	7,9	2,5	1,9	3,3	11	18	0,00550	38
K11R 132 S2	4,6	T1-T3	2900	87,5	0,88	9,2	6,6	1,4	1,2	2,8	11	28	0,0110	57
K12R 132 SX2	5,5	T1-T3	2930	90,5	0,92	10,1	7,0	2,1	1,3	2,6	16	35	0,0110	57
K11R 160 M2	7,5	T1-T3	2945	87,5	0,90	14,4	6,6	1,9	1,6	2,7	19	40	0,0575	120
K11R 160 MX2	10,0	T1-T3	2935	89,5	0,90	19,1	6,1	1,8	1,5	2,5	11	28	0,0575	120
K11R 160 L2	12,5	T1-T3	2945	90,0	0,91	23	7,0	1,8	1,4	2,8	10	27	0,0675	138
K11R 180 M2	15,0	T1-T3	2945	91,0	0,92	27	6,6	1,8	1,5	2,6	13	30	0,105	175
K11R 200 L2	20	T1-T3	2935	91,5	0,92	36	6,2	1,8	1,4	2,4	8	25	0,128	210
K11R 200 LX2	24	T1-T3	2950	93,0	0,90	43	6,6	1,6	1,2	2,5	9	24	0,193	255
K11R 225 M2	28	T1-T3	2970	93,0	0,91	50	7,1	1,5	1,0	2,6	14	30	0,375	360
K11R 250 M2	36	T1-T3	2970	93,0	0,93	63	6,8	1,9	1,5	2,6	18	40	0,65	490
K11R 280 S2	47	T1-T3	2975	93,7	0,88	86	6,7	1,4	1,3	2,2	23	50	1,21	730
K11R 280 M2	58	T1-T3	2975	94,0	0,88	107	6,7	1,4	1,3	2,1	21	35	1,44	815
K11R 315 S2	68	T1-T3	2975	94,1	0,90	122	7,1	1,8	1,6	2,3	13	29	1,44	850
K11R 315 M2	80	T1-T3											1,76	970
K11R 315 MY2	110	T1-T3	2970	95,0	0,93	189	6,9	1,5	1,3	3,0	9	24	2,82	1170

Synchronous speed 1500 min⁻¹ – 4-pole version

KPER 63 K4	0,12	T1-T3	not possible in voltage range											0,00019	4,8
KPER 63 G4	0,12	T1-T4	1340...1380	62,5	0,78...0,68	0,37	3,3	1,9	1,9	2,2	70	75	0,00024	5,2	
KPER 71 K4	0,25	T1-T3	1350...1390	65,0	0,79...0,69	0,79	3,4	1,4	1,4	1,8	24	27	0,00040	6,8	
KPER 71 G4	0,37	T1-T3	1350...1390	67,0	0,79...0,70	1,08	3,6	1,6	1,6	2,0	18	21	0,00050	7,8	
KPER 80 K4	0,55	T1-T3	1365...1395	69,0	0,80...0,71	1,59	3,9	1,8	1,8	2,0	13	16	0,00087	10,6	
KPER 80 GX4	0,75	T1-T3	1320...1360	70,0	0,84...0,77	2,00	3,8	1,9	1,8	1,9	16	20	0,00120	12,4	
KPER 90 S4	1,00	T1-T3	1395...1415	77,0	0,84...0,77	2,40	5,1	2,4	2,3	2,5	17	19	0,00207	15,5	
KPER 90 L4	1,35	T1-T3	1395...1420	79,0	0,84...0,78	3,10	5,5	2,3	1,8	2,5	12	14	0,00260	18	
KPER 100 L4	2,00	T1-T3	1410...1430	80,0	0,82...0,74	4,65	6,0	2,8	2,6	2,9	11	13	0,00400	23,5	
KPER 100 LX4	2,5	T1-T3	1435...1450	83,0	0,81...0,74	5,6	6,7	2,3	2,2	2,9	11	12	0,00725	30	
KPER 112 M4	3,6	T1-T3	1430...1450	85,0	0,82...0,73	8,1	7,0	2,8	2,1	2,9	7	9	0,009	37	
K11R 132 S4	5,0	T1-T3	1435	84,5	0,83	10,5	6,3	2,0	1,6	2,8	8	16	0,015	53	
K11R 132 M4	6,8	T1-T3	1455	87,5	0,85...0,78	14,0	5,9	2,1	1,8	2,7	10	27	0,028	72	
K11R 160 M4	10,0	T1-T3	1465	91,0	0,89	18,9	6,1	2,0	1,7	2,5	16	35	0,078	123	
K11R 160 L4	13,5	T1-T3	1470	90,5	0,87...0,83	26,0	7,4	2,5	2,0	3,0	7	25	0,090	136	
K11R 180 M4	15,0	T1-T3	1475	90,5	0,87	28,5	6,4	1,9	1,6	2,5	13	40	0,138	180	
K11R 180 L4	17,5	T1-T3	1475	90,5	0,86...0,82	34,0	6,9	2,1	1,8	2,8	8	27	0,138	185	
K11R 200 L4	24,0	T1-T3	1477	92,5	0,87	45,0	6,4	1,8	1,5	2,4	8	30	0,275	270	
K11R 225 S4	30	T1-T3	1475	93,0	0,85	59,0	5,7	1,6	1,4	1,9	12	30	0,525	380	
K11R 225 M4	36	T1-T3	1480	94,0	0,85	69,0	7,0	2,2	1,7	2,3	7	20	0,525	385	
K11R 250 M4	44	T1-T3	1485	94,0	0,86	83	6,9	1,8	1,6	2,1	9	29	0,95	530	
K11R 280 S4	58	T1-T3	1485	94,2	0,84	113	6,7	1,8	1,6	2,2	13	40	1,96	765	
K11R 280 M4	70	T1-T3	1485	95,0	0,84	135	7,1	2,0	1,8	2,4	11	30	2,27	840	
K11R 315 S4	84	T1-T3	1485	95,0	0,84	159	6,9	2,0	1,8	2,2	7	25	2,27	875	
K11R 315 M4	100	T1-T3											2,73	1000	
K11R 315 MY4	110	T1-T3	1487	95,4	0,85	217	6,7	1,5	1,4	2,4	12	35	4,82	1200	
K11R 315 L4	135	T1-T3	1491	96,0	0,86	248	7,2	1,4	1,3	2,4	16	40	5,93	1450	

Other voltages and frequencies on request
Modifications of not yet certified motors are possible!

Three-phase motors with squirrel-cage rotor Increased-safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage range, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55

Motor selection data

Design voltage range, EEx e II 2G

Typ	P kW	Tempe- rature class	n rpm	η %	cos φ -	I 380...420 V A	I _M /I _N	M _M /M _N	M _S /M _N	M _R /M _N	t _E -time		J kgm ²	m kg
											T3 s	T1,T2 s		
Synchronous speed 1000 rpm – 6-pole version														
KPER 80 K6	0.37	T1-T3	905...930	62.0	0.74...0.65	1.3	3.2	2.0	1.8	2.0	26	28	0.00130	11
KPER 80 G6	0.55	T1-T3	not possible in voltage range										0.00175	12.5
KPER 90 S6	0.65	T1-T3	915...935	69.0	0.74...0.67	1.95	3.4	1.8	1.7	1.9	30	35	0.00325	16
KPER 90 L6	0.95	T1-T3	not possible in voltage range										0.00425	19
KPER 100 L6	1.4	T1-T3	930...950	75.0	0.76...0.69	3.75	4.2	2.1	2.0	2.3	20	24	0.00625	24
KPER 112 M6	1.9	T1-T3	945...955	79.0	0.78...0.71	4.7	5.3	2.2	2.0	2.4	18	21	0.01225	33.5
K11R 132 S6	2.6	T1-T3	950	80.5	0.83...0.77	6.1	5.1	1.8	1.8	2.8	18	21	0.018	49
K11R 132 M6	3.5	T1-T3	960	82.9	0.85...0.79	7.5	6.2	2.0	2.0	3.0	23	20	0.023	53
K11R 132 MX6	4.8	T1-T3	963	83.5	0.83	10.3	5.0	1.8	1.6	2.5	26	30	0.043	70
K11R 160 M6	6.6	T1-T3	965	84.5	0.86...0.82	13.8	5.2	1.9	1.6	2.5	26	30	0.053	89
K11R 160 L6	9.7	T1-T3	970	85.0	0.87...0.80	20.0	5.6	2.2	1.9	2.2	12	29	0.113	123
K11R 180 L6	13.2	T1-T3	975	89.0	0.87	25.5	6.2	2.2	2.0	2.9	21	45	0.228	190
K11R 200 L6	16.5	T1-T3											0.228	190
K11R 200 LX6	20	T1-T3	977	90.5	0.90...0.89	37.5	6.0	2.2	1.6	2.5	14	45	0.443	265
K11R 225 M6	27	T1-T3	975	91.0	0.88...0.84	51	5.4	2.1	1.8	2.3	10	35	0.825	360
K11R 250 M6	33	T1-T3	985	92.0	0.86	63	5.7	2.1	1.7	2.4	9	30	1.28	475
K11R 280 S6	40	T1-T3											2.63	715
K11R 280 M6	46	T1-T3											3.33	810
K11R 315 S6	64	T1-T3	988	94.5	0.90...0.88	116	7.0	2.2	1.8	2.5	8	28	3.33	840
K11R 315 M6	76	T1-T3	992	95.2	0.88	136	6.9	1.6	1.3	2.5	15	40	6.00	1080
K11R 315 MY6	85	T1-T3											6.00	1080

Synchronous speed 750 rpm – 8-pole version

KPER 80 K8	0.18	T1-T3	not possible in voltage range											
KPER 80 G8	0.25	T1-T3	655...680	55.0	0.70...0.62	1.0	2.8	2.3	2.2	2.4	60	70	0.00060	8.1
KPER 90 S8	0.37	T1-T3	not possible in voltage range											
KPER 90 L8	0.55	T1-T3	not possible in voltage range											
KPER 100 L8	0.65	T1-T3	690...705	66.0	0.67...0.60	2.25	2.9	1.5	1.5	1.8	60	70	0.00625	23
KPER 100 LX8	0.95	T1-T3	700...710	74.0	0.72...0.64	2.75	4.1	2.0	2.0	2.5	60	70	0.00900	28
KPER 112 M8	1.3	T1-T3	690...710	75.0	0.70...0.61	3.9	4.1	1.8	1.7	1.9	50	60	0.01225	33.5
K11R 132 S8	1.9	T1-T3	700.00	76.2	0.75	5.0	3.8	1.6	1.6	2.2	30	35	0.018	49
K11R 132 M8	2.6	T1-T3	705.00	78.5	0.78...0.71	6.6	4.4	1.8	1.7	2.6	27	30	0.023	57
K11R 160 M8	3.5	T1-T3	720.00	80.0	0.76...0.70	8.8	4.2	1.8	1.7	2.4	40	45	0.043	80
K11R 160 MX8	4.8	T1-T3	720.00	83.5	0.76...0.70	11.8	4.4	2.0	1.9	2.5	40	45	0.053	90
K11R 160 L8	6.6	T1-T3	730.00	81.5	0.76...0.68	16.3	4.7	1.9	1.8	2.4	29	35	0.113	122
K11R 180 L8	9.7	T1-T3	725.00	85.0	0.77...0.69	22.5	5.0	2.3	2.0	2.6	10	40	0.145	140
K11R 200 L8	13.2	T1-T3											0.228	195
K11R 225 S8	16.5	T1-T3											0.440	275
K11R 225 M8	20	T1-T3											0.825	360
K11R 250 M8	27	T1-T3	737.00	90.5	0.81...0.77	55	5.9	2.3	1.7	2.3	14	35	1.35	472
K11R 280 S8	33	T1-T3											2.63	700
K11R 280 M8	40	T1-T3											3.33	805
K11R 315 S8	50	T1-T3											3.33	850
K11R 315 M8	68	T1-T3											3.60	880
K11R 315 MY8	80	T1-T3	742.00	94.3	0.81...0.77	160	6.2	1.4	1.2	2.3	11	30	6.00	1080

Other voltages and frequencies on request

T1,T2-design on request

Modifications of not yet certified motors are possible!

Three-phase motors with squirrel-cage rotor Increased safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55
Partial certification PTB Nr. Ex-91.C.3070 U, Ex-95.D.3020 U
Design in accordance to EG Certificates IBExU00ATEX1083 U and IBExU00ATEX1051 U

Motor selection data

Type	P ₂ kW	U _B , 50 Hz, T1-T3 ATEX	P ₂ kW	U _{J...U₀} , 50 Hz, T1-T3 ATEX	P ₂ kW	U _B , 50 Hz, T1,T2 ATEX	P ₂ kW	U _B , 60 Hz, T1-T3 ATEX
Synchronous speed 3000 rpm – 2-pole version								
KPER 63 K2	0.18	PTB 99 ATEX 3309	0.18	PTB 99 ATEX 3309			0.18	PTB 99 ATEX 3309
KPER 63 G2	0.25	PTB 99 ATEX 3309					0.25	PTB 99 ATEX 3309
KPER 63 GX2			0.25	PTB 99 ATEX 3309				
KPER 71 K2	0.37	PTB 99 ATEX 3310	0.37	PTB 99 ATEX 3310			0.37	PTB 99 ATEX 3310
KPER 71 G2	0.55	PTB 99 ATEX 3310	0.55	PTB 99 ATEX 3310			0.55	PTB 99 ATEX 3310
				PTB 99 ATEX 3311				PTB 99 ATEX 3311
KPER 80 K2	0.75	PTB 99 ATEX 3311	0.75	PTB 99 ATEX 3311			0.75	PTB 99 ATEX 3311
KPER 80 G2	1.10	PTB 99 ATEX 3311	1.10	PTB 99 ATEX 3311			1.1	PTB 99 ATEX 3311
KPER 90 S2	1.30	PTB 99 ATEX 3312	1.30	PTB 99 ATEX 3312			1.3	PTB 99 ATEX 3312
KPER 90 L2	1.85	PTB 99 ATEX 3312	1.85	PTB 99 ATEX 3312			1.85	PTB 99 ATEX 3312
KPER 100 L 2	2.5	PTB 99 ATEX 3313	2.5	PTB 99 ATEX 3313			2.5	PTB 99 ATEX 3313
KPER 112 M2	3.3	PTB 99 ATEX 3314	3.3	PTB 99 ATEX 3314			3.3	PTB 99 ATEX 3314
KPER 112 MX2	4.1	PTB 99 ATEX 3314	4.1	PTB 99 ATEX 3314			4.1	PTB 99 ATEX 3314
K11R 132 S2	4.6	PTB 98 ATEX 3459/01	4.6	PTB 98 ATEX 3459/02			5.3	IBExU 99 ATEX 1142/08
K11R 132 SX2	5.5	PTB 98 ATEX 3459/03					6.3	IBExU 99 ATEX 1142/10
K12R 132 SX2	5.5	IBExU 99 ATEX 1142/21	5.5	IBExU 99 ATEX 1142/22	6.6	IBExU 99 ATEX 1142/23	6.6	IBExU 99 ATEX 1142/24
K11R 160 M2	7.5	PTB 98 ATEX 3460/01	7.5	PTB 98 ATEX 3460/02	9.5	PTB 98 ATEX 3460/03	8.6	IBExU 99 ATEX 1105/12
K11R 160 MX2	10	PTB 98 ATEX 3460/04	10	PTB 98 ATEX 3460/05	13	PTB 98 ATEX 3460/06	12	IBExU 99 ATEX 1105/24
K11R 160 L2	12.5	PTB 98 ATEX 3460/07	12.5	PTB 98 ATEX 3460/09	16	PTB 98 ATEX 3460/08	14	IBExU 99 ATEX 1105/15
K11R 180 M2	15	PTB 98 ATEX 3461/01	15	PTB 98 ATEX 3461/02	19	PTB 98 ATEX 3461/03	17	IBExU 99 ATEX 1138/09
K11R 200 L2	20	PTB 98 ATEX 3462/01	20	PTB 98 ATEX 3462/02	25	PTB 98 ATEX 3462/03	23	IBExU 99 ATEX 1143/03
K11R 200 LX2	24	PTB 98 ATEX 3462/04	24	PTB 98 ATEX 3462/05	31	PTB 98 ATEX 3462/06	27	IBExU 99 ATEX 1143/11
K11R 225 M2	28	PTB 98 ATEX 3463/01	28	PTB 98 ATEX 3463/02	38	PTB 98 ATEX 3463/03	33	IBExU 99 ATEX 1144/02
K11R 250 M2	36	PTB 98 ATEX 3464/01	36	PTB 98 ATEX 3464/02	47	PTB 98 ATEX 3464/03	44	IBExU 99 ATEX 1131/06
K11R 280 S2	47	PTB 98 ATEX 3466/01	47	IBExU 99 ATEX 1030/17	68	IBExU 99 ATEX 1030/14	56	IBExU 99 ATEX 1030/06
K11R 280 S2	68	IBExU 99 ATEX 1030/14						
K11R 280 M2	58	PTB 98 ATEX 3466/02	58	PTB 98 ATEX 3466/03	76	PTB 98 ATEX 3466/04	70	IBExU 99 ATEX 1030/07
K11R 280 M2	76	PTB 98 ATEX 3466/04						
K11R 315 S2	68	PTB 98 ATEX 3465/01	68	IBExU 99 ATEX 1137/23	95	IBExU 99 ATEX 1137/02	82	IBExU 99 ATEX 1137/02
K11R 315 M2	80	PTB 98 ATEX 3465/02	80		112		80	IBExU 99 ATEX 1137/08
K11R 315 MY2	110	PTB 98 ATEX 3465/03	110	IBExU 99 ATEX 1137/28	135		132	IBExU 99 ATEX 1137/09
K11R 315 LX2	150	IBExU 99 ATEX 1137/30						

