

**Three-phase
asynchronous motors
with squirrel-cage rotor
for potentially
explosive atmospheres**



VEM motors GmbH



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56

*Reservation of modifications: Subject to modifications of output, technical data, dimensions and weights specified in the list.
The illustrations are not binding.*

Technical explications

Squirrel-cage motors, increased safety type of protection „e“

Constructive version

Series	K11R / KPER / K12R
Sizes	63 - 355
Degrees of protection	IP 54, IP 55, IP 56, IP 65 according to DIN VDE 0530-5: 1988
Type of cooling	IC 411 according to DIN EN 60034-6: 1996
Types of construction	IM B3, IM B35, IM B5 and derived types of construction according to DIN EN 60034-7: 1996

When mounting motors with vertical shaft position, there is to be prevented the ingress of foreign bodies into the vent holes.

Design for potentially explosive atmospheres according to apparatus group II, category 2 acc. to
DIN EN 50 014:1994 (DIN VDE 0170/0171 part 1) General Provisions
DIN EN 50 019:1996 (DIN VDE 0170/0171 part 6) Increased Safety „e“

Temperature class T1 to T3

Fixing dimensions and coordination between output and dimensions according to DIN 42673 page 2 or DIN 42677 page 2

Ambient temperatures -40°C to +40°C

The construction of the motors is tested through the Physikalisch-Technische Bundesanstalt (PTB) Braunschweig and approved with the following partial certificates:

- Partial certificate PTB no. Ex-95.D.3020 U with the respective supplements
- Partial certificate PTB no. Ex-95.D.3162 U with the respective supplement
- Partial certificate PTB no. Ex-95.D.3021 U with the respective supplements
- Partial certificate PTB no. Ex-93.C.3059 U with the respective supplements
- Partial certificate PTB no. Ex-90.C.3152 U with the respective supplements.

Furthermore, the series are tested through the Schweizerischer Elektrotechnischer Verein
certificate A. no. 97.1 10387.01

and approved through the Schweizer Eidgenössische Starkstrominspektorat (Swiss Confederate Power Current Inspectorate)
approval no. 98.5 51477.01, 95.1 11107.07.

The reports on the test for intended use in hazardous areas are available. The certificates of conformity and the EC certificates of sample test issued for the individual types are to be taken from the approval summary.

Squirrel-cage motors, flame-proof enclosure type of protection EEx de/d

Series	K81R / K82R
Sizes	56 - 355
Degrees of protection	IP 54, IP 55, IP 56 according to DIN VDE 0530-5: 1988
Type of cooling	IC 411 according to DIN EN 60034-6: 1996
Types of construction	IM B3, IM B35, IM B5 and derived types of construction according to DIN EN 60034-7: 1996

When mounting motors with vertical shaft position, there is to be prevented the ingress of foreign bodies into the vent holes.

Design for potentially explosive atmospheres according to apparatus group II, category 2 acc. to
DIN EN 50 014:1994 (DIN VDE 0170/0171 part 1) General Provisions
DIN EN 50 018:1994 (DIN VDE 0170/0171 part 5) Flame Proof Enclosure Type of Protection „d“

Temperature class T3 to T6

Fixing dimensions and coordination between output and dimensions according to DIN 42673 page 3 or DIN 42677 page 3

Ambient temperatures -20°C to +60°C

The construction of the motors is tested through the Physikalisch-Technische Bundesanstalt (PTB) Braunschweig and approved with the following EC certificates of sample test:

- Partial certificate PTB no. PTB 99 ATEX 1098, EExdIICT3 - T6, EEx de T3 - T6

Squirrel-cage motors, type of protection „n“ according to IEC report 79-15 (1987)

Series	K11R / KPER / K12R
Size	63 - 355
Degrees of protection	IP 54, IP 55, IP 56, IP 65 according to DIN VDE 0530-5: 1988
Type of cooling	IC 411 according to DIN EN 60034-6: 1996

Fixing dimensions and coordination between output and dimensions according to DIN 42673 page 1 or DIN 42677 page 1
Types of construction IM B3, IM B35, IM B5 and derived types of construction according to DIN EN 60034-7: 1996

When mounting motors with vertical shaft position, there is to be prevented the ingress of foreign bodies into the vent holes.

Design for potentially explosive atmospheres according to apparatus group II, category 3 acc. to IEC report 79-15 (1987)
Temperature class T3 or T4
Ambient temperatures -40°C to +55°C

For K11R are available the EC certificates of sample test IBExU994TEX 1094 and 1095, for KPER are available the EC certificates of sample test PTB no. Ex-.96.Y.3725U, EX-96.Y.3726.

Furthermore, the series are tested through the Schweizerischer Elektrotechnischer Verein and approved through the Schweizer Eidgenössisches Starkstrominspektorat (Swiss Confederate Power Current Inspectorate)

Certificate A. no. 95.1 11108.03
Approval no. 95.1 11108.04.

Squirrel-cage motors for being used in case of potentially inflammable dusts (zone 21, 22)

Design for zone 21

Series KPER / K11Q
Sizes 56 - 280 (315 in preparation)
Degree of protection IP 65 according to DIN VDE 0530-5: 1988
Type of cooling IC 411 according to DIN EN 60034-6: 1996
Types of construction IM B3, IM B35, IM B5 and derived types of construction according to DIN EN 60034-7: 1996

When mounting motors with vertical shaft position, there is to be prevented the ingress of foreign bodies into the vent holes.

Design for potentially explosive atmospheres according to apparatus group II, category 2 acc. to DIN EN 50281-1-1 and -2
Fixing dimensions and coordination between output and dimensions according to DIN 42673 page 1 or DIN 42677 page 1
Ambient temperatures -40°C to +40°C

The design of the motors has been tested by the DMT (Deutsche Montan Technik), certified with the certificate
DMT 00 ATEX E 002 X for the sizes 132 to 280
DMT 00 ATEX E 012 X for the sizes 56 to 132 T
and approved in the respective test report.

Design for zone 22

Series K21R / K11R
Sizes 56 - 355
Degrees of protection IP 55 according to DIN VDE 0530-5: 1988
Type of cooling IC 411 according to DIN EN 60034-6: 1996
Types of construction IM B3, IM B35, IM B5 and derived types of construction according to DIN EN 60034-7: 1996

When mounting motors with vertical shaft position, there is to be prevented the ingress of foreign bodies into the vent holes.

Design for potentially explosive atmospheres according to apparatus group II, category 3 acc. to E DIN EN 50281-1-1 and -2
Fixing dimensions and coordination between output and dimensions according to DIN 42673 page 1 or DIN 42677 page 1
Ambient temperatures -40°C to +40°C

The design of the motors has been certified with manufacturer's declaration of incorporation.

EC certificates of conformity and EC certificates of prototype test



DMT

EG-Baumusterprüfbescheinigung

(1) - Richtlinie 94/9/EG -
(2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung
in explosionsgefährdeten Bereichen

(3) **DMT 00 ATEX E 002 X**

(4) **Gerät: Drechstrommotoren mit Käfigläufer Typ K1.Q...**

(5) **Hersteller: VEM motors GmbH**

(6) **Anschrift: D 38842 Werningerode**

(7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausfüllungen sind in der Anlage zu dieser Baustoffprüfbescheinigung festgelegt.

(8) Die Zertifizierungsstelle der Deutsche Montan Technologie GmbH, benannte Stelle Nr. 0158 gemäß Artikel 9 der Richtlinie 94/9/EG des Europäischen Parlaments und des Rates vom 23. März 1994, bescheinigt, daß das Gerät die grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.

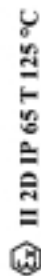
Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht Nr. BVS PP 00.2008 EG niedergelegt.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit EN 50281-1-1:1998 (VDE 0170/0171 Teil 15/10:99)

(10) Falls das Zeichen „N“ hinter der Bescheinigungsnummer steht, wird in der Anlage zu dieser Bescheinigung auf besondere Bedingungen für die sichere Anwendung des Gerätes hingewiesen.

(11) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf die Konzeption und den Bau des beschriebenen Gerätes. Für Herstellung und Inverkehrbringen des Gerätes sind weitere Anforderungen der Richtlinie 94/9/EG zu erfüllen.

(12) Die Kennzeichnung des Gerätes muß die folgenden Angaben enthalten:



II 2D IP 65 T 125 °C

Deutsche Montan Technologie GmbH

Essen, den 15. Februar 2008

Fachbereichsleiter

DMT-Zertifizierungsstelle

DMT

Anlage zur

EG-Baumusterprüfbescheinigung

DMT 00 ATEX E 002 X

(15) 15.1 Benennung und Typ:

Drechstrommotoren mit Käfigläufer Typ K1.Q...

15.2 Beschreibung:

Die Motoren werden in ähnlicher Konstruktion mit verschiedenen Bauhöhen und Bauflängen gefertigt.

15.3 Elektrische, mechanische und thermische Kenngrößen:

Polanzahl	1 bis	4
Benennungsleistung	2,2 bis	90 kW
Benennungsleistung	220 bis	725 V
Benennungsleistung		50 Hz
Isolierstoffklasse		F
Betriebsart		SI

(16) Prüfberichte

Nr. BVS PP 00.2008 EG

11 Seiten

(17) Besondere Bedingungen für die sichere Anwendung:

17.1 Die Motoren dürfen nicht in Staubablagerungen übermäßiger Dicke betrieben werden.

17.2 Bei Montage der Motoren mit freier Wellenstufe nach oben, muss das Hineinfallen von Fremdkörpern in die Belüftungöffnung durch den Anbau verhindert sein.

VEM motors GmbH



EC certificate of conformity

Manufacturer: VEM motors GmbH
Elektromotorenwerk Wernigerode

Address: PSF 10 12 52 * 38842 Wernigerode
Carl-Friedrich-Gauß-Str. 1
38855 Wernigerode

Product designation: Three-phase asynchronous motors with squirrel-cage rotor
K1.R ...
Size 112...315
Degree of protection IP 55



The designated product complies with the regulations of the following European Directives:

94/9/EG Directive of the European Parliament and of the Council for the Adjustment of the Legal Requirements of the Member States for Apparatus and Protective Systems for the Designated Use in Hazardous Areas.

The conformity with the directives of these guidelines will be proved and documented through the complete compliance with the standards
EN 50014 prEN50281 EN 60034

First attachment of the CE-marking: 04/1999

The designated product is provided for being incorporated in a machine. The commissioning is forbidden until the conformity of the final product with the guideline 89/392/EWG has been assigned.

First edition: 02/99
Wernigerode, 10/02/2000

Sander
Managing Director

Beutner
Plant manager

This certificate is no warranty of qualities within the product liability. The safety instructions of the product documentation are to be followed.

VEM motors GmbH



EC certificate of conformity

Manufacturer: VEM motors GmbH
Elektromotorenwerk Wernigerode

Address: PSF 10 12 52 * 38842 Wernigerode
Carl-Friedrich-Gauß-Str. 1
38855 Wernigerode

Product designation: Three-phase asynchronous motors with squirrel-cage rotor
K22.R ...
Size 355
Degree of protection IP 55



The designated product complies with the regulations of the following European Directives:

94/9/EG Directive of the European Parliament and of the Council for the Adjustment of the Legal Requirements of the Member States for Apparatus and Protective Systems for the Designated Use in Hazardous Areas.

The conformity with the directives of these guidelines will be proved and documented through the complete compliance with the standards
EN 50014 prEN50281 EN 60034

First attachment of the CE-marking: 04/1999

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First edition: 02/99
Wernigerode, 10/02/2000

Sander
Managing Director

Beutner
Plant manager

This certificate is no warranty of qualities within the product liability. The safety instructions of the product documentation are to be followed.

Standards and specifications

The motors correspond to the appropriate standards, in particular to the following::

Title	DIN/VDE	IEC
General regulations for electrical rotating machines	DIN EN 60034-1/02.99	IEC 34-1 IEC 85
Fixing dimensions and coordination between output and dimensions at IM B3	DIN 42673	(IEC 72)
Fixing dimensions and coordination between output and dimensions at IM B5, IM B35 and IM B14	DIN 42677	(IEC 72)
Rotating electrical machines, terminal markings and direction of rotation	DIN VDE 0530 part 8	IEC 34-8
Rotating electrical machines, symbols for types of construction and mounting	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, classification of degrees of protection	DIN VDE 0530 part 5	IEC 34-5
Rotating electrical machines, mechanical vibrations of certain machines with shaft heights 56 mm and higher	DIN EN 60034-14	IEC 34-14
Cylindrical shaft ends for rotating electrical machines	DIN 748 part 3	IEC 72
Rotating electrical machines, noise limits	DIN EN 60034-9	IEC 34-9
Rotating electrical machines, starting performance of single-speed three-phase cage induction motors for voltages up to 660 V, 50 cps	DIN EN 60034-12	IEC 34-12
IEC-standard voltages	DIN IEC 38	IEC 38
For EEx-motors are valid furthermore		
General regulations	DIN EN 50014/VDE 0170/0171 T.1	IEC 79-0
Increased safety „e“	DIN EN 50019/VDE 0170/0171 T.6	IEC 79-7
Flameproof enclosure „d“	DIN EN 50018 / VDE 0170/0171 T.5	-
Electrical apparatus for being used in areas with potentially inflammable dusts	DIN EN 50281-1-1	-

Furthermore, VEM motors comply with various foreign regulations which have been adapted to the IEC-publ. 34-1 and they are available according to the regulations of the Classification Authorities

Germanischer Lloyd	American Bureau of Shipping
Bureau Veritas	Det Norske Veritas
Lloyd's Register of Shipping	Russian Register.

For these standards and specifications are valid the following admissible limits of temperature rise:

Specifications	Coolant temperature	Admissible limit of temperature rise in K (measuring acc. to resistance method)			
		Insulation class			
	°C	A	E	B	F
DIN VDE 60034-1/02.99	40	60	75	80	105
IEC 34-1	40	60	75	80	105
Switzerland SEV	40	60	75	80	105
Germanischer Lloyd	45	55	70	75	95
American Bureau of Shipping	50	55	65	75	95
Bureau Veritas	50	50	65	70	90
Det Norske Veritas	45	50	65	70	90 ¹⁾
Lloyd's Register	45	50	65	70	90
Russ. Register	40/45	60	75	85	110

¹⁾ only with special approval

Tolerances

Following tolerances are admitted according to DIN EN 60034-1/02.99. These tolerances are permissible for the values assured for three-phase asynchronous motors, taking the necessary manufacturing tolerances and material variations of the used raw materials into account. The standard contains the following notes to that:

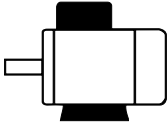
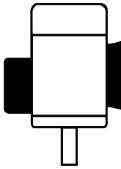
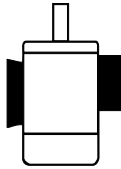
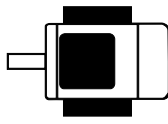
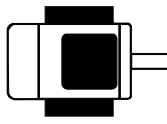
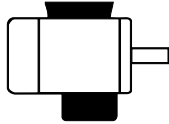
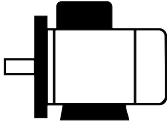
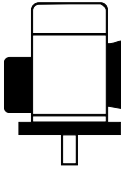
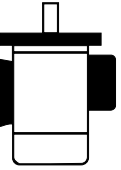
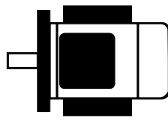
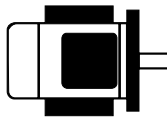
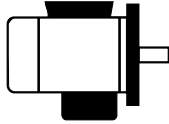
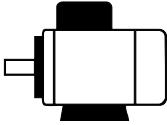
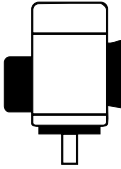
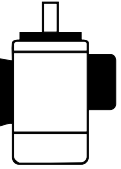
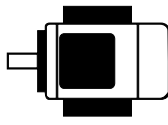
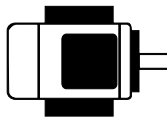
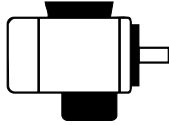
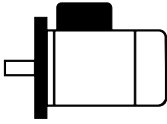
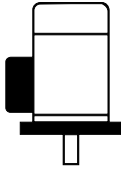
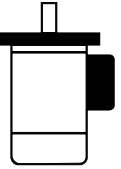
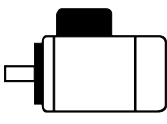
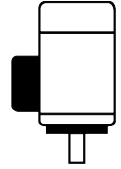
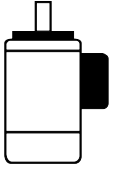
1. A guarantee for all or any of the values shown in the table is not mandatory. In tenders, the guaranteed values for which permissible deviations should apply must be expressly specified. The permissible variations must correspond to those stated in the table.
2. There is pointed to the distinctions concerning the definition „Guarantee“. In some countries, distinction is drawn between guaranteed values and typical or declared values.
3. If the permissible deviation applies only in one direction, then the value in other direction is not limited.

Tolerances of the design values

Efficiency (with indirect calculation)	-0,15 (1-h) up to $P_N \leq 50$ kW -0,1 (1- η) up to $P_N > 50$ kW
Power faktor	$\frac{1-\cos\varphi}{6}$ at least 0,02 at most 0,07
Slip (at rated-load operating temperature)	± 20 % up to $P_N \geq 1$ kW ± 30 % up to $P_N < 1$ kW
Starting current (in the planned starting circuit)	+ 20 % without limiting downwards
Starting torque	- 15 % and + 25 %
Pull-up torque	- 15 %
Pull-out torque	- 10 % (with the application of this tolerance M_k/M at least 1,6)
Moment of inertia	± 10 %
Noise intensity (measurement area sound pressure level)	+ 3 dB (A)

Tolerances of the fixing dimensions

Dimensional short sign according to DIN	Meaning of the dimension	Fit or tolerance
a	Spacing of housing foot fixing holes in axial direction	± 1 mm
b	Spacing of housing foot fixing holes across the axial direction	± 1 mm
e1	Pitch circle diameter of the attachment flange	$\pm 0,8$ mm
a1	Diameter or width across corner of the flange	+ 1 %
g	Largest width of the motor	+ 2 %
f	(without terminal box)	
k	Overall length of the motor	+ 1 %
k1		
p	Overall height (lower edge foot, housing or flange up to highest point of the motor)	+ 2 %
s	Diameter of the fixing holes of the foot or of the flange	+ 3 %
s1		
w1	Centre of the first fixing hole up to shaft end shoulder	± 3 mm
w2		
b1	Diameter of the centering shoulder of the attachment flange	up to 230 j6 from 250 h6
d	Diameter of the shaft end	up to $\varnothing 48$ k6 from $\varnothing 55$ m6
d1		
h	Shaft height (lower edge foot up to centre of shaft end)	up to 250-0,5 higher than 250-1
u	Width of the key	h9
u1		
t	Lower edge of shaft end up to upper edge of key	+ 0,2 mm
t1		
	Motor weight	- 5 bis + 10 %

Basic Type of Construction	Derived 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 ¹⁾ IM 2001 ¹⁾ 	IM V15 ¹⁾ IM 2011 ¹⁾ 	IM V36 ^{1) 2)} IM 2031 ^{1) 2)} 	– IM 2051 ¹⁾ 	– IM 2061 ¹⁾ 	– IM 2071 ¹⁾ 	
IM B34 ^{1) 2)} IM 2101 ^{1) 2)} 	– IM 2111 ^{1) 2)} 	– IM 2131 ^{1) 2)} 	– IM 2151 ^{1) 2)} 	– IM 2161 ^{1) 2)} 	– IM 2171 ^{1) 2)} 	
IM B5 IM 3001 	IM V1 IM 3011 	IM V3 ³⁾ IM 3031 ³⁾ 				
IM B14 ²⁾ IM 3601 	IM V18 ²⁾ IM 3611 	IM V19 ²⁾ IM 3631 				

Basic types of construction can be used in all derived types of construction.

Exceptions:

¹⁾ On inquiry

²⁾ Only available in the types of construction 56 - 160

³⁾ This type of construction is to be ordered directly because of additional water return hole in the flange end shield

Shaft ends

As specified in IEC 34-7, the definition of the motor ends is as follows :

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

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

The motors are always supplied with the key fitted. The second shaft end can transmit the full nominal output with coupling service. The power transmission capability at belt service, chain service or pinion service for the second shaft end is available on request.

