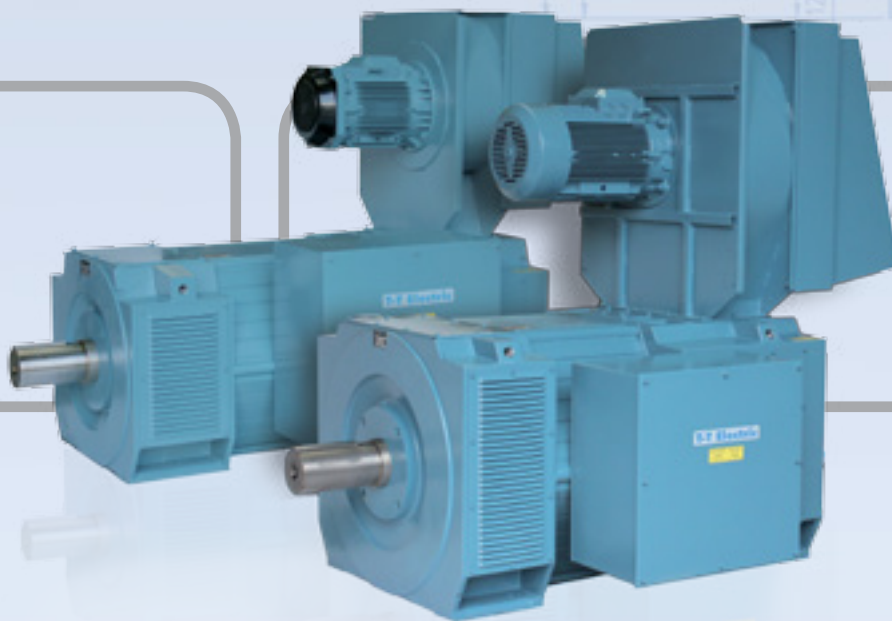


# LAK DC Motors

Catalogue-2017/11 EU

**LAK 4000-6000**  
**Series 112 - 400**  
1-1055 kW  
1-1415 HP  
30-14800 Nm





# List of contents

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Introduction .....	p. 4
Options .....	p. 5
Application data .....	p. 6
Output data .....	p. 8
Dimension drawings, IC06.....	p. 54
Dimension drawings, C06/17/37 .....	p. 57
Dimension drawings, IC666.....	p. 60
Dimension drawings, IC86W.....	p. 62
Dimension drawings, flanges IEC.....	p. 64
Ordering .....	p.66

# Introduction

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LAK 4000 d.c. motors are fully laminated, 4 pole, square frame.  
 Output: 7-500 kW  
 Torque: 40-4500 Nm

LAK 6000 D.C. motors are fully laminated, 6 pole, hexagonal frame.  
 Power : 121-1055 kW  
 Torque : 3874-14800 Nm

LAK 4000 and LAK 6000 motor range:

Frame size	Core lengths
4112	A, B
4132	A, B, C, D
4160	A, B, C, D
4180	A, B, C, D, E, F
4200	A, B, C
4225	A, B, C
4250	A, B, C
4280	A, B, C, D
6315	A, B, C, D, E
6400	A, B, C, D, E

To complete the output range, fully laminated, 2 pole, square frame DC motors are also available.

Frame size	Core lengths
2112	MA, LA
2132	M

Output: 1-25 kW  
 Torque: 30-65 Nm

Type designation example -  
 LAK 4160B:

LAK = Type of motor  
 4 = Number of poles  
 160 = Centre height in mm  
 B = Core length

## Basic design characteristics LAK 4000 and LAK 6000

- Fully laminated stator, main poles and interpoles.
- Compact square frame design and hexagonal frame design.
- Easy installation of accessories.
- Large openings in end shields for easy inspection.
- Stator windings of varnish insulated copper wire.
- Laminated armature core of high grade insulated electro-plate.
- Large number of cooling ducts in armature provide excellent cooling.
- Scrambled armature laminations for low torque ripples.
- Armature windings of varnished copper designed for low commutating stresses and high mechanical strength.
- Armature is impregnated to

ensure high degree of heat transfer.