Synchronous speed 1500 rpm – 4-pole version

KPER 63 K4	0.12	PTB 99 ATEX 3309					0.12	PTB 99 ATEX 3309
KPER 63 G4	0.18	PTB 99 ATEX 3309	0.12	PTB 99 ATEX 3309			0.18	PTB 99 ATEX 3309
KPER 71 K4	0.25	PTB 99 ATEX 3310	0.25	PTB 99 ATEX 3310			0.25	PTB 99 ATEX 3310
KPER 71 G4	0.37	PTB 99 ATEX 3310	0.37	PTB 99 ATEX 3310			0.37	PTB 99 ATEX 3310
KPER 80 K4	0.55	PTB 99 ATEX 3311	0.55	PTB 99 ATEX 3311			0.55	PTB 99 ATEX 3311
KPER 80 G4	0.75	PTB 99 ATEX 3311					0.75	PTB 99 ATEX 3311
KPER 80 GX4			0.75	PTB 99 ATEX 3311				
KPER 90 S4	1.00	PTB 99 ATEX 3312	1.00	PTB 99 ATEX 3312			1.00	PTB 99 ATEX 3312
KPER 90 L4	1.35	PTB 99 ATEX 3312	1.35	PTB 99 ATEX 3312			1.35	PTB 99 ATEX 3312
KPER 100 L 4	2.00	PTB 99 ATEX 3313	2.00	PTB 99 ATEX 3313			2.00	PTB 99 ATEX 3313
KPER 100 LX4	2.5	PTB 99 ATEX 3313	2.5	PTB 99 ATEX 3313			2.5	PTB 99 ATEX 3313
KPER 112 M4	3.6	PTB 99 ATEX 3314	3.6	PTB 99 ATEX 3314			3.6	PTB 99 ATEX 3314
K11R 132 S4	5	PTB 98 ATEX 3459/04	5	PTB 98 ATEX 3459/05			5.8	IBExU 99 ATEX 1142/11
K11R 132 M4	6.8	PTB 98 ATEX 3459/06	6.8	PTB 98 ATEX 3459/07			7.8	IBExU 99 ATEX 1142/12
K11R 160 M4	10	PTB 98 ATEX 3460/10	10	PTB 98 ATEX 3460/11			12	IBExU 99 ATEX 1105/16
K11R 160 L4	13.5	PTB 98 ATEX 3460/12	13.5	PTB 98 ATEX 3460/13			15.5	IBExU 99 ATEX 1105/17
K11R 180 M4	15	PTB 98 ATEX 3461/04	15	PTB 98 ATEX 3461/05	17	PTB 98 ATEX 3461/06	17	IBExU 99 ATEX 1138/10
K11R 180 L4	17.5	PTB 98 ATEX 3461/07	17.5	PTB 98 ATEX 3461/08	20	PTB 98 ATEX 3461/09	20	IBExU 99 ATEX 1138/12
K11R 200 L4	24	PTB 98 ATEX 3462/07	24	PTB 98 ATEX 3462/08	27	PTB 98 ATEX 3462/09	28	IBExU 99 ATEX 1143/05
K11R 225 S4	30	PTB 98 ATEX 3463/04	30	PTB 98 ATEX 3463/05	33	PTB 98 ATEX 3463/06	36	IBExU 99 ATEX 1144/04
K11R 225 M4	36	PTB 98 ATEX 3463/07	36	PTB 98 ATEX 3463/08	40	PTB 98 ATEX 3463/09	43	IBExU 99 ATEX 1144/05
K11R 250 M4	44	PTB 98 ATEX 3464/04	44	PTB 98 ATEX 3464/06	50	PTB 98 ATEX 3464/05	52	IBExU 99 ATEX 1131/09
K11R 280 S4	58	PTB 98 ATEX 3466/05	58	IBExU 99 ATEX 1030/18	68	IBExU 99 ATEX 1030/02	70	IBExU 99 ATEX 1030/10
K11R 280 M4	70	PTB 98 ATEX 3466/06	70	PTB 98 ATEX 3466/07	80	PTB 98 ATEX 3466/08	84	IBExU 99 ATEX 1030/11
K11R 315 S4	84	PTB 98 ATEX 3465/04	84	IBExU 99 ATEX 1137/24	100	IBExU 99 ATEX 1137/15	100	IBExU 99 ATEX 1137/11
K11R 315 M4	100	PTB 98 ATEX 3465/05	100		120	IBExU 99 ATEX 1137/01	100	IBExU 99 ATEX 1137/12
K11R 315 MY4	115	PTB 98 ATEX 3465/06	115	IBExU 99 ATEX 1137/29	135		132	IBExU 99 ATEX 1137/13
K11R 315 L4	135	IBExU 99 ATEX 1137/16	135	IBExU 99 ATEX 1137/17				
K11R 315 LX4	170	IBExU 99 ATEX 1137/35						
K12R 355 M4	215	IBExU 01 ATEX 1009/01						

Three-phase motors with squirrel-cage rotor Increased safety type of protection EEx e II acc. to DIN EN 50014/50019



for design voltage, temperature classes T1, T2 and T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55
Partial certification PTB Nr. Ex-91.C.3070 U, Ex-95.D.3020 U
Design in accordance to EG Certificates IBExU00ATEX1083 U and IBExU00ATEX1051 U

Motor selection data

Type	P ₂ kW	U _B , 50 Hz, T1-T3 ATEX PTB ..	P ₂ kW	U _U ...U ₀ , 50 Hz, T1-T3 ATEX PTB ..	P ₂ kW	U _B , 50 Hz, T1,T2 ATEX PTB ..	P ₂ kW	U _B , 60 Hz, T1-T3 ATEX
Synchronous speed 1000 rpm – 6-pole version								
KPER 80 K6	0.37	PTB 99 ATEX 3311	0.37	PTB 99 ATEX 3311			0.37	PTB 99 ATEX 3311
KPER 80 G6	0.55	PTB 99 ATEX 3311					0.55	PTB 99 ATEX 3311
KPER 90 S6	0.65	PTB 99 ATEX 3312	0.65	PTB 99 ATEX 3312			0.65	PTB 99 ATEX 3312
KPER 90 L6	0.95	PTB 99 ATEX 3312					0.95	PTB 99 ATEX 3312
KPER 100 L 6	1.4	PTB 99 ATEX 3313	1.4	PTB 99 ATEX 3313			1.4	PTB 99 ATEX 3313
KPER 112 M6	1.9	PTB 99 ATEX 3314	1.9	PTB 99 ATEX 3314			1.9	PTB 99 ATEX 3314
K11R 132 S6	2.6	PTB 98 ATEX 3459/08	2.6	PTB 98 ATEX 3459/09			3	IBExU 99 ATEX 1142/13
K11R 132 M6	3.5	PTB 98 ATEX 3459/10	3.5	PTB 98 ATEX 3459/11			4	IBExU 99 ATEX 1142/14
K11R 132 MX6	4.8	PTB 98 ATEX 3459/12	4.8	PTB 98 ATEX 3459/13			5.5	IBExU 99 ATEX 1142/15
K11R 160 M6	6.6	PTB 98 ATEX 3460/14	6.6	PTB 98 ATEX 3460/14			7.6	IBExU 99 ATEX 1105/18
K11R 160 L6	9.7	PTB 98 ATEX 3460/16	9.7	PTB 98 ATEX 3460/17			11	IBExU 99 ATEX 1105/19
K11R 180 L6	13.2	PTB 98 ATEX 3461/10	13.2	PTB 98 ATEX 3461/11			15	IBExU 99 ATEX 1138/14
K11R 200 L6	16.5	PTB 98 ATEX 3462/10	16.5				19	
K11R 200 LX6	20	PTB 98 ATEX 3462/11	20	PTB 98 ATEX 3462/12			23	IBExU 99 ATEX 1143/06
K11R 225 M6	27	PTB 98 ATEX 3463/10	27	PTB 98 ATEX 3463/11			32	IBExU 99 ATEX 1144/06
K11R 250 M6	33	PTB 98 ATEX 3464/07	33	IBExU 99 ATEX 1131/13			40	IBExU 99 ATEX 1131/10
K11R 280 S6	40	PTB 98 ATEX 3466/09	40				48	
K11R 280 M6	46	PTB 98 ATEX 3466/10	46		50	IBExU 99 ATEX 1030/16	55	
K11R 315 S6	64	PTB 98 ATEX 3465/07	64	PTB 98 ATEX 3465/09	68	PTB 98 ATEX 3465/08	76	
K11R 315 M6	76	IBExU 99 ATEX 1137/19	76	IBExU 99 ATEX 1137/20	82	IBExU 99 ATEX 1137/21	90	IBExU 99 ATEX 1137/22
K11R 315 MY6	85	IBExU 99 ATEX 1137/04	85	IBExU 99 ATEX 1137/05	92		100	

Synchronous speed 750 rpm – 8-pole version

KPER 80 K8	0.18	PTB 99 ATEX 3311					0.18	PTB 99 ATEX 3311
KPER 80 G8	0.25	PTB 99 ATEX 3311	0.25	PTB 99 ATEX 3311			0.25	PTB 99 ATEX 3311
KPER 90 S8	0.37	PTB 99 ATEX 3312					0.37	PTB 99 ATEX 3312
KPER 90 L8	0.55	PTB 99 ATEX 3312					0.55	PTB 99 ATEX 3312
KPER 100 L 8	0.65	PTB 99 ATEX 3313	0.65	PTB 99 ATEX 3313			0.65	PTB 99 ATEX 3313
KPER 100 LX8	0.95	PTB 99 ATEX 3313	0.95	PTB 99 ATEX 3313			0.95	PTB 99 ATEX 3313
KPER 112 M8	1.3	PTB 99 ATEX 3314	1.3	PTB 99 ATEX 3314			1.3	PTB 99 ATEX 3314
K11R 132 S8	1.9	PTB 98 ATEX 3459/14	1.9	PTB 98 ATEX 3459/15			2.2	IBExU 99 ATEX 1142/16
K11R 132 M8	2.6	PTB 98 ATEX 3459/16	2.6	PTB 98 ATEX 3459/17			3	IBExU 99 ATEX 1142/17
K11R 160 M8	3.5	PTB 98 ATEX 3460/18	3.5	PTB 98 ATEX 3460/19			4	IBExU 99 ATEX 1105/20
K11R 160 MX8	4.8	PTB 98 ATEX 3460/20	4.8	PTB 98 ATEX 3460/21			5.5	IBExU 99 ATEX 1105/21
K11R 160 L8	6.6	PTB 98 ATEX 3460/22	6.6	PTB 98 ATEX 3460/23			7.6	IBExU 99 ATEX 1105/22
K11R 180 L8	9.7	PTB 98 ATEX 3461/12	9.7	PTB 98 ATEX 3461/13			11	IBExU 99 ATEX 1138/15
K11R 200 L8	13.2	PTB 98 ATEX 3462/13	13.2				15	
K11R 225 S8	16.5	PTB 98 ATEX 3463/12	16.5				19.5	
K11R 225 M8	20	PTB 98 ATEX 3463/13	20				24	
K11R 250 M8	27	PTB 98 ATEX 3464/08	27	IBExU 99 ATEX 1131/14			32	IBExU 99 ATEX 1131/15
K11R 280 S8	33	PTB 98 ATEX 3466/11	33				40	
K11R 280 M8	40	PTB 98 ATEX 3466/12	40				48	
K11R 315 S8	50	PTB 98 ATEX 3465/10	50				60	
K11R 315 M8	68	PTB 98 ATEX 3465/11	68				82	
K11R 315 MY8	80	IBExU 99 ATEX 1137/25	80	IBExU 99 ATEX 1137/26			95	IBExU 99 ATEX 1137/27

**Explosion protected motors for
type of protection "Flame-proof enclosure", EEx d II 2G / EEx de II 2G**



**Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm**

Series

K8.R

mounting dimensions and output correlation acc. to DIN 42673 sh. 3 and 42677 sh. 3

Sizes

56 – 355

Output range

0.12 – 630 kW

Degrees of protection

IP 55, IP 56 acc. to DIN EN 60034-5

Cooling method

IC 411 acc. to DIN EN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

-20 °C up to +60 °C

Temperature classes

T3 up to T6

Explosion-protected version in accordance to Apparatus Group II, Category 2

EN 50 014 (DIN VDE 0170/0171 p. 1) General Requirements

EN 50 018 (DIN VDE 0170/0171 p. 5) Flame-proof enclosure "d"

The motor design version is certified in an EG-Sample Test Certificate.



Three-phase motors with squirrel-cage rotor, Flame-proof enclosure type of protection EEx d, de II according to DIN EN 50014/50018



for design voltage, temperature class T4

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz, EEx d, de II 2G

Type	P	n	η	$\cos \varphi$	I	I_k/I	M_k/M	M_k/M	J	m
	kW	rpm	%	-	400 V A				kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version										
K81R 63 K 2	0.18	2905	66.0	0.68	0.58	6.8	4.6	6.5	0.00028	16
K81R 63 L 2	0.25	2860	70.0	0.88	0.67	5.8	3.4	4.7	0.00028	16
K81R 71 K 2	0.37	2800	71.5	0.84	0.89	5.2	2.7	3.5	0.00028	16
K81R 71 L 2	0.55	2810	73.0	0.84	1.29	4.8	2.8	3.6	0.00039	17
K81R 80 K 2	0.75	2790	74.0	0.84	1.74	4.8	2.7	3.3	0.00058	24
K81R 80 L 2	1.10	2820	78.0	0.85	2.40	5.5	2.8	3.5	0.00080	25
K81R 90 L 2	1.50	2840	79.0	0.86	3.20	5.5	2.7	3.2	0.00130	31
K81R 90 LX 2	2.20	2850	82.0	0.86	4.50	5.6	2.7	3.3	0.00180	35
K82R 100 L 2	3.0	2850	83.0	0.87	6.00	6.8	2.7	3.3	0.00290	45
K82R 112 M 2	4.0	2880	85.0	0.88	7.70	6.5	2.3	3.1	0.00051	53
K82R 132 S 2	5.5	2880	85.0	0.87	10.7	6.0	2.5	3.3	0.00089	95
K82R 132 SX 2	7.5	2910	86.5	0.87	14.4	6.8	2.7	3.5	0.0125	100
K82R 160 M 2	11.0	2925	88.5	0.89	20.0	6.6	2.8	3.2	0.0320	163
K82R 160 MX 2	15.0	2920	89.5	0.92	26.5	6.8	2.8	3.2	0.0430	173
K82R 160 L 2	18.5	2925	91.0	0.92	32.0	6.8	2.6	3.1	0.0520	188
K81R 180 M 2	22.0	2925	91.7	0.92	37.5	6.9	2.5	3.0	0.075	196
K81R 200 L 2	30	2955	92.5	0.90	52	7.2	2.6	2.9	0.130	254
K81R 200 LX 2	37	2955	93.0	0.90	64	7.2	2.7	3.0	0.160	278
K82R 225 M 2	45	2960	93.0	0.89	78	7.1	2.5	3.0	0.240	400
K82R 250 M 2	55	2970	93.8	0.89	95	7.1	2.4	2.8	0.400	545
K82R 280 S 2	75	2970	94.5	0.90	127	6.8	2.2	2.7	0.650	700
K82R 280 M 2	90	2970	94.5	0.90	153	6.6	2.4	2.8	0.780	762
K82R 315 S 2	110	2975	95.0	0.90	186	6.3	2.0	2.4	1.40	960
K82R 315 M 2	132	2975	95.5	0.90	220	6.8	2.1	2.5	1.60	1025
K82R 315 L 2	160	2975	95.7	0.90	270	6.9	2.4	2.7	1.70	1065
K82R 315 LX 2	200	2980	95.8	0.90	335	6.9	2.3	2.6	2.20	1270
K82R 315 LY2	250	2980	96.0	0.91	415	7.2	1.7	2.7	2.80	1420
K82R 355 M 2	315	2980	96.6	0.92	510	6.7	1.5	2.8	4.50	1900
K82R 355 L 2	355	2985	96.8	0.93	570	6.9	1.4	2.7	5.00	2050
K82R 400 M 2	400	2990	96.9	0.94	635	6.7	1.1	2.8	7.50	2500