Degrees of protection

Degrees of protection for electrical machines are indicated according to DIN VDE 0530 part 5 through the identification marking „IP“ and two characteristic numerals for the degree of protection. The first characteristic numeral specifies the protection against damaging ingress of dust and foreign particles and against contact with inner moving or live parts, the second characteristic numeral specifies the protection against the penetration of water having an effect on the machine from different directions and with different intensities.

The respective degrees of protection of the various series of motors are to be taken from the tables of the electrical selection data.

Sense of rotation

When connecting a VEM motor with the stator terminals U, V, W to a three-phase mains with the phase sequence L1, L2 and L3, the direction of rotation of the motor goes clockwise as seen on the D-end. In case of required alteration of the direction of rotation, two terminals are to be exchanged.

Bearing arrangement / bearing lubrication

VEM motors are equipped with antifriction bearings of well-known manufacturers. The bearings have a nominal service life of at least 20.000 hours for maximum permissible load conditions. For motors without additional axial loading, the nominal service life is 40.000 hours for coupling service. The sizes 56 - 160 are equipped with life-lubricated bearings. For motors from size 180, depending on the useful life of grease, bearings must be relubricated in good time so that the nominal bearing service life is reached. Under normal operating conditions, the grease packing will last for 10.000 hours of operation with 2-pole version and for 20.000 hours of operation with versions from 4 poles upwards without being renewed. For motors fitted with relubricating facility and working under normal operating conditions, the grease will last for 2.000 hours of operation or for 4.000 hours of operation. The standard grease is a KE2R-40 type according to DIN 51825.

Use of cylindrical roller bearings

Using cylindrical roller bearings („heavy bearing arrangement“), relatively high radial forces or masses can be supported at the motor shaft end. Examples : belt drives, pinions or heavy couplings. The minimum radial force at the shaft end must be a quarter of the permissible radial force. Account must be taken of permissible shaft end loading.

Important to note: *Radial forces below the minimum value can lead to bearing damages within a few hours. Test runs in no-load state are only permissible for a short period.*

If the specified minimum radial forces cannot be met, we recommend to use grooved ball bearings („easy bearing arrangement“). Bearing change is possible on request.

Transport locking

According to the specific conditions of transport, motors with cylindrical roller bearing can be provided, according to DIN 5412, with a transport locking on the driving end as protection against transport shocks.

Vibration characteristics

The admissible vibration intensities of electric motors are specified in DIN EN 60034-14.

The vibration intensity stage N (normal) is achieved or is below limit by VEM motors in the basic version. On demand, the vibration intensity stages R (reduced) and S (special) can be delivered in dependence on the type at extra charge.

The following values are recommended according to DIN EN 60034-14:

Vibration intensity stages	Speed range rpm	Limit values of vibration velocity (mm/s) in frequency range 10 to 1000 cps for sizes		
		56 - 132	160 - 225	250 - 450
N (normal)	600-3600	1,8	2,8	3,5
R (reduced)	600-1800 up to 1800-3600	0,71 1,12	1,12 1,8	1,8 2,8
S (special)	600-1800 up to 1800-3600	0,45 0,71	0,71 1,12	1,12 1,8

All rotors are dynamically balanced with half key inserted. This balancing is documented on the rating plate with the letter H after the motor number. On inquiry, the balancing is possible with the complete key; this balancing is documented with the letter F after the motor number.

Noise characteristics

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

The tabular value + 5 dB (A) applies as an approximate value for motors in 60 cps design. Binding data for 60 cps are available on request. For the main type series, the noise values are specified in the main catalogue in form of tables. In case of special versions, please refer to the manufacturer.

Cooling and ventilation

The motors are equipped with radial fans which cool the motor, whatever is the direction of rotation (IC 411 according to DIN EN 60034-6). When installing the motors, care should be taken that a minimum distance from the fan cover to the wall (dimension B) is maintained.

Paint finish

Normal finish

Adapted for group of climates „moderate“ according to IEC 721-2-1,

- weatherprotected and non-weatherprotected locations, short time up to 100 % of relative air humidity at temperatures up to + 30 °C, continuously up to 85 % of relative air humidity at up to + 25 °C.

Finish system Sizes 56 - 112

All components except aluminium terminal boxes : prime plastic paint, layer thickness approx. 30µm

Finish coat water-soluble varnish with layer thicknesses from 30 µm to 60 µm

Sizes 132 - 355

Synthetic-resin zincphosphate primary coat, layer thickness approx. 30 µm

Finish coat : two-component polyurethane, layer thickness approx. 30 µm

Special finish

Adapted for group of climates „World-wide“ according to IEC 721-2-1

- Non-weather-protected location in corrosive chemical and sea atmosphere, short time up to 100 % of relative air humidity at temperatures up to + 35 °C, continuously up to 98 % of relative air humidity with temperatures up to + 30 °C

Finish system

Sizes 56 - 112

All components with prime plastic paint, layer thicknesses: approx. 30 µm

Finish coat water-soluble varnish with layer thicknesses from 60 µm to 90 µm

Two-component coating varnish on demand

BG 132 - 355

Synthetic-resin zincphosphate primary coat, layer thickness approx. 30 µm

Intermediate coat on two-component base, layer thickness approx. 30 µm

Finish coat: two-component coating varnish on demand

Standard colour **RAL 7031 blue-grey**

Further special coating systems:

Version for excessive thermal stresses

Version for excessive chemical and radiation stresses

Special finish upon customer's request

Design voltage and frequency

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

230/400 V Δ/Y 50 cps 690 V Δ 50 cps

400/690 V Δ/Y 50 cps 480 V Δ 60 cps

The motors can run without changing the nominal output in mains, in which the voltage at nominal frequency deviates from the nominal value up to ± 5 % (design voltage range A). The above mentioned standard voltages according to DIN IEC 38 are taken as design point. Application for voltage range is possible, limits see tables of the electrical selection data.

Special voltages and frequencies upon customer's request.

Design torque

The nominal torque in Nm given at the motor shaft is calculated by

$$M = \frac{9550 \times P}{n} \quad \text{with } P = \text{nominal output in kW} \\ n = \text{speed in rpm}$$

If the voltages deviate from their nominal value (within the admissible limits), starting torque, pull-up torque and pull-out torque change about quadratically and the starting current changes about linearly with the voltage variation.

Design output

The nominal output applies for continuous operation as specified in DIN EN 60034-1/02.99 at a coolant temperature of 40 °C and a site altitude of ≤ 1000 m above M.S.L. On account of the thermal reserve, the nominal output can be maintained up to 50 °C coolant temperature or up to 2.500 m site altitude. These conditions can only be applied alternatively. The output must be reduced in case of coupling. In case of motors in design for sea-going vessels, the output is possibly reduced according to the Classification Rules.

Additional thermal winding protection

The additional thermal winding protection is exclusively provided as additional protective device for monitoring the temperature of the stator winding and is not regarded as protective device according to VDE 0170/0171 part 6 / DIN EN 50019 appendix A.

Overload capacity

In compliance with DIN EN 60034-1, all motors can be exposed to the following overload conditions:

- 1,5 times the rated current for 2 min.
- 1,6 times the rated torque for 15 s

Both conditions apply to design voltage and design frequency.

Design efficiency and design power factor

The efficiency η and the power factor $\cos \varphi$ are stated in the Motor Selection Data lists. Partial load ratings on demand.

Re-starting with residual field and phase opposition

A re-starting after mains failure against 100 % residual field is possible for all motors.

Project planning and application instructions

Hazardous areas

Which zones in the open or in closed areas are to be considered hazardous within the relevant rules or regulations is to be leaved exclusively to the user or, in case of doubt about the definition of hazardous areas, to the competent inspectorate.

Electrical motors for potentially explosive atmospheres correspond to the standards of the series DIN EN 60034 (VDE 0530) as well as DIN EN 50014-50020, DIN EN 50281-1-1. In hazardous areas they can only be placed in accordance with the competent inspectorate being responsible for the assignment of potentially explosive atmospheres (zonal classification). The type of protection, the temperature class as well as special requirements are indicated on the rating plate or in the certificate of conformity.

Apparatus group I, category M2

Under this category come electrical machines of increased-safety types protections, of flameproof enclosure types of protection, of pressurized enclosure types of protection for being used in the mining area.

Apparatus group II, category 2 (up to now zone 1)

Under this category come electrical machines of increased-safety types protections, of flameproof enclosure types of protection, of pressurized enclosure types of protection for being used in the other areas endangered through an explosive atmosphere.

Apparatus group II, category 3 (up to now zone 2)

Under this category come electrical machines of the type of protection „Ex n“.

If the certificate number is completed by the letter X, special requirements in the certificate of conformity are to be observed.

The operation at the converter must be certified specially. The special manufacturer's instructions are to be observed absolutely. For the type of protection EEx e, motor, converter and protective device must be marked as components belonging together and the admissible operating data must be determined in the common test certificate (VDE 0165).

Through the interconnecting cable installed between converter and electrical machine, the voltage peaks generated by the converter can be badly influenced in their magnitude. In the system converter - cable - electrical machine, the maximum value of the voltage peaks at the terminals of the machine must never exceed the value indicated in the special manufacturer's instructions.

Installation and electric connection

The erection of electrical installations in potentially explosive atmospheres requires in Germany the observance of the following regulations:

- DIN VDE 0118	„Erection of Electrical Installations in Mines“.
- EIBergV	„Elektrobergverordnung“ (Ordinance Regulating the Electrical Installations in Mines).
- DIN 56 165/VDE 0165/DIN EN 60079-14	„Installation of Electrical Apparatus in Hazardous Areas.
-VbF	„Verordnung über brennbare Flüssigkeiten“ (Ordinance Concerning Flammable Liquids)

Abroad are to be followed the corresponding national regulations.

The general safety and commissioning instructions are valid for the electric connection. The cable entries must be approved for the explosion-proof area and they must be protected against selfloosening. Non-used apertures are to be closed with accepted plugs.

Protective measures against excessive temperature rise

If the test certificate or the rating plate do not contain different data concerning duty type and tolerances, the electrical machines are designed for continuous duty and for normal starts, not recurring frequently, in the course of which the temperatures are not rising essentially. The motors can only be used for that duty being indicated on the rating plate.

The range A in DIN EN 60034-1 (VDE 0530, part 1) - voltage $\pm 5\%$, frequency $\pm 2\%$, waveform, supply balance - is to be observed so that the temperature rises within the admissible limits. Greater deviations from the design values can cause an excessive temperature rise of the electric machine and must be indicated on the rating plate.

Each machine is to be protected in all phases against excessive temperature rise by means of an inverse time-delay circuit breaker with phase-failure protection according to VDE 0660 or an equivalent device. The protective device is to be set to the design current. In case of windings in delta connection, the trip elements are connected in series with phase windings and set to 0,58 times the design current. When being impossible this connection, additional protective measures are necessary (eg. thermal machine protection).

In contrast to the degree of protection „Ex-n“, in case of the „increased safety“ the start will be monitored too. Therefore, in case of locked rotor, the protective device must disconnect within the t_E -time indicated for the corresponding temperature class. The requirement is fulfilled if the tripping time - it is to be taken from the tripping characteristic (initial temperature of 20 °C) for the ratio I_A/I_N - doesn't exceed the indicated t_E -time.

In compliance with the data of the certificate of conformity, electrical machines for heavy starting (acceleration time $> 1,7 \times t_E$ -time) are to be protected through a starting-cycle monitoring circuit.

Thermal machine protection through direct temperature monitoring of the winding is admissible if that is certified and indicated on the rating plate. It is consisting of temperature sensors according to DIN 44081 / 44082 which in connection with tripping units, provided with the mark of conformity of an authorized testing agency, are guaranteeing the explosion-protection.

In case of pole-changing motors, separate interlocked protective devices are necessary for each speed step. We recommend devices provided with the test report of an authorized testing agency.

Maintenance and repair

In Germany, maintenance, repair and modifications at explosion protected machines are to be carried out observing the ElexV/EIBergV, the safety instructions und descriptions of the general maintenance instructions.

Work, influencing the explosion protection, such as eg.:

- repair work at the stator or rotor winding and at the terminals,
- repair work at the ventilation system,
- the disassembly of explosion-proof machines,

are to be carried out at the manufacturer or through a workshop specialized for electrical machines.

The work is to be marked by an additional repair name plate with the following data:

- date
- operative firm
- if necessary, mode of repair
- if necessary, sign of the expert.

If the work will not be realized by part of the manufacturer, it is to be accepted by an officially recognized expert who has to issue a written confirmation or to provide the machine with his mark of conformity. Abroad are to be observed the corresponding national regulations.

Spare parts

There may only be used original spare parts (see list of spare parts), excepting standardized, commercial and equivalent parts (eg. antifriction bearings); in particular, this applies to seals and connecting pieces too.

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 50 cps

Type	P kW	Tempe- rature class	n rpm	η %	cos φ -	I 400 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 3000 rpm - 2-pole design														
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	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	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	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	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	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	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	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	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	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,T2	2975	94,0	0,89	117	7,8	1,4	1,3	2,3	23	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	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	17	17	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											3,66	1460
	165	T1,T2											3,66	1460
K11R 315 LX2	150	T1-T3											4,43	1630
	200	T1,T2											4,43	1630
K12R 355 M2	190	T1-T3											4,20	2000
	255	T1,T2											4,20	2000
K12R 355 MX2	220	T1-T3											5,50	2200
	300	T1,T2											5,50	2200
K12R 355 L2	250	T1-T3											9,50	2400
	335	T1,T2											9,50	2400

Other voltages and frequencies on inquiry. Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 50 cps

Type	P kW	Tempe- rature class	n rpm	η %	cos φ -	I 400 V A	I _A /I _N	M _A /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 1500 rpm - 4-pole design														
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
	17,0	T1,T2	1465	90,5	0,88	31,0	6,0	1,7	1,4	2,3		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
	20,0	T1,T2	1470	90,5	0,86	37	6,3	1,8	1,6	2,4		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
	27	T1,T2	1470	92,5	0,88	48	6,0	1,6	1,5	2,2		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
	33	T1,T2	1472	92,9	0,85	60	5,6	1,5	1,2	1,7		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
	40	T1,T2	1475	93,5	0,85	73	6,6	2,0	1,6	2,1		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
	50	T1,T2	1480	94,0	0,86	90	6,3	1,7	1,5	1,9		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
	68	T1,T2	1480	94,0	0,85	124	6,1	1,5	1,4	1,8		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
	80	T1,T2	1483	94,5	0,84	147	6,5	1,7	1,6	2,0		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
	100	T1,T2	1470	94,5	0,84	181	6,5	1,6	1,4	2,0			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
	120	T1,T2	1478	94,7	0,85	216	5,6	1,3	1,1	1,6		30	2,73	1000
K11R 315 MY4	115	T1-T3	1489	95,4	0,85	205	7,1	1,5	1,4	2,4	14	35	4,82	1200
	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
	165	T1,T2											5,93	1450
K11R 315 LX4	170	T1-T3											6,82	1630
	200	T1,T2											6,82	1630
K12R 355 M4	215	T1-T3											5,60	1950
	245	T1,T2											5,60	1950
K12R 355 MX4	240	T1-T3											7,90	2150
	275	T1,T2											7,90	2150
K12R 355 L4	275	T1-T3											9,50	2400
	315	T1,T2											9,50	2400

Other voltages and frequencies on inquiry. 1) only available up to 380 V
 Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 50 cps

Type		P	Tempe- rature class	n	η	cos φ	I	I_A/I_N	M_A/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 1000 rpm - 6-pole design															
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	990	94,0	0,88	87	6,7	1,9	1,7	2,4			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	990	94,5	0,87	133	7,5	2,2	1,8	2,5			3,60	890
		82	T1,T2	985	94,5	0,87	144	6,9	2,0	1,6	2,2			3,60	890
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											6,67	1250
		100	T1,T2											6,67	1250
K11R	315 LX6	110	T1-T3											8,6	1460
		120	T1,T2											8,6	1460
K12R	355 M6	125	T1-T3											8,2	1650
		135	T1,T2											8,2	1650
K12R	355 MX6	160	T1-T3											10,1	2100
		175	T1,T2											10,1	2100
K12R	355 L6	200	T1-T3											14	2400
		215	T1,T2											14	2400

Data on inquiry

Other voltages and frequencies on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 50 cps

Type	P	Temperature	n	η	$\cos \varphi$	I	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	t_e -time		J	m	
	kW	class	rpm	%	-	400 V A					T3 s	T1,T2 s	kgm ²	kg	
Synchronous speed 750 rpm - 8-pole design															
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	740	94,0	0,80	153	5,7	1,6	1,5	2,2			6,00	1080
K11R	315 L8	95	T1-T3											6,76	1250
K11R	315 LX8	115	T1-T3											8,71	1430
K12R	355 M8	140	T1-T3											9,5	1600
K12R	355 MX8	180	T1-T3											11,6	2100
K12R	355 L8	210	T1-T3											15,8	2400

Data on inquiry

Other voltages and frequencies on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
for design voltage, temperature classes T1, T2 and T3
with surface cooling, duty type S1, continuous duty
insulation class F, degree of protection IP 54, 60 cps

Type		P	Tempe- rature class	n	η	cos φ	I	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	t_E -time		J	m
		kW		rpm	%	-	480 V A					T3 s	T1,T2 s	kgm ²	kg
Synchronous speed 3600 rpm - 2-pole design															
KPER	63 K2	0,18	T1-T3	3380	65,0	0,80	0,55 ¹⁾	4,0	1,6	1,6	2,0	29	30	0,00013	4,9
KPER	63 G2	0,25	T1-T3	3400	65,0	0,74	0,75 ¹⁾	4,5	1,9	1,9	2,2	13	15	0,00015	5,2
KPER	71 K2	0,37	T1-T3	3340	67,0	0,84	0,95 ¹⁾	4,6	1,7	1,7	2,2	16	18	0,00025	6,7
KPER	71 G2	0,55	T1-T3	3370	73,0	0,79	1,44 ¹⁾	5,3	2,2	2,2	2,5	11	13	0,00032	7,6
KPER	80 K2	0,75	T1-T3	3410	74,0	0,84	1,76 ¹⁾	5,8	1,9	1,9	2,4	14	16	0,00057	10,7
KPER	80 G2	1,10	T1-T3	3430	77,0	0,82	2,60 ¹⁾	6,2	2,3	2,3	2,5	8	10	0,00072	11,5
KPER	90 S2	1,30	T1-T3	3440	78,0	0,88	2,75 ¹⁾	7,2	2,2	2,2	2,6	14	16	0,00132	16
KPER	90 L2	1,85	T1-T3	3470	83,0	0,86	3,85 ¹⁾	8,1	3,0	3,0	3,2	9	12	0,00170	19
KPER	100 L2	2,50	T1-T3	3470	82,0	0,87	5,20 ¹⁾	7,5	2,4	2,4	2,7	13	16	0,00275	25
KPER	112 M2	3,3	T1-T3	3510	85,0	0,82	6,90 ¹⁾	8,4	2,1	2,1	3,1	11	16	0,00450	32
KPER	112 MX2	4,1	T1-T3	3510	87,0	0,87	8,05 ¹⁾	8,6	1,9	1,9	3,3	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
K12R	132 SX2	6,6	T1-T3	3525	90,5	0,93	9,5	7,8	2,2	1,5	2,8	14	30	0,0258	88
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

¹⁾ currents at 400 V

Other voltages and frequencies on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 60 cps

Type		P	Tempe- rature class	n	η	cos φ	I	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	t _e -time		J	m
		kW		rpm	%	-	480 V A					T3 s	T1,T2 s	kgm ²	kg
Synchronous speed 1800 rpm - 4-pole design															
KPER	63 K4 ²⁾	0,12	T1-T3	1670	57,0	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	0,63 ¹⁾	3,5	1,9	1,9	2,2	30	35	0,00024	5,2
KPER	71 K4	0,25	T1-T3	1680	65,0	0,73	0,79 ¹⁾	3,7	1,4	1,4	1,8	24	27	0,00040	6,8
KPER	71 G4	0,37	T1-T3	1670	67,0	0,75	1,08 ¹⁾	3,9	1,6	1,6	2,0	18	21	0,00050	7,8
KPER	80 K4	0,55	T1-T3	1680	69,0	0,76	1,59 ¹⁾	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	2,05 ¹⁾	4,8	2,0	2,0	2,3	14	17	0,00107	11,7
KPER	90 S4	1,00	T1-T3	1710	77,0	0,80	2,42 ¹⁾	5,5	2,4	2,3	2,5	17	19	0,00207	15,5
KPER	90 L4	1,35	T1-T3	1710	79,0	0,81	3,10 ¹⁾	6,0	2,3	1,8	2,5	12	14	0,00260	18
KPER	100 L4	2,0	T1-T3	1720	80,0	0,80	4,65 ¹⁾	6,6	2,8	2,6	2,9	11	13	0,00400	23,5
KPER	100 LX4	2,5	T1-T3	1740	83,0	0,78	5,60 ¹⁾	7,3	2,3	2,2	2,9	11	12	0,00725	30
KPER	112 M4	3,6	T1-T3	1740	85,0	0,77	8,1 ¹⁾	7,7	2,8	2,1	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 S4	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 V ²⁾ only available up to 415 V