- Brush holders with spring loaded pressure fingers.
- Prepared for a number of options and accessories ensuring high flexibility.
- Painting with excellent corrosion resistant properties.
- Conforms with IEC standards.
- Available as NEMA standard.
- CSA approved.

## LAK 6000

- Equipped with compensation winding

# Options

Frame size	LAK	4112	4132	4160	4180	4200	4225	4250	4280	6315	6400
<b>Cooling forms</b>											
IC06	(IP23) Force ventilated	0	0	0	0	0	0	0	0	0	0
IC17	(IP23) Single pipe ventilated	0	0	0	0	0	0	0	0	0	0
IC37	(IP54) Double pipe ventilated	0	0	0	0	0	0	0	0	0	0
IC410	(IP54) Totally enclosed	0	0	0	0	0	0	0	0		
IC416	(IP54) Totally enclosed, fan cooled	0	0	0	0						
IC666	(IP54) Air-air cooled		0	0	0	0	0	0	0	0	0
IC86W	(IP54) Air-water cooled		0	0	0	0	0	0	0	0	0
<i>Other cooling forms available</i>											
<b>Protection</b>											
IP55		0	0	0	0	0	0	0	0	0	0
<b>Mounting forms</b>											
IM1001	Horizontal foot	0	0	0	0	0	0	0	0	0	0
IM1002	Horizontal foot, two shaft ends	0	0	0	0	0	0	0	0	0	0
IM2001	Horizontal foot and flange	0	0	0	0	0	0	0	0	0	0
IM2011	Vertical foot and flange	0	0	0	0	0	0	0	0	0	0
<i>Other mounting forms available</i>											
<b>Modifications and accessories</b>											
Compound winding		0	0	0	0	0	0	0	0	S	S
Pressure switch		0	0	0	0	0	0	0	0	0	0
Temperature sensor, interpole		0	0	0	0	0	0	0	0	0	0
Temperature sensor, compensating winding										0	0
Temperature sensor, field winding		0	0	0	0	0	0	0	0	0	0
Bearing sensor		0	0	0	0	0	0	0	0	0	0
Grounding brush		0	0	0	0	0	0	0	0	0	0
Heating element		0	0	0	0	0	0	0	0	0	0
Brush wear sensor		0	0	0	0	0	0	0	0	0	0
Special shaft		0	0	0	0	0	0	0	0	0	0
Roller bearing d-end		0	0	0	0	0	0	0	0	0	0
Shaft seal, d-end		0	0	0	0	0	0	0	0	0	0
Special balance Class 'B'		0	0	0	0	0	0	0	0	0	0
Special paint (RAL colour)		0	0	0	0	0	0	0	0	0	0
Special corrosion protection		0	0	0	0	0	0	0	0	0	0
Transparent inspection cover		0	0	0	0	0	0	0	0	0	0
Brake		0	0	0	0	0	0	0	0	0	0
Gearbox		0	0	0	0	0	0	0	0	0	0
<b>Tachos with coupling</b>											
REO 444RT1 (60v/1000 min <sup>-1</sup> )		0	0	0	0	0	0	0	0	0	0
TDP 0.2 T-4 (60v/1000 min <sup>-1</sup> )		0	0	0	0	0	0	0	0	0	0
<i>Others available</i>											
<b>Pulse generators</b>											
POG 9 D (1-1250 ppr)		0	0	0	0	0	0	0	0	0	0
DGS65 (1024 ppr)		0	0	0	0	0	0	0	0	0	0
<i>Others available</i>											

S : special on request

# Application data

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## Standards

IEC 60034-1

## Insulation

Class H

## Temperature rise

Frames 112-180: Class F

Frames 200-400: Class H

## Vibration class and balance

LAK 4000 motors follow IEC 60034-14 with vibration class A as standard. Grade B is available on request. The motors are balanced with half key as standard.