Other voltages and frequencies on request

Three-phase motors with squirrel-cage rotor, Flame-proof enclosure type of protection EEx d, de II according to DIN EN 50014/50018



for design voltage, temperature class T4

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz, EEx d, de II 2G

Type	P	n	η	$\cos \varphi$	I	I_N/I	M_N/M	M_K/M	J	m
	kW	rpm	%	-	400 V A				kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version										
K81R 63 K 4	0.12	1445	67.0	0.60	0.43	5.7	3.9	3.9	0.00046	16
K81R 63 L 4	0.18	1415	70.0	0.70	0.53	4.7	2.7	2.7	0.00046	16
K81R 71 K 4	0.25	1370	66.0	0.80	0.68	3.9	2.0	2.5	0.00046	16
K81R 71 L 4	0.37	1380	70.0	0.80	0.95	3.9	2.2	2.6	0.00063	17
K81R 80 K 4	0.55	1380	73.0	0.80	1.36	3.8	2.0	2.3	0.00092	24
K81R 80 L 4	0.75	1400	75.0	0.79	1.83	4.2	2.1	2.5	0.00130	25
K81R 90 L 4	1.10	1400	76.0	0.84	2.50	4.8	2.1	2.5	0.00210	31
K81R 90 LX 4	1.50	1405	79.0	0.83	3.30	5.0	2.3	2.7	0.00290	35
K82R 100 L 4	2.2	1420	80.0	0.80	4.95	5.4	2.4	2.8	0.00460	44
K82R 100 LX 4	3.0	1415	80.5	0.82	6.6	5.5	2.3	2.7	0.00560	46
K82R 112 M 4	4.0	1435	85.0	0.84	8.1	6.8	2.7	3.2	0.01100	59
K82R 132 S 4	5.5	1440	86.5	0.86	10.7	6.2	2.5	2.7	0.0220	100
K82R 132 SX 4	7.5	1440	88.0	0.86	14.3	6.5	2.7	2.8	0.0300	110
K82R 160 M 4	11.0	1460	89.5	0.85	21.0	6.6	2.5	2.8	0.0570	168
K82R 160 MX 4	15.0	1455	90.0	0.86	28.0	6.5	2.8	3.1	0.0790	184
K81R 180 M 4	18.5	1460	91.0	0.84	35.0	6.6	2.9	3.0	0.130	198
K81R 180 L 4	22.0	1460	91.5	0.85	41.0	6.9	3.0	3.0	0.155	217
K81R 200 L 4	30	1460	92.5	0.88	53	6.8	2.6	2.9	0.250	274
K82R 225 S 4	37	1465	93.0	0.89	65	6.7	2.7	2.6	0.400	372
K82R 225 M 4	45	1470	93.0	0.89	78	6.5	2.7	2.6	0.480	402
K82R 250 M 4	55	1470	93.8	0.89	95	7.1	2.9	2.9	0.750	573
K82R 280 S 4	75	1480	94.5	0.86	133	6.8	2.6	2.5	1.250	740
K82R 280 M 4	90	1480	94.5	0.86	160	6.9	2.8	2.6	1.480	820
K82R 315 S 4	110	1485	95.1	0.86	194	6.7	2.5	2.6	2.20	1040
K82R 315 M 4	132	1485	95.3	0.86	230	6.8	2.5	2.7	2.70	1120
K82R 315 L 4	160	1485	95.6	0.87	280	6.9	2.6	2.6	3.10	1210
K82R 315 LX 4	200	1485	95.8	0.87	345	6.9	2.6	2.6	3.90	1430
K82R 315 LY 4	250	1490	96.2	0.89	420	7.3	1.7	2.7	4.60	1565
K82R 355 M 4	315	1490	96.3	0.89	530	6.9	1.5	2.7	6.10	2050
K82R 355 L 4	355	1490	96.6	0.89	595	6.9	1.6	2.8	6.70	2200
K82R 400 S 4	400	1495	97.0	0.90	660	6.7	1.3	2.8	16.0	2650
K82R 400 M 4	450	1495	97.0	0.91	735	6.5	1.1	2.7	18.0	2850
K81R 450 M 4	500	1495	97.2	0.91	815	6.9	1.0	2.7	23.0	3300
K81R 450 L 4	560	1495	97.4	0.91		6.8	1.0	2.7	26.0	3500
K81R 450 LX 4	630	1495	97.4	0.91		6.8	1.0	2.7	31.0	3800

Other voltages and frequencies on request



Three-phase motors with squirrel-cage rotor, Flame-proof enclosure type of protection EEx d, de II according to DIN EN 50014/50018



for design voltage, temperature class T4

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Motor selection data

Design point 400 V, 50 Hz, EEx d, de II 2G

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_k/M	J	m
	kW	rpm	%	-	400 V A				kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version										
K81R 71 L 6	0.25	920	63.5	0.71	0.80	3.5	2.2	2.6	0.0012	17
K81R 80 K 6	0.37	925	68.0	0.72	1.11	4.1	2.5	2.8	0.0019	24
K81R 80 L 6	0.55	925	70.0	0.72	1.58	4.0	2.4	2.7	0.0025	25
K81R 90 L 6	0.75	910	67.0	0.75	2.15	3.4	1.8	2.1	0.0033	31
K81R 90 LX 6	1.10	920	71.0	0.73	3.05	3.7	2.0	2.2	0.0046	35
K82R 100 L 6	1.5	945	77.0	0.75	3.75	4.9	2.5	3.0	0.0095	46
K82R 112 M 6	2.2	950	81.0	0.75	5.20	5.6	2.7	3.1	0.0170	59
K82R 132 S 6	3.0	965	84.0	0.78	6.60	6.3	2.7	3.1	0.0310	100
K82R 132 M 6	4.0	960	84.5	0.79	8.60	6.0	2.6	3.0	0.0370	104
K82R 132 MX 6	5.5	960	85.5	0.82	11.3	6.4	2.6	3.0	0.0430	112
K82R 160 M 6	7.5	960	86.5	0.85	14.7	6.8	2.5	3.3	0.0870	170
K82R 160 L 6	11.0	965	87.5	0.85	21.5	6.7	2.5	3.2	0.1200	190
K81R 180 L 6	15.0	965	90.0	0.84	28.5	6.9	2.4	3.2	0.190	215
K81R 200 L 6	18.5	975	90.5	0.84	35.0	6.2	1.9	2.7	0.280	270
K81R 200 LX 6	22	970	91.0	0.84	41.5	6.8	2.2	3.0	0.310	280
K82R 225 M 6	30	975	92.0	0.84	56	6.6	2.8	2.5	0.690	404
K82R 250 M 6	37	980	92.5	0.85	68	6.6	2.8	2.6	1.03	570
K82R 280 S 6	45	985	93.3	0.82	85	5.8	2.8	2.4	1.35	720
K82R 280 M 6	55	985	93.5	0.82	104	5.8	2.7	2.3	1.70	770
K82R 315 S 6	75	990	94.0	0.87	132	6.4	2.6	2.4	4.30	995
K82R 315 M 6	90	990	94.2	0.88	157	6.5	2.6	2.4	5.00	1050
K82R 315 L 6	110	990	94.5	0.88	191	6.5	2.7	2.5	6.00	1145
K82R 315 LX 6	132	990	94.7	0.88	230	6.7	2.7	2.5	7.30	1265
K82R 315 LY 6	160	990	95.0	0.88	275	6.8	2.6	2.5	8.30	1440
K82R 355 M 6	200	990	95.6	0.88	345	6.7	1.8	2.7	11.3	1750
K82R 355 L 6	250	990	95.9	0.88	430	6.7	1.8	2.7	13.8	1950
K82R 400 S 6	315	993	96.3	0.89	530	6.5	1.0	2.6	23.0	2650
K82R 400 M 6	355	994	96.6	0.89	595	6.6	1.1	2.7	27.0	2850
K81R 450 M 6	400	995	96.8	0.90	665	6.9	1.0	2.6	41.0	3300
K81R 450 L 6	450	995	96.6	0.89	755	6.8	1.2	2.8	46.0	3600
K81R 450 LX 6	500	995	97.0	0.89		6.8	1.1	2.7	51.0	3800

Synchronous speed 750 rpm – 8-pole version

K81R 71 L 8	0.12	680	52.0	0.67	0.50	2.4	1.9	2.4	0.0012	17
K81R 80 K 8	0.18	690	61.0	0.65	0.66	3.2	2.2	2.6	0.0019	24
K81R 80 L 8	0.25	690	62.0	0.64	0.91	3.2	2.2	2.5	0.0025	25
K81R 90 L 8	0.37	690	64.0	0.63	1.32	3.0	1.8	2.2	0.0033	31
K81R 90 LX 8	0.55	690	65.0	0.65	1.88	3.1	1.8	2.2	0.0046	35
K82R 100 L 8	0.75	710	71.0	0.67	2.30	4.0	2.4	2.6	0.0080	44
K82R 100 LX 8	1.10	695	70.0	0.73	3.10	3.8	2.0	2.4	0.0095	46
K82R 112 M 8	1.5	710	78.0	0.67	4.15	4.6	2.2	2.8	0.017	59
K82R 132 S 8	2.2	695	81.0	0.79	4.95	4.1	2.0	2.3	0.029	97
K82R 132 M 8	3.0	705	81.5	0.77	6.90	4.6	2.4	2.7	0.036	113
K82R 160 M 8	4.0	715	84.0	0.78	8.8	4.6	1.8	2.3	0.071	157
K82R 160 MX 8	5.5	720	86.0	0.77	12.0	5.4	2.1	2.8	0.105	170
K82R 160 L 8	7.5	720	86.5	0.77	16.3	5.6	2.2	2.9	0.136	190
K81R 180 L 8	11.0	725	88.5	0.80	22.5	6.4	2.4	3.0	0.22	215
K81R 200 L 8	15.0	730	89.0	0.79	31.0	6.9	2.7	3.2	0.40	280
K82R 225 S 8	18.5	730	90.2	0.79	37.5	6.3	2.2	3.0	0.56	372
K82R 225 M 8	22	730	90.5	0.80	44.0	6.6	2.2	3.0	0.69	404
K82R 250 M 8	30	735	92.1	0.80	59	6.8	2.0	3.0	1.20	550
K82R 280 S 8	37	735	92.8	0.82	70	6.2	2.1	2.8	1.90	740
K82R 280 M 8	45	735	92.8	0.82	84	6.3	2.0	2.6	2.30	800
K82R 315 S 8	55	740	92.8	0.83	103	6.0	2.5	2.6	4.30	995
K82R 315 M 8	75	740	93.0	0.83	140	6.3	2.5	2.5	5.00	1050
K82R 315 L 8	90	740	93.2	0.82	170	6.6	2.6	2.6	6.00	1145
K82R 315 LX 8	110	740	93.2	0.82	210	6.8	2.7	2.7	7.30	1265
K82R 315 LY 8	132	740	93.4	0.82	250	6.3	2.5	2.5	8.30	1440
K82R 355 M 8	160	740	95.1	0.83	295	6.4	1.9	2.4	11.4	1750
K82R 355 L 8	200	745	95.5	0.83	365	6.6	1.7	2.5	13.9	1950
K82R 400 S 8	250	745	96.0	0.83	455	6.1	1.2	2.4	23.0	2650
K82R 400 M 8	315	745	96.2	0.84	565	6.2	1.2	2.4	30.0	3100
K81R 450 S 8	355	745	96.5	0.84	630	6.1	1.0	2.3	46.0	3450
K81R 450 M 8	400	745	96.6	0.84	710	6.1	1.0	2.2	51.0	3750
K81R 450 L 8	450	745	96.7	0.84	800	6.1	1.0	2.2	57.0	4050

Other voltages and frequencies on request

**Explosion protected motors for
type of protection "Non-sparking", EEx nA II 3G**



Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series

KPER/K11R/K12R

mounting dimensions and output correlation acc. to DIN 42673 sh. 1 and DIN 42677 sh. 1

KPR/K10R

Transnorm version on request

Size

63 – 355

Output range

0.06 – 450 kW

Degrees of protection

IP 54, 55, 56, 65 acc. to DIN EN 60034-5

Cooling method

IC 411 DIN EN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

-40°C bis +55°C (depending on the Certificate, deviations possible)

Temperature class

T1 up to T3

Explosion-protected version in accordance to Apparatus Group II, Category 3

EN 50 014 (DIN VDE 0170/0171 p. 1) General Requirements

EN 50 021 (DIN VDE 0170/0171 p. 16) Protective system "n"

The motor design version is certified in an EG-Sample Test Certificate.

Three-phase motors with squirrel-cage rotor

Motors for the use in zone 2, type of protection "Non sparking EEx nA II"

acc. to DIN EN 50014/50021, temperature classes T1 – T3

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55



Motor selection data

Design point 400 V, 50 Hz, EEx II 3G

Type	P	n	η	$\cos \varphi$	I	I_k/I	M_A/M	M_G/M	M_k/M	max. T	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	°C	kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version												
KPER 56 K2	0.09	2840	70.0	0.74	0.25	4.9	2.3	2.3	2.8	140	0.00013	4.4
KPER 56 G2	0.12	2830	70.3	0.77	0.32	4.5	2.1	2.1	2.3	140	0.00013	4.5
KPER 63 K2	0.18	2790	67.1	0.76	0.51	4.1	1.9	1.9	2.2	140	0.00013	4.9
KPER 63 G2	0.25	2800	68.1	0.72	0.74	4.2	2.2	2.2	2.4	150	0.00015	5.2
KPER 71 K2	0.37	2780	71.5	0.79	0.94	4.4	2.1	2.1	2.3	150	0.00025	6.7
KPER 71 G2	0.55	2775	74.3	0.81	1.32	5.1	2.3	2.1	2.6	160	0.00032	7.6
KPER 80 K2	0.75	2825	77.5	0.81	1.72	5.9	2.4	2.4	2.4	150	0.00057	10.7
KPER 80 G2	1.1	2835	77.8	0.80	2.55	6.0	2.4	2.3	2.6	180	0.00072	11.5
KPER 90 S2	1.5	2840	81.2	0.86	3.1	7.0	2.5	2.5	2.8	160	0.00132	16
KPER 90 L2	2.2	2850	82.0	0.85	4.55	7.5	2.8	2.3	2.9	170	0.00170	19
KPER 100 L2	3.0	2865	83.4	0.84	6.15	6.8	2.4	2.2	2.8	180	0.00275	25
KPER 112 M2	4.0	2900	85.0	0.81	8.4	7.0	2.2	2.1	2.9	170	0.0045	32
KPER 112 MX2 ¹⁾	5.5	2890	86.3	0.84	11	7.5	2.4	2.2	3.0	190	0.0055	38
K11R 132 SX2	7.5	2900	87.0	0.86	14.5	6.6	1.8	1.3	2.5	170	0.0110	57
K11R 160 M2	11	2900	88.5	0.90	20.0	7.0	2.4	2.0	3.0	175	0.0258	81
K11R 160 MX2	15	2920	89.4	0.90	27.0	7.1	2.2	1.7	2.9	165	0.0575	118
K11R 160 L2	18.5	2930	90.5	0.92	32.5	7.2	2.1	1.6	2.8	165	0.0675	134
K11R 180 M2	22	2935	91.8	0.92	37.5	6.8	1.7	1.4	2.6	165	0.105	165
K11R 200 L2	30	2940	92.8	0.92	50.5	7.3	2.0	1.6	2.9	180	0.128	195
K11R 200 LX2	37	2940	93.0	0.90	64.0	7.0	1.8	1.3	2.4	165	0.193	255
K11R 225 M2	45	2940	93.7	0.91	76.0	7.5	1.8	1.4	2.7	180	0.220	290
K11R 250 M2	55	2955	93.7	0.91	93.0	7.5	2.0	1.5	2.6	165	0.375	360
K11R 280 S2	75	2970	94.6	0.92	124	7.5	2.0	1.6	2.6	140	0.650	490
K11R 280 M2	90	2970	94.7	0.91	151	8.5	2.2	1.8	2.8	155	0.675	510
K11R 315 S2	110	2975	95.4	0.91	183	8.5	1.5	1.3	2.5	150	1.21	720
K11R 315 M2	132	2975	95.4	0.91	219	8.5	2.0	1.8	2.7	160	1.44	800
K11R 315 MX2	160	2975	96.0	0.93	259	8.5	2.0	1.6	2.6	150	1.76	980
K11R 315 MY2	200	2970	96.0	0.92	327	8.2	2.6	2.0	2.6	165	2.82	1170
K11R 315 L2	250	2973	96.1	0.93	404	7.3	2.1	1.4	2.0	180	3.66	1460
K12R 355 M2	315	2985	96.8	0.91	520	8.2	1.4	1.0	3.0	150	4.20	2000
K12R 355 MX2	355	2985	96.9	0.91	580	8.5	1.4	1.0	2.9	170	5.60	2200
K12R 355 LY2	400	2985	97.1	0.91	650	8.6	1.6	1.0	2.9	180	7.10	2400
K12R 355 L2	450	2985	97.2	0.92	725	9.0	2.0	0.9	2.8	190	7.1	2400

max. T: maximum surface temperature (rotor included)

¹⁾ also available as K11R 132 S2

Three-phase motors with squirrel-cage rotor

Motors for the use in zone 2, type of protection "Non sparking EEx nA II"
acc. to DIN EN 50014/50021, temperature classes T1 – T3
with surface ventilation, mode of operation S1, continuous duty
insulation class F, degree of protection IP 55