Other voltages and frequencies on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 60 cps

Type		P	Tempe- ratur- klasse	n	η	cos φ	I	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	t _E -Zeit		J	m
		kW		min ⁻¹	%	-	480 V A					T3 s	T1,T2 s	kgm ²	kg
Synchronous speed 1200 rpm - 6-pole design															
KPER	80 K6	0,37	T1-T3	1120	62,0	0,70	1,30 ¹⁾	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	1,75 ¹⁾	4,0	2,1	2,1	2,2	22	26	0,00175	12,5
KPER	90 S6	0,65	T1-T3	1125	69,0	0,71	1,94 ¹⁾	3,7	1,8	1,7	1,9	30	35	0,00325	16
KPER	90 L6	0,95	T1-T3	1125	71,0	0,71	2,70 ¹⁾	4,3	2,1	2,0	2,2	23	27	0,00425	19
KPER	100 L6	1,4	T1-T3	1140	75,0	0,73	3,75 ¹⁾	4,6	2,1	2,0	2,3	20	24	0,00625	24
KPER	112 M6	1,9	T1-T3	1150	79,0	0,74	4,70 ¹⁾	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	85	T1-T3	1190	94,5	0,87	124	8,1	2,0	1,8	2,5			3,600	890
K11R	315 MY6	100	T1-T3	1185	94,5	0,86	148	8,2	1,9	1,7	2,3			6,000	1080

¹⁾ currents at 400 V

Other voltages and frequencies on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 60 cps

Type	P kW	Tempe- ratur- klasse	n min ⁻¹	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 -Zeit		J kgm ²	m kg
											T3 s	T1,T2 s		
Synchronous speed 900 rpm - 8-pole design														
KPER 80 K8	0,18	T1-T3	820	52,0	0,64	0,78 ¹⁾	2,7	1,6	1,6	1,9	150	180	0,00130	10,5
KPER 80 G8	0,25	T1-T3	820	55,0	0,67	1,00 ¹⁾	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	1,61 ¹⁾	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	2,14 ¹⁾	3,3	1,6	1,6	2,1	55	60	0,00375	18
KPER 100 L8	0,65	T1-T3	850	66,0	0,63	2,24 ¹⁾	3,3	1,5	1,5	1,8	60	70	0,00625	23
KPER 100 LX8	0,95	T1-T3	855	74,0	0,68	2,75 ¹⁾	4,5	2,0	2,0	2,5	60	70	0,00900	28
KPER 112 M8	1,3	T1-T3	850	75,0	0,67	3,90 ¹⁾	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	885	90,5	0,81	52,5	5,3	2,1	1,6	2,1			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	890	94,0	0,77	158	7,7	2,0	1,8	2,4			6,000	1080

¹⁾ currents at 400 V

Other voltages and frequencies on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage range, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 50 cps

Type	P kW	Tempe- rature class	n rpm	cos φ -	I 380...420 V A	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	t _e -time T3,T1,T2 s	J kgm ²	m kg	
Synchronous speed 3000 rpm - 2-pole design													
KPER 63 K2	0,18	T1-T3	2710...2810	0,85...0,75	0,53	3,7	1,6	1,6	2,0	29	30	0,00013	4,9
KPER 63 GX2	0,25	T1-T3	2700...2760	0,88...0,83	0,6	4,2	2,2	2,1	2,2	25	29	0,00015	5,2
KPER 71 K2	0,37	T1-T3	2700...2780	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	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	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	0,86...0,76	2,6	5,6	2,3	2,3	2,5	8	10	0,00072	11,5
KPER 90 S2	1,30	T1-T3	2830...2860	0,90...0,85	2,75	6,5	2,2	2,2	2,6	14	16	0,00132	16
KPER 90L2	1,85	T1-T3	2850...2880	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	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	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	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	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	0,92	10,1	7,0	2,1	1,3	2,6	16	35	0,0258	88
K11R 160 M2	7,5	T1-T3	2945	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	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	0,91	23	7,0	1,8	1,4	2,8	10	27	0,0675	138
K11R 180 M2	15,0	T1-T3	2945	0,92	27	6,6	1,8	1,5	2,6	13	30	0,105	175
K11R 200 L2	20	T1-T3	2935	0,92	36	6,2	1,8	1,4	2,4	8	25	0,128	210
K11R 200 LX2	24	T1-T3	2950	0,90	43,0	6,6	1,6	1,2	2,5	9	24	0,193	255
K11R 225 M2	28	T1-T3	2970	0,91	50	7,1	1,5	1,0	2,6	14	30	0,375	360
K11R 250 M2	36	T1-T3	2970	0,93	63	6,8	1,9	1,5	2,6	18	40	0,65	490
K11R 280 S2	47	T1-T3										1,21	730
K11R 280 M2	58	T1-T3	2975	0,88	107	6,7	1,4	1,3	2,1	21	35	1,44	815
K11R 315 S2	68	T1-T3										1,44	850
K11R 315 M2	80	T1-T3										1,76	970
K11R 315 MY2	110	T1-T3										2,82	1170

Other voltages and frequencies on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage range, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 50 cps

Type	P	Temperature class	n	cos φ	I	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	t _E -time	J	m	
	kW		rpm	-	380...420 V A					T3,T1,T2 s	kgm ²	kg	
Synchronous speed 1500 rpm - 4-pole design													
KPER 63 K4	0,12	T1-T3	not possible in voltage range								0,00019	4,8	
KPER 63 G4	0,18	T1-T3	possible with 0,12 kW								0,00024	5,2	
KPER 71 K4	0,25	T1-T3	1350...1390	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	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	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	0,84...0,77	2,00	3,8	1,9	1,8	1,9	16	20	0,00107	11,7
KPER 90 S4	1,00	T1-T3	1395...1415	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	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	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	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	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	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	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	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	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	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	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	0,87	45,0	6,4	1,8	1,5	2,4	8	30	0,275	270
K11R 225 S4	30	T1-T3	1475	0,85	59,0	5,7	1,6	1,4	1,9	12	30	0,525	380
K11R 225 M4	36	T1-T3	1480	0,85	69,0	7,0	2,2	1,7	2,3	7	20	0,525	385
K11R 250 M4	44	T1-T3	1485	0,86	83	6,9	1,8	1,6	2,1	9	29	0,95	530
K11R 280 S4	58	T1-T3										1,96	765
K11R 280 M4	70	T1-T3	1485	0,84	135	7,1	2,0	1,8	2,4	11	30	2,27	840
K11R 315 S4	84	T1-T3										2,27	875
K11R 315 M4	100	T1-T3										2,73	1000
K11R 315 MY4	110	T1-T3										4,82	1200

Other voltages and frequencies on inquiry.

T1,T2-design on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage range, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 50 cps

Type	P	Tempe- rature class	n	cos φ	I	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	t _e -time	J	m		
	kW		rpm	-	380...420 V A					T3,T1,T2 s s	kgm ²	kg		
Synchronous speed 1000 rpm - 6-pole design														
KPER	80 K6	0,37	T1-T3	905...930	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	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	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	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	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	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	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	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	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	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	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	0,88..0,84	51,0	5,4	2,1	1,8	2,3	10	35	0,825	360
K11R	250 M6	33	T1-T3										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	0,90...0,88	116	7,0	2,2	1,8	2,5	8	28	3,33	840
K11R	315 M6	76	T1-T3										3,60	890
K11R	315 MY6	85	T1-T3										6,00	1080

Other voltages and frequencies on inquiry.

T1,T2-design on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Three-phase motors with squirrel-cage rotor

Increased-safety type of protection EEx e II according to DIN EN 50014/50019
 for design voltage range, temperature classes T1, T2 and T3
 with surface cooling, duty type S1, continuous duty
 insulation class F, degree of protection IP 54, 50 cps

Type	P	Temperature class	n	cos φ	I	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	t _E -time	J	m		
	kW		rpm	-	380...420 V A					T3,T1,T2 s s	kgm ²	kg		
Synchronous speed 750 rpm - 8-pole design														
KPER	80 K8	0,18	T1-T3	not possible in voltage range										
KPER	80 G8	0,25	T1-T3	655...680	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	90L8	0,55	T1-T3	not possible in voltage range										
KPER	100 L8	0,65	T1-T3	690...705	0,67...0,60	2,3	2,9	1,5	1,5	1,8	60	70	0,00625	23
KPER	100 LX8	0,95	T1-T3	700...710	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	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	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	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	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	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	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	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										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										6,00	1080

Other voltages and frequencies on inquiry.

T1,T2-design on inquiry.

Modifications of motors not yet certified by the PTB are possible!

Basic design

Type	D-side				N-side			fixed bearing
	Antifriction bearing	V-type seal	γ-type seal	Wave washer	Antifriction bearing	V-type seal	Wave washer	
KPER 63	6201 2Z C3	-	-	-	6201 2Z C3	-	32	without
KPER 71	6202 2Z C3	-	-	-	6202 2Z C3	-	35	without
KPER 80	6204 2Z C3	-	-	-	6204 2Z C3	-	47	without
KPER 90	6205 2Z C3	-	-	-	6205 2Z C3	-	52	without
KPER 100	6205 2Z C3	-	-	-	6205 2Z C3	-	52	without
KPER 100 LX	6206 2Z C3	-	-	-	6206 2Z C3	-	62	without
KPER 112 M	6206 2Z C3	-	-	-	6206 2Z C3	-	62	without
K11R 132 S, SX2,M6,8	6208 2Z C3	-	80	-	6207 2Z C3	-	-	without
K11R 132 M4,MX6	6308 2Z C3	-	90	-	6308 2Z C3	-	-	without
K11R 160 M6,8,MX8	6309 2Z C3	-	100	-	6308 2Z C3	-	-	without
K11R 160 M2,4,MX2, L	6310 2Z C3	-	110	-	6309 2Z C3	-	-	without
K11R 180 L8	6310 2Z C3	-	110	-	6309 2Z C3	-	-	without
K11R 180 M2	6310 C3	50A	110	-	6310 C3	50A	-	N-side
K11R 180 M4,L4,6	6312 C3	60A	-	130	6310 C3	50A	-	N-side
K11R 200 L2,6,8	6312 C3	60A	-	130	6310 C3	50A	-	N-side
K11R 200 LX2,6,L4	6312 C3	60A	-	130	6312 C3	60A	-	N-side
K11R 225 S8	6313 C3	65A	-	140	6312 C3	60A	-	N-side
K11R 225 M2	6313 C3	65A	-	140	6313 C3	65A	-	N-side
K11R 225 S4,M4,6,8	6314 C3	70A	-	150	6313 C3	65A	-	N-side
K11R 250 M2	6314 C3	70A	-	150	6314 C3	70A	-	N-side
K11R 250 M4,6,8 VL	NU 316 E	80A	-	-	6314 C3	70A	-	N-side
K11R 280 S2,M2	6316 C3	80A	-	170	6316 C3	80A	-	N-side
K11R 280 S4,6,8,M4,6,8 VL	NU 317 E	80A	-	-	6316 C3	80A	-	N-side
K11R 315 S2	6316 C3	80A	-	170	6316 C3	80A	-	N-side
K11R 315 M2 VL	NU 317 E	-	RB85	-	6316 C3	80A	-	N-side
K11R 315 S4,6,8 VL	NU 317 E	-	RB85	-	6316 C3	80A	-	N-side
K11R 315 M4,6,8 VL	NU 2220 E	-	RB100	-	6316 C3	80A	-	N-side
K11R 315 MY2 VL	NU 317 E	-	RB85	-	6317 C3 *)	85A	-	N-side
K11R 315 MY4,6,8 VL	NU 320 E	-	RB100	-	6317 C3 *)	85A	-	N-side

*) In case of vertical types of construction Q317 C3; size 315 as standard with relubricating device

Special design „heavy bearing arrangement“

Type	D-side		N-side		fixed bearing
	Antifriction bearing	V-type rotary seal	Antifriction bearing	V-type rotary seal	
K11R 132 S, SX2,M6,8	NU 208 E	40A	6207 2Z C3	-	N-side
K11R 132 M4,MX6	NU 308 E	40A	6308 2Z C3	-	N-side
K11R 160 M6,8,MX8	NU 309 E	45A	6308 2Z C3	-	N-side
K11R 160 M2,4,MX2,L	NU 310 E	50A	6309 2Z C3	-	N-side
K11R 180 L8	NU 310 E	50A	6309 2Z C3	-	N-side
K11R 180 M2	NU 310 E	50A	6310 C3	50A	N-side
K11R 180 M4,L4,6	NU 312 E	60A	6310 C3	50A	N-side
K11R 200 L2,6,8	NU 312 E	60A	6310 C3	50A	N-side
K11R 200 LX2,6,L4	NU 312 E	60A	6312 C3	60A	N-side
K11R 225 S8	NU 313 E	65A	6312 C3	60A	N-side
K11R 225 M2	NU 313 E	65A	6313 C3	60A	N-side
K11R 225 S4,M4,6,8	NU 314 E	70A	6313 C3	65A	N-side
K11R 250 M2	NU 314 E	70A	6314 C3	70A	N-side
K11R 280 S2,M2	NU 316 E	80A	6316 C3	80A	N-side
K11R 315 S2	NU 316 E	80A	6316 C3	80A	N-side

Basic design

Type	Terminal box	Terminal plate according to DIN 46 295	Thread of the terminal stud	max. design current	Entry	Cable diameter range
KPER 63 - 80 KPER 90 - 112	AISI10 Mg			16 A	M20x1,5-Ms M25x1,5-Ms	7 - 13 mm 9 - 17 mm
K11R 132	GG25	KS 10 A	S 10x1	40 A	M32x1,5-Ms	11 - 21 mm
K11R 160 M6,8	GG 25	KS 10 A	S 10x1	40 A	M32x1,5-Ms	11 - 21 mm
K11R 160 MX8	GG 25	KS 10 A	S 10x1	40 A	M32x1,5-Ms	11 - 21 mm
K11R 160 M2,4	GG 63	KS 14 A	S 14x1,25	53 A	M40x1,5-Ms	19 - 28 mm
K11R 160 MX2	GG 63	KS 14 A	S 14x1,25	65 A	M40x1,5-Ms	19 - 28 mm
K11R 160 L	GG 63	KS 14 A	S 14x1,25	65 A	M40x1,5-Ms	19 - 28 mm
K11R 180 M	GG 63	KS 14 A	S 14x1,25	65 A	M40x1,5-Ms	19 - 28 mm
K11R 180 L	GG 63	KS 14 A	S 14x1,25	65 A	M40x1,5-Ms	19 - 28 mm
K11R 200 L2,6,8	GG 63/100	KS 14 A	S 14x1,25	65 A	M50x1,5-Ms	27 - 35 mm
K11R 200 L4	GG100	KS 14 A	S 14x1,25	65 A	M50x1,5-Ms	27 - 35 mm
K11R 200 LX2,6	GG100	KS 14 A	S 14x1,25	65 A	M50x1,5-Ms	27 - 35 mm
K11R 225	GG100	KS 14 A	S 14x1,25	65 A	M50x1,5-Ms	27 - 35 mm
K11R 250	GG200	KS 18 A	S 18x1,5	110 A	M63x1,5-Ms	34 - 45 mm
K11R 280	GG200	KS 18 A	S 18x1,5	110 A	M63x1,5-Ms	34 - 45 mm
K11R 315	GG200	KS 18 A	S 18x1,5	110 A	M63x1,5-Ms	34 - 45 mm

Motor selection data

Design point 400 V, 50 cps, EEx d, de

Three-phase motors with squirrel-cage rotor

Flame-proof enclosure type of protection EEx d II acc. to DIN EN 50014/50018

temperature class T4

with surface cooling, duty type S1, continuous duty

insulation class F, degree of protection IP 54, 50 cps

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 3000 rpm - 2-pole design											
K8.R	63 K 2	0,18	2710	64,0	0,85	0,48	3,8	2,5	3,0	0,00011	13
K8.R	63 L 2	0,25	2740	67,0	0,85	0,63	4,2	2,6	3,1	0,00018	14
K8.R	71 K 2	0,37	2800	68,0	0,81	0,97	4,5	2,7	3,5	0,00028	16
K8.R	71 L 2	0,55	2820	72,0	0,82	1,34	4,9	2,8	3,6	0,00039	17
K8.R	80 K 2	0,75	2790	74,0	0,84	1,74	4,8	2,7	3,3	0,00058	24
K8.R	80 L 2	1,10	2820	78,0	0,85	2,40	5,5	2,8	3,5	0,00080	25
K8.R	90 L 2	1,50	2840	79,0	0,86	3,20	5,5	2,7	3,2	0,00130	31
K8.R	90 LX 2	2,20	2850	82,0	0,86	4,50	5,6	2,7	3,3	0,00180	35
K8.R	100 L 2	3,0	2850	83,0	0,87	6,00	6,8	2,7	3,3	0,00290	45
K8.R	112 M 2	4,0	2880	85,0	0,88	7,70	6,5	2,3	3,1	0,00051	53
K8.R	132 S 2	5,5	2880	85,0	0,86	10,9	6,0	2,5	3,3	0,0089	95
K8.R	132 SX 2	7,5	2910	86,5	0,86	14,6	6,8	2,7	3,5	0,0125	100
K8.R	160 M 2	11,0	2925	88,5	0,89	20,0	6,6	2,8	3,2	0,0320	163
K8.R	160 MX 2	15,0	2920	89,5	0,92	26,5	6,8	2,8	3,2	0,0430	173
K8.R	160 L 2	18,5	2925	91,0	0,92	32,0	6,8	2,6	3,1	0,0520	188
K8.R	180 M 2	22,0	2925	91,7	0,92	37,5	6,9	2,5	3,0	0,075	196
K8.R	200 L 2	30	2955	92,5	0,90	52	7,2	2,6	2,9	0,130	254
K8.R	200 LX 2	37	2955	93,0	0,90	64	7,2	2,7	3,0	0,160	278
K8.R	225 M 2	45	2960	93,0	0,89	78	7,1	2,5	3,0	0,240	400
K8.R	250 M 2	55	2970	93,8	0,89	95	7,1	2,4	2,8	0,400	545
K8.R	280 S 2	75	2970	94,5	0,90	127	6,8	2,2	2,7	0,650	700
K8.R	280 M 2	90	2970	94,5	0,90	153	6,6	2,4	2,8	0,780	762
K8.R	315 S 2	110	2975	95,0	0,90	186	6,3	2,0	2,4	1,40	960
K8.R	315 M 2	132	2975	95,5	0,90	220	6,8	2,1	2,5	1,60	1025
K8.R	315 L 2	160	2975	95,7	0,90	270	6,9	2,4	2,7	1,70	1065
K8.R	315 LX 2	200	2980	95,8	0,90	335	6,9	2,3	2,6	2,20	1270
K8.R	315 LY2	250	2980	96,0	0,91	415	7,2	1,7	2,7	2,80	1420
K8.R	355 M 2	315	2980	96,8	0,92	510	6,7	1,5	2,8	4,50	1900
K8.R	355 L 2	355	2985	96,8	0,93	570	6,9	1,4	2,7	5,00	2050
K8.R	400 M 2	400	2990	96,9	0,94	635	6,7	1,1	2,8	7,50	2500