## Overload capacity

LAK4112-4280:

160% of nominal torque for 15 sec every 5 min (or for 30 sec every 30 min)

180% of nominal current for 15 sec every 5 min (or for 30 sec every 30 min)

LAK6315-6400:

195% of nominal torque for 15 sec every 5 min (or for 30 sec every 30 min)

200% of nominal current for 15 sec every 5 min (or for 30 sec every 30 min)

## Terminal box position

LAK 4112-4180:

Standard: On right side of the motor (facing d-end).

Mounting of terminal box on top or left side on request.

LAK 4200-4280:

Standard: On top of the motor.

Mounting of terminal box on either side of the motor on request.

LAK 6315-6400:

Standard : on right side of the motor (facing D-end)

Mounting of terminal box on top or left side on request

## Blower position

Standard: On top of the motor at the non-drive end.

Other positions on request.

Blower is supplied without filter as standard.

Filter on request.

## Bearings

Grease lubricated ball bearings on D-end as standard.

For belt drive please contact our sales offices.

## Painting

The standard LAK surface finish has excellent corrosion resistance properties. The standard colour of LAK motors is blue according to Munsell 8B 4.5/3.25 (similar to RAL 5024).

## Heat exchangers

Air/water (IC86W):

Air/water exchangers are especially recommended for polluted environment.

Standard is for clean water. For corrosive water, please contact T-T Electric.

Position on top of the motor as standard. Water connection flanges at right hand side (facing D-end).

Max. water pressure 10 PSI  
Max. inlet water temperature 25°C. A water temperature rise of 8-10°C must be expected.

LAK 4132-4180:

Fan motor at N-end.

LAK 4200-4280:

Fan motor at D-end.

LAK 6315-6400:

Fan motor at N-end.

*Detailed heat exchanger information on request.*

A constant speed fan circulates the internal cooling air. A polyamide filter is provided to prevent circulation of carbon dust.

For motors with low loads or a low incoming water temperature, a temperature regulator is recommended to avoid condensation in the cooling air circuit and to minimize water consumption.

Air/air (IC666):

Air/air heat exchangers are recommended where water is not available for cooling purposes.

The output of a motor with air/air exchanger will be approximately 20% lower compared to cooling forms IC06/17/37/86W.

LAK 4132-4280: / 6315-6400

Position: On top of the motor as standard.

Two constant speed fans at top of the heat exchanger to provide air circulation for the outer and inner circuits.

A polyamid filter is provided to prevent circulation of carbon dust.

## Mechanical data

Frame	Inertia J-Kgm <sup>2</sup>	Max. mechanical speed (min <sup>-1</sup> )
LAK 2112MA LAK 2112LA	0.030 0.040	5000 5000
LAK 4112A LAK 4112B	0.037 0.050	5000 5000
LAK 2132M	0.090	5000
LAK 4132A LAK 4132B LAK 4132C LAK 4132D	0.10 0.12 0.14 0.20	4000 4000 4000 3000
LAK 4160A LAK 4160B LAK 4160C LAK 4160D	0.22 0.25 0.31 0.46	3500 3500 3500 3000
LAK 4180AA LAK 4180BA LAK 4180CA LAK 4180DA LAK 4180EA LAK 4180FA	0.39 0.47 0.55 0.69 0.81 1.05	3800 3800 3800 3800 3200 3000
LAK 4200A LAK 4200B LAK 4200C	0.95 1.20 1.40	4000 4000 4000
LAK 4225A LAK 4225B LAK 4225C	1.90 2.20 2.90	3600 3600 3600
LAK 4250A LAK 4250B LAK 4250C	3.30 3.80 4.30	3200 3200 3200
LAK 4280A LAK 4280B LAK 4280C LAK 4280D	5.90 6.80 7.80 8.90	2800 2800 2800 2400
LAK 6315A LAK 6315B LAK 6315C LAK 6315D LAK 6315E	14.5 17.5 20.5 24.0 27.0	2500 2500 2500 2400 2000
LAK 6400A LAK 6400B LAK 6400C LAK 6400D LAK 6400E	36.0 41.5 47.5 54.0 63.0	2100 2100 2100 2100 1900