Motor selection data

Design point 400 V, 50 Hz, EEx II 3G

Type	P	n	η	$\cos \varphi$	I	I_k/I	M_k/M	M_s/M	M_k/M	max. T	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	°C	kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version												
KPER 56 K4	0.06	1410	60.5	0.60	0.24	3.1	2.3	2.3	2.7	140	0.00019	4.3
KPER 56 G4	0.09	1375	62.0	0.68	0.31	3.2	1.9	1.9	2.2	140	0.00019	4.4
KPER 63 K4	0.12	1370	57.5	0.68	0.44	3.2	1.9	1.8	2.2	150	0.00019	4.8
KPER 63 G4	0.18	1360	61.0	0.66	0.65	3.3	2.0	2.0	2.3	160	0.00024	5.2
KPER 71 K4	0.25	1385	64.6	0.72	0.78	3.6	1.8	1.8	2.1	140	0.00040	6.8
KPER 71 G4	0.37	1370	67.8	0.74	1.06	3.8	2.0	2.0	2.2	160	0.00050	7.8
KPER 80 K4	0.55	1400	71.5	0.69	1.60	4.1	2.1	2.0	2.3	180	0.00087	10.6
KPER 80 G4	0.75	1400	73.5	0.70	2.10	4.6	2.2	2.1	2.3	160	0.00107	11.7
KPER 90 S4	1.10	1410	76.6	0.79	2.62	5.5	2.3	2.2	2.5	150	0.00207	15.5
KPER 90 L4	1.50	1400	78.8	0.81	3.40	5.5	2.5	2.4	2.6	160	0.00260	18
KPER 100 L4	2.20	1410	81.2	0.79	4.95	6.0	2.5	2.3	2.7	170	0.00400	23.5
KPER 100 LX4	3.00	1430	82.3	0.79	6.65	6.5	2.5	2.2	2.9	170	0.00725	30
KPER 112 M4	4.00	1435	84.2	0.78	8.80	6.9	2.6	2.5	3.2	180	0.0090	37
KPER 112 MX4 ¹⁾	5.5	1425	84.0	0.78	12.1	6.3	2.5	2.5	2.9	195	0.0110	45
K11R 132 M4	7.5	1450	85.0	0.82	15.5	5.5	2.0	1.7	2.9	160	0.028	69
K11R 160 M4	11.0	1440	87.0	0.83	22.0	6.0	2.2	1.9	3.3	165	0.035	86
K11R 160 L4	15.0	1455	89.0	0.86	28.5	6.0	2.5	2.0	3.0	170	0.078	120
K11R 180 M4	18.5	1455	90.0	0.86	34.5	6.0	2.5	2.0	2.9	180	0.090	136
K11R 180 L4	22	1465	90.5	0.84	42.0	6.5	2.0	1.8	2.6	180	0.138	170
K11R 200 L4	30	1465	91.5	0.85	55.5	7.0	2.0	1.7	2.4	190	0.168	200
K11R 225 S4	37	1470	92.5	0.86	67.0	7.0	2.0	1.7	2.5	180	0.275	270
K11R 225 M4	45	1470	93.0	0.86	81.0	7.0	2.0	1.7	2.5	195	0.313	300
K11R 250 M4	55	1475	93.5	0.86	98.5	7.0	2.2	1.7	2.3	180	0.525	375
K11R 280 S4	75	1480	94.1	0.86	134	7.0	2.0	1.7	2.2	170	0.950	520
K11R 280 M4	90	1480	94.6	0.86	160	7.0	2.1	1.6	2.2	175	1.100	580
K11R 315 S4	110	1485	95.1	0.86	194	7.5	1.8	1.6	2.2	160	1.96	740
K11R 315 M4	132	1485	95.1	0.86	233	7.0	1.8	1.5	2.2	160	2.27	840
K11R 315 MX4	160	1480	95.0	0.87	279	7.0	1.8	1.5	2.0	170	2.73	1000
K11R 315 MY4	200	1485	96.0	0.88	342	7.5	2.0	1.8	2.4	180	4.82	1200
K11R 315 L4	250	1485	96.1	0.90	415	8.0	2.0	1.6	2.3	180	5.93	1450
K12R 355 M4	315	1495	96.8	0.85	555	9.0	2.0	1.3	3.4	150	5.6	1950
K12R 355 MX4	355	1495	96.8	0.84	630	9.2	2.0	1.3	3.8	160	7.9	2150
K12R 355 LY4	400	1495	96.8	0.82	730	9.0	2.1	1.3	4.0	170	9.5	2400
K12R 355 L4	450	1490	96.7	0.79	850	8.7	1.9	1.4	4.0	185	9.5	2400

max. T: maximum surface temperature (rotor included)

¹⁾ also available as K11R 132 S2



Three-phase motors with squirrel-cage rotor

Motors for the use in zone 2, type of protection "Non sparking EEx nA II"

acc. to DIN EN 50014/50021, temperature classes T1 – T3

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55



Motor selection data

Design point 400 V, 50 Hz, EEx II 3G

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_G/M	M_K/M	max. T	J	m
	kW	rpm	%	-	400 V A	-	-	-	-	°C	kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version												
KPER 63 K6	0.09	895	50.5	0.56	0.46	2.5	2.0	2.0	2.4	150	0.00024	4.9
KPER 63 G6	0.12	880	52.0	0.56	0.59	2.5	2.0	2.0	2.3	160	0.00027	5.7
KPER 71 K6	0.18	925	58.0	0.51	0.88	2.8	1.6	1.6	2.1	160	0.00045	7.4
KPER 71 G6	0.25	915	60.0	0.55	1.10	2.9	2.0	2.0	2.2	180	0.00060	8.3
KPER 80 K6	0.37	915	66.0	0.66	1.22	3.4	2.0	2.0	2.0	150	0.00130	11
KPER 80 G6	0.55	915	68.0	0.67	1.73	3.7	2.2	2.2	2.4	170	0.00175	12.5
KPER 90 S6	0.75	935	70.0	0.64	2.43	4.5	2.4	2.4	2.6	140	0.00325	16
KPER 90 L6	1.10	935	73.0	0.69	3.15	4.6	2.2	2.2	2.6	180	0.00425	19
KPER 100 L6	1.50	945	76.4	0.73	3.90	4.6	2.1	2.0	2.4	160	0.00625	24
KPER 112 M6	2.20	950	79.8	0.74	5.35	5.3	2.2	2.1	2.7	150	0.01225	33.5
K11R 132 S6	3.0	955	78.5	0.82	6.7	5.7	1.8	1.6	2.7	130	0.0180	46
K11R 132 M6	4.0	955	80.0	0.80	9.0	6.0	2.2	2.0	3.1	130	0.0230	53
K11R 132 MX6	5.5	955	83.0	0.83	11.5	5.0	1.8	1.5	2.3	140	0.0430	70
K11R 160 M6	7.5	960	85.0	0.82	15.5	5.5	2.0	1.6	2.5	150	0.0530	86
K11R 160 L6	11.0	965	85.2	0.86	21.5	5.0	2.0	1.7	2.3	165	0.113	114
K11R 180 L6	15.0	965	86.0	0.83	30.5	6.0	2.4	2.1	2.7	180	0.145	136
K11R 200 L6	18.5	970	88.1	0.87	35.0	5.5	2.0	1.7	2.4	170	0.228	175
K11R 200 LX6	22	970	88.8	0.87	41.0	6.2	2.2	1.8	2.6	180	0.268	200
K11R 225 M6	30	973	90.4	0.89	54.0	6.5	2.2	1.7	2.5	180	0.443	265
K11R 250 M6	37	975	91.0	0.89	66.0	6.5	2.2	1.7	2.3	165	0.825	360
K11R 280 S6	45	980	92.0	0.87	81.0	6.0	2.0	1.5	2.0	155	1.28	465
K11R 280 M6	55	980	92.5	0.88	97.5	6.5	2.3	1.7	2.4	155	1.48	520
K11R 315 S6	75	985	93.5	0.87	133	7.0	2.0	1.6	2.4	140	2.63	690
K11R 315 M6	90	990	94.4	0.88	156	7.0	2.0	1.7	2.4	140	3.33	800
K11R 315 MX6	110	990	94.0	0.88	192	7.5	2.2	1.7	2.6	165	3.60	880
K11R 315 MY6	132	990	95.0	0.88	228	7.5	2.0	1.7	2.4	165	6.00	1050
K11R 315 L6	160	985	95.3	0.89	272	7.5	2.3	1.9	2.4	180	6.76	1250
K12R 355 M6	200	995	96.0	0.84	360	9.2	2.0	1.3	3.5	190	8.2	1650
K12R 355 MX6	250	995	96.6	0.85	440	9.0	2.0	1.2	3.2	190	12.1	2200
K12R 355 LY6	315	995	96.6	0.84	560	8.8	2.0	1.2	3.4	190	14.0	2400

Synchronous speed 750 rpm – 8-pole version

KPER 71 K8	0.09	675	45.5	0.51	0.56	2.1	1.9	1.9	2.1	160	0.00050	6.6
KPER 71 G8	0.12	670	46.5	0.51	0.73	2.3	1.8	1.8	2.1	160	0.00060	8.1
KPER 80 K8	0.18	690	56.5	0.59	0.78	2.8	2.0	2.0	2.2	140	0.00130	10.5
KPER 80 G8	0.25	695	58.0	0.56	1.12	3.0	2.3	2.3	2.5	140	0.00175	12
KPER 90 S8	0.37	700	61.5	0.54	1.6	3.0	1.9	1.9	2.1	150	0.00300	15
KPER 90 L8	0.55	695	64.5	0.60	2.04	3.2	1.9	1.9	2.2	160	0.00375	18
KPER 100 L8	0.75	705	67.0	0.60	2.7	3.3	2.0	2.0	2.3	160	0.00625	23
KPER 100 LX8	1.1	705	73.0	0.67	3.25	4.0	2.0	2.0	2.4	150	0.00900	28
KPER 112 M8	1.5	705	75.5	0.70	4.1	4.4	2.2	2.1	2.5	150	0.01225	33.5
K11R 132 S8	2.2	705	75.5	0.76	5.5	4.5	1.7	1.6	2.3	125	0.0180	46
K11R 132 M8	3.0	705	78.0	0.75	7.4	4.5	1.7	1.6	2.3	135	0.0230	53
K11R 160 M8	4.0	710	79.3	0.78	9.3	4.0	1.6	1.3	1.9	140	0.0430	70
K11R 160 MX8	5.5	710	81.4	0.78	12.5	4.5	1.7	1.6	2.1	140	0.0530	86
K11R 160 L8	7.5	725	83.0	0.78	16.5	4.5	1.8	1.6	2.1	150	0.1130	114
K11R 180 L8	11.0	720	85.0	0.78	24.0	4.5	2.0	1.7	2.1	165	0.1450	136
K11R 200 L8	15.0	725	86.5	0.79	31.5	5.0	2.0	1.7	2.3	160	0.2280	175
K10R 180 M8	18.5	725	87.5	0.80	38.0	5.0	1.9	1.7	2.2	185	0.2680	200
K11R 225 S8	18.5	725	89.2	0.83	36.0	5.5	2.0	1.6	2.2	175	0.440	265
K11R 225 M8	22	725	89.2	0.84	42.5	5.0	1.8	1.5	2.2	175	0.440	265
K11R 250 M8	30	730	90.2	0.79	61.0	5.5	2.2	1.8	2.2	165	0.825	360
K11R 280 S8	37	735	91.0	0.80	73.5	5.5	2.0	1.5	2.0	155	1.350	465
K11R 280 M8	45	735	91.5	0.77	92.0	6.0	2.3	1.8	2.4	155	1.550	520
K11R 315 S8	55	740	93.1	0.80	107	6.5	1.8	1.6	2.3	130	2.63	690
K11R 315 M8	75	740	93.3	0.81	143	6.0	2.0	1.6	2.3	140	3.33	800
K11R 315 MX8	90	740	93.5	0.81	172	6.0	1.9	1.6	2.2	160	3.60	880
K11R 315 MY8	110	740	94.5	0.81	207	6.5	2.1	1.8	2.4	165	6.00	1050
K11R 315 L8	132	740	95.0	0.83	242	6.3	2.0	1.7	2.1	180	6.76	1250
K12R 355 M8	160	745	95.6	0.77	315	7.5	1.8	1.2	3.0	180	9.5	1600
K12R 355 MX8	200	745	95.9	0.79	380	8.2	2.0	1.3	3.5	190	13.4	2200
K12R 355 LY8	250	745	95.8	0.74	510	8.0	2.2	1.3	3.5	190	15.8	2400

max. T: maximum surface temperature (rotor included)

Motors for use in areas with occurrence of combustible dust
Motors for use in Zone 21, Ex II 2D



Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series

KPER/K21Q

mounting dimensions and output correlation acc. to DIN 42673 sh. 1 and 42677 sh. 1

KPR/K20Q

Transnorm version on request

Sizes

56 – 315

Output range

0.06 – 315 kW

Degree of protection

IP 65 acc. to DIN EN 60034-5

Cooling method

IC 411 acc. to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

-40 °C bis +40 °C (depending on the Certificate, deviations possible)

Explosion-protected version in accordance to Apparatus Group II, Category 2

EN 50 014 (DIN VDE 0170/0171 p. 1) General Requirements

EN 50281-1-1 (DIN VDE 0170/0171 p. 15) Areas with combustible dusts

The motor design version is certified in an EG-Sample Test Certificate.



Three-phase motors with squirrel-cage rotor Motors for the use in zone 21 acc. to DIN EN 50014/50281-1-1 and -1-2



with surface ventilation,

mode of operation S1, continuous duty

insulation class F, degree of protection IP 65

version for design voltage range A acc. to IEC 34-1, 50 Hz

max. surface temperature 125 °C

Motor selection data

Design point 400 V, 50 Hz, Ex II 2D

Type	P	n	η	$\cos \varphi$	I	I_{Δ}/I	J	m
	kW	rpm	%	-	400 V A	-	kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version								
KPER 56 K2	0.09	2840	70.0	0.74	0.25	4.9	0.00013	4.4
KPER 56 G2	0.12	2830	70.5	0.77	0.32	4.5	0.00013	4.5
KPER 63 K2	0.18	2790	67.0	0.76	0.51	4.1	0.00013	4.9
KPER 63 G2	0.25	2800	68.0	0.72	0.74	4.2	0.00015	5.2
KPER 71 K2	0.37	2780	71.5	0.79	0.94	4.4	0.00025	6.7
KPER 71 G2	0.55	2775	74.5	0.81	1.32	5.1	0.00032	7.6
KPER 80 K2	0.75	2825	77.5	0.81	1.72	5.9	0.00057	10.7
KPER 80 G2	1.1	2835	78.0	0.80	2.55	6.0	0.00072	11.5
KPER 90 S2	1.5	2840	81.0	0.86	3.1	7.0	0.00132	16
KPER 90 L2	2.2	2850	82.0	0.85	4.55	7.5	0.0017	19
KPER 100 L2	3.0	2865	83.5	0.84	6.15	6.8	0.00275	25
KPER 112 M2	4.0	2900	85.0	0.81	8.4	7.0	0.0045	32
KPER 132 S2T ¹⁾	5.5	2890	86.5	0.84	11	7.5	0.0055	40
KPER 132 SX2T	7.5	2880	87.0	0.84	14.8	6.3	0.0068	48
K21Q 132 SX2	7.5	2900	87.0	0.86	15	6.6	0.0110	57
K21Q 160 M2	11.0	2900	88.5	0.90	20	7.0	0.0258	81
K21Q 160 MX2	15.0	2930	89.4	0.90	27	7.1	0.0575	118
K21Q 160 L2	18.5	2920	90.5	0.92	32	7.2	0.0675	134
K21Q 180 M2	22	2935	91.8	0.92	37.5	6.8	0.1050	165
K21Q 200 L2	30	2940	92.8	0.92	50.5	7.3	0.1280	195
K21Q 200 Lx2	37	2940	93.0	0.90	64	7.0	0.1930	255
K21Q 225 M2	45	2940	93.7	0.91	76	7.5	0.2200	290
K21Q 250 M2	55	2955	93.7	0.91	93	7.5	0.3750	360
K21Q 280 S2	75	2970	94.6	0.92	124	7.5	0.6500	490
K21Q 280 M2	90	2970	94.7	0.91	151	8.5	0.6750	510
K21Q 315 S2	110	2975	95.4	0.91	183	8.5	1.210	720
K21Q 315 M2	132	2975	95.4	0.91	219	8.5	1.440	800
K21Q 315 MX2	160	2975	96.0	0.93	259	8.5	1.760	980
K21Q 315 MY2	200	2970	96.0	0.92	327	8.2	2.820	1170
K21Q 315 L2	250	2973	96.1	0.93	404	7.3	3.66	1460
K21Q 315 LX2	315	2975	96.7	0.92	511	7.4	4.43	1630

¹⁾ also available as K21Q 132 S2

Series K21Q also available as series K20Q

Three-phase motors with squirrel-cage rotor Motors for the use in zone 21 acc. to DIN EN 50014/50281-1-1 and -1-2



with surface ventilation,

mode of operation S1, continuous duty

insulation class F, degree of protection IP 65

version for design voltage range A acc. to IEC 34-1, 50 Hz

max. surface temperature 125 °C

Motor selection data

Design point 400 V, 50 Hz, Ex II 2D

Type	P	n	η	$\cos \varphi$	I	I_{Δ}/I	J	m
	kW	rpm	%	-	400 V A	-	kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version								
KPER 56 K4	0.06	1410	60.5	0.60	0.24	3.1	0.00019	4.3
KPER 56 G4	0.09	1375	62.0	0.68	0.31	3.2	0.00019	4.4
KPER 63 K4	0.12	1370	57.5	0.68	0.44	3.2	0.00019	4.8
KPER 63 G4	0.18	1360	61.0	0.66	0.65	3.3	0.00024	5.2
KPER 71 K4	0.25	1385	64.5	0.72	0.78	3.6	0.00040	6.8
KPER 71 G4	0.37	1370	68.0	0.74	1.06	3.8	0.00050	7.8
KPER 80 K4	0.55	1400	71.5	0.69	1.60	4.1	0.00087	10.6
KPER 80 G4	0.75	1400	73.5	0.70	2.10	4.6	0.00107	11.7
KPER 90 S4	1.10	1410	76.5	0.79	2.62	5.5	0.00207	15.5
KPER 90 L4	1.50	1400	79.0	0.81	3.40	5.5	0.00260	18
KPER 100 L4	2.20	1410	81.0	0.79	4.95	6.0	0.00400	23.5
KPER 100 LX4	3.00	1430	82.5	0.79	6.65	6.5	0.00725	30
KPER 112 M4	4.00	1435	84.0	0.78	8.80	6.9	0.00900	37
KPER 132 S4T ¹⁾	5.5	1420	86.5	0.78	11.80	6.3	0.01100	47
K21Q 132 M4	7.5	1450	87.0	0.84	15	6.0	0.0280	70
K21Q 160 M4	11.0	1450	88.4	0.85	21.0	6.8	0.0350	92
K21Q 160 L4	15.0	1465	89.4	0.86	28.0	7.3	0.0780	120
K21Q 180 M4	18.5	1460	90.0	0.86	35	6.8	0.0900	136
K21Q 180 L4	22	1465	90.5	0.84	42	6.5	0.1380	170
K21Q 200 L4	30	1465	91.5	0.85	55.5	7.0	0.1680	200
K21Q 225 S4	37	1470	92.5	0.86	67	7.0	0.2750	270
K21Q 225 M4	45	1470	93.0	0.86	81	7.0	0.3130	300
K21Q 250 M4	55	1475	93.5	0.86	98.5	7.0	0.5250	375
K21Q 280 S4	75	1480	94.1	0.86	134	7.0	0.950	520
K21Q 280 M4	90	1480	94.6	0.86	160	7.0	1.100	580
K21Q 315 S4	110	1485	95.1	0.86	194	7.5	1.960	740
K21Q 315 M4	132	1485	95.1	0.86	233	7.0	2.270	840
K21Q 315 MX4	160	1480	95.0	0.87	279	7.0	2.730	1000
K21Q 315 MY4	200	1485	96.0	0.88	342	7.5	4.820	1200
K21Q 315 L4	250	1485	96.1	0.90	417	8.0	5.93	1450
K21Q 315 LX4	315	1490	96.5	0.88	535	8.6	6.82	1630