Other voltages and frequencies on inquiry

Motor selection data

Design point 400 V, 50 cps, EEx d, de

Three-phase motors with squirrel-cage rotor

Flame-proof enclosure type of protection EEx d II acc. to DIN EN 50014/50018

temperature class T4

with surface cooling, duty type S1, continuous duty

insulation class F, degree of protection IP 54, 50 cps

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_R/M	J	m
	kW	rpm	%	-	400 V A				kgm ²	kg
Synchronous speed 1500 rpm - 4-pole design										
K8.R 63 K 4	0,12	1330	52,0	0,73	0,48	2,7	2,2	2,6	0,00020	13
K8.R 63 L 4	0,18	1350	60,0	0,74	0,59	3,1	2,0	2,5	0,00025	14
K8.R 71 K 4	0,25	1370	64,0	0,80	0,70	3,5	2,0	2,5	0,00046	16
K8.R 71 L 4	0,37	1380	70,0	0,80	0,95	3,6	2,2	2,6	0,00063	17
K8.R 80 K 4	0,55	1380	73,0	0,80	1,36	3,8	2,0	2,3	0,00092	24
K8.R 80 L 4	0,75	1400	75,0	0,79	1,83	4,2	2,1	2,5	0,00130	25
K8.R 90 L 4	1,10	1400	76,0	0,84	2,50	4,8	2,1	2,5	0,00210	31
K8.R 90 LX 4	1,50	1405	79,0	0,84	3,25	5,0	2,3	2,7	0,00290	35
K8.R 100 L 4	2,2	1420	80,0	0,80	4,95	5,4	2,4	2,8	0,00460	44
K8.R 100 LX 4	3,0	1415	80,5	0,82	6,6	5,5	2,3	2,7	0,00560	46
K8.R 112 M 4	4,0	1435	85,0	0,84	8,1	6,8	2,7	3,2	0,01100	59
K8.R 132 S 4	5,5	1440	86,5	0,86	10,7	6,2	2,5	2,7	0,0220	100
K8.R 132 SX 4	7,5	1440	88,0	0,86	14,3	6,5	2,7	2,8	0,0300	110
K8.R 160 M 4	11,0	1460	89,5	0,85	21,0	6,6	2,5	2,8	0,0570	168
K8.R 160 MX 4	15,0	1455	90,0	0,86	28,0	6,5	2,8	3,1	0,0790	184
K8.R 180 M 4	18,5	1460	91,0	0,84	35,0	6,6	2,9	3,0	0,130	198
K8.R 180 L 4	22,0	1460	91,5	0,85	41,0	6,9	3,0	3,0	0,155	217
K8.R 200 L 4	30	1460	92,5	0,88	53	6,8	2,6	2,9	0,250	274
K8.R 225 S 4	37	1465	93,0	0,89	65	6,7	2,7	2,6	0,400	372
K8.R 225 M 4	45	1470	93,0	0,89	78	6,5	2,7	2,6	0,480	402
K8.R 250 M 4	55	1470	93,8	0,89	95	7,1	2,9	2,9	0,750	573
K8.R 280 S 4	75	1480	94,5	0,86	133	6,8	2,6	2,5	1,250	740
K8.R 280 M 4	90	1480	94,5	0,86	160	6,9	2,8	2,6	1,480	820
K8.R 315 S 4	110	1485	95,1	0,86	194	6,7	2,5	2,6	2,20	1040
K8.R 315 M 4	132	1485	95,3	0,86	230	6,8	2,5	2,7	2,70	1120
K8.R 315 L 4	160	1485	95,6	0,87	280	6,9	2,6	2,6	3,10	1210
K8.R 315 LX 4	200	1485	95,8	0,87	345	6,9	2,6	2,6	3,90	1430
K8.R 315 LY 4	250	1485	96,0	0,89	420	7,3	1,7	2,7	4,60	1565
K8.R 355 M 4	315	1490	96,3	0,89	530	6,9	1,5	2,7	6,10	2050
K8.R 355 L 4	355	1490	96,6	0,89	595	6,9	1,6	2,8	6,70	2200
K8.R 400 M 4	400	1495	97,0	0,91	660	6,7	1,3	2,8	16,0	2650
K8.R 400 L 4	450	1495	97,0	0,91	735	6,5	1,1	2,7	18,0	2850
K8.R 450 M 4	500	1495	97,2	0,91	815	6,9	1,0	2,7	23,0	3300
K8.R 450 L 4	560	1495	97,4	0,91		6,8	1,0	2,7	26,0	3500
K8.R 450 LX 4	630	1495	97,4	0,91		6,8	1,0	2,7	31,0	3800

Other voltages and frequencies on inquiry

Three-phase motors with squirrel-cage rotor

Flame-proof enclosure type of protection EEx d II acc. to DIN EN 50014/50018

temperature class T4

with surface cooling, duty type S1, continuous duty

insulation class F, degree of protection IP 54, 50 cps

Type		P	n	η	$\cos \varphi$	I	I_{Δ}/I	M_{Δ}/M	M_k/M	J	m
		kW	rpm	%	-	400 V A				kgm ²	kg
Synchronous speed 1000 rpm - 6-pole design											
K8.R	71 L 6	0,25	920	63,5	0,71	0,80	3,5	2,2	2,6	0,0012	17
K8.R	80 K 6	0,37	925	68,0	0,72	1,11	4,1	2,5	2,8	0,0019	24
K8.R	80 L 6	0,55	925	70,0	0,72	1,58	4,0	2,4	2,7	0,0025	25
K8.R	90 L 6	0,75	910	67,0	0,75	2,15	3,4	1,8	2,1	0,0033	31
K8.R	90 LX 6	1,10	920	71,0	0,73	3,05	3,7	2,0	2,2	0,0046	35
K8.R	100 L 6	1,5	945	77,0	0,75	3,75	4,9	2,5	3,0	0,0095	46
K8.R	112 M 6	2,2	950	81,0	0,74	5,30	5,6	2,7	3,1	0,0170	59
K8.R	132 S 6	3,0	965	84,0	0,78	6,60	6,3	2,7	3,1	0,0310	100
K8.R	132 M 6	4,0	960	84,5	0,79	8,60	6,0	2,6	3,0	0,0370	104
K8.R	132 MX 6	5,5	960	85,5	0,82	11,3	6,4	2,6	3,0	0,0430	112
K8.R	160 M 6	7,5	960	86,5	0,85	14,7	6,8	2,5	3,3	0,0870	170
K8.R	160 L 6	11,0	965	87,5	0,85	21,5	6,7	2,5	3,2	0,1200	190
K8.R	180 L 6	15,0	965	90,0	0,84	28,5	6,9	2,4	3,2	0,190	215
K8.R	200 L 6	18,5	975	90,5	0,84	35,0	6,2	1,9	2,7	0,280	270
K8.R	200 LX 6	22	970	91,0	0,84	41,5	6,8	2,2	3,0	0,310	280
K8.R	225 M 6	30	975	92,0	0,84	56	6,6	2,8	2,5	0,690	404
K8.R	250 M 6	37	980	92,5	0,85	68	6,6	2,8	2,6	1,03	570
K8.R	280 S 6	45	985	93,3	0,83	84	5,8	2,8	2,4	1,35	720
K8.R	280 M 6	55	985	93,5	0,83	102	5,8	2,7	2,3	1,70	770
K8.R	315 S 6	75	990	94,6	0,87	132	6,4	2,6	2,4	4,30	995
K8.R	315 M 6	90	990	95,0	0,88	155	6,5	2,6	2,4	5,00	1050
K8.R	315 L 6	110	990	95,2	0,88	190	6,5	2,7	2,5	6,00	1145
K8.R	315 LX 6	132	990	95,4	0,88	225	6,7	2,7	2,5	7,30	1265
K8.R	315 LY 6	160	990	95,4	0,88	275	6,8	2,6	2,5	8,30	1440
K8.R	355 M 6	200	990	95,6	0,88	345	6,7	1,8	2,7	11,3	1750
K8.R	355 L 6	250	990	95,9	0,88	430	6,7	1,8	2,7	13,8	1950
K8.R	400 M 6	315	993	96,3	0,89	530	6,5	1,0	2,6	23,0	2650
K8.R	400 L 6	355	994	96,6	0,89	595	6,7	1,1	2,7	27,0	2850
K8.R	450 M 6	400	995	96,8	0,90	665	6,9	1,0	2,6	41,0	3300
K8.R	450 L 6	450	995	96,6	0,89	755	6,8	1,2	2,8	46,0	3600
K8.R	450 LX 6	500	995	97,0	0,89		6,8	1,1	2,7	x	3800

Other voltages and frequencies on inquiry

Three-phase motors with squirrel-cage rotor

Flame-proof enclosure type of protection EEx d II acc. to DIN EN 50014/50018

temperature class T4

with surface cooling, duty type S1, continuous duty

insulation class F, degree of protection IP 54, 50 cps

Type		P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_R/M	J	m
		kW	rpm	%	-	400 V A				kgm ²	kg
Synchronous speed 750 rpm - 8-pole design											
K8.R	71 L 8	0,12	680	52,0	0,67	0,50	2,4	1,9	2,4	0,0012	17
K8.R	80 K 8	0,18	690	61,0	0,65	0,66	3,2	2,2	2,6	0,0019	24
K8.R	80 L 8	0,25	690	62,0	0,64	0,91	3,2	2,2	2,5	0,0025	25
K8.R	90 L 8	0,37	690	64,0	0,63	1,32	3,0	1,8	2,2	0,0033	31
K8.R	90 LX 8	0,55	690	65,0	0,65	1,88	3,1	1,8	2,2	0,0046	35
K8.R	100 L 8	0,75	710	71,0	0,67	2,30	4,0	2,4	2,6	0,0080	44
K8.R	100 LX 8	1,10	695	70,0	0,73	3,10	3,8	2,0	2,4	0,0095	46
K8.R	112 M 8	1,5	710	77,0	0,67	4,20	4,6	2,2	2,8	0,017	59
K8.R	132 S 8	2,2	695	81,0	0,79	4,95	4,1	2,0	2,3	0,029	97
K8.R	132 M 8	3,0	705	81,5	0,77	6,90	4,6	2,4	2,7	0,036	113
K8.R	160 M 8	4,0	715	84,0	0,78	8,8	4,6	1,8	2,3	0,071	157
K8.R	160 MX 8	5,5	720	86,0	0,77	12,0	5,4	2,1	2,8	0,105	170
K8.R	160 L 8	7,5	720	86,5	0,79	15,8	5,6	2,2	2,9	0,136	190
K8.R	180 L 8	11,0	725	88,5	0,80	22,5	6,4	2,4	3,0	0,22	215
K8.R	200 L 8	15,0	730	89,0	0,79	31,0	6,9	2,7	3,2	0,40	280
K8.R	225 S 8	18,5	730	90,2	0,79	37,5	6,3	2,2	3,0	0,56	372
K8.R	225 M 8	22	730	90,5	0,80	44,0	6,6	2,2	3,0	0,69	404
K8.R	250 M 8	30	735	92,1	0,80	59	6,8	2,0	3,0	1,20	550
K8.R	280 S 8	37	735	92,8	0,82	70	6,2	2,1	2,8	1,90	740
K8.R	280 M 8	45	735	92,8	0,82	84	6,3	2,0	2,6	2,30	800
K8.R	315 S 8	55	740	93,5	0,83	102	6,0	2,5	2,6	4,30	995
K8.R	315 M 8	75	740	93,7	0,84	138	6,3	2,5	2,5	5,00	1050
K8.R	315 L 8	90	740	94,0	0,84	165	6,5	2,6	2,6	6,00	1145
K8.R	315 LX 8	110	740	94,2	0,83	205	6,6	2,7	2,7	7,30	1265
K8.R	315 LY 8	132	740	94,2	0,85	245	6,7	2,5	2,5	8,30	1440
K8.R	355 M 8	160	740	95,1	0,83	295	6,4	1,9	2,4	11,4	1750
K8.R	355 L 8	200	745	95,5	0,83	365	6,6	1,7	2,5	13,9	1950
K8.R	400 M 8	250	745	96,0	0,83	455	6,1	1,2	2,4	23,0	2650
K8.R	400 L 8	315	745	96,2	0,84	565	6,2	1,2	2,4	30,0	3100
K8.R	450 M 8	355	745	96,5	0,84	630	6,1	1,0	2,3	46,0	3450
K8.R	450 L 8	400	745	96,6	0,84	710	6,1	1,0	2,2	51,0	3750
K8.R	450 LX 8	450	745	96,7	0,84	800	6,1	1,0	2,2	57,0	4050

Constructive selection data

Dimensions

Three-phase motors with squirrel cage rotor, types K8.R

with surface cooling, type of cooling IC 411, degree of protection IP 55
flameproof enclosure type of protection

Type	Size	a B	a1 P	b A	b1 N	c HA	c1 LA	d D	d1 DA	e BB	e1 M	f AB	f1 T	g AC	k L	k1 LC	l E	l1 EA	m BA	n AA	p (IM B3) HD	p (IM B5) HD	p (IM B3, - EEX d)	p (IM B5, - EEX d)	r Pg	s K	s1 K	t GA	t1 GC	u F	u1 FA	
K8.R	63	K + L	80	140	100	95	10	9	11	11	100	115	130	3	136	246										2xM25x1,5	7	9,5	12,5	12,5	4	4
K8.R	71	K + L	90	160	112	110	10	9	14	14	110	130	140	3,5	150	282										2xM25x1,5	7	9,5	16	16	5	5
K8.R	80	K + L	100	200	125	130	12	12	19	19	130	165	160	3,5	168	314										2xM25x1,5	9,5	11,5	21,5	21,5	9,5	6
K8.R	90	L	125	200	140	130	12	12	24	24	155	165	180	3,5	188	358										2xM25x1,5	10,5	11,5	27	27	9,5	8
K8.R	100	L	140	250	160	180	15	16	28	28	175	215	200	4	208	414										2xM32x1,5	12	14	31	31	8	8
K8.R	112	M	140	250	190	180	17	16	28	28	175	215	235	4	230	432										2xM32x1,5	12	14	31	31	8	8
K8.R	132	S	140	300	216	230	20	20	38	38	225	265	266	4	275	541										2xM32x1,5	12	14	41	41	10	10
K8.R	132	M	178	300	216	230	20	20	38	38	225	265	266	4	275	541										2xM32x1,5	12	14	41	41	10	10
K8.R	160	M...2,6,8	210	350	254	250	25	20	42	42	300	300	310	5	326	706										2xM40x1,5	15	18	45	45	12	12
K8.R	160	M...4	210	350	254	250	25	20	42	42	300	300	310	5	326	637										2xM40x1,5	15	18	45	45	12	12
K8.R	160	L...2,6,8	254	350	254	250	25	20	42	42	300	300	310	5	326	706										2xM40x1,5	15	18	45	45	12	12
K8.R	160	L...4	254	350	254	250	25	20	42	42	300	300	310	5	326	637										2xM40x1,5	15	18	45	45	12	12
K8.R	180	M...2	241	350	279	250	25	20	48	48	300	300	350	5	358	702										2xM40x1,5	15	18	51,5	51,5	14	14
K8.R	180	M...4,6,8	241	350	279	250	25	20	48	48	300	300	350	5	358	682										2xM40x1,5	15	18	51,5	51,5	14	14
K8.R	180	L...2	279	350	279	250	25	20	48	48	340	300	350	5	358	740										2xM40x1,5	15	18	51,5	51,5	14	14
K8.R	180	L...4,6,8	279	350	279	250	25	20	48	48	340	300	350	5	358	690										2xM40x1,5	15	18	51,5	51,5	14	14
K8.R	200	L	305	400	318	300	30	20	55	55	365	350	390	5	400	813										2xM50x1,5	20	18	59	59	16	16
K8.R	225	S...4	286	450	356	350	32	22	60	60	370	400	450	5	455	890										2xM50x1,5	20	18	64	64	18	18
K8.R	225	S...8	286	450	356	350	32	22	60	60	370	400	450	5	455	835										2xM50x1,5	20	18	64	64	18	18
K8.R	225	M...2	311	450	356	350	32	22	55	55	395	400	450	5	455	910										2xM50x1,5	20	18	59	59	16	16
K8.R	225	M...4	311	450	356	350	32	22	60	60	395	400	450	5	455	940										2xM50x1,5	20	18	64	64	18	18
K8.R	225	M...6,8	311	450	356	350	32	22	60	60	395	400	450	5	455	890										2xM50x1,5	20	18	64	64	18	18
K8.R	250	M...2	349	550	406	450	35	18	60	60	420	500	510	5	480	1005										2xM 63x1,5	26	18	64	64	18	18
K8.R	250	M...4	349	550	406	450	35	18	65	65	420	500	510	5	480	1005										2xM 63x1,5	26	18	69	69	18	18
K8.R	250	M...6,8	349	550	406	450	35	18	65	65	420	500	510	5	480	1025										2xM 63x1,5	26	18	69	69	18	18
K8.R	280	S...2	368	550	457	450	40	18	65	65	470	500	570	5	550	1070										2xM63x1,5	26	18	69	69	18	18
K8.R	280	S...4,6,8	368	550	457	450	40	18	75	75	470	500	570	5	550	1070										2xM63x1,5	26	18	79,5	79,5	20	20
K8.R	280	M...2	419	550	457	450	40	18	65	65	520	500	570	5	550	1130										2xM63x1,5	26	18	69	69	18	18
K8.R	280	M...4,6,8	419	550	457	450	40	18	75	75	520	500	570	5	550	1130										2xM63x1,5	26	18	79,5	79,5	20	20
K8.R	315	S...2	406	660	508	550	30	22	65	65	520	550	630	6	635	1268										2xM63x1,5	30	24	69	69	18	18
K8.R	315	S...4	406	660	508	550	30	22	80	80	520	550	630	6	635	1298										2xM63x1,5	30	24	85	85	22	22
K8.R	315	S...6,8	406	660	508	550	30	22	80	80	520	550	630	6	635	1298										2xM63x1,5	30	24	85	85	22	22
K8.R	315	M...2	457	660	508	550	30	22	65	65	570	550	630	6	635	1268										2xM63x1,5	30	24	69	69	18	18
K8.R	315	M...4	457	660	508	550	30	22	80	80	570	550	630	6	635	1298										2xM63x1,5	30	24	85	85	22	22
K8.R	315	M...6,8	457	660	508	550	30	22	80	80	570	550	630	6	635	1298										2xM63x1,5	30	24	85	85	22	22
K8.R	315	L...2	508	660	508	550	30	22	65	65	621	550	630	6	635	1268										2xM63x1,5	30	24	69	69	18	18
K8.R	315	L...4	508	660	508	550	30	22	80	80	621	550	630	6	635	1298										2xM63x1,5	30	24	85	85	22	22
K8.R	315	L...6,8	508	660	508	550	30	22	80	80	621	550	630	6	635	1298										2xM63x1,5	30	24	85	85	22	22
K8.R	315	LX...2	508	660	508	550	30	22	65	65	621	550	630	6	635	1368										2xM63x1,5	30	24	69	69	18	18
K8.R	315	LX...4	508	660	508	550	30	22	80	80	621	550	630	6	635	1398										2xM63x1,5	30	24	85	85	22	22
K8.R	315	LX...6,8	508	660	508	550	30	22	80	80	621	550	630	6	635	1398										2xM63x1,5	30	24	85	85	22	22

Threaded center bores in the shaft end DIN 332-DS:

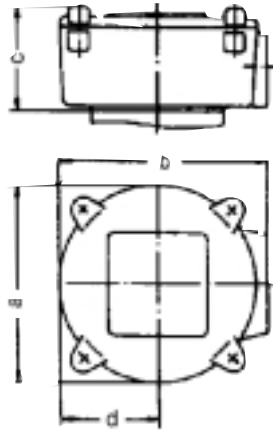
at diameter 11 up to 13 M4
at diameter 14 up to 16 M5
at diameter 17 up to 21 M6
at diameter 22 up to 24 M8
at diameter 25 up to 30 M10

at diameter 31 up to 38 M12
at diameter 39 up to 50 M16
at diameter 51 up to 90 M20
at diameter 51 up to 90 M21
at diameter 100 M24

Dimensions for K8.R 315 LY, 355, 400, 450 on inquiry

Tolerance for counter parts: H7
2nd shaft end only for direct coupling

Size	pole number	DS-bearing	NS-bearing
63	2,4	6003 2ZR	6003 2ZR
71	2,4	6004 2ZR	6004 2ZR
80	2,4,6	6204 2ZR	6204 2ZR
90	2,4,6	6205 2ZR	6205 2ZR
100	2,4,6,8	6206 2ZR C3	6206 2ZR C3
112	2,4,6,8	6206 2ZR C3	6206 2ZR C3
132	2,4,6,8	6208 2ZR C3	6208 2ZR C3
160	2,4,6,8	6209 2ZR C3	6209 2ZR C3
180	2,4,6,8	6210 2ZR C3	6210 2ZR C3
200	2,4,6,8	6212 2ZR C3	6212 2ZR C3
225	2,4,6,8	6213 2ZR C3	6213 2ZR C3
250	2,4,6,8	6215 2ZR C3	6213 2ZR C3
280	2,4,6,8	6216 2ZR C3	6215 2ZR C3
315	2	6216 C4	6216 C4
315	4,6,8	6218 C4	6216 C4
355	2	6218 C4	6218 C4
355	4,6,8	6220 C4	6220 C4