## Cooling data (IC06/17/37)

Frame	Air volume m <sup>3</sup> /h	Pressure drop in motor N/m <sup>2</sup>
LAK 2112MA-LA	235	375
LAK 4112A-B	270	480
LAK 2132M	435	400
LAK 4132A-B-C LAK 4132D	470 510	550 810
LAK 4160A-B-C LAK 4160D	880 600	980 915
LAK 4180AA-BA LAK 4180CA-DA LAK 4180EA LAK 4180FA	1300 1300 1500 1900	1250 1250 1530 1400
LAK 4200A-B-C	1050	1150
LAK 4225A-B-C	1850	1450
LAK 4250A-B-C	2700	2100
LAK 4280A-B-C-D	3600	2600
LAK 6315A-B-C-D-E	4650	3400
LAK 6400A-B-C-D-E	8600	5400

## Bearings

Frame	Drive end		Commutator end
	Ball bearing	Roller bearing	Ball bearing
LAK 2112MA-LA	6308-C3	NU308-ECP	6208-2RS-C3
LAK 4112	6308-C3	NU308-ECP	6208-2RS-C3
LAK 2132	6309-C3	NU309-ECP	6207-2RS-C3
LAK 4132	6309-C3	NU309-ECP	6207-2RS-C3
LAK 4160	6310-C3	NU310-ECP	6209-2RS-C3
LAK 4180AA-BA LAK 4180CA-DA LAK 4180EA LAK 4180FA	6215-C3 6215-C3 6215-C3 6215-C3	NU2215-ECP NU2215-ECP NU2215-ECP NU315-ECP	6312-2RS-C3 6312-2RS-C3 6312-2RS-C3 6312-2RS-C3
LAK 4200	6216-C3	NU216-ECP	6214-C3
LAK 4225	6218-C3	NU218-ECP	6216-C3
LAK 4250	6220-C3	NU220-ECP	6218-C3
LAK 4280	6222-C3	NU222-ECP	6220-C3
LAK 6315	6228-C3	NU228-ECM	6228-C3
LAK 6400	6230-C3	NU230-ECM	6230-C3

## Blower motor data

Frame	Electric supply			
LAK 2112MA-LA LAK 4112A-B LAK 2132M LAK 4132A-B-C	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz 3x500 V 50 Hz	0.70 1.20 0.70 1.20 0.60	0.25 0.25 0.30 0.30 0.25	
LAK 4132D LAK 4160A-B-C	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz 3x500 V 50 Hz	2.10 3.60 2.00 3.50 1.40	0.75 0.75 0.90 0.90 0.75	
LAK 4160D	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz 3x500 V 50 Hz	2.90 5.00 2.80 5.00 2.30	1.30 1.30 1.50 1.50 1.30	
LAK 4180 AA-BA-CA-DA	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz 3x500 V 50 Hz	3.00 5.20 2.90 5.00 2.70	1.50 1.50 1.75 1.75 1.50	

Frame	Electric supply	F.L.C. (A)	Output (kW)
LAK 4180 EA-FA	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz 3x500 V 50 Hz	5.80 10.00 5.80 10.00 4.60	2.70 2.70 3.00 3.00 2.70
LAK 4200 A-B-C	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz	3.00 5.20 2.90 5.00	1.50 1.50 1.75 1.75
LAK 4225 A-B-C	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz	5.80 10.00 5.80 10.00	2.70 2.70 3.00 3.00
LAK 4250 A-B-C	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz	8.40 14.50 10.40 18.00	4.00 4.00 5.50 5.50
LAK 4280 A-B-C-D	3x380-420 V 50 Hz 3x220-240 V 50 Hz 3x440-480 V 60 Hz 3x250-280 V 60 Hz	10.50 18.20 14.50 25.20	5.50 5.50 7.50 7.50
LAK6315 A-B-C-D-E	3x380-420 V 50 Hz 3x440-480 V 60 Hz	18,7 16,5	11 11
LAK6400 A-B-C-D-E	3x380-420 V 50 Hz 3x440-480 V 60 Hz	30,8 32,5	18,5 22

# Output data

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Select motor frame size against voltage, output and speed.