¹⁾ also available as K21Q 132 S4
Series K21Q also available as series K200



Three-phase motors with squirrel-cage rotor

Motors for the use in zone 21 acc. to DIN EN 50014/50281-1-1 and -1-2



with surface ventilation,

mode of operation S1, continuous duty

insulation class F, degree of protection IP 65

version for design voltage range A acc. to IEC 34-1, 50 Hz

max. surface temperature 125 °C

Motor selection data

Design point 400 V, 50 Hz, Ex II 2D

Type	P	n	η	$\cos \varphi$	I	I_{Δ}/I	J	m
	kW	rpm	%	-	400 V A	-	kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version								
KPER 63 K6	0.09	895	50.5	0.56	0.46	2.5	0.00024	4.9
KPER 63 G6	0.12	880	52.0	0.56	0.59	2.5	0.00027	5.7
KPER 71 K6	0.18	925	58.0	0.51	0.88	2.8	0.00045	7.4
KPER 71 G6	0.25	915	60.0	0.55	1.10	2.9	0.00060	8.3
KPER 80 K6	0.37	915	66.0	0.66	1.22	3.4	0.00130	11
KPER 80 G6	0.55	915	68.0	0.67	1.73	3.7	0.00175	12.5
KPER 90 S6	0.75	935	70.0	0.64	2.43	4.5	0.00325	16
KPER 90 L6	1.10	935	73.0	0.69	3.15	4.6	0.00425	19
KPER 100 L6	1.50	945	76.5	0.73	3.90	4.6	0.00625	24
KPER 112 M6	2.20	950	80.0	0.74	5.35	5.3	0.01225	33.5
KPER 132 S6T	3.00	935	82.0	0.75	7.05	5.2	0.01390	39
K21Q 132 S6	3.0	955	78.5	0.82	6.7	5.7	0.0180	46
K21Q 132 M6	4.0	955	80.0	0.80	9	6.0	0.0230	53
K21Q 132 MX6	5.5	955	83.0	0.83	11.5	5.0	0.0430	70
K21Q 160 M6	7.5	960	85.0	0.82	15.5	5.5	0.0530	86
K21Q 160 L6	11.0	965	85.2	0.86	21.5	5.0	0.1130	114
K21Q 180 L6	15.0	965	86.0	0.83	30.5	6.0	0.1450	136
K21Q 200 L6	18.5	970	88.1	0.87	35.0	5.5	0.2280	175
K21Q 200 LX6	22	970	88.8	0.87	41	6.2	0.2680	200
K21Q 225 M6	30	973	90.4	0.89	54	6.5	0.4430	265
K21Q 250 M6	37	975	91.0	0.89	66	6.5	0.8250	360
K21Q 280 S6	45	980	92.0	0.87	81	6.0	1.280	465
K21Q 280 M6	55	980	92.5	0.88	97.5	6.5	1.480	520
K21Q 315 S6	75	985	93.7	0.87	133	7.0	2.630	690
K21Q 315 M6	90	990	94.4	0.88	156	7.0	3.330	800
K21Q 315 MX6	110	990	94.0	0.88	192	7.5	3.60	880
K21Q 315 MY6	132	990	95.0	0.88	228	7.5	6.00	1050
K21Q 315 L6	160	985	95.3	0.89	272	7.5	6.67	1250
K21Q 315 LX6	200	990	95.0	0.87	349	8.3	8.60	1460

Synchronous speed 750 rpm – 8-pole version

KPER 71 K8	0.09	675	45.5	0.51	0.56	2.1	0.00050	6.6
KPER 71 G8	0.12	670	46.5	0.51	0.73	2.3	0.00060	8.1
KPER 80 K8	0.18	690	56.5	0.59	0.78	2.8	0.00130	10.5
KPER 80 G8	0.25	695	58.0	0.56	1.12	3.0	0.00175	12
KPER 90 S8	0.37	700	61.5	0.54	1.6	3.0	0.00300	15
KPER 90 L8	0.55	695	64.5	0.60	2.04	3.2	0.00375	18
KPER 100 L8	0.75	705	67.0	0.60	2.7	3.3	0.00625	23
KPER 100 LX8	1.1	705	73.0	0.67	3.25	4.0	0.00900	28
KPER 112 M8	1.5	705	75.5	0.70	4.1	4.4	0.01225	33.5
KPER 132 S8T	2.2	685	76.0	0.68	6.3	3.8	0.01390	39
K21Q 132 S8	2.2	705	75.5	0.76	5.5	4.5	0.0180	46
K21Q 132 M8	3.0	705	78.0	0.75	7.4	4.5	0.0230	53
K21Q 160 M8	4.0	710	79.3	0.78	9.3	4.0	0.0430	70
K21Q 160 MX8	5.5	710	81.4	0.78	12.5	4.5	0.0530	86
K21Q 160 L8	7.5	725	83.0	0.78	16.5	4.5	0.1130	114
K21Q 180 L8	11.0	720	85.0	0.78	24	4.5	0.1450	136
K21Q 200 L8	15.0	725	86.5	0.79	31.5	5.0	0.2280	175
K21Q 225 S8	18.5	725	89.2	0.83	36	5.5	0.4400	265
K21Q 225 M8	22	725	89.2	0.84	42.5	5.0	0.4400	265
K21Q 250 M8	30	730	90.2	0.79	61	5.5	0.8250	360
K21Q 280 S8	37	735	91.0	0.80	73.5	5.5	1.350	465
K21Q 280 M8	45	735	91.5	0.77	92	6.0	1.550	520
K21Q 315 S8	55	740	93.1	0.80	107	6.5	2.630	690
K21Q 315 M8	75	740	93.3	0.81	143	6.0	3.330	800
K21Q 315 MX8	90	740	93.5	0.81	172	6.0	3.60	880
K21Q 315 MY8	110	740	94.6	0.81	207	6.5	6.00	1050
K21Q 315 L8	132	740	95.0	0.83	242	6.3	6.76	1250
K21Q 315 LX8	160	740	95.2	0.79	307	7.2	8.71	1430

Series K21Q also available as series K20Q

Motors for use in areas with occurrence of combustible dust
Motors for use in Zone 22, Ex II 3D



Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series

KPER/K21R

mounting dimensions and output correlation acc. to DIN 42673 sh.1 and DIN 42677 sh.1

KPR/K20R

Transnorm version on request

Sizes

56 – 355

Output range

0.09 – 450 kW

Degree of protection

IP 55 acc. to DIN EN 60034-5

IP 65 acc. to DIN EN 60034-5 for conductive dusts

Cooling method

IC 411 acc. to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

-40 °C up to +40 °C

(depending on the Certificate, deviations possible)

Explosion-protected version in accordance Apparatus Group II, Category 3

EN 50 014 (DIN VDE 0170/0171 p. 1) General Requirements

EN 50281-1-1 (DIN VDE 0170/0171 p. 15) Areas with combustible dust

The motor design version is certified in a Manufacturer's Declaration of Incorporation.



Three-phase motors with squirrel-cage rotor Motors for the use in zone 22 acc. to DIN EN 50014/50281-1-1 and -1-2



with surface ventilation,

mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

version for design voltage range A acc. to IEC 34-1, 50 Hz

max. surface temperature 125 °C

Motor selection data

Design point 400 V, 50 Hz, Ex II 3D

Type	P	n	η	$\cos \varphi$	I	I_N/I	J	m
	kW	rpm	%	-	400 V A	-	kgm ²	kg
Synchronous speed 3000 rpm - 2-pole version								
K21R 56 K2	0.09	2840	70.0	0.74	0.25	4.9	0.00013	4.4
K21R 56 G2	0.12	2830	70.5	0.77	0.32	4.5	0.00013	4.5
K21R 63 K2	0.18	2790	67.0	0.76	0.51	4.1	0.00013	4.9
K21R 63 G2	0.25	2800	68.0	0.72	0.74	4.2	0.00015	5.2
K21R 71 K2	0.37	2780	71.5	0.79	0.94	4.4	0.00025	6.7
K21R 71 G2	0.55	2775	74.5	0.81	1.32	5.1	0.00032	7.6
K21R 80 K2	0.75	2825	77.5	0.81	1.72	5.9	0.00057	10.7
K21R 80 G2	1.1	2835	78.0	0.80	2.55	6.0	0.00072	11.5
K21R 90 S2	1.5	2840	81.0	0.86	3.1	7.0	0.00132	16
K21R 90 L2	2.2	2850	82.0	0.85	4.55	7.5	0.0017	19
K21R 100 L2	3.0	2865	83.5	0.84	6.15	6.8	0.00275	25
K21R 112 M2	4.0	2900	85.0	0.81	8.4	7.0	0.0045	32
K21R 132 S2T ¹⁾	5.5	2890	86.5	0.84	11	7.5	0.0055	40
K21R 132 SX2T	7.5	2880	87.0	0.84	14.8	6.3	0.0068	48
K21R 132 SX2	7.5	2900	87.0	0.86	15	6.6	0.0110	57
K21R 160 M2	11.0	2900	88.5	0.90	20	7.0	0.0258	81
K21R 160 MX2	15.0	2930	89.4	0.90	27	7.1	0.0575	118
K21R 160 L2	18.5	2920	90.5	0.92	32	7.2	0.0675	134
K21R 180 M2	22	2935	91.8	0.92	37.5	6.8	0.1050	165
K21R 200 L2	30	2940	92.8	0.92	50.5	7.3	0.1280	195
K21R 200 Lx2	37	2940	93.0	0.90	64	7.0	0.1930	255
K21R 225 M2	45	2940	93.7	0.91	76	7.5	0.2200	290
K21R 250 M2	55	2955	93.7	0.91	93	7.5	0.3750	360
K21R 280 S2	75	2970	94.6	0.92	124	7.5	0.6500	490
K21R 280 M2	90	2970	94.7	0.91	151	8.5	0.6750	510
K21R 315 S2	110	2975	95.4	0.91	183	8.5	1.210	720
K21R 315 M2	132	2975	95.4	0.91	219	8.5	1.440	800
K21R 315 MX2	160	2975	96.0	0.93	259	8.5	1.760	980
K21R 315 MY2	200	2970	96.0	0.92	327	8.2	2.820	1170
K21R 315 L2	250	2973	96.1	0.93	404	7.3	3.66	1460
K21R 315 LX2	315	2975	96.7	0.92	511	7.4	4.43	1630

¹⁾ also available as K21R 132 S2

Three-phase motors with squirrel-cage rotor Motors for the use in zone 22 acc. to DIN EN 50014/50281-1-1 and -1-2



with surface ventilation,

mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

version for design voltage range A acc. to IEC 34-1, 50 Hz

max. surface temperature 125 °C

Motor selection data

Design point 400 V, 50 Hz, Ex II 3D

Type	P	n	η	$\cos \varphi$	I	I_{Δ}/I	J	m
	kW	rpm	%	-	400 V A	-	kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version								
K21R 56 K4	0.06	1410	60.5	0.60	0.24	3.1	0.00019	4.3
K21R 56 G4	0.09	1375	62.0	0.68	0.31	3.2	0.00019	4.4
K21R 63 K4	K20R 56 K4	1370	57.5	0.68	0.44	3.2	0.00019	4.8
K21R 63 G4	K20R 56 G4	1360	61.0	0.66	0.65	3.3	0.00024	5.2
K21R 71 K4	K20R 63 K4	1385	64.5	0.72	0.78	3.6	0.00040	6.8
K21R 71 G4	K20R 63 G4	1370	68.0	0.74	1.06	3.8	0.00050	7.8
K21R 80 K4	K20R 71 K4	1400	71.5	0.69	1.60	4.1	0.00087	10.6
K21R 80 G4	K20R 71 G4	1400	73.5	0.70	2.10	4.6	0.00107	11.7
K21R 90 S4	K20R 80 K4	1410	76.5	0.79	2.62	5.5	0.00207	15.5
K21R 90 L4	K20R 80 G4	1400	79.0	0.81	3.40	5.5	0.00260	18
K21R 100 L4	K20R 90 L4	1410	81.0	0.79	4.95	6.0	0.00400	23.5
K21R 100 LX4	K20R 100 S4	1430	82.5	0.79	6.65	6.5	0.00725	30
K21R 112 M4	K20R 100 L4	1435	84.0	0.78	8.80	6.9	0.00900	37
K21R 132 S4T ¹⁾		1420	86.5	0.78	11.80	6.3	0.01100	47
K21R 132 M4	K20R 132 S4	1450	87.0	0.84	15	6.0	0.0280	70
K21R 160 M4	K20R 132 M4	1450	88.4	0.85	21.0	6.8	0.0350	92
K21R 160 L4	K20R 160 S4	1465	89.4	0.86	28.0	7.3	0.0780	120
K21R 180 M4	K20R 160 M4	1460	90.0	0.86	35	6.8	0.0900	136
K21R 180 L4	K20R 180 S4	1465	90.5	0.84	42	6.5	0.1380	170
K21R 200 L4	K20R 180 M4	1465	91.5	0.85	55.5	7.0	0.1680	200
K21R 225 S4	K20R 200 M4	1470	92.5	0.86	67	7.0	0.2750	270
K21R 225 M4	K20R 200 L4	1470	93.0	0.86	81	7.0	0.3130	300
K21R 250 M4	K20R 225 M4	1475	93.5	0.86	98.5	7.0	0.5250	375
K21R 280 S4	K20R 250 S4	1480	94.1	0.86	134	7.0	0.950	520
K21R 280 M4	K20R 250 M4	1480	94.6	0.86	160	7.0	1.100	580
K21R 315 S4	K20R 280 S4	1485	95.1	0.86	194	7.5	1.960	740
K21R 315 M4	K20R 280 M4	1485	95.1	0.86	233	7.0	2.270	840
K21R 315 MX4	K20R 315 S4	1480	95.0	0.87	279	7.0	2.730	1000
K21R 315 MY4	K20R 315 M4	1485	96.0	0.88	342	7.5	4.820	1200
K21R 315 L4	K20R 315 L4	1485	96.1	0.90	417	8.0	5.93	1450
K21R 315 LX4	K20R 315 LX4	1490	96.5	0.88	535	8.6	6.82	1630