Size	Material	Dimensions in mm			
		a	b	c	d
63	GG	140	140	80	70
71	GG	140	140	80	70
80	GG	145	145	70	53
90	GG	145	145	70	53
100	GG	145	145	70	53
112	GG	145	145	70	53
132	GG	220	220	110	110
160	GG	220	220	110	110
180	GG	265	270	162	133
200	GG	265	270	162	133
225	GG	380	380	203	190
250	GG	380	380	203	190
280	GG	380	380	203	190
315	GG	380	380	203	190
355	GG	583	489	255	242

Three-phase motors with squirrel-cage rotor

with surface cooling, duty type S1, continuous duty

motors for the use in zone 2

non-sparking type of protection Ex nA II acc. to IEC 79-15, temperature class T1-T3

insulation class F, degree of protection IP 54, 50 cps

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_k/M	max. T	J	m
	kW	rpm	%	-	400 V A				°C	kgm ²	kg
Synchronous speed 3000 rpm - 2-pole design											
KPER 56 K2	0,09	2865	69,0	0,75	0,25	4,9	2,3	2,8	140	0,00013	4,4
KPER 56 G2	0,12	2830	69,0	0,78	0,32	4,5	2,1	2,3	140	0,00013	4,5
KPER 63 K2	0,18	2790	65,0	0,78	0,51	4,1	1,9	2,2	140	0,00013	4,9
KPER 63 G2	0,25	2800	67,0	0,73	0,74	4,2	2,2	2,4	150	0,00015	5,2
KPER 71 K2	0,37	2780	70,0	0,81	0,94	4,4	2,1	2,3	150	0,00025	6,7
KPER 71 G2	0,55	2775	74,0	0,81	1,32	4,9	2,3	2,6	160	0,00032	7,6
KPER 80 K2	0,75	2825	77,0	0,82	1,72	5,9	2,4	2,4	150	0,00057	10,7
KPER 80 G2	1,1	2835	77,0	0,81	2,55	6,0	2,4	2,6	180	0,00072	11,5
KPER 90 S2	1,5	2850	80,0	0,81	3,35	7,0	2,5	2,8	160	0,00132	16
KPER 90 L2	2,2	2850	81,0	0,86	4,55	7,5	2,8	2,9	170	0,00170	19
KPER 100 L2	3,0	2865	83,0	0,85	6,15	7,0	2,4	2,8	180	0,00275	25
KPER 112 M2	4,0	2900	83,0	0,83	8,4	7,0	2,2	2,9	170	0,0045	32
KPER 112 MX2 ¹⁾	5,5	2890	86,0	0,84	11	7,5	2,4	3,0	190	0,0055	38
K11R 132 SX2	7,5	2880	86,0	0,86	14,5	7,0	2,3	2,8	170	0,0110	57
K11R 160 M2	11	2900	88,5	0,90	20,0	7,0	2,4	3,0	175	0,0258	81
K11R 160 MX2	15	2920	89,0	0,90	27,0	7,0	2,3	2,9	165	0,0575	118
K11R 160 L2	18,5	2920	90,5	0,91	32,5	7,0	2,2	2,7	165	0,0675	134
K11R 180 M2	22	2935	91,5	0,92	37,5	6,0	1,8	2,5	165	0,105	165
K11R 200 L2	30	2935	91,8	0,92	51,5	6,5	1,9	2,6	180	0,128	195
K11R 200 LX2	37	2940	93,0	0,90	64,0	6,5	1,8	2,4	165	0,193	255
K11R 225 M2	45	2940	93,0	0,90	77,5	7,0	2,0	2,6	180	0,220	290
K11R 250 M2	55	2955	93,7	0,91	93,0	7,0	2,3	2,5	165	0,375	360
K11R 280 S2	75	2965	94,6	0,92	124	6,5	1,7	2,3	140	0,650	490
K11R 280 M2	90	2970	94,2	0,92	150	7,0	1,8	2,6	155	0,675	510
K11R 315 S2	110	2975	95,4	0,91	183	7,0	1,8	2,5	150	1,21	720
K11R 315 M2	132	2975	95,4	0,91	219	7,0	1,7	2,4	160	1,44	800
K11R 315 MX2	160	2970	95,5	0,92	263	7,0	2,0	2,5	150	1,76	980
K11R 315 MY2	200	2965	95,8	0,92	328	7,0	2,6	2,7	165	2,82	1170
K11R 315 L2	250	2975	95,0	0,93	408	7,1	2,7	2,4	180	3,66	1395
K12R 355 M2	315	2985	96,8	0,91	520	8,2	1,4	3	150	4,2	2000
K12R 355 MX2	355	2985	96,9	0,91	580	8,5	1,4	2,9	170	5,6	2200
K12R 355 LY2	400	2985	97,1	0,91	650	8,6	1,6	2,9	180	7,1	2400
K12R 355 L2	450	2985	97,2	0,92	725	9,0	2,0	2,8	190	7,1	2400

max. T: maximum surface temperature (incl. rotor)

¹⁾ also available as K11R 132 S2

Three-phase motors with squirrel-cage rotor

with surface cooling, duty type S1, continuous duty

motors for the use in zone 2

non-sparking type of protection Ex nA II acc. to IEC 79-15, temperature class T1-T3

insulation class F, degree of protection IP 54, 50 cps

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_k/M	max. T	J	m
	kW	rpm	%	-	400 V A				°C	kgm ²	kg
Synchronous speed 1500 rpm - 4-pole design											
KPER 56 K4	0,06	1410	59,0	0,61	0,24	3,1	2,3	2,7	140	0,00019	4,3
KPER 56 G4	0,09	1375	60,0	0,70	0,31	3,2	1,9	2,2	140	0,00019	4,4
KPER 63 K4	0,12	1370	56,0	0,70	0,44	3,2	1,9	2,2	150	0,00019	4,8
KPER 63 G4	0,18	1360	58,0	0,69	0,65	3,3	2,0	2,3	160	0,00024	5,2
KPER 71 K4	0,25	1385	64,0	0,72	0,78	3,6	1,8	2,1	140	0,00040	6,8
KPER 71 G4	0,37	1370	66,0	0,76	1,06	3,8	2,0	2,2	160	0,00050	7,8
KPER 80 K4	0,55	1400	69,0	0,72	1,60	4,1	2,1	2,3	180	0,00087	10,6
KPER 80 G4	0,75	1400	72,0	0,72	2,10	4,6	2,2	2,3	160	0,00107	11,7
KPER 90 S4	1,10	1410	76,0	0,80	2,62	5,5	2,3	2,5	150	0,00207	15,5
KPER 90 L4	1,50	1400	77,0	0,83	3,40	5,5	2,5	2,6	160	0,00260	18
KPER 100 L4	2,20	1420	79,0	0,78	5,15	6,0	3,0	3,1	170	0,00400	23,5
KPER 100 LX4	3,00	1430	82,6	0,79	6,65	6,4	2,3	2,8	170	0,00725	30
KPER 112 M4	4,00	1435	83,0	0,79	8,80	6,9	2,6	3,0	180	0,0090	37
KPER 112 MX4 ¹⁾	5,5	1425	84,0	0,78	12,1	6,3	2,5	2,9	195	0,0110	45
K11R 132 M4	7,5	1440	85,0	0,82	15,5	5,5	2,0	2,4	160	0,028	69
K11R 160 M4	11,0	1440	87,0	0,83	22,0	6,0	2,1	2,4	165	0,035	86
K11R 160 L4	15,0	1455	89,0	0,86	28,5	6,0	2,1	2,5	170	0,078	120
K11R 180 M4	18,5	1455	90,0	0,86	34,5	6,0	2,3	2,5	180	0,090	136
K11R 180 L4	22	1470	90,5	0,86	41,0	6,5	2,2	2,6	180	0,138	170
K11R 200 L4	30	1465	91,5	0,87	54,5	6,0	2,0	2,4	190	0,168	200
K11R 225 S4	37	1470	92,5	0,86	67,0	6,5	2,0	2,5	180	0,275	270
K11R 225 M4	45	1470	93,0	0,86	81,0	6,5	2,2	2,5	195	0,313	300
K11R 250 M4	55	1475	93,5	0,86	98,5	7,0	2,4	2,3	180	0,525	375
K11R 280 S4	75	1480	94,1	0,86	134	7,0	2,0	2,2	170	0,950	520
K11R 280 M4	90	1480	94,6	0,86	160	7,0	2,1	2,2	175	1,100	580
K11R 315 S4	110	1480	94,8	0,86	195	7,0	2,1	2,4	160	1,96	740
K11R 315 M4	132	1480	95,0	0,87	231	7,0	2,1	2,4	160	2,27	840
K11R 315 MX4	160	1480	95,0	0,87	279	6,5	1,8	2,2	170	2,73	1000
K11R 315 MY4	200	1480	95,5	0,88	343	6,8	2,0	2,4	180	4,82	1200
K11R 315 L4	250	1480	95,0	0,89	427	7,7	1,8	2,2	180	5,93	1410
K12R 355 M4	315	1495	96,8	0,85	555	9,0	2,0	3,4	150	5,6	1950
K12R 355 MX4	355	1495	96,8	0,84	630	9,2	2,0	3,8	160	7,9	2150
K12R 355 LY4	400	1495	96,8	0,82	730	9,0	2,1	4,0	170	9,5	2400
K12R 355 L4	450	1490	96,7	0,79	850	8,7	1,9	4,0	185	9,5	2400

max. T: maximum surface temperature (incl. rotor)

¹⁾ also available as K11R 132 S2

Three-phase motors with squirrel-cage rotor

with surface cooling, duty type S1, continuous duty

motors for the use in zone 2

non-sparking type of protection Ex nA II acc. to IEC 79-15, temperature class T1-T3

insulation class F, degree of protection IP 54, 50 cps

Type	P	n	η	$\cos \varphi$	I	I_{Δ}/I	M_{Δ}/M	M_k/M	max. T	J	m
	kW	rpm	%	-	400 V A				°C	kgm ²	kg
Synchronous speed 1000 rpm - 6-pole design											
KPER 63 K6	0,09	895	48,0	0,59	0,46	2,5	2,0	2,4	150	0,00024	4,9
KPER 63 G6	0,12	880	50,0	0,59	0,59	2,5	2,0	2,3	160	0,00027	5,7
KPER 71 K6	0,18	925	57,0	0,52	0,88	2,8	1,6	2,1	160	0,00045	7,4
KPER 71 G6	0,25	915	59,0	0,56	1,10	2,9	2,0	2,2	180	0,00060	8,3
KPER 80 K6	0,37	915	63,0	0,70	1,22	3,4	2,0	2,0	150	0,00130	11
KPER 80 G6	0,55	915	67,0	0,69	1,73	3,7	2,2	2,4	170	0,00175	12,5
KPER 90 S6	0,75	935	69,0	0,65	2,43	4,5	2,4	2,6	140	0,00325	16
KPER 90 L6	1,10	935	73,0	0,69	3,15	4,6	2,2	2,4	180	0,00425	19
KPER 100 L6	1,50	945	76,0	0,73	3,90	4,6	2,1	2,4	160	0,00625	24
KPER 112 M6	2,20	950	78,0	0,76	5,35	5,3	2,2	2,7	150	0,01225	33,5
K11R 132 S6	3,0	950	78,0	0,81	6,9	5,5	2,0	2,8	130	0,0180	46
K11R 132 M6	4,0	950	80,0	0,80	9,0	6,0	2,3	3,0	130	0,0230	53
K11R 132 MX6	5,5	955	83,0	0,83	11,5	5,0	1,9	2,4	140	0,0430	70
K11R 160 M6	7,5	960	85,0	0,82	15,5	5,5	2,0	2,5	150	0,0530	86
K11R 160 L6	11,0	965	85,0	0,85	22,0	5,0	2,0	2,3	165	0,113	114
K11R 180 L6	15,0	965	86,0	0,83	30,5	5,5	2,4	2,7	180	0,145	136
K11R 200 L6	18,5	965	88,0	0,87	35,0	5,5	2,0	2,4	170	0,228	175
K11R 200 LX6	22	970	88,5	0,87	41,0	6,0	2,2	2,7	180	0,268	200
K11R 225 M6	30	973	90,3	0,87	55,0	6,0	2,2	2,5	180	0,443	265
K11R 250 M6	37	973	91,0	0,89	66,0	6,0	2,0	2,3	165	0,825	360
K11R 280 S6	45	980	92,0	0,87	81,0	6,0	2,0	2,0	155	1,28	465
K11R 280 M6	55	980	92,5	0,88	97,5	6,0	2,1	2,2	155	1,48	520
K11R 315 S6	75	985	93,5	0,87	133	6,5	2,0	2,4	140	2,63	690
K11R 315 M6	90	990	94,0	0,88	157	6,5	2,0	2,4	140	3,33	800
K11R 315 MX6	110	985	94,0	0,88	192	7,0	2,3	2,6	165	3,60	880
K11R 315 MY6	132	985	95,0	0,88	228	7,0	2,4	2,6	165	6,00	1050
K11R 315 L6	160	985	93,5	0,87	284	7,0	2,1	2,4	180	6,76	1155
K12R 355 M6	200	995	96,0	0,84	360	9,2	2,0	3,5	190	8,2	1650
K12R 355 MX6	250	995	96,6	0,85	440	9,0	2,0	3,2	190	12,1	2200
K12R 355 LY6	315	995	96,6	0,84	560	8,8	2,0	3,4	190	14,0	2400

max. T: maximum surface temperature (incl. rotor)

Three-phase motors with squirrel-cage rotor

with surface cooling, duty type S1, continuous duty

motors for the use in zone 2

non-sparking type of protection Ex nA II acc. to IEC 79-15, temperature class T1-T3

insulation class F, degree of protection IP 54, 50 cps

Type	P	n	η	$\cos \varphi$	I	I_A/I	M_A/M	M_k/M	max. T	J	m
	kW	rpm	%	-	400 V A				°C	kgm ²	kg
Synchronous speed 750 rpm - 8-pole design											
KPER 71 K8	0,09	675	43,0	0,54	0,56	2,1	1,9	2,1	160	0,00050	6,6
KPER 71 G8	0,12	670	44,0	0,54	0,73	2,3	1,8	2,1	160	0,00060	8,1
KPER 80 K8	0,18	690	55,0	0,61	0,78	2,8	2,0	2,2	140	0,00130	10,5
KPER 80 G8	0,25	695	56,0	0,58	1,12	3,0	2,3	2,5	140	0,00175	12
KPER 90 S8	0,37	700	59,0	0,57	1,6	3,0	1,9	2,1	150	0,00300	15
KPER 90 L8	0,55	695	63,0	0,62	2,04	3,2	1,9	2,2	160	0,00375	18
KPER 100 L8	0,75	705	67,0	0,60	2,7	3,3	2,0	2,3	160	0,00625	23
KPER 100 LX8	1,1	705	72,0	0,68	3,25	4,0	2,0	2,4	150	0,00900	28
KPER 112 M8	1,5	705	75,0	0,71	4,1	4,4	2,2	2,5	150	0,01225	33,5
K11R 132 S8	2,2	705	75,0	0,75	5,6	4,0	1,7	2,3	125	0,0180	46
K11R 132 M8	3,0	700	78,0	0,75	7,4	4,0	1,7	2,3	135	0,0230	53
K11R 160 M8	4,0	710	79,0	0,76	9,6	4,0	1,6	1,9	140	0,0430	70
K11R 160 MX8	5,5	710	80,0	0,76	13,0	4,0	1,7	2,1	140	0,0530	86
K11R 160 L8	7,5	720	83,0	0,78	16,5	4,5	1,8	2,1	150	0,1130	114
K11R 180 L8	11,0	720	85,0	0,78	24,0	4,5	2,0	2,1	165	0,1450	136
K11R 200 L8	15,0	725	86,5	0,78	32,0	5,0	2,0	2,3	160	0,2280	175
	18,5	725	86,5	0,78	39,5	5,0	2,0	2,3	185	0,2680	200
K11R 225 S8	18,5	725	88,0	0,80	38,0	5,0	2,0	2,2	175	0,440	265
K11R 225 M8	22	730	89,0	0,80	44,5	5,0	2,0	2,4	175	0,440	265
K11R 250 M8	30	730	90,0	0,80	60,0	5,5	2,2	2,2	165	0,825	360
K11R 280 S8	37	735	91,0	0,80	73,5	5,5	2,0	2,0	155	1,350	465
K11R 280 M8	45	735	91,5	0,77	92,0	5,5	2,2	2,0	155	1,550	520
K11R 315 S8	55	740	92,5	0,80	107	6,0	2,0	2,4	130	2,63	690
K11R 315 M8	75	740	93,3	0,81	143	6,0	2,0	2,3	140	3,33	800
K11R 315 MX8	90	740	93,5	0,81	172	6,0	2,0	2,4	160	3,60	880
K11R 315 MY8	110	740	94,5	0,81	207	6,0	2,4	2,6	165	6,00	1050
K11R 315 L8	132	740	93,0	0,79	259	5,8	2,0	2,1	180	6,76	1155
K12R 355 M8	160	745	95,6	0,77	315	7,5	1,8	3,0	180	9,5	1600
K12R 355 MX8	200	745	95,9	0,79	380	8,2	2,0	3,5	190	13,4	2200
K12R 355 LY8	250	745	95,8	0,74	510	8,0	2,2	3,5	190	15,8	2400

Three-phase motors with squirrel-cage rotor

with surface cooling, type of cooling IC 411, duty type S1, continuous duty motors for the use in zone 21 acc. to EN 50281-1-1+2
insulation class F, degree of protection IP 65,
version for design voltages range A according to IEC 34-1, 50 cps
max. surface temperature 125 °C

Type	P	n	η	$\cos \varphi$	I	I_A/I	J	m
	kW	rpm	%	-	400 V A		kgm ²	kg
Synchronous speed 3000 rpm - 2-pole design								
KPER 56 K2	0,09	2865	69,0	0,75	0,25	4,9	0,00013	4,4
KPER 56 G2	0,12	2830	69,0	0,78	0,32	4,5	0,00013	4,5
KPER 63 K2	0,18	2790	65,0	0,78	0,51	4,1	0,00013	4,9
KPER 63 G2	0,25	2800	67,0	0,73	0,74	4,2	0,00015	5,2
KPER 71 K2	0,37	2780	70,0	0,81	0,94	4,4	0,00025	6,7
KPER 71 G2	0,55	2775	74,0	0,81	1,32	4,9	0,00032	7,6
KPER 80 K2	0,75	2825	77,0	0,82	1,72	5,9	0,00057	10,7
KPER 80 G2	1,1	2835	77,0	0,81	2,55	6,0	0,00072	11,5
KPER 90 S2	1,5	2850	80,0	0,81	3,35	7,0	0,00132	16
KPER 90 L2	2,2	2850	81,0	0,86	4,55	7,5	0,0017	19
KPER 100 L2	3,0	2865	83,0	0,85	6,15	7,0	0,00275	25
KPER 112 M2	4,0	2900	83,0	0,83	8,4	7,0	0,0045	32
KPER 132 S2T ¹⁾	5,5	2890	86,0	0,84	11	7,5	0,0055	40
K11Q 132 SX2	7,5	2900	87,0	0,86	15	6,5	0,0110	57
K11Q 160 M2	11,0	2910	87,0	0,92	20	7,5	0,0258	81
K11Q 160 MX2	15,0	2930	88,8	0,90	27	7,1	0,0575	118
K11Q 160 L2	18,5	2920	90,5	0,92	32	7,2	0,0675	134
K11Q 180 M2	22	2935	91,8	0,92	37,5	6,8	0,1050	165
K11Q 200 L2	30	2940	92,8	0,92	50,5	7,3	0,1280	195
K11Q 200 Lx2	37	2940	93,0	0,90	64	7,0	0,1930	255
K11Q 225 M2	45	2940	93,7	0,91	76	7,5	0,2200	290
K11Q 250 M2	55	2955	93,7	0,91	93	7,5	0,3750	360
K11Q 280 S2	75	2970	94,6	0,92	124	7,5	0,6500	490
K11Q 280 M2	90	2970	94,7	0,91	151	8,5	0,6750	510
K11Q 315 S2	110	2975	95,4	0,91	183	8,5	1,210	720
K11Q 315 M2	132	2975	95,4	0,91	219	8,5	1,440	800
K11Q 315 MX2	160	2975	96,0	0,93	259	8,5	1,760	980
K11Q 315 MY2	200	2970	96,0	0,92	327	8,2	2,820	1170
K11Q 315 L2	250	2973	96,1	0,93	404	7,3	3,66	1460
K11Q 315 LX2	315	2975	96,7	0,92	511	7,4	4,43	1630