¹⁾ also available as K21R 132 S4



Three-phase motors with squirrel-cage rotor Motors for the use in zone 22 acc. to DIN EN 50014/50281-1-1 and -1-2



with surface ventilation,

mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

version for design voltage range A acc. to IEC 34-1, 50 Hz

max. surface temperature 125 °C

Motor selection data

Design point 400 V, 50 Hz, Ex II 3D

Type	P	n	η	cos φ	I	I _k /I	J	m	
	kW	rpm	%	-	400 V A	-	kgm ²	kg	
Synchronous speed 1000 rpm – 6-pole version									
K21R 63 K6	K20R 56 K6	0.09	895	50.5	0.56	0.46	2.5	0.00024	4.9
K21R 63 G6	K20R 56 G6	0.12	880	52.0	0.56	0.59	2.5	0.00027	5.7
K21R 71 K6	K20R 63 K6	0.18	925	58.0	0.51	0.88	2.8	0.00045	7.4
K21R 71 G6	K20R 63 G6	0.25	915	60.0	0.55	1.10	2.9	0.00060	8.3
K21R 80 K6	K20R 71 K6	0.37	915	66.0	0.66	1.22	3.4	0.00130	11
K21R 80 G6	K20R 71 G6	0.55	915	68.0	0.67	1.73	3.7	0.00175	12.5
K21R 90 S6	K20R 80 K6	0.75	935	70.0	0.64	2.43	4.5	0.00325	16
K21R 90 L6	K20R 80 G6	1.10	935	73.0	0.69	3.15	4.6	0.00425	19
K21R 100 L6	K20R 90 L6	1.50	945	76.5	0.73	3.90	4.6	0.00625	24
K21R 112 M6	K20R 100 L6	2.20	950	80.0	0.74	5.35	5.3	0.01225	33.5
K21R 132 S6T		3.00	935	82.0	0.75	7.05	5.2	0.01390	39
K21R 132 S6	K20R 112 M6	3.0	955	78.5	0.82	6.7	5.7	0.0180	46
K21R 132 M6	K20R 112 MX6	4.0	955	80.0	0.80	9	6.0	0.0230	53
K21R 132 MX6	K20R 132 S6	5.5	955	83.0	0.83	11.5	5.0	0.0430	70
K21R 160 M6	K20R 132 M6	7.5	960	85.0	0.82	15.5	5.5	0.0530	86
K21R 160 L6	K20R 160 S6	11.0	965	85.2	0.86	21.5	5.0	0.1130	114
K21R 180 L6	K20R 160 M6	15.0	965	86.0	0.83	30.5	6.0	0.1450	136
K21R 200 L6	K20R 180 S6	18.5	970	88.1	0.87	35.0	5.5	0.2280	175
K21R 200 LX6	K20R 180 M6	22	970	88.8	0.87	41	6.2	0.2680	200
K21R 225 M6	K20R 200 M6	30	973	90.4	0.89	54	6.5	0.4430	265
K21R 250 M6	K20R 225 M6	37	975	91.0	0.89	66	6.5	0.8250	360
K21R 280 S6	K20R 250 S6	45	980	92.0	0.87	81	6.0	1.280	465
K21R 280 M6	K20R 250 M6	55	980	92.5	0.88	97.5	6.5	1.480	520
K21R 315 S6	K20R 280 S6	75	985	93.7	0.87	133	7.0	2.630	690
K21R 315 M6	K20R 280 M6	90	990	94.4	0.88	156	7.0	3.330	800
K21R 315 MX6	K20R 315 S6	110	990	94.0	0.88	192	7.5	3.600	880
K21R 315 MY6	K20R 315 M6	132	990	95.0	0.88	228	7.5	6.000	1050
K21R 315 L6	K20R 315 L6	160	985	95.3	0.89	272	7.5	6.67	1250
K21R 315 LX6	K20R 315 LX6	200	990	95.0	0.87	349	8.3	8.60	1460

Synchronous speed 750 rpm – 8-pole version

K21R 71 K8	K20R 63 K8	0.09	675	45.5	0.51	0.56	2.1	0.00050	6.6
K21R 71 G8	K20R 63 G8	0.12	670	46.5	0.51	0.73	2.3	0.00060	8.1
K21R 80 K8	K20R 71 K8	0.18	690	56.5	0.59	0.78	2.8	0.00130	10.5
K21R 80 G8	K20R 71 G8	0.25	695	58.0	0.56	1.12	3.0	0.00175	12
K21R 90 S8	K20R 80 K8	0.37	700	61.5	0.54	1.6	3.0	0.00300	15
K21R 90 L8	K20R 80 G8	0.55	695	64.5	0.60	2.04	3.2	0.00375	18
K21R 100 L8	K20R 90 L8	0.75	705	67.0	0.60	2.7	3.3	0.00625	23
K21R 100 LX8	K20R 100 S8	1.1	705	73.0	0.67	3.25	4.0	0.00900	28
K21R 112 M8	K20R 100 L8	1.5	705	75.5	0.70	4.1	4.4	0.01225	33.5
K21R 132 S8T		2.2	685	76.0	0.68	6.3	3.8	0.01390	39
K21R 132 S8	K20R 112 M8	2.2	705	75.5	0.76	5.5	4.5	0.0180	46
K21R 132 M8	K20R 112 MX8	3.0	705	78.0	0.75	7.4	4.5	0.0230	53
K21R 160 M8	K20R 132 S8	4.0	710	79.3	0.78	9.3	4.0	0.0430	70
K21R 160 MX8	K20R 132 M8	5.5	710	81.4	0.78	12.5	4.5	0.0530	86
K21R 160 L8	K20R 160 S8	7.5	725	83.0	0.78	16.5	4.5	0.1130	114
K21R 180 L8	K20R 160 M8	11.0	720	85.0	0.78	24	4.5	0.1450	136
K21R 200 L8	K20R 180 S8	15.0	725	86.5	0.79	31.5	5.0	0.2280	175
K21R 225 S8		18.5	725	89.2	0.83	36	5.5	0.4400	265
K21R 225 M8	K20R 200 M8	22	725	89.2	0.84	42.5	5.0	0.4400	265
K21R 250 M8	K20R 225 M8	30	730	90.2	0.79	61	5.5	0.8250	360
K21R 280 S8	K20R 250 S8	37	735	91.0	0.80	73.5	5.5	1.350	465
K21R 280 M8	K20R 250 M8	45	735	91.5	0.77	92	6.0	1.550	520
K21R 315 S8	K20R 280 S8	55	740	93.1	0.80	107	6.5	2.630	690
K21R 315 M8	K20R 280 M8	75	740	93.3	0.81	143	6.0	3.330	800
K21R 315 MX8	K20R 315 S8	90	740	93.5	0.81	172	6.0	3.60	880
K21R 315 MY8	K20R 315 M8	110	740	94.6	0.81	207	6.5	6.00	1050
K21R 315 L8	K20R 315 L8	132	740	95.0	0.83	242	6.3	6.76	1250
K21R 315 LX8	K20R 315 LX8	160	740	95.2	0.79	307	7.2	8.71	1430

Motors for use in powered smoke and heat exhaust ventilators - Fire gas version

Motor selection data, 50 Hz, 2- up to 8pole
3000/1500/1000/750 rpm

Series

K21R/K11R/K22R

mounting dimensions and output correlation acc. to DIN 42673 sh. 1 and 42677 sh. 1

Sizes

56 – 355

Output range

0.09 – 450 kW

Degree of protection

IP 55 acc. to DIN EN 60034-5

Cooling method

IC 411 acc. to DIN 60034-6

Types of construction

IM B3, IM B35, IM B5 and derived types of construction acc. to DIN EN 60034-7

Ambient temperatures

shaft height 56 up to 132T -20 °C up to +40 °C

from shaft height 132 -40 °C up to +40 °C

Fire gas classification

in accordance to DIN EN 12101-3,

F200, F300, F400 and F600

The motor version is certified by a Declaration of Incorporation.

Three-phase motors with squirrel-cage rotor for use in mechanical smoke and heat exhaust ventilators – Fire gas version

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Design point 400 V, 50 Hz

Motor selection data

Load period and fire gas temperature 1 h, 200 °C / 2 h, 200 °C (F200)

Type	P kW	n rpm	Load			I A	I _R /I _N -	M _A /M _N -	M _S /M _N -	M _K /M _N -	J kgm ²	m kg	
			100 % η %	75 % η %	100 % cos φ -								
Synchronous speed 3000 rpm – 2-pole version													
K21R 71 K2	K20R 63 K2	0.25									0.00025	6.7	
K21R 71 G2	K20R 63 G2	0.37									0.00032	7.6	
K21R 80 K2	K20R 71 K2	0.55									0.00057	10.7	
K21R 80 G2	K20R 71 G2	0.75									0.00072	11.5	
K21R 90 S2	K20R 80 K2	1.1									0.00132	16	
K21R 90 L2	K20R 80 G2	1.5									0.0017	19	
K21R 100 L2	K20R 90 L2	2.2									0.00275	25	
K21R 112 M2	K20R 100 S2	3.0									0.0045	32	
K21R 132 S2 T		4.0									0.0055	40	
K21R 132 SX2T		5.5									0.0068	48	
K11R 132 S2	-	5.5	2860	85.7	85.7	0.86	11	5.5	1.8	1.6	2.2	0.0081	52
K11R 132 SX2	K10R 112 M2	7.5	2900	87.0	87.0	0.86	14.5	6.6	1.8	1.3	2.5	0.0110	57
K11R 160 M2	K10R 132 M2	11.0	2900	88.5	88.5	0.90	20	7.0	2.4	2.0	3.0	0.0258	81
K11R 160 MX2	K10R 160 S2	15.0	2930	89.4	89.4	0.90	27	7.1	2.2	1.7	2.9	0.0575	118
K11R 160 L2	K10R 160 M2	18.5	2920	90.5	89.5	0.92	32	7.2	2.1	1.6	2.8	0.0675	134
K11R 180 M2	K10R 180 S2	22	2935	91.8	91.0	0.92	37.5	6.8	1.7	1.4	2.6	0.105	165
K11R 200 L2	K10R 180 M2	30	2940	92.8	92.0	0.92	50.5	7.3	2.0	1.6	2.9	0.128	195
K11R 200 LX2	K10R 200 M2	37	2940	93.0	92.0	0.90	64	7.0	1.8	1.3	2.4	0.193	255
K11R 225 M2	K10R 200 L2	45	2940	93.7	93.0	0.91	76	7.5	1.8	1.4	2.7	0.22	290
K11R 250 M2	K10R 225 M2	55	2955	93.7	92.5	0.91	93	7.5	2.0	1.5	2.6	0.375	360
K11R 280 S2	K10R 250 S2	75	2970	94.6	93.5	0.92	124	7.5	2.0	1.6	2.6	0.650	490
K11R 280 M2	K10R 250 M2	90	2970	94.7	94.2	0.91	151	8.5	2.2	1.8	2.8	0.675	510
K11R 315 S2	K10R 280 S2	110	2975	95.4	94.5	0.91	183	8.5	1.5	1.3	2.5	1.21	720
K11R 315 M2	K10R 280 M2	132	2975	95.4	94.5	0.91	219	8.5	2.0	1.8	2.7	1.44	800
K11R 315 MX2	K10R 315 S2	160	2975	96.0	95.0	0.93	259	8.5	2.0	1.6	2.6	1.76	980
K11R 315 MY2	K10R 315 M2	200	2970	96.0	95.2	0.92	327	8.2	2.6	2	2.6	2.82	1170
K11R 315 L2	K10R 315 L2	250	2973	96.1	95.2	0.93	404	7.3	2.1	1.4	2.0	3.66	1460
K11R 315 LX2	K10R 315 LX2	315	2975	96.7	95.5	0.92	511	7.4	2.4	1.4	2.0	4.43	1630
K22R 355 M2		355	2980	96.5	96.5	0.91	584	7.3	1.3	1.0	2.3	4.20	2000
K22R 355 MX2		400	2985	96.8	96.7	0.90	663	8.5	1.9	1.3	3.2	5.60	2200
K22R 355 LY2		450	2983	96.9	96.7	0.92	729	7.2	1.3	1.0	2.4	7.10	2400
K22R 355 L2		500	2985	97.2	97.0	0.92	809	8.2	1.8	0.9	2.6	7.10	2400

Three-phase motors with squirrel-cage rotor for use in mechanical smoke and heat exhaust ventilators – Fire gas version

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Design point 400 V, 50 Hz

Motor selection data

Load period and fire gas temperature 1 h, 200 °C / 2 h, 200 °C (F200)

Type	P kW	n rpm	Load			I A	I _A /I _N -	M _A /M _N -	M _S /M _N -	M _K /M _N -	J kgm ²	m kg	
			100 % η %	75 % η %	100 % cos φ -								
Synchronous speed 1500 rpm – 4-pole version													
K21R 71 K4	K20R 63 K4	0.18									0.00040	6.8	
K21R 71 G4	K20R 63 G4	0.25									0.00050	7.8	
K21R 80 K4	K20R 71 K4	0.37									0.00087	10.6	
K21R 80 G4	K20R 71 G4	0.55									0.00107	11.7	
K21R 90 S4	K20R 80 K4	0.75									0.00207	15.5	
K21R 90 L4	K20R 80 G4	1.10									0.00260	18	
K21R 100 L4	K20R 90 L4	1.50									0.00400	23.5	
K21R 100 LX4	K20R 100 S4	2.20									0.00725	30	
K21R 112 M4	K20R 100 L4	3.00									0.00900	37	
K21R 132 S4T		4.0									0.011	47	
K11R 132 S4	K10R 112 M4	5.5	1440	85.7	85.7	0.89	10.5	6.5	1.9	1.7	3.0	0.015	50
K11R 132 M4	K10R 132 S4	7.5	1450	87.0	86.0	0.84	15	6.0	2.0	1.7	2.9	0.028	70
K11R 160 M4	K10R 132 M4	11	1450	88.4	88.0	0.85	21	6.8	2.2	1.9	3.3	0.035	92
K11R 160 L4	K10R 160 S4	15	1465	89.4	89.0	0.86	28	7.3	2.5	2.0	3.0	0.078	120
K11R 180 M4	K10R 160 M4	18.5	1460	90.0	89.5	0.86	34.5	6.8	2.5	2.0	2.9	0.090	136
K11R 180 L4	K10R 180 S4	22	1465	90.5	90.5	0.84	42	6.5	2.0	1.8	2.6	0.138	170
K11R 200 L4	K10R 180 M4	30	1465	91.5	91.0	0.85	55.5	7.0	2.0	1.7	2.4	0.168	200
K11R 225 S4	K10R 200 M4	37	1470	92.5	91.5	0.86	67	7.0	2.0	1.7	2.5	0.275	270
K11R 225 M4	K10R 200 L4	45	1470	93.0	92.5	0.86	81	7.0	2.0	1.7	2.5	0.313	300
K11R 250 M4	K10R 225 M4	55	1475	93.5	93.0	0.86	98.5	7.0	2.2	1.7	2.3	0.525	375
K11R 280 S4	K10R 250 S4	75	1480	94.1	93.5	0.86	134	7.0	2.0	1.7	2.2	0.95	520
K11R 280 M4	K10R 250 M4	90	1480	94.6	93.5	0.86	160	7.0	2.1	1.6	2.2	1.10	580
K11R 315 S4	K10R 280 S4	110	1485	95.1	94.5	0.86	194	7.5	1.8	1.6	2.2	1.96	740
K11R 315 M4	K10R 280 M4	132	1485	95.1	94.5	0.86	233	7.0	1.8	1.5	2.2	2.27	840
K11R 315 MX4	K10R 315 S4	160	1480	95.0	94.8	0.87	279	7.0	1.8	1.5	2.0	2.73	1000
K11R 315 MY4	K10R 315 M4	200	1485	96.0	95.0	0.88	342	7.5	2.0	1.8	2.4	4.82	1200
K11R 315 L4	K10R 315 L4	250	1485	96.1	95.0	0.90	417	8.0	2.0	1.6	2.3	5.93	1450
K11R 315 LX4	K10R 315 LX4	315	1490	96.5	95.5	0.88	535	8.6	1.9	1.5	2.5	6.82	1630
K22R 355 M4		355	1490	96.8	96.5	0.84	630	8.1	1.8	1.0	3.1	5.60	1950
K22R 355 MX4		400	1494	96.8	96.7	0.84	710	8.6	1.3	1.0	3.0	7.90	2150
K22R 355 LY4		450	1490	96.8	96.7	0.82	818	8.0	1.2	1.0	3.0	9.50	2400
K22R355 L4		500	1490	96.7	96.4	0.79	945	7.9	1.9	1.0	3.6	9.50	2400

Three-phase motors with squirrel-cage rotor for use in mechanical smoke and heat exhaust ventilators – Fire gas version

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Design point 400 V, 50 Hz

Motor selection data

Load period and fire gas temperature 1 h, 200 °C / 2 h, 200 °C (F200)

Type	P kW	n rpm	Load			I A	I _R /I _N -	M _A /M _N -	M _S /M _N -	M _K /M _N -	J kgm ²	m kg	
			100 % η %	75 % η %	100 % cos φ -								
Synchronous speed 1000 rpm – 6-pole version													
K21R 71 K6	K20R 63 K6	0.12									0.00045	7.4	
K21R 71 G6	K20R 63 G6	0.18									0.00060	8.3	
K21R 80 K6	K20R 71 K6	0.25									0.00130	11	
K21R 80 G6	K20R 71 G6	0.37									0.00175	12.5	
K21R 90 S6	K20R 80 K6	0.55									0.00325	16	
K21R 90 L6	K20R 80 G6	0.75									0.00425	19	
K21R 100 L6	K20R 90 L6	1.10									0.00625	24	
K21R 112 M6	K20R 100 L6	1.50									0.01225	33.5	
K21R 132 S6T		2.2									0.0139	39	
K11R 132 S6	K10R 112 M6	3.0	955	78.5	78.5	0.82	6.7	5.7	1.8	1.6	2.7	0.018	46
K11R 132 M6	K10R 112 MX6	4.0	955	80.0	79.0	0.80	9	6.0	2.2	2.0	3.1	0.023	53
K11R 132 MX6	K10R 132 S6	5.5	955	83.0	83.0	0.83	11.5	5.0	1.8	1.5	2.3	0.043	70
K11R 160 M6	K10R 132 M6	7.5	960	85.0	84.0	0.82	15.5	5.5	2.0	1.6	2.5	0.053	86
K11R 160 L6	K10R 160 S6	11.0	965	85.2	85.0	0.86	21.5	5.0	2.0	1.7	2.3	0.113	114
K11R 180 L6	K10R 160 M6	15.0	965	86.0	85.0	0.83	30.5	6.0	2.4	2.1	2.7	0.145	136
K11R 200 L6	K10R 180 S6	18.5	970	88.1	88.0	0.87	35	5.5	2.0	1.7	2.4	0.228	175
K11R 200 LX6	K10R 180 M6	22.0	970	88.8	88.5	0.87	41	6.2	2.2	1.8	2.6	0.268	200
K11R 225 M6	K10R 200 M6	30	973	90.4	90.0	0.89	54	6.5	2.2	1.7	2.5	0.443	265
K11R 250 M6	K10R 225 M6	37	975	91.0	90.8	0.89	66	6.5	2.2	1.7	2.3	0.825	360
K11R 280 S6	K10R 250 S6	45	980	92.0	92.0	0.87	81	6.0	2.0	1.5	2.0	1.280	465
K11R 280 M6	K10R 250 M6	55	980	92.5	92.0	0.88	97.5	6.5	2.3	1.7	2.4	1.480	520
K11R 315 S6	K10R 280 S6	75	985	93.7	93.0	0.87	133	7.0	2.0	1.6	2.4	2.63	690
K11R 315 M6	K10R 280 M6	90	990	94.4	93.5	0.88	156	7.0	2.0	1.7	2.4	3.33	800
K11R 315 MX6	K10R 315 S6	110	990	94.0	93.8	0.88	192	7.5	2.2	1.7	2.6	3.60	880
K11R 315 MY6	K10R 315 M6	132	990	95.0	94.7	0.88	228	7.5	2.0	1.7	2.4	6.00	1050
K11R 315 L6	K10R 315 L6	160	985	95.3	95.0	0.89	272	7.5	2.3	1.9	2.4	6.67	1250
K11R 315 LX6	K10R 315 LX6	200	990	95.0	94.7	0.87	349	8.3	2.2	2.0	2.7	8.60	1460
K22R 355 M6		250	994	96.0	95.7	0.81	464	7.0	1.8	1.3	2.3	8.20	1650
K22R 355 MX6		315	995	96.5	96.5	0.83	568	6.8	1.6	1.3	2.5	12.10	2200
K22R 355 LY6		355	995	96.0	95.8	0.78	684	7.4	1.9	1.4	2.6	14.00	2400

Three-phase motors with squirrel-cage rotor for use in mechanical smoke and heat exhaust ventilators – Fire gas version

with surface ventilation, mode of operation S1, continuous duty

insulation class F, degree of protection IP 55

Design point 400 V, 50 Hz

Motor selection data

Load period and fire gas temperature 1 h, 200 °C / 2 h, 200 °C (F200)

Type	P kW	n rpm	Load			I A	I _A /I _N -	M _A /M _N -	M _S /M _N -	M _K /M _N -	J kgm ²	m kg	
			100 % η %	75 % η %	100 % cos φ -								
Synchronous speed 750 rpm – 8-pole version													
K21R 71 K8	K20R 63 K8	0.06									0.00050	6.6	
K21R 71 G8	K20R 63 G8	0.09									0.00060	8.1	
K21R 80 K8	K20R 71 K8	0.12									0.00130	10.5	
K21R 80 G8	K20R 71 G8	0.18									0.00175	12	
K21R 90 S8	K20R 80 K8	0.25									0.00300	15	
K21R 90 L8	K20R 80 G8	0.37									0.00375	18	
K21R 100 L8	K20R 90 L8	0.55									0.00625	23	
K21R 100 LX8	K20R 100 S8	0.8									0.00900	28	
K21R 112 M8	K20R 100 L8	1.1									0.01225	33.5	
K11R 132 S8T		1.5									0.014	39	
K11R 132 S8	K10R 112 M8	2.2	705	75.5	75.0	0.76	5.5	4.5	1.7	1.6	2.3	0.018	46
K11R 132 M8	K10R 112 MX8	3.0	705	78.0	78.0	0.75	7.4	4.5	1.7	1.6	2.3	0.023	53
K11R 160 M8	K10R 132 S8	4.0	710	79.3	79.0	0.78	9.3	4.0	1.6	1.3	1.9	0.043	70
K11R 160 MX8	K10R 132 M8	5.5	710	81.4	81.0	0.78	12.5	4.5	1.7	1.6	2.1	0.053	86
K11R 160 L8	K10R 160 S8	7.5	725	83.0	83.0	0.78	16.5	4.5	1.8	1.6	2.1	0.113	114
K11R 180 L8	K10R 160 M8	11.0	720	85.0	84.0	0.78	24	4.5	2.0	1.7	2.1	0.145	136
K11R 200 L8	K10R 180 S8	15.0	725	86.5	86.0	0.79	31.5	5.0	2.0	1.7	2.3	0.228	175
K11R 225 S8	-	18.5	725	89.2	88.0	0.83	36	5.5	2.0	1.6	2.2	0.440	265
K11R 225 M8	K10R 200 M8	22	725	89.2	89.0	0.84	42.5	5.0	1.8	1.5	2.2	0.440	265
K11R 250 M8	K10R 225 M8	30	730	90.2	90.0	0.79	61	5.5	2.2	1.8	2.2	0.825	360
K11R 280 S8	K10R 250 S8	37	735	91.0	90.5	0.80	73.5	5.5	2.0	1.5	2.0	1.35	465
K11R 280 M8	K10R 250 M8	45	735	91.5	91.0	0.77	92	6.0	2.3	1.8	2.4	1.55	520
K11R 315 S8	K10R 280 S8	55	740	93.1	92.0	0.80	107	6.5	1.8	1.6	2.3	2.63	690
K11R 315 M8	K10R 280 M8	75	740	93.3	93.0	0.81	143	6.0	2.0	1.6	2.3	3.33	800
K11R 315 MX8	K10R 315 S8	90	740	93.5	93.0	0.81	172	6.0	1.9	1.6	2.2	3.60	880
K11R 315 MY8	K10R 315 M8	110	740	94.6	94.0	0.81	207	6.5	2.1	1.8	2.4	6.00	1050
K11R 315 L8	K10R 315 L8	132	740	95.0	94.3	0.83	242	6.3	2.0	1.7	2.1	6.76	1250
K11R 315 LX8	K10R 315 LX8	160	740	95.2	94.5	0.79	307	7.2	2.2	1.9	2.5	8.71	1430
K22R 355 M8		200	743	95.6	95.3	0.77	392	6.5	1.6	1.0	2.7	9.5	1600
K22R 355 MX8		250	744	95.8	95.6	0.78	483	6.6	1.3	1.0	2.8	13.4	2200
K22R 355 LY8		280	744	95.3	95.1	0.78	544	8.2	1.2	1.0	2.8	15.8	2400



Three-phase motors with squirrel-cage rotor for use in mechanical smoke and heat exhaust ventilators

(Fire gas version)

Output table

Class acc. to DIN EN 12101-3		-		F200		-		F300		F400		F600		
Load period, fire gas temperature		1 h, 200 °C		2 h, 200 °C		1 h, 250 °C		1 h, 300 °C		2 h, 250 °C		2 h, 300 °C	2 h, 400 °C	1 h, 600 °C
Synchronous speed 3000 rpm – 2-pole version														
K21R 71 K2	K20R 63 K2	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
K21R 71 G2	K20R 63 G2	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
K21R 80 K2	K20R 71 K2	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
K21R 80 G2	K20R 71 G2	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
K21R 90 S2	K20R 80 K2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
K21R 90 L2	K20R 80 G2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
K21R 100 L2	K20R 90 L2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
K21R 112 M2	K20R 100 S2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
K21R 132 S2 T		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
K21R 132SX 2T		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
K11R 132S 2	K10R 112MY2	5.5	5.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	-
K11R 132SX2	K10R 112M 2	7.5	7.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0	-
K11R 160M 2	K10R 132M 2	11.0	11.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	5.5	-
K11R 160MX2	K10R 160S 2	15.0	15.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	7.5	7.5
K11R 160L 2	K10R 160M 2	18.5	18.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	11.0	11.0
K11R 180M2	K10R 180S 2	22.0	22.0	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	15.0	15.0
K11R 200L 2	K10R 180M 2	30	30	22	22	22	22	22	22	22	22	22	18.5	18.5
K11R 200LX2	K10R 200M 2	37	37	30	30	30	30	30	30	30	30	30	30	30
K11R 225M 2	K10R 200L 2	45	45	37	37	37	37	37	37	37	37	37	37	37
K11R 250M 2	K10R 225M 2	55	55	45	45	45	45	45	45	45	45	45	45	45
K11R 280S 2	K10R 250S 2	75	75	55	55	55	55	55	55	55	55	55	55	55
K11R 280M 2	K10R 250M 2	90	90	75	75	75	75	75	75	75	75	75	75	75
K11R 315S 2	K10R 280S 2	110	110	90	90	90	90	90	90	90	90	90	90	90
K11R 315M 2	K10R 280M 2	132	132	110	110	110	110	110	110	110	110	110	110	110
K11R 315MX2	K10R 315S 2	160	160	132	132	132	132	132	132	132	132	132	132	132
K11R 315MY2	K10R 315M 2	200	200	160	160	160	160	160	160	160	160	160	160	160
K11R 315 L2		250	250	200	200	200	200	200	200	200	200	200	200	200
K11R 315LX2		315	315	250	250	250	250	250	250	250	250	250	250	250
K22R 355M 2		355	355	300	300	300	300	300	300	300	300	300	300	300
K22R 355MX2		400	400	340	340	340	340	340	340	340	340	340	340	-
K22R 355LY2		450	450	380	380	380	380	380	380	380	380	380	380	-
K22R 355L 2		500	500	420	420	420	420	420	420	420	420	420	420	-

Synchronous speed 1500 rpm – 4-pole version

K21R 71 K4	K20R 63 K4	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
K21R 71 G4	K20R 63 G4	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
K21R 80 K4	K20R 71 K4	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
K21R 80 G4	K20R 71 G4	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
K21R 90 S4	K20R 80 K4	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
K21R 90 L4	K20R 80 G4	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
K21R 100 L4	K20R 90 L4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
K21R 100 LX4	K20R 100 S4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
K21R 112 M4	K20R 100 L4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
K21R 132 S4 T		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
K11R 132S 4	K10R 112M 4	5.5	5.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	-
K11R 132M 4	K10R 132S 4	7.5	7.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0	-
K11R 160M 4	K10R 132M 4	11.0	11.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	5.5	-
K11R 160L 4	K10R 160S 4	15.0	15.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	7.5	7.5
K11R 180M 4	K10R 160M 4	18.5	18.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	11.0	11.0
K11R 180L 4	K10R 180S 4	22.0	22.0	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	15.0	15.0
K11R 200L 4	K10R 180M 4	30	30	22	22	22	22	22	22	22	22	22	18.5	18.5
K11R 225S 4	K10R 200M 4	37	37	30	30	30	30	30	30	30	30	30	30	30
K11R 225M 4	K10R 200L 4	45	45	37	37	37	37	37	37	37	37	37	37	37
K11R 250M 4	K10R 225M 4	55	55	45	45	45	45	45	45	45	45	45	45	45
K11R 280S 4	K10R 250S 4	75	75	55	55	55	55	55	55	55	55	55	55	55
K11R 280M 4	K10R 250M 4	90	90	75	75	75	75	75	75	75	75	75	75	75
K11R 315S 4	K10R 280S 4	110	110	90	90	90	90	90	90	90	90	90	90	90
K11R 315M 4	K10R 280M 4	132	132	110	110	110	110	110	110	110	110	110	110	110
K11R 315MX4	K10R 315S 4	160	160	132	132	132	132	132	132	132	132	132	132	132
K11R 315MY4	K10R 315M 4	200	200	160	160	160	160	160	160	160	160	160	160	160
K11R 315 L4		250	250	200	200	200	200	200	200	200	200	200	200	200
K11R 315LX4		315	315	250	250	250	250	250	250	250	250	250	250	250
K22R 355M 4		355	355	300	300	300	300	300	300	300	300	300	300	300
K22R 355MX4		400	400	340	340	340	340	340	340	340	340	340	340	-
K22R 355LY4		450	450	380	380	380	380	380	380	380	380	380	380	-
K22R 355L 4		500	500	420	420	420	420	420	420	420	420	420	420	-

Three-phase motors with squirrel-cage rotor for use in mechanical smoke and heat exhaust ventilators

(Fire gas version)

Output table

Class acc. to DIN EN 12101-3		-		F200		-		F300		-		F400		F600			
Load period,		1 h, 200 °C		2 h, 200 °C		1 h, 250 °C		1 h, 300 °C		2 h, 250 °C		2 h, 300 °C		2 h, 400 °C		1 h, 600 °C	
fire gas temperature												1 h, 400 °C					
Synchronous speed 1000 rpm – 6-pole version																	
K21R 71 K6	K20R 63 K6	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12								
K21R 71 G6	K20R 63 G6	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18								
K21R 80 K6	K20R 71 K6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25								
K21R 80 G6	K20R 71 G6	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37								
K21R 90 S6	K20R 80 K6	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55								
K21R 90 L6	K20R 80 G6	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75								
K21R 100 L6	K20R 90 L6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1								
K21R 112 M6	K20R 100 L6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5								
K11R 132 S6T		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2								
K11R 132 S 6	K10R 112M 6	3.0	3.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2			1.5			-	-
K11R 132 M 6	K10R 112MX6	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			2.2			-	-
K11R 132 MX6	K10R 132S 6	5.5	5.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0			3.0			-	-
K11R 160 M 6	K10R 132M 6	7.5	7.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5			4.0			-	-
K11R 160 L 6	K10R 160S 6	11.0	11.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5			5.5			5.5	5.5
K11R 180 L 6	K10R 160M 6	15.0	15.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0			7.5			7.5	7.5
K11R 200 L 6	K10R 180S 6	18.5	18.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0			11.0			11.0	11.0
K11R 200 LX6	K10R 180M 6	22	22	18.5	18.5	18.5	18.5	18.5	18.5	18.5			15.0			15.0	15.0
K11R 225 M 6	K10R 200M 6	30	30	22	22	22	22	22	22	22			22			22	22
K11R 250 M 6	K10R 225M 6	37	37	30	30	30	30	30	30	30			30			30	30
K11R 280 S 6	K10R 250S 6	45	45	37	37	37	37	37	37	37			37			37	37
K11R 280 M 6	K10R 250M 6	55	55	45	45	45	45	45	45	45			45			45	45
K11R 315 S 6	K10R 280S 6	75	75	55	55	55	55	55	55	55			55			55	55
K11R 315 M 6	K10R 280M 6	90	90	75	75	75	75	75	75	75			75			75	75
K11R 315 MX6	K10R 315S 6	110	110	90	90	90	90	90	90	90			90			90	90
K11R 315 MY6	K10R 315M 6	132	132	110	110	110	110	110	110	110			110			110	110
K11R 315 L6		160	160	132	132	132	132	132	132	132			132			132	132
K11R 315 LX6		200	200	160	160	160	160	160	160	160			160			160	160
K22R 355 M 6		250	250	200	200	200	200	200	200	200			200			200	200
K22R 355 MX6		315	315	250	250	250	250	250	250	250			250			-	-
K22R 355 LY6		355	355	300	300	300	300	300	300	300			300			-	-

Synchronous speed 750 rpm – 8-pole version

K21R 71 K8	K20R 63 K8	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06								
K21R 71 G8	K20R 63 G8	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09								
K21R 80 K8	K20R 71 K8	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12								
K21R 80 G8	K20R 71 G8	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18								
K21R 90 S8	K20R 80 K8	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25								
K21R 90 L8	K20R 80 G8	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37								
K21R 100 L8	K20R 90 L8	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55								
K21R 100 LX8	K20R 100 S8	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75								
K21R 112 M8	K20R 100 L8	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1								
K11R 132 S8T		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5								
K11R 132S 8	K10R 112M 8	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5			1.1			-	-
K11R 132M 8	K10R 112MX8	3.0	3.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2			1.5			-	-
K11R 160M 8	K10R 132S 8	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			2.2			-	-
K11R 160MX8	K10R 132M 8	5.5	5.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0			3.0			-	-
K11R 160L 8	K10R 160S 8	7.5	7.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5			4.0			4.0	4.0
K11R 180L 8	K10R 160M 8	11.0	11.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5			5.5			5.5	5.5
K11R 200L 8	K10R 180S 8	15.0	15.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0			7.5			7.5	7.5
K11R 225S 8		18.5	18.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0			11.0			11.0	11.0
K11R 225M 8	K10R 200M 8	22	22	18.5	18.5	18.5	18.5	18.5	18.5	18.5			15.0			15.0	15.0
K11R 250M 8	K10R 225M 8	30	30	22	22	22	22	22	22	22			22			22	22
K11R 280S 8	K10R 250S 8	37	37	30	30	30	30	30	30	30			30			30	30
K11R 280M 8	K10R 250M 8	45	45	37	37	37	37	37	37	37			37			37	37
K11R 315S 8	K10R 280S 8	55	55	45	45	45	45	45	45	45			45			45	45
K11R 315M 8	K10R 280M 8	75	75	55	55	55	55	55	55	55			55			55	55
K11R 315MX8	K10R 315S 8	90	90	75	75	75	75	75	75	75			75			75	75
K11R 315MY8	K10R 315M 8	110	110	90	90	90	90	90	90	90			90			90	90
K11R 315 L8		132	132	110	110	110	110	110	110	110			110			110	110
K11R 315LX8		160	160	132	132	132	132	132	132	132			132			132	132
K22R 355M 8		200	200	160	160	160	160	160	160	160			160			160	160
K22R 355MX8		250	250	200	200	200	200	200	200	200			200			-	-
K22R 355LY8		315	315	230	230	230	230	230	230	230			230			-	-

Spare parts

Spare parts summary

Survey of spare parts K2.R 56 up to 132T

Survey of spare parts K1.R, K2.R, KU.R 112 up to 355

Responsibility for the delivery of spare motors and spare parts

Spare parts available up to 5 years after phase-out of a series

After more than 5 years, VEM gives technical information about the whole motor, and components respectively and supplies, if requested, spare parts (if still available) or technical documents for manufacturing of spare parts.