¹⁾ also available as K11Q 132 S2

Three-phase motors with squirrel-cage rotor

with surface cooling, type of cooling IC 411, duty type S1, continuous duty motors for the use in zone 21 acc. to EN 50281-1-1+2
insulation class F, degree of protection IP 65,
version for design voltages range A according to IEC 34-1, 50 cps
max. surface temperature 125 °C

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 design									
KPER	56 K4	0,06	1410	59,0	0,61	0,24	3,1	0,00019	4,3
KPER	56 G4	0,09	1375	60,0	0,70	0,31	3,2	0,00019	4,4
KPER	63 K4	0,12	1370	56,0	0,70	0,44	3,2	0,00019	4,8
KPER	63 G4	0,18	1360	58,0	0,69	0,65	3,3	0,00024	5,2
KPER	71 K4	0,25	1385	64,0	0,72	0,78	3,6	0,00040	6,8
KPER	71 G4	0,37	1370	66,0	0,76	1,06	3,8	0,00050	7,8
KPER	80 K4	0,55	1400	69,0	0,72	1,60	4,1	0,00087	10,6
KPER	80 G4	0,75	1400	72,0	0,72	2,10	4,6	0,00107	11,7
KPER	90 S4	1,10	1410	76,0	0,80	2,62	5,5	0,00207	15,5
KPER	90 L4	1,50	1400	77,0	0,83	3,40	5,5	0,00260	18
KPER	100 L4	2,20	1420	79,0	0,78	5,15	6,0	0,00400	23,5
KPER	100 LX4	3,00	1430	82,6	0,79	6,65	6,4	0,00725	30
KPER	112 M4	4,00	1435	83,0	0,79	8,80	6,9	0,00900	37
K11Q	132 S4T ¹⁾	5,5	1425	85,0	0,79	11,80	6,3	0,01100	47
K11Q	132 M4	7,5	1450	86,0	0,84	15	6,0	0,0280	70
K11Q	160 M4	11,0	1450	86,0	0,85	21,5	6,8	0,0350	92
K11Q	160 L4	15,0	1465	88,0	0,86	28,5	7,3	0,0780	120
K11Q	180 M4	18,5	1460	88,5	0,86	35	6,8	0,0900	136
K11Q	180 L4	22	1465	90,5	0,84	42	6,5	0,1380	170
K11Q	200 L4	30	1465	91,5	0,85	55,5	7,0	0,1680	200
K11Q	225 S4	37	1470	92,5	0,86	67	7,0	0,2750	270
K11Q	225 M4	45	1470	93,0	0,86	81	7,0	0,3130	300
K11Q	250 M4	55	1475	93,5	0,86	98,5	7,0	0,5250	375
K11Q	280 S4	75	1480	94,1	0,86	134	7,0	0,950	520
K11Q	280 M4	90	1480	94,6	0,86	160	7,0	1,100	580
K11Q	315 S4	110	1485	95,1	0,86	194	7,5	1,960	740
K11Q	315 M4	132	1485	95,1	0,86	233	7,0	2,270	840
K11Q	315 MX4	160	1480	95,0	0,87	279	7,0	2,730	1000
K11Q	315 MY4	200	1485	96,0	0,88	342	7,5	4,820	1200
K11Q	315 L4	250	1485	96,1	0,90	417	8,0	5,93	1450
K11Q	315 LX4	315	1490	96,5	0,88	535	8,6	6,82	1630

¹⁾ also available as K11Q 132 S2

Three-phase motors with squirrel-cage rotor

with surface cooling, type of cooling IC 411, duty type S1, continuous duty motors for the use in zone 21 acc. to EN 50281-1-1+2
insulation class F, degree of protection IP 65,
version for design voltages range A according to IEC 34-1, 50 cps
max. surface temperature 125 °C

Type	P	n	η	$\cos \varphi$	I	I_A/I	J	m
	kW	rpm	%	-	400 V A		kgm ²	kg
Synchronous speed 1000 rpm - 6-pole design								
KPER 63 K6	0,09	895	48,0	0,59	0,46	2,5	0,00024	4,9
KPER 63 G6	0,12	880	50,0	0,59	0,59	2,5	0,00027	5,7
KPER 71 K6	0,18	925	57,0	0,52	0,88	2,8	0,00045	7,4
KPER 71 G6	0,25	915	59,0	0,56	1,10	2,9	0,00060	8,3
KPER 80 K6	0,37	915	63,0	0,70	1,22	3,4	0,00130	11
KPER 80 G6	0,55	915	67,0	0,69	1,73	3,7	0,00175	12,5
KPER 90 S6	0,75	935	69,0	0,65	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	76,0	0,73	3,90	4,6	0,00625	24
KPER 112 M6	2,20	950	78,0	0,76	5,35	5,3	0,01225	33,5
K11Q 132 S6	3,0	955	78,2	0,82	6,8	5,4	0,0180	46
K11Q 132 M6	4,0	955	80,0	0,80	9	6,0	0,0230	53
K11Q 132 MX6	5,5	955	83,0	0,83	11,5	5,0	0,0430	70
K11Q 160 M6	7,5	960	85,0	0,82	15,5	5,5	0,0530	86
K11Q 160 L6	11,0	965	85,2	0,86	21,5	5,0	0,1130	114
K11Q 180 L6	15,0	965	86,0	0,83	30,5	6,0	0,1450	136
K11Q 200 L6	18,5	970	88,1	0,87	35,0	5,5	0,2280	175
K11Q 200 LX6	22	970	88,8	0,87	41	6,2	0,2680	200
K11Q 225 M6	30	973	90,4	0,89	54	6,5	0,4430	265
K11Q 250 M6	37	975	91,0	0,89	66	6,5	0,8250	360
K11Q 280 S6	45	980	92,0	0,87	81	6,0	1,280	465
K11Q 280 M6	55	980	92,5	0,88	97,5	6,5	1,480	520
K11Q 315 S6	75	985	93,7	0,87	133	7,0	2,630	690
K11Q 315 M6	90	990	94,4	0,88	156	7,0	3,330	800
K11Q 315 MX6	110	990	94,0	0,88	192	7,5	3,60	880
K11Q 315 MY6	132	990	95,0	0,88	228	7,5	6,00	1050
K11Q 315 L6	160	985	95,3	0,89	272	7,5	6,67	1250
K11Q 315 LX6	200	990	95,0	0,87	349	8,3	8,60	1460

Three-phase motors with squirrel-cage rotor

with surface cooling, type of cooling IC 411, duty type S1, continuous duty motors for the use in zone 21 acc. to EN 50281-1-1+2
insulation class F, degree of protection IP 65,
version for design voltages range A according to IEC 34-1, 50 cps
max. surface temperature 125 °C

Type		P	n	η	$\cos \varphi$	I	I_{Δ}/I	J	m
		kW	rpm	%	-	400 V A		kgm ²	kg
Synchronous speed 750 rpm - 8-pole design									
KPER	71 K8	0,09	675	43,0	0,54	0,56	2,1	0,00050	6,6
KPER	71 G8	0,12	670	44,0	0,54	0,73	2,3	0,00060	8,1
KPER	80 K8	0,18	690	55,0	0,61	0,78	2,8	0,00130	10,5
KPER	80 G8	0,25	695	56,0	0,58	1,12	3,0	0,00175	12
KPER	90 S8	0,37	700	59,0	0,57	1,6	3,0	0,00300	15
KPER	90 L8	0,55	695	63,0	0,62	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	72,0	0,68	3,25	4,0	0,00900	28
KPER	112 M8	1,5	705	75,0	0,71	4,1	4,4	0,01225	33,5
K11Q	132 S8	2,2	705	75,5	0,76	5,5	4,5	0,0180	46
K11Q	132 M8	3,0	705	78,0	0,75	7,4	4,5	0,0230	53
K11Q	160 M8	4,0	710	79,3	0,78	9,3	4,0	0,0430	70
K11Q	160 MX8	5,5	710	81,4	0,78	12,5	4,5	0,0530	86
K11Q	160 L8	7,5	725	83,0	0,78	16,5	4,5	0,1130	114
K11Q	180 L8	11,0	720	85,0	0,78	24	4,5	0,1450	136
K11Q	200 L8	15,0	725	86,5	0,79	31,5	5,0	0,2280	175
K11Q	225 S8	18,5	725	89,2	0,83	36	5,5	0,4400	265
K11Q	225 M8	22	725	89,2	0,84	42,5	5,0	0,4400	265
K11Q	250 M8	30	730	90,2	0,79	61	5,5	0,8250	360
K11Q	280 S8	37	735	91,0	0,80	73,5	5,5	1,350	465
K11Q	280 M8	45	735	91,5	0,77	92	6,0	1,550	520
K11Q	315 S8	55	740	93,1	0,80	107	6,5	2,630	690
K11Q	315 M8	75	740	93,3	0,81	143	6,0	3,330	800
K11Q	315 MX8	90	740	93,5	0,81	172	6,0	3,60	880
K11Q	315 MY8	110	740	94,6	0,81	207	6,5	6,00	1050
K11Q	315 L8	132	740	95,0	0,83	242	6,3	6,76	1250
K11Q	315 LX8	160	740	95,2	0,79	307	7,2	8,71	1430

Basic design

Type	Antifriction bearing	D-side					N-side				fixed bearing
		V-type seal	γ-type seal	felt ring	Wave washer	Disk spring	V-type seal	Wave washer	felt ring		
KPER 63	6201 2Z C3	-	-	11,5x19	-	-	6201 2Z C3	-	32	12x22	without
KPER 71	6202 2Z C3	-	-	14,5x21	-	-	6202 2Z C3	-	35	15x24	without
KPER 80	6204 2Z C3	-	-	19,5x26	-	-	6204 2Z C3	-	47	20x32	without
KPER 90	6205 2Z C3	-	-	24,5x35	-	-	6205 2Z C3	-	52	25x40	without
KPER 100	6205 2Z C3	-	-	24,5x35	-	-	6205 2Z C3	-	52	25x40	without
KPER 100 LX	6206 2Z C3	-	-	29,2x40	-	-	6206 2Z C3	-	62	30x50	without
KPER 112 M	6206 2Z C3	-	-	29,2x40	-	-	6206 2Z C3	-	62	30x50	without
K11. 132 S, SX2,M6,8	6208 2RS C3	-	-	-	80	-	6207 2RS C3	-	-	-	without
K11. 132 M4,MX6	6308 2RS C3 ²⁾	-	-	-	90	-	6308 2RS C3 ²⁾	-	-	-	without
K11. 160 M,MX8	6309 2RS C3	-	-	-	100	-	6308 2RS C3	-	-	-	without
K11. 160 MX2, L	6310 2RS C3 ²⁾	-	-	-	110	-	6309 2RS C3 ²⁾	-	-	-	without
K11. 180 M4, L6, 8	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	without
K11. 180 M2, L4	6310 C3 ²⁾	50A	-	-	110	-	6310 C3 ²⁾	50A	-	-	N-side
K11. 200 L, LX6	6312 C3 ²⁾	60A	-	-	-	130	6310 C3 ²⁾	50A	-	-	N-side
K11. 200 LX2	6312 C3 ²⁾	60A	-	-	-	130	6312 C3 ²⁾	60A	-	-	N-side
K11. 225 M2	6312 C3 ²⁾	60A	-	-	-	130	6312 C3 ²⁾	60A	-	-	N-side
K11. 225 S4, 8, M4,6,8,	6313 C3 ²⁾	65A	-	-	-	140	6312 C3 ²⁾	60A	-	-	N-side
K11. 250 M2	6313 C3 ²⁾	65A	-	-	-	140	6313 C3 ²⁾	65A	-	-	N-side
K11. 250 M4,6,8	6314 C3 ²⁾	70A	-	-	-	150	6313 C3 ²⁾	65A	-	-	N-side
K11. 280 S2,M2	6314 C3 ²⁾	70A	-	-	-	150	6314 C3 ²⁾	70A	-	-	N-side
K11. 280 S4,6,8,M4,6,8	NU 316 E	80A	-	-	-	-	6314 C3	70A	-	-	N-side
K11. 315 S2,M2	6316 C3 ²⁾	80A	-	-	-	170	6316 C3 ²⁾	80A	-	-	N-side
K11. 315 S4,6,8,M4,6,8	NU 317 E	80A	-	-	-	-	6316 C3	80A	-	-	N-side
K11. 315 MX2	NU 317 E	-	RB85	-	-	-	6316 C3	80A	-	-	N-side
K11. 315 MX4,6,8	NU 2220 E	-	RB100	-	-	-	6316 C3	80A	-	-	N-side
K11. 315 MY2	NU 317 E	-	RB85	-	-	-	6317 C3 ¹⁾	85A	-	-	N-side
K11. 315 MY4,6,8	NU 320 E	-	RB100	-	-	-	6317 C3 ¹⁾	85A	-	-	N-side
K11. 315 L2, LX2	NU 317 E	-	RB85	-	-	-	6317 C3 ¹⁾	85A	-	-	N-side
K11. 315 L4,6,8, LX4,6,8	NU 320 E	-	RB100	-	-	-	6317 C3 ¹⁾	85A	-	-	N-side

¹⁾ In case of vertical types of construction Q317 C3; K21R 315 MX; MY; L; LX as standard with relubricating device

²⁾ For K11Q bearing type ...RS

Special design „heavy bearing arrangement“

Type	Antifriction bearing	D-side					N-side				fixed bearing
		V-type seal	γ-type seal	felt ring	Wave washer	Disk spring	V-type seal	Wave washer	felt ring		
K11. 132 S, SX2,M6,8 VL	NU 208 E	40A	-	-	-	-	6207 RS C3	-	-	-	N-side
K11. 132 M4,MX6 VL	NU 308 E	40A	-	-	-	-	6308 RS C3	-	-	-	N-side
K11. 160 M, MX8 VL	NU 309 E	45A	-	-	-	-	6308 RS C3	-	-	-	N-side
K11. 160 MX2, L VL	NU 310 E	50A	-	-	-	-	6309 RS C3	-	-	-	N-side
K11. 180 M4, L6, 8 VL	NU 310 E	50A	-	-	-	-	6309 RS C3	-	-	-	N-side
K11. 180 M2, L4 VL	NU 310 E	50A	-	-	-	-	6310 C3	50A	-	-	N-side
K11. 200 L, LX6 VL	NU 312 E	60A	-	-	-	-	6310 C3	50A	-	-	N-side
K11. 200 LX2 VL	NU 312 E	60A	-	-	-	-	6312 C3	60A	-	-	N-side
K11. 225 M2 VL	NU 312 E	-	RB60	-	-	-	6312 C3	60A	-	-	N-side
K11. 225 S4, 8, M4,6,8 VL	NU 313 E	-	RB65	-	-	-	6312 C3	60A	-	-	N-side
K11. 250 M2 VL	NU 313 E	-	RB65	-	-	-	6313 C3	65A	-	-	N-side
K11. 250 M4,6,8 VL	NU 314 E	-	RB70	-	-	-	6313 C3	65A	-	-	N-side
K11. 280 S2,M2 VL	NU 314 E	-	RB70	-	-	-	6314 C3	70A	-	-	N-side
K11. 280 S4,6,8,M4,6,8 VL		basic version is heavy bearing arrangement									
K11. 315 S2,M2 VL	NU 316 E	-	RB80	-	-	-	6316 C3	80A	-	-	N-side
K11. 315 S4,6,8,M4,6,8 VL		basic version is heavy bearing arrangement									
K11. 315 MX2 VL		basic version is heavy bearing arrangement									
K11. 315 MX4,6,8 VL		basic version is heavy bearing arrangement									
K11. 315 MY2 VL		basic version is heavy bearing arrangement									
K11. 315 MY4,6,8 VL		basic version is heavy bearing arrangement									
K11. 315 L2, LX2 VL		basic version is heavy bearing arrangement									
K11. 315 L4,6,8, LX4,6,8 VL		basic version is heavy bearing arrangement									

ab BG 225 for heavy bearing arrangement as standard with relubricating device

Relubricating device

Type	Antifriction bearing	D-side				Antifriction bearing	N-side			fixed bearing
		γ-type seal	felt ring	Wave washer	Disk spring		V-type seal	Wave washer	felt ring	
K11. 132 S, SX2,M6,8		at the D-side for reasons of design impossible								N-side
K11. 132 M4,MX6										N-side
K11. 160 M,MX8		at the D-side for reasons of design impossible								N-side
K11. 160 MX2, L *)	6310 C3	-	-	110	-	6309 C3	-	-		N-side
K11. 180 M4, L6, 8 *)	6310 C3	-	-	110	-	6309 C3	-	-		N-side
K11. 180 M2, L4 *)	6310 C3	-	-	110	-	6310 C3	-	-		N-side
K11. 200 L, LX6 *)	6312 C3	-	-	-	130	6310 C3	-	-		N-side
K11. 200 LX2 *)	6312 C3	-	-	-	130	6312 C3	-	-		N-side
K11. 225 M2	6312 C3	RB60	-	-	130	6312 C3	60A	-	-	N-side
K11. 225 S4, 8, M4,6,8,	6313 C3	RB65	-	-	140	6312 C3	60A	-	-	N-side
K11. 250 M2	6313 C3	RB65	-	-	140	6313 C3	65A	-	-	N-side
K11. 250 M4,6,8	6314 C3	RB70	-	-	150	6313 C3	65A	-	-	N-side
K11. 280 S2,M2	6314 C3	RB70	-	-	150	6314 C3	70A	-	-	N-side
K11. 280 S4,6,8,M4,6,8	NU 316 E	RB80	-	-	-	6314 C3	70A	-	-	N-side
K11. 315 S2,M2	6316 C3	RB80	-	-	170	6316 C3	80A	-	-	N-side
K11. 315 S4,6,8,M4,6,8	NU 317 E	RB80	-	-	-	6316 C3	80A	-	-	N-side
K11. 315 MX2		see basic version								
K11. 315 MX4,6,8		see basic version								
K11. 315 MY2		see basic version								
K11. 315 MY4,6,8		see basic version								
K11. 315 L2, LX2		see basic version								
K11. 315 L4,6,8, LX4,6,8		see basic version								

*) degree of protection IP 54

Conventional design

Type	Terminal box	Terminal plate according to DIN 46 295	Thread of the terminal stud	max. design current	Entry	cable diameter range
KPER 63 - 80	AlSi10Mg			16 A	M20x1,5-Ms	7 - 13 mm
KPER 90 - 112					M25x1,5-Ms	9 - 17 mm
K11. 132	GG25	KS 10 A	S 10x1	40 A	M32x1,5-Ms	11 - 21 mm
K11. 160 M6,8	GG 25	KS 10 A	S 10x1	40 A	M32x1,5-Ms	11 - 21 mm
K11. 160MX8	GG 25	KS 10 A	S 10x1	40 A	M32x1,5-Ms	19 - 21 mm
K11. 160 M2,4	GG 63	KS 14 A	S 14x1,25	53 A	M40x1,5-Ms	19 - 28 mm
K11. 160 MX2	GG 63	KS 14 A	S 14x1,25	65 A	M40x1,5-Ms	19 - 28 mm
K11. 160 L	GG 63	KS 14 A	S 14x1,25	65 A	M40x1,5-Ms	19 - 28 mm
K11. 180 M	GG 63	KS 14 A	S 14x1,25	65 A	M40x1,5-Ms	19 - 28 mm
K11. 180 L	GG 63	KS 14 A	S 14x1,25	65 A	M40x1,5-Ms	19 - 28 mm
K11. 200 L2,6,8	GG 63/100	KS 14 A	S 14x1,25	65 A	M50x1,5-Ms	27 - 35 mm
K11. 200 L4	GG100	KS 14 A	S 14x1,25	65 A	M50x1,5-Ms	27 - 35 mm
K11. 200 LX2,6	GG100	KS 14 A	S 14x1,25	65 A	M50x1,5-Ms	27 - 35 mm
K11. 225	GG100	KS 14 A	S 14x1,25	65 A	M50x1,5-Ms	27 - 35 mm
K11. 250	GG200	KS 18 A	S 18x1,5	110 A	M63x1,5-Ms	34 - 45 mm
K11. 280	GG200	KS 18 A	S 18x1,5	110 A	M63x1,5-Ms	34 - 45 mm
K11. 315	GG200	KS 18 A	S 18x1,5	110 A	M63x1,5-Ms	34 - 45 mm