Data for spare parts order

Ordering spare parts, the following data must be specified:

Motor designation and Motor number (Factory number)

Designation of the component

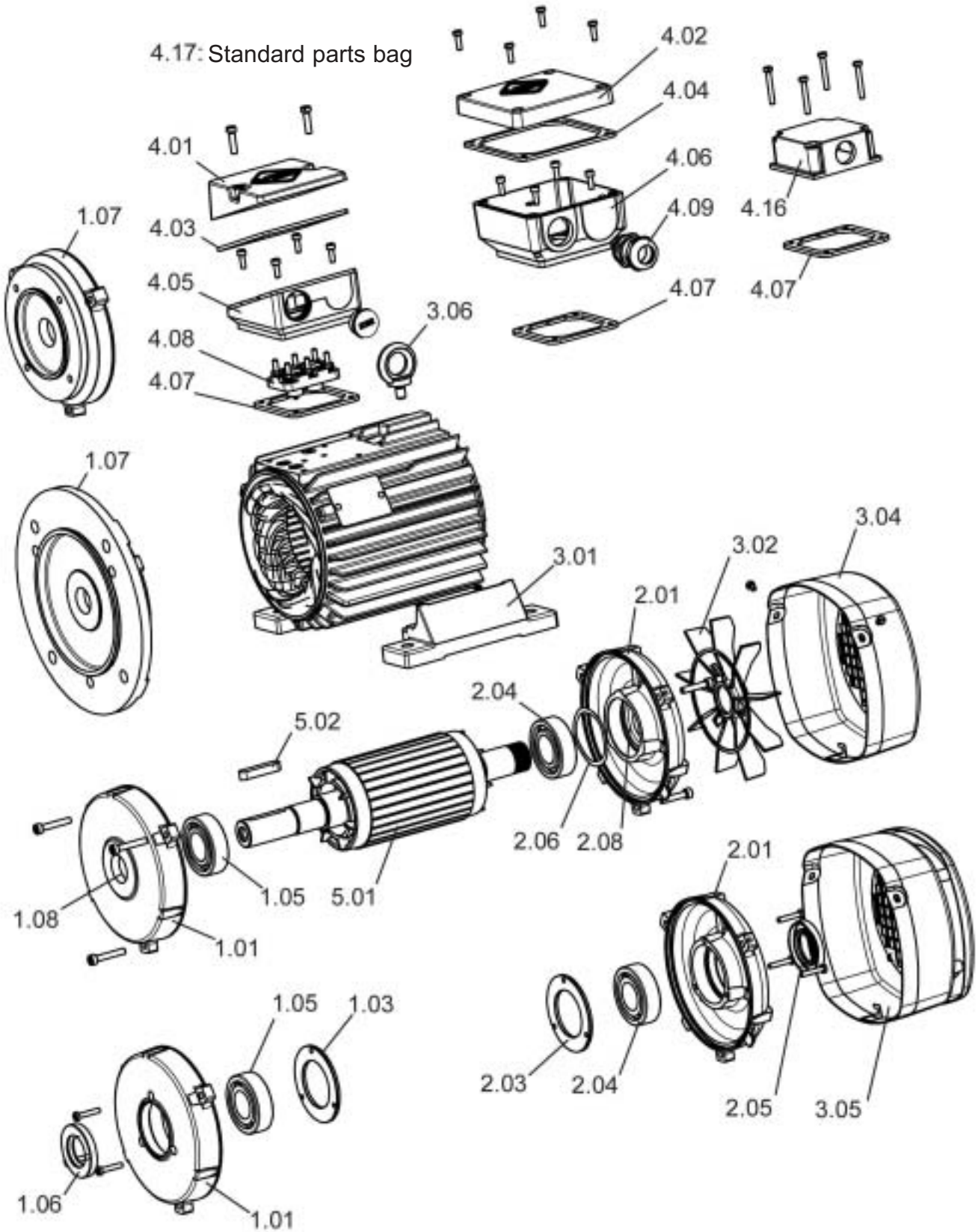
Year of manufacturing

Spare parts summary

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

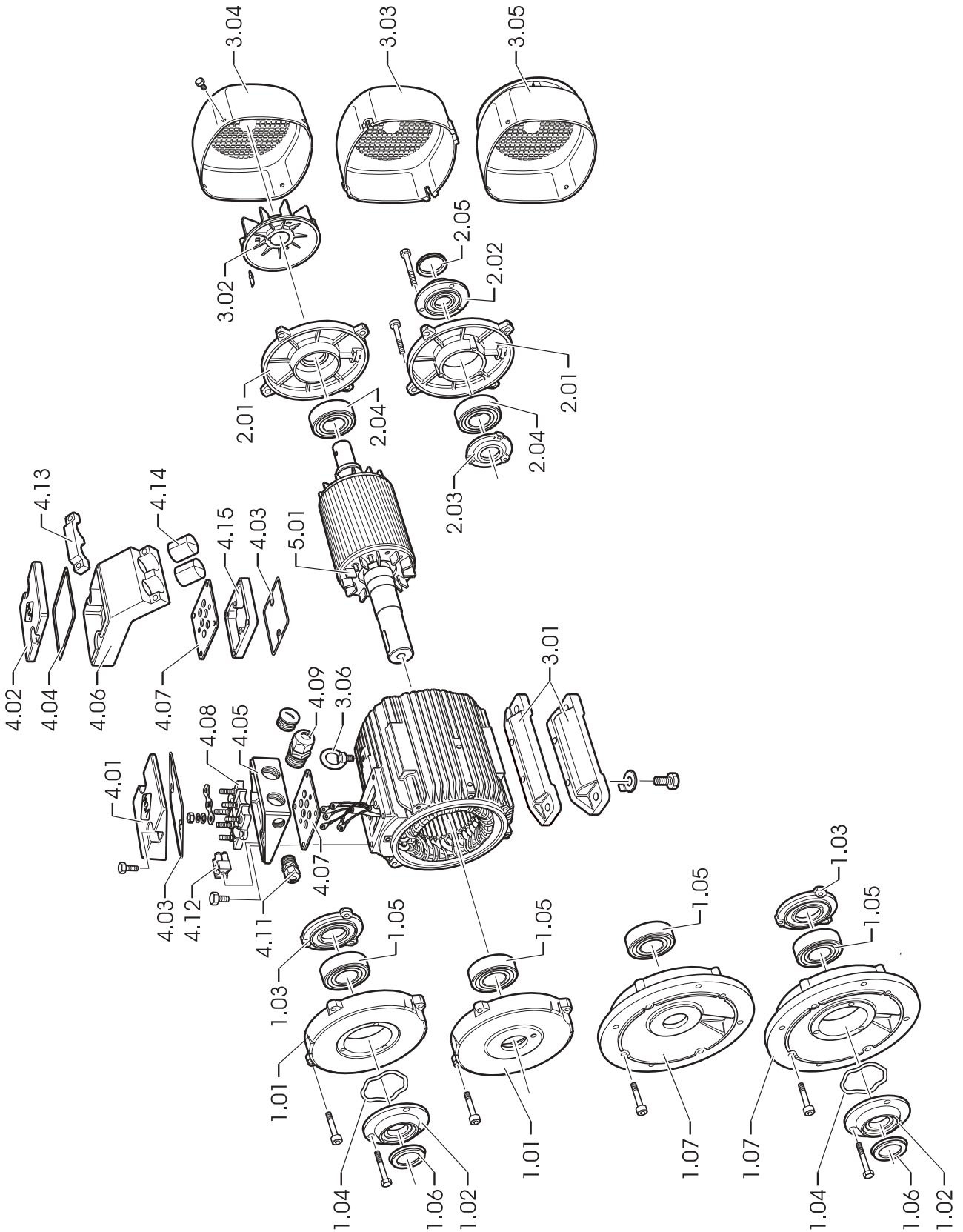
Three-phase asynchronous motor with squirrel-cage rotor, basic version K2.R 56 – 132T

(example, delivered version may differ in details)



Three-phase asynchronous motor, basic version K1.R/K2.R 112 – 355

(example, delivered version may differ in details)



Contact us

VEM motors GmbH

Carl-Friedrich-Gauss-Strasse 1
D-38855 Wernigerode
P.O.Box 101252
D-38842 Wernigerode

Phone: +49 (0)39 43/68 0
Fax: +49 (0)39 43/68 21 20

Jürgen Sander

Phone: +49 (0)39 43/68 32 90
Fax: +49 (0)39 43/68 24 40
sander@vem-group.com

VEM Competence Centre Berlin

Bühningstrasse 12
D-13086 Berlin

Ulrich T. Beholz

Phone: +49 (0)30/47 90 89 41
Fax: +49 (0)30/47 90 89 50
beholz@vem-group.com

VEM Competence Centre North

Schützenstrasse 20
D-30853 Langenhagen/Hannover

Ulrich T. Beholz

Phone: +49 (0)5 11/72 63 57 21
Fax: +49 (0)5 11/72 63 57 50
beholz@vem-group.com

VEM Competence Centre East

Bitterfelder Strasse 1
D-04129 Leipzig

Uwe Macion

Phone: +49 (0)3 41/9 17 79 15
Fax: +49 (0)3 41/9 17 79 48
Fax: +49 (0)3 41/9 17 79 49
macion@vem-group.com

VEM Competence Centre West

Gothaer Strasse 4
D-40880 Ratingen

Frank Steuer

Phone: +49 (0)21 02/99 76 70
Fax: +49 (0)21 02/99 76 15
steuer@vem-group.com

VEM Competence Centre South

Max-Planck-Strasse 17
D-85664 Unterschleißheim

Hans-Christian Weber

Phone: +49 (0)89/31 81 28 10
Fax: +49 (0)89/31 81 28 29
hcweber@vem-group.com

VEM Competence Centre Siegen

Weidenauer Strasse 174
D-57076 Siegen

Rolf Heide

Phone: +49 (0)2 71/8 80 49 10
Fax: +49 (0)2 71/8 80 49 50
heide@vem-group.com

Western Europe

VEM motors GmbH

Carl-Friedrich-Gauss-Strasse 1
D-38855 Wernigerode
P.O.Box 101252
D-38842 Wernigerode

Phone: +49 (0)39 43/68 32 90
Fax: +49 (0)39 43/68 24 40
motors@vem-group.com

Austria

VEM motors Austria GmbH
IZ NÖ-Süd, Strasse 2
A-2351 Wiener Neudorf

Phone: +43-22 36-6 36 40
Fax: +43-22 36-6 29 18
info@vem.co.at

Michael Völker

Benelux

Dutchi Motors B.V.
Van Oldenbarneveldtstraat 85a
NL-6828 ZN Arnhem
Postbus 5390
NL-6802 EJ Arnhem

Phone: +31 26-3 54 16 00
Fax: +31 26-3 54 16 50
dutchi.motors@dutchi.nl

Denmark

R. Frimodt Pedersen a/s
Ndr. Stationsvej 3
P.O.Box 17
DK-8721 Daugård

Phone: +45-7 58-95-4 44
Fax: +45-7 58-95-8 31
rfp@frimodt-p.dk

Finland

Esmac OY
Kehänreuna 4
FIN-02430 Masala
P.O.Box 35
FIN-02431 Masala

Phone: +3 58-9-61 32 66
Fax: +3 58-9-61 32 67 00
esmac@esmac.fi

Kari Randell

France

SERMES
B.P. 177
14, rue des Frères Eberts
F-67025 Strasbourg Cedex

Phone: +3 33-88-40 72 00
Fax: +3 33-88-40 73 29
moteurs@sermes.fr

Greece

Elmo Ltd.
Athinon 18
GR-18540-Piräus

Phone: +30-2 10-4 12 01 50
Fax: +30-2 10-4 17 63 19

Iceland

Falkinn H.F.
Suðurlandsbraut 8
P.O.Box 8420
IS-128 Reykjavik

Phone: +35 4-5 65-71 28
Fax: +35 4-5 40-70 01
falkinn@falkinn.is

Italy

SOVEM S. r. l.
Via dell'industria 17/17a/17b
I-20020 Villa Cortese (Milano)

Phone: +39 03 31-43 63 63
Fax: +39 03 31-43 03 33
sovem@sovem.it

PARTISANI S. p. A.
Via Ugo Buli 2
I-47100 Forlì (FO)

Phone: +39 05 43-79 61 65
Fax: +39 05 43-72 32 37
info@partisani.com

Norway

VEM motors Norge AS
Postbox 124
Skjaervaveien 38
N-2010 Strømmen

Phone: +47-64-83 43 90
Fax: +47-63-84 22 30
vem.motors@vem.no

Ernst Sandmeier

Spain

COSGRA S.A.
Ctra. Banyoles a Figueres,
km 9
E-17832 CRESPIÀ (Girona)

Phone: +34-9 02-40 52 05
+34-9 72-59 78 07
Fax: +34-9 72-59 72 33
cosgra@cosgra.com

**Sweden**

VEM Nordisk Elektra AB
Travbanegatan 4
Box 9023
S-20039 Malmö

Phone: +46-40-6 71 29 00
Fax: +46-40-22 99 44
sales@nordiskelektra.se

Göran Weibull

Switzerland

Rüetschi AG
Antriebstechnik
Feldackerstraße 2
CH-5040 Schöffland

Phone: +41-62-7 39 20 60
Fax: +41-62-7 21 12 61
verkauf@antriebstech.ch

United Kingdom

VEM motors UK Ltd.
Hazelwell Lane, Stirchley,
Birmingham B 30 2PS

Phone: +44-12 14 15-72 30
Fax: +44-12 14 86-22 63
info@vem-uk.com

Frank Taylor

Elektrotorc Ltd.
Broadground Road,
Lakeside, Redditch,
Worcs. B 98 8YP

Phone: +44-15 27-50 56 00
Fax: +44-15 27-50 09-56
enquiries@elektrotorc.co.uk

Eastern Europe

VEM motors GmbH
Export Eastern Europe
Pirnaer Landstrasse 176
D-01257 Dresden

Jürgen Reinhold

Phone: +49 (0)3 51/2 08 24 40
Fax: +49 (0)3 51/2 08 21 78
reinhold@vem-group.com

GUS/Russia

VEM motors GmbH
Office Moskau
Leninskij Prospekt 95a
RUS-117313 Moskva

Phone: +70 95/9 36 24 51
Fax: +70 95/9 36 26 19

Alexander Tschekmassov

Hungary

S & SZ Hajtástechnika KFT
H-2045 Törökbálint
Katona József u.1.

Phone: +36 23/33 59 56
Fax: +36 23/51 01 56

Ferenc Szuhai

Poland

VEM motors GmbH
Office Warschau
ul. Grojecka 22/24 M 16
PL-02-301 Warszawa

Phone: +48 22/8 22 49 84
Fax: +48 22/8 22 49 85

Barbara Janas

Romania

Reprezentanta Romania
Bd. Carol/30/ap. 26
RO-703342 Bucuresti

Phone: +40 21/3 15 47 63
Fax: +40 21/3 15 47 51
vem@pcnet.ro

Alexandru Minculescu

Overseas**VEM motors GmbH**

Overseas Sales
Carl-Friedrich-Gauss-Strasse 1
D-38855 Wernigerode
P.O.Box 101252
D-38842 Wernigerode

Wolfgang Wagner

Phone: +49 (0)39 43/68 24 33
Fax: +49 (0)39 43/68 22 86
+49 (0)39 43/68 23 60
wagner@vem-group.com

Brazil

Grupo C+Tecnologia
Av. Pedroso de Moraes,
433 – 13° andar
CEP 05419-000
Sao Paulo/SP/Brazil

Phone: +55.11.3815-6554
Fax: +55.11.3815-4979
info@ctecnologia.com.br

Canada

ALLTRA ENGINEERING SERVICES LTD.
4028-4th Street SE
Calgary/Alberta
Canada T2G 2W3

Phone: +1-403-287-1510
Fax: +1-403-243-8623
alltra@cadvision.com

NU START Electric Motors Ltd.

1415 Bonhill Rd.
Unit# 12-14
Mississauga, Ontario
Canada L5T 1R2

Phone: +1.905.670-2145
or -9655
Fax: +1.905.670-2879
nustartelectric@cs.com

Chile

LUREYE Electromecánica S.A.
Vicuña Mackenna 1503
RCH-Santiago/Chile

Phone: +56.2.556 1729
Fax: +56.2.555 2465
info@lureye.cl

China

(Except Guang Dong Province and Hong Kong)
PEAK INTERNATIONAL TRADE (TIANJIN) CO., LTD.
A 1801-2 Huijia Gongyu
201 Yingkou Road
Heping District
TIANJIN / P.R. of China

Phone: +86-22-27 83 90 97-8
Fax: +86-22-27 82 23 02,
-23 12 82 31
peak@public.tpt.tj.cn

Egypt

Ahmed Daoud & Co.
Engineering and Trade Agencies
11, El-Sherifein St.
P.O.Box 752
ET-Cairo/Egypt

Phone: +202.392 1550
Fax: +202.392 1501
daoud&co@brainy1.ie-eg.com

Hong Kong

Peter, Charles & Co.
Hong Kong Head Office
2nd Floor
China Aerospace Centre
143 Hoi Bun Road
Kwun Tong, Kowloon
Hong Kong

Phone: +852.2369 4050 (10 Lines)
Fax: +852.2722 4080
pcc@pcc.com.hk

Guangzhou Branch
Flat C,10/F., Block A9
Glorious City Garden
858, Dongfeng Road East
Guangzhou 510600/
P.R. China

Phone: +86.20.87 34 94 50
Fax: +86.20.87 34 95 59