Three-phase motors with squirrel-cage rotor

with surface cooling, type of cooling IC 411, duty type S1, continuous duty motors for the use in zone 22 acc. to EN 50281-1-1+2

insulation class F, degree of protection IP 55

version for design voltages range A according to IEC 34-1, 50 cps

max. surface temperature 125 °C

Type	P	n	η	$\cos \varphi$	I	I_A/I	J	m
	kW	rpm	%	-	400 V A		kgm ²	kg
Synchronous speed 3000 rpm - 2-pole design								
K21R 56 K2	0,09	2865	69,0	0,75	0,25	4,9	0,00013	4,4
K21R 56 G2	0,12	2830	69,0	0,78	0,32	4,5	0,00013	4,5
K21R 63 K2	0,18	2790	65,0	0,78	0,51	4,1	0,00013	4,9
K21R 63 G2	0,25	2800	67,0	0,73	0,74	4,2	0,00015	5,2
K21R 71 K2	0,37	2780	70,0	0,81	0,94	4,4	0,00025	6,7
K21R 71 G2	0,55	2775	74,0	0,81	1,32	4,9	0,00032	7,6
K21R 80 K2	0,75	2825	77,0	0,82	1,72	5,9	0,00057	10,7
K21R 80 G2	1,1	2835	77,0	0,81	2,55	6,0	0,00072	11,5
K21R 90 S2	1,5	2850	80,0	0,81	3,35	7,0	0,00132	16
K21R 90 L2	2,2	2850	81,0	0,86	4,55	7,5	0,0017	19
K21R 100 L2	3,0	2865	83,0	0,85	6,15	7,0	0,00275	25
K21R 112 M2	4,0	2900	83,0	0,83	8,4	7,0	0,0045	32
K21R 132 S2T ¹⁾	5,5	2890	86,0	0,84	11	7,5	0,0055	40
K11R 132 SX2	7,5	2900	87,0	0,86	15	6,5	0,0110	57
K11R 160 M2	11,0	2910	87,0	0,92	20	7,5	0,0258	81
K11R 160 MX2	15,0	2930	88,8	0,90	27	7,1	0,0575	118
K11R 160 L2	18,5	2920	90,5	0,92	32	7,2	0,0675	134
K11R 180 M2	22	2935	91,8	0,92	37,5	6,8	0,1050	165
K11R 200 L2	30	2940	92,8	0,92	50,5	7,3	0,1280	195
K11R 200 Lx2	37	2940	93,0	0,90	64	7,0	0,1930	255
K11R 225 M2	45	2940	93,7	0,91	76	7,5	0,2200	290
K11R 250 M2	55	2955	93,7	0,91	93	7,5	0,3750	360
K11R 280 S2	75	2970	94,6	0,92	124	7,5	0,6500	490
K11R 280 M2	90	2970	94,7	0,91	151	8,5	0,6750	510
K11R 315 S2	110	2975	95,4	0,91	183	8,5	1,210	720
K11R 315 M2	132	2975	95,4	0,91	219	8,5	1,440	800
K11R 315 MX2	160	2975	96,0	0,93	259	8,5	1,760	980
K11R 315 MY2	200	2970	96,0	0,92	327	8,2	2,820	1170
K11R 315 L2	250	2973	96,1	0,93	404	7,3	3,66	1460
K11R 315 LX2	315	2975	96,7	0,92	511	7,4	4,43	1630

¹⁾ also available as K11R 132 S2

Three-phase motors with squirrel-cage rotor

with surface cooling, type of cooling IC 411, duty type S1, continuous duty motors for the use in zone 22 acc. to EN 50281-1-1+2
insulation class F, degree of protection IP55
version for design voltages range A according to IEC 34-1, 50 cps
max. surface temperature 125 °C

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 design								
K21R 56 K4	0,06	1410	59,0	0,61	0,24	3,1	0,00019	4,3
K21R 56 G4	0,09	1375	60,0	0,70	0,31	3,2	0,00019	4,4
K21R 63 K4	0,12	1370	56,0	0,70	0,44	3,2	0,00019	4,8
K21R 63 G4	0,18	1360	58,0	0,69	0,65	3,3	0,00024	5,2
K21R 71 K4	0,25	1385	64,0	0,72	0,78	3,6	0,00040	6,8
K21R 71 G4	0,37	1370	66,0	0,76	1,06	3,8	0,00050	7,8
K21R 80 K4	0,55	1400	69,0	0,72	1,60	4,1	0,00087	10,6
K21R 80 G4	0,75	1400	72,0	0,72	2,10	4,6	0,00107	11,7
K21R 90 S4	1,10	1410	76,0	0,80	2,62	5,5	0,00207	15,5
K21R 90 L4	1,50	1400	77,0	0,83	3,40	5,5	0,00260	18
K21R 100 L4	2,20	1420	79,0	0,78	5,15	6,0	0,00400	23,5
K21R 100 LX4	3,00	1430	82,6	0,79	6,65	6,4	0,00725	30
K21R 112 M4	4,00	1435	83,0	0,79	8,80	6,9	0,00900	37
K21R 132 S4T ¹⁾	5,5	1425	85,0	0,79	11,80	6,3	0,01100	47
K11R 132 M4	7,5	1450	86,0	0,84	15	6,0	0,0280	70
K11R 160 M4	11,0	1450	86,0	0,85	21,5	6,8	0,0350	92
K11R 160 L4	15,0	1465	88,0	0,86	28,5	7,3	0,0780	120
K11R 180 M4	18,5	1460	88,5	0,86	35	6,8	0,0900	136
K11R 180 L4	22	1465	90,5	0,84	42	6,5	0,1380	170
K11R 200 L4	30	1465	91,5	0,85	55,5	7,0	0,1680	200
K11R 225 S4	37	1470	92,5	0,86	67	7,0	0,2750	270
K11R 225 M4	45	1470	93,0	0,86	81	7,0	0,3130	300
K11R 250 M4	55	1475	93,5	0,86	98,5	7,0	0,5250	375
K11R 280 S4	75	1480	94,1	0,86	134	7,0	0,950	520
K11R 280 M4	90	1480	94,6	0,86	160	7,0	1,100	580
K11R 315 S4	110	1485	95,1	0,86	194	7,5	1,960	740
K11R 315 M4	132	1485	95,1	0,86	233	7,0	2,270	840
K11R 315 MX4	160	1480	95,0	0,87	279	7,0	2,730	1000
K11R 315 MY4	200	1485	96,0	0,88	342	7,5	4,820	1200
K11R 315 L4	250	1485	96,1	0,90	417	8,0	5,93	1450
K11R 315 LX4	315	1490	96,5	0,88	535	8,6	6,82	1630

¹⁾ also available as K11R 132 S4

Three-phase motors with squirrel-cage rotor

with surface cooling, type of cooling IC 411, duty type S1, continuous duty

motors for the use in zone 22 acc. to EN 50281-1-1+2

insulation class F, degree of protection IP 55

version for design voltages range A according to IEC 34-1, 50 cps

max. surface temperature 125 °C

Type		P	n	η	$\cos \varphi$	I	I_A/I	J	m
		kW	rpm	%	-	400 V A		kgm ²	kg
Synchronous speed 1000 rpm - 6-pole design									
K21R	63 K6	0,09	895	48,0	0,59	0,46	2,5	0,00024	4,9
K21R	63 G6	0,12	880	50,0	0,59	0,59	2,5	0,00027	5,7
K21R	71 K6	0,18	925	57,0	0,52	0,88	2,8	0,00045	7,4
K21R	71 G6	0,25	915	59,0	0,56	1,10	2,9	0,00060	8,3
K21R	80 K6	0,37	915	63,0	0,70	1,22	3,4	0,00130	11
K21R	80 G6	0,55	915	67,0	0,69	1,73	3,7	0,00175	12,5
K21R	90 S6	0,75	935	69,0	0,65	2,43	4,5	0,00325	16
K21R	90 L6	1,10	935	73,0	0,69	3,15	4,6	0,00425	19
K21R	100 L6	1,50	945	76,0	0,73	3,90	4,6	0,00625	24
K21R	112 M6	2,20	950	78,0	0,76	5,35	5,3	0,01225	33,5
K11R	132 S6	3,0	955	78,2	0,82	6,8	5,4	0,0180	46
K11R	132 M6	4,0	955	80,0	0,80	9	6,0	0,0230	53
K11R	132 MX6	5,5	955	83,0	0,83	11,5	5,0	0,0430	70
K11R	160 M6	7,5	960	85,0	0,82	15,5	5,5	0,0530	86
K11R	160 L6	11,0	965	85,2	0,86	21,5	5,0	0,1130	114
K11R	180 L6	15,0	965	86,0	0,83	30,5	6,0	0,1450	136
K11R	200 L6	18,5	970	88,1	0,87	35,0	5,5	0,2280	175
K11R	200 LX6	22	970	88,8	0,87	41	6,2	0,2680	200
K11R	225 M6	30	973	90,4	0,89	54	6,5	0,4430	265
K11R	250 M6	37	975	91,0	0,89	66	6,5	0,8250	360
K11R	280 S6	45	980	92,0	0,87	81	6,0	1,2800	465
K11R	280 M6	55	980	92,5	0,88	97,5	6,5	1,4800	520
K11R	315 S6	75	985	93,7	0,87	133	7,0	2,6300	690
K11R	315 M6	90	990	94,4	0,88	156	7,0	3,3300	800
K11R	315 MX6	110	990	94,0	0,88	192	7,5	3,6000	880
K11R	315 MY6	132	990	95,0	0,88	228	7,5	6,0000	1050
K11R	315 L6	160	985	95,3	0,89	272	7,5	6,67	1250
K11R	315 LX6	200	990	95,0	0,87	349	8,3	8,60	1460

Three-phase motors with squirrel-cage rotor

with surface cooling, type of cooling IC 411, duty type S1, continuous duty

motors for the use in zone 22 acc. to EN 50281-1-1+2

insulation class F, degree of protection IP 55

version for design voltages range A according to IEC 34-1, 50 cps

max. surface temperature 125 °C

Type		P	n	η	$\cos \varphi$	I	I_{Δ}/I	J	m
		kW	rpm	%	-	400 V A		kgm ²	kg
Synchronous speed 750 rpm - 8-pole design									
K21R	71 K8	0,09	675	43,0	0,54	0,56	2,1	0,00050	6,6
K21R	71 G8	0,12	670	44,0	0,54	0,73	2,3	0,00060	8,1
K21R	80 K8	0,18	690	55,0	0,61	0,78	2,8	0,00130	10,5
K21R	80 G8	0,25	695	56,0	0,58	1,12	3,0	0,00175	12
K21R	90 S8	0,37	700	59,0	0,57	1,6	3,0	0,00300	15
K21R	90 L8	0,55	695	63,0	0,62	2,04	3,2	0,00375	18
K21R	100 L8	0,75	705	67,0	0,60	2,7	3,3	0,00625	23
K21R	100 LX8	1,1	705	72,0	0,68	3,25	4,0	0,00900	28
K21R	112 M8	1,5	705	75,0	0,71	4,1	4,4	0,01225	33,5
K11R	132 S8	2,2	705	75,5	0,76	5,5	4,5	0,0180	46
K11R	132 M8	3,0	705	78,0	0,75	7,4	4,5	0,0230	53
K11R	160 M8	4,0	710	79,3	0,78	9,3	4,0	0,0430	70
K11R	160 MX8	5,5	710	81,4	0,78	12,5	4,5	0,0530	86
K11R	160 L8	7,5	725	83,0	0,78	16,5	4,5	0,1130	114
K11R	180 L8	11,0	720	85,0	0,78	24	4,5	0,1450	136
K11R	200 L8	15,0	725	86,5	0,79	31,5	5,0	0,2280	175
K11R	225 S8	18,5	725	89,2	0,83	36	5,5	0,4400	265
K11R	225 M8	22	725	89,2	0,84	42,5	5,0	0,4400	265
K11R	250 M8	30	730	90,2	0,79	61	5,5	0,8250	360
K11R	280 S8	37	735	91,0	0,80	73,5	5,5	1,350	465
K11R	280 M8	45	735	91,5	0,77	92	6,0	1,550	520
K11R	315 S8	55	740	93,1	0,80	107	6,5	2,630	690
K11R	315 M8	75	740	93,3	0,81	143	6,0	3,330	800
K11R	315 MX8	90	740	93,5	0,81	172	6,0	3,60	880
K11R	315 MY8	110	740	94,6	0,81	207	6,5	6,00	1050
K11R	315 L8	132	740	95,0	0,83	242	6,3	6,76	1250
K11R	315 LX8	160	740	95,2	0,79	307	7,2	8,71	1430

Constructive selection data

Dimensions

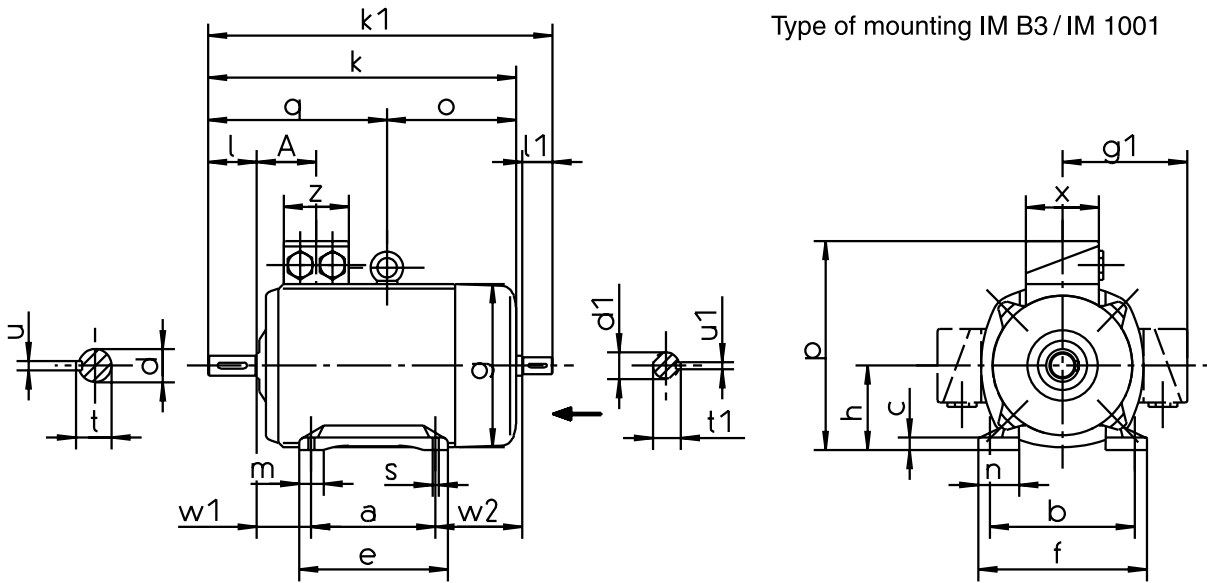
Three-phase motors with squirrel-cage rotor, types K21R, K11R... Ex II 3 D

for zones with flammable dust zone 22 DIN EN 50281-1-1

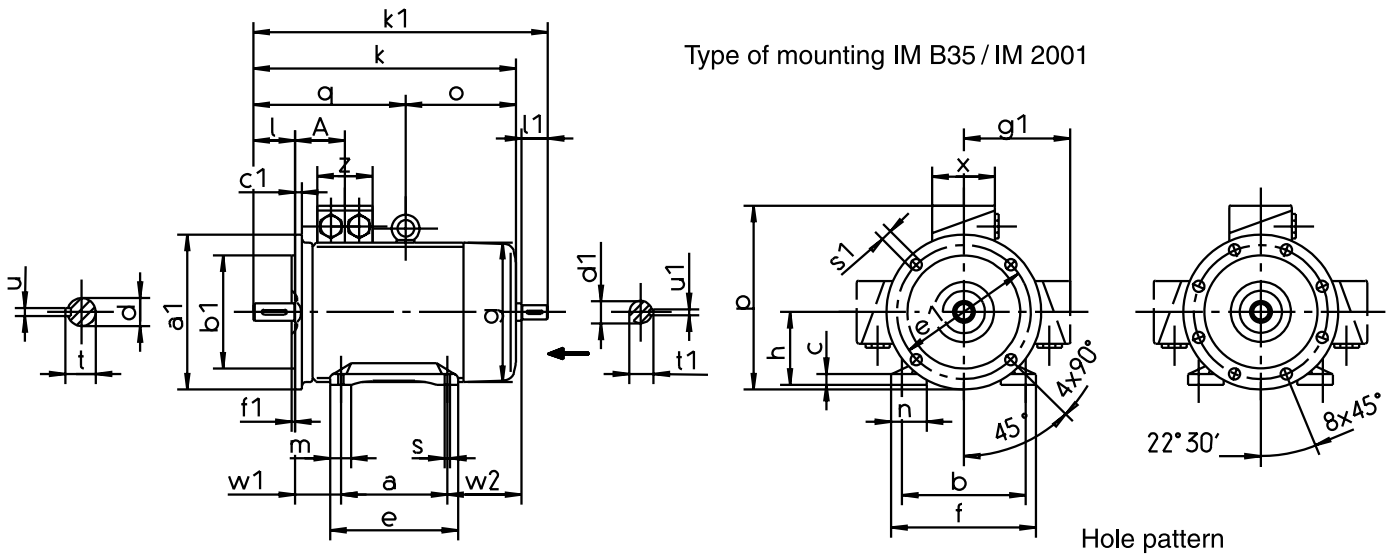
with surface cooling, type of cooling IC 411, degree of protection IP 55

Type	Overall length	a				b				c				d				e				g				h				i				k				l				m				n				o				p				q				r				s				t				u				w				A				BI				x				z				Hole pattern	Relubricating facility possible
		B	P	A	N	HA	LA	DA	DB	BB	M	AB	T	AC	HC	HC*	HC**	LC	LC*	LC**	LC***	EA	EA*	EA**	EA***	BA	AA	AA*	AA**	AA***	HD	HD*	HD**	HD***	HD	HD*	HD**	HD***	r(l)	r(l)*	r(l)**	r(l)***	r(l)	r(l)*	r(l)**	r(l)***	r(l)	r(l)*	r(l)**	r(l)***	r(l)	r(l)*	r(l)**	r(l)***	r(l)	r(l)*	r(l)**	r(l)***	r(l)	r(l)*	r(l)**	r(l)***	r(l)	r(l)*	r(l)**	r(l)***																																	
K21R 56	K2,4	71	140	90	95	j6	119	7	9	9	k6	-	-	86	115	110	3	109	56	-0,5	173	-	20	-	18	154	-	-	-	-	M20	6	9	10	-	3	-	36	-	57	14	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 56	G2,4	71	140	90	95	j6	119	7	9	9	k6	9	k6	86	115	110	3	109	56	-0,5	179	219	20	20	18	154	-	-	-	-	M20	6	9	10	10	3	3	36	52	57	14	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 63	K2,4,6	80	140	100	95	j6	119	10	9	11	k6	11	k6	100	115	128	3	109	63	-0,5	179	205	23	23	28	161	-	-	-	-	M20	8	9	13	13	4	4	40	39	57,5	14	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 63	G2,4,6	80	140	100	95	j6	119	10	9	11	k6	11	k6	100	115	128	3	109	63	-0,5	179	205	23	23	28	161	-	-	-	-	M20	8	9	13	13	4	4	40	39	57,5	14	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 71	K2,4,6,8	90	160	112	110	j6	137	11	9	14	k6	14	k6	116	130	138	3,5	124	71	-0,5	206	238,5	30	30	32	175	-	-	-	-	M20	8	9	16	16	5	5	45	43,5	61	14	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 71	G2,4,6,8	90	160	112	110	j6	137	11	9	14	k6	14	k6	116	130	138	3,5	124	71	-0,5	206	238,5	30	30	32	175	-	-	-	-	M20	8	9	16	16	5	5	45	43,5	61	14	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 80	K2,4,6,8	100	200	125	130	j6	165	12	10	19	k6	19	k6	125	165	168	3,5	139	80	-0,5	249	293	40	40	38	191	-	-	-	-	M25	10	11	22	22	6	6	50	63	67	16	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 80	G2,4,6,8	100	200	125	130	j6	165	12	10	19	k6	19	k6	125	165	168	3,5	139	80	-0,5	249	293	40	40	38	191	-	-	-	-	M25	10	11	22	22	6	6	50	63	67	16	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 90	S2,4,6,8	100	200	140	130	j6	165	14	10	24	k6	22	k6	130	165	178	3,5	157	90	-0,5	276	330	50	50	40	210	-	-	-	-	M25	10	11	27	25	8	6	56	74	70	16	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 90	L2,4,6,8	125	200	140	130	j6	165	14	10	24	k6	22	k6	155	165	178	3,5	157	90	-0,5	298	352	50	50	40	210	-	-	-	-	M25	10	11	27	25	8	6	56	71	70	16	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 100	L2,4,6,8	140	250	160	180	j6	213	15	11	28	k6	24	k6	175	215	192	4	177	100	-0,5	332	386	60	60	45	227	-	-	-	-	M25	12	14	31	27	8	8	63	73	75	18	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 100	LX4,8	140	250	160	180	j6	213	11	11	28	k6	28	k6	171	215	188	4	196	100	-0,5	359	425	60	60	33	237	235,5	237	-	-	M25	12	14	31	31	8	8	63	102	77	20	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K21R 112	M2,6,8	140	250	190	180	j6	213	18	11	28	k6	28	k6	180	215	224	4	196	112	-0,5	359	425	60	60	50	249	235,5	M25	12	14	31	31	8	8	70	95	77	20	92	-	-	-	-	92	-	-	-	-	4L	no																																																	
K21R 112	M4	140	250	190	180	j6	213	18	11	28	k6	28	k6	180	215	224	4	196	112	-0,5	393	459	60	60	50	249	235,5	M25	12	14	31	31	8	8	70	129	77	20	92	-	-	-	-	92	-	-	-	-	4L	no																																																	
K21R 132	S2,4T	140	300	216	230	j6	-	18	12	38	k6	28	k6	180	265	256	4	196	132	-0,5	430	498	80	60	50	269	-	-	-	-	M25	12	14	41	31	10	8	89	121	77	20	92	-	-	-	-	92	-	-	-	-	4L	no																																														
K11R 132	S2	140	300	216	230	j6	-	16	12	38	k6	32	k6	180	265	256	4	217	178	218	132	-0,5	459	542	80	80	55	310	350	-	-	M40	12	14	41	35	10	10	89	153	108	35	155	192	-	-	-	-	145	165	4L	no																																															
K11R 132	SX2	140	300	216	230	j6	-	16	12	38	k6	32	k6	180	265	256	4	217	178	218	132	-0,5	479	562	80	80	55	310	350	-	-	M40	12	14	41	35	10	10	89	173	108	35	155	192	-	-	-	-	145	165	4L	no																																															
K11R 132	S4,6,8	140	300	216	230	j6	-	16	12	38	k6	32	k6	180	265	256	4	217	178	218	132	-0,5	459	542	80	80	55	310	350	-	-	M40	12	14	41	35	10	10	89	153	108	35	155	192	-	-	-	-	145	165	4L	no																																															
K11R 132	M4	178	300	216	230	j6	-	16	12	38	k6	38	k6	218	265	256	4	258	200	240	132	-0,5	481	565	80	80	55	332	372	-	-	M40	12	14	41	41	10	10	89	138	114	35	155	192	-	-	-	-	145	165	4L	yes																																															
K11R 132	MX6	178	300	216	230	j6	-	16	12	38	k6	38	k6	218	265	256	4	258	200	240	132	-0,5	481	565	80	80	55	332	372	-	-	M40	12	14	41	41	10	10	89	138	114	35	155	192	-	-	-	-	145	165	4L	yes																																															
K11R 132	M6,8	178	300	216	230	j6	-	16	12	38	k6	32	k6	218	265	256	4	217	178	218	132	-0,5	479	562	80	80	55	310	350	-	-	M40	12	14	41	35	10	10	89	135	108	35	155	192	-	-	-	-	145	165	4L	no																																															
K11R 160	M2,4,6,8	210	350	254	250	h6	-	18	13	42	k6	38	k6	257	300	296	5	258	200	240	160	-0,5	559	643	110	80	60	377	-	-	M40	15	18	45	41	12	10	108	135	135	35	192	-	-	-	-	165	-	-	-	-	4L	no																																														
K11R 160	MX8	210	350	254	250	h6	-	18	13	42	k6	38	k6	257	300	296	5	258	200	240	160	-0,5	559	643	110	80	60	377	-	-	M40	15	18	45	41	12	10	108	135	135	35	192	-	-	-	-	165	-	-	-	-	4L	no																																														
K11R 160	MX2	210	350	254	250	h6	-	18	13	42	k6	42	k6	257	300	296	5	313	242	288	160	-0,5	571	686	110	110	60	402	448	-	-	M50	15	18	45	45	12	12	108	148	138	35	192	212	-	-	-	-	165	207	4L	yes																																															
K11R 160	L2,4,6,8	254	350	254	250	h6	-	18	13	42	k6	42	k6	301	300	296	5	313	242	288	160	-0,5	609	724	110	110	60	402	448	-	-	M50	15	18	45	45	12	12	108	142	138	35	192	212	-	-	-	-	165	207	4L	yes																																															
K11R 180	M2	241	350	279	250	h6	-	20	13	48	k6	48	k6	288	300	328	5	351	261	307	180	-0,5	635	751	110	110	65	441	487	-	-	M50	15	18	51,5	51,5	14	14	121	169	147	35	192	212	-	-	-	-	165	207	4L	yes																																															
K11R 180	M4	241	350	279	250	h6	-	20	13	48	k6	42	k6	288	300	328	5	313	242	288	180	-0,5	609	724	110	110	65	422	468	-	-	M50	15	18	51,5	45	14	12	121	142	138	35	192	212	-	-	-	-	165	207	4L	yes																																															
K11R 180	L4	279	350	279	250	h6	-	20	13	48	k6	48	k6	326	300	328	5	351	261	307	180	-0,5	680	796	110	110	65	441	487	-	-	M50	15	18	51,5	51,5	14	14	121	172	147	35	192	212	-	-	-	-	165	207	4L	yes																																															
K11R 180	L6,8	279	350	279	250	h6	-	20	13	48	k6	42	k6	326	300	328	5	313	242	288	180	-0,5	609	724	110	110	65	422	468	-	-	M50	15	18	51,5	45	14	12	121	104	138	35	192	212	-	-	-	-	165	207	4L	yes																																															
K11R 200	L2,4,6,8	305	400	318	300	h6	-	22	15	55	m6	48	k6	360	350	372	5	351	261	307	200	-0,5	680	796	110	110	70	461	507	-	-	M50	19	18	59	51,5	16	14	133	138	147	35																																																									

Type of mounting IM B3 / IM 1001



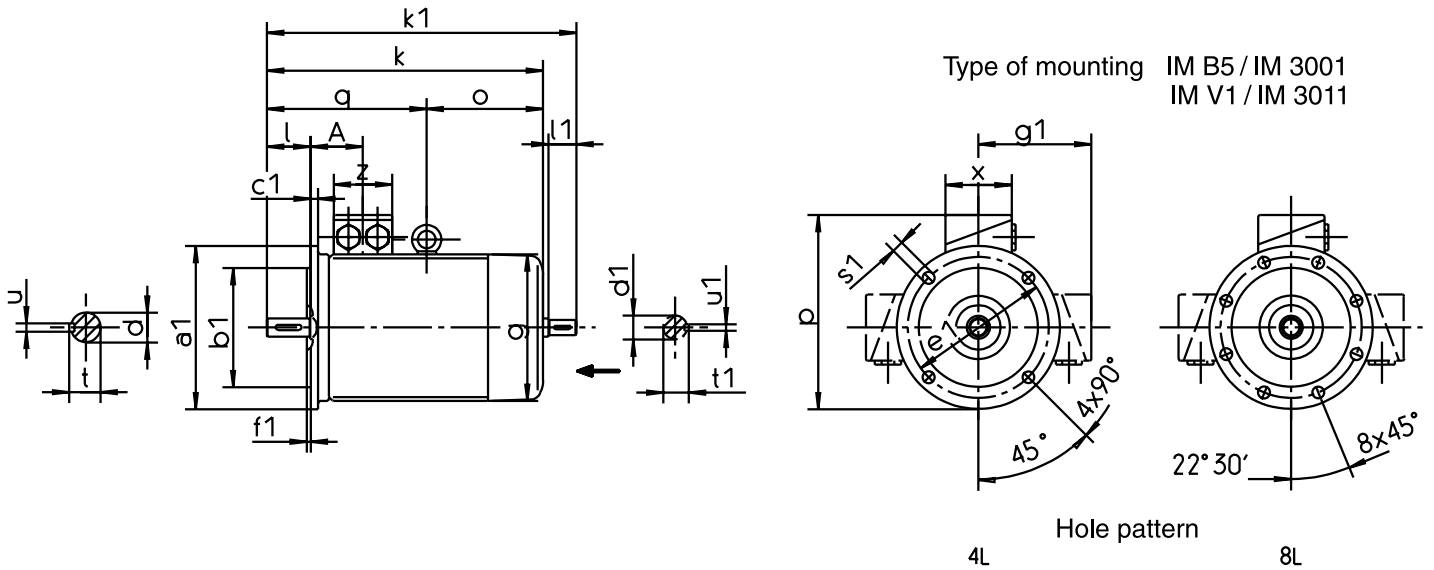
Type of mounting IM B35 / IM 2001



4L

8L

Type of mounting IM B5 / IM 3001
IM V1 / IM 3011



4L

8L

Basic design

Type	D-side					N-side				fixed bearing	
	Antifriction bearing	V-type seal	γ-type seal	felt ring	Wave washer	Disk spring	Antifriction bearing	V-type seal	Wave washer		felt ring
K21R 63	6201 2Z C3	-	-	11,5x19	-	-	6201 2Z C3	-	32	12x22	without
K21R 71	6202 2Z C3	-	-	14,5x21	-	-	6202 2Z C3	-	35	15x24	without
K21R 80	6204 2Z C3	-	-	19,5x26	-	-	6204 2Z C3	-	47	20x32	without
K21R 90	6205 2Z C3	-	-	24,5x35	-	-	6205 2Z C3	-	52	25x40	without
K21R 100	6205 2Z C3	-	-	24,5x35	-	-	6205 2Z C3	-	52	25x40	without
K21R 100 LX	6206 2Z C3	-	-	29,2x40	-	-	6206 2Z C3	-	62	30x50	without
K21R 112 M	6206 2Z C3	-	-	29,2x40	-	-	6206 2Z C3	-	62	30x50	without
K11R 132 S, SX2,M6,8	6208 2RS C3	-	-	-	80	-	6207 2RS C3	-	-	-	without
K11R 132 M4,MX6	6308 2RS C3	-	-	-	90	-	6308 2RS C3	-	-	-	without
K11R 160 M,MX8	6309 2RS C3	-	-	-	100	-	6308 2RS C3	-	-	-	without
K11R 160 MX2, L	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	without
K11R 180 M4, L6, 8	6310 2RS C3	-	-	-	110	-	6309 2RS C3	-	-	-	without
K11R 180 M2, L4	6310 C3	50A	-	-	110	-	6310 C3	50A	-	-	N-side
K11R 200 L, LX6	6312 C3	60A	-	-	-	130	6310 C3	50A	-	-	N-side
K11R 200 LX2	6312 C3	60A	-	-	-	130	6312 C3	60A	-	-	N-side
K11R 225 M2	6312 C3	60A	-	-	-	130	6312 C3	60A	-	-	N-side
K11R 225 S4, 8, M4,6,8,	6313 C3	65A	-	-	-	140	6312 C3	60A	-	-	N-side
K11R 250 M2	6313 C3	65A	-	-	-	140	6313 C3	65A	-	-	N-side
K11R 250 M4,6,8	6314 C3	70A	-	-	-	150	6313 C3	65A	-	-	N-side
K11R 280 S2,M2	6314 C3	70A	-	-	-	150	6314 C3	70A	-	-	N-side
K11R 280 S4,6,8,M4,6,8	NU 316 E	80A	-	-	-	-	6314 C3	70A	-	-	N-side
K11R 315 S2,M2	6316 C3	80A	-	-	-	170	6316 C3	80A	-	-	N-side
K11R 315 S4,6,8,M4,6,8	NU 317 E	80A	-	-	-	-	6316 C3	80A	-	-	N-side
K11R 315 MX2	NU 317 E	-	RB85	-	-	-	6316 C3	80A	-	-	N-side
K11R 315 MX4,6,8	NU 2220 E	-	RB100	-	-	-	6316 C3	80A	-	-	N-side
K11R 315 MY2	NU 317 E	-	RB85	-	-	-	6317 C3 ¹⁾	85A	-	-	N-side
K11R 315 MY4,6,8	NU 320 E	-	RB100	-	-	-	6317 C3 ¹⁾	85A	-	-	N-side
K11R 315 L2, LX2	NU 317 E	-	RB85	-	-	-	6317 C3 ¹⁾	85A	-	-	N-side
K11R 315 L4,6,8, LX4,6,8	NU 320 E	-	RB100	-	-	-	6317 C3 ¹⁾	85A	-	-	N-side

¹⁾ In case of vertical types of construction Q317 C3;

K11R 315 MX ; MY ; L ; LX as standard with relubricating device

Special design „heavy bearing arrangement“

Type	D-side					N-side				fixed bearing	
	Antifriction bearing	V-type seal	γ-type seal	felt ring	Wave washer	Disk spring	Antifriction bearing	V-type seal	Wave washer		felt ring
K11R 132 S, SX2,M6,8 VL	NU 208 E	40A	-	-	-	-	6207 RS C3	-	-	-	N-side
K11R 132 M4,MX6 VL	NU 308 E	40A	-	-	-	-	6308 RS C3	-	-	-	N-side
K11R 160 M, MX8 VL	NU 309 E	45A	-	-	-	-	6308 RS C3	-	-	-	N-side
K11R 160 MX2, L VL	NU 310 E	50A	-	-	-	-	6309 RS C3	-	-	-	N-side
K11R 180 M4, L6, 8 VL	NU 310 E	50A	-	-	-	-	6309 RS C3	-	-	-	N-side
K11R 180 M2, L4 VL	NU 310 E	50A	-	-	-	-	6310 C3	50A	-	-	N-side
K11R 200 L, LX6 VL	NU 312 E	60A	-	-	-	-	6310 C3	50A	-	-	N-side
K11R 200 LX2 VL	NU 312 E	60A	-	-	-	-	6312 C3	60A	-	-	N-side
K11R 225 M2 VL	NU 312 E	-	RB60	-	-	-	6312 C3	60A	-	-	N-side
K11R 225 S4, 8, M4,6,8 VL	NU 313 E	-	RB65	-	-	-	6312 C3	60A	-	-	N-side
K11R 250 M2 VL	NU 313 E	-	RB65	-	-	-	6313 C3	65A	-	-	N-side
K11R 250 M4,6,8 VL	NU 314 E	-	RB70	-	-	-	6313 C3	65A	-	-	N-side
K11R 280 S2,M2 VL	NU 314 E	-	RB70	-	-	-	6314 C3	70A	-	-	N-side
K11R 280 S4,6,8,M4,6,8 VL	basic version is heavy bearing arrangement										
K11R 315 S2,M2 VL	NU 316 E	-	RB80	-	-	-	6316 C3	80A	-	-	N-side
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										

from size BG 225 for heavy bearing arrangement as standard with relubricating device

Constructive selection data

Bearing arrangement

Relubricating device

Type	Antifriction bearing	D-side				N-side				fixed bearing
		γ-type rotary seal	felt ring	Wave washer	Disk spring	Antifriction bearing	V-type rotary seal	Wave washer	felt ring	
K11R 132 S, SX2,M6,8		at the D-side for reasons of design impossible								
K11R 132 M4,MX6		at the D-side for reasons of design impossible								
K11R 160 M,MX8		at the D-side for reasons of design impossible								
K11R 160 MX2, L *)	6310 C3	-	-	110	-	6309 C3	45A	-	-	N-side
K11R 180 M4, L6, 8 *)	6310 C3	-	-	110	-	6309 C3	45A	-	-	N-side
K11R 180 M2, L4 *)	6310 C3	-	-	110	-	6310 C3	50A	-	-	N-side
K11R 200 L, LX6 *)	6312 C3	-	-	-	130	6310 C3	50A	-	-	N-side
K11R 200 LX2 *)	6312 C3	-	-	-	130	6312 C3	60A	-	-	N-side
K11R 225 M2	6312 C3	RB60	-	-	130	6312 C3	60A	-	-	N-side
K11R 225 S4, 8, M4,6,8,	6313 C3	RB65	-	-	140	6312 C3	60A	-	-	N-side
K11R 250 M2	6313 C3	RB65	-	-	140	6313 C3	65A	-	-	N-side
K11R 250 M4,6,8	6314 C3	RB70	-	-	150	6313 C3	65A	-	-	N-side
K11R 280 S2,M2	6314 C3	RB70	-	-	150	6314 C3	70A	-	-	N-side
K11R 280 S4,6,8,M4,6,8	NU 316 E	RB80	-	-	-	6314 C3	70A	-	-	N-side
K11R 315 S2,M2	6316 C3	RB80	-	-	170	6316 C3	80A	-	-	N-side
K11R 315 S4,6,8,M4,6,8	NU 317 E	RB80	-	-	-	6316 C3	80A	-	-	N-side
K11R 315 MX2		see basic version								
K11R 315 MX4,6,8		see basic version								
K11R 315 MY2		see basic version								
K11R 315 MY4,6,8		see basic version								
K11R 315 L2, LX2		see basic version								
K21R 315 L4,6,8, LX4,6,8		see basic version								

*) degree of protection IP 54

Constructive selection data

Terminal box connection

Basic design

Type	Terminal box	Material		Terminal plate Thread of the terminal stud	Thread Protective conductor	Entry	Cable diameter range
		Standard	as option				
K21R 63 - 80	16A	AlSi10 Mg	GG	K1M4 DIN 46294 / M4	M4	M20x1,5	7 - 13 mm
K21R 90 - 112						M25x1,5	9 - 17 mm
K11R 132	25A	AlSi10 Mg	GG	SB5 / M5	M6	M32x1,5	11 - 21 mm
K11R 160 M2 - 8, MX8	25A/63A	AlSi10 Mg	GG	SB5 / M5	M6	M40x1,5	19 - 28 mm
K11R 160 L, MX2	63A	AlSi10 Mg	GG	SB6 / M6	M6	M40x1,5	19 - 28 mm
K11R 180	63A	AlSi10 Mg	GG	SB6 / M6	M6	M40x1,5	19 - 28 mm
K11R 200 L, LX6	63A/100A	AlSi10 Mg	GG	SB6 / M6	M6	M50x1,5	27 - 35 mm
K11R 200 LX2	100A	BI / GG	GG	SB8 / M8	M8	M50x1,5	27 - 35 mm
K11R 225	100A	BI / GG	GG	SB8 / M8	M8	M50x1,5	27 - 35 mm
K11R 250	100A/200A	BI / GG	GG	SB8 / M8	M8	M63x1,5	34 - 45 mm
K11R 280	200A	GG	GG	SB10 / M10	M10	M63x1,5	34 - 45 mm
K11R 315S, M	200A	GG	GG	SB10 / M10	M10	M63x1,5	34 - 45 mm
K11R 315MX	200A	GG	GG	SB10 / M10	M10	M63x1,5	34 - 45 mm
K11R 315S, M	400A ¹⁾	GG	GG	SB12 / M12	M10	M63x1,5	34 - 45 mm
K11R 315MX	400A ¹⁾	GG	GG	SB12 / M12	M10	M63x1,5	34 - 45 mm
K11R 315MY, L, LX	400A ²⁾	GG	GG	SB12 / M12	M10	M63x1,5	34 - 45 mm

¹⁾ Version 220/380 V Δ/Y resp. 230/400 V Δ/Y

²⁾ Version 220/380 V Δ/Y resp. 230/400 V Δ/Y not available

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 Slip-ring rotor, 4 - 315 kW
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- designs for the dairying
- with forced-ventilation
- design with thermal winding protection
- increased degree of protection up to IP 65 S
- brake motors
- built-in motors 0,06 - 90 k

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