For intermediate output, take the nearest higher output listed for the same frame size.

For intermediate speed take the next lower speed listed giving the output required. The output lists are based on:

- **Cooling forms**  
**IC06/IC17/IC37/IC86W.**
- **The armature circuit resistance listed is for duty warm condition.**
- **The inductance listed is for the armature circuit.**
- **Motor supply from 3-phase fully controlled thyristor converter, form factor max. 1.05.**

## **Constant power/constant torque**

The full field or base speed and maximum speed through field control with constant output are listed for each winding.

Armature voltage: For -10% the output and speed are proportional to the voltage.

For higher shunt field ranges, please refer to sales offices.

With a combination of armature voltage/shunt control greater constant power ranges can be obtained.

## **Duty cycles**

Ratings: All outputs are duty type S1 and motors are fed from a 3-phase fully controlled thyristor converter with form factor max. 1.05.

## **Field windings**

All motors in the output lists have separate excitation, the field being shunt wound.

Compound winding can be supplied on request.

Motors with compound winding may have nominal data which differ from those shown in the output lists.

## **Armature voltage**

For other armature voltages, please contact our sales offices.

## **Ambient temperature and altitude**

Outputs in this catalogue are based on max. 40°C ambient temperature and motor located at max. 1000 metres above sea level.

If ambient temperature and/or altitude is higher, contact our sales office.

## **NEMA output data**

NEMA catalogue available on request.

## **Stock motors**

LAK 4112 – 4280:

Motors indicated with the sign # in the output data lists are available from stock and can be delivered promptly.

LAK 4200 – 4280:

Delivery time for motors with sign ## in the output data list is 3 weeks (ex. works).

For motor frames 4200 – 4280 in stock please contact our sales department

LAK 6315-6400

Please contact our sales department.



Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 154
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
3.2		1000				12.2	31.0	1605	61.1	9.84	120	241-AB
3.7			1145			12.2	31.0	1605	64.1	9.84	120	241-AB
3.9				1220		12.2	31.0	1605	65.4	9.84	120	241-AB
4.4					1365	12.0	30.8	1605	67.8	9.84	120	241-AB
2.0	645					13.5	29.1	1960	50.3	7.78	88	241-BB
3.8		1235				13.5	29.3	1960	65.0	7.78	88	241-BB
4.3			1400			13.5	29.3	1960	67.5	7.78	88	241-BB
4.6				1485		13.5	29.3	1960	68.7	7.78	88	241-BB
5.0					1660	13.4	29.0	1960	70.9	7.78	88	241-BB
2.8	860					17.0	30.8	2480	57.4	5.14	61	241-CB
5.1		1570				17.0	30.8	2480	70.0	5.14	61	241-CB
5.7			1770			17.0	30.8	2480	72.2	5.14	61	241-CB
6.0				1870		17.0	30.8	2480	73.6	5.14	61	241-CB
6.6					2080	16.9	30.3	2480	75.0	5.14	61	241-CB
3.2	1010					18.5	30.2	3060	61.1	4.21	49	251-CB
5.7		1795				18.5	30.2	3060	61.1	4.21	49	251-CB
6.4			2015			18.5	30.2	3060	74.5	4.21	49	251-CB
6.7				2130		18.5	30.2	3060	75.3	4.21	49	251-CB
7.4					2355	18.0	30.0	3060	76.9	4.21	49	251-CB
3.8	1185					21.0	30.4	3250	64.4	3.33	39	241-DB
6.6		2070				21.0	30.4	3250	74.8	3.33	39	241-DB
7.4			2320			21.0	30.4	3250	76.5	3.33	39	241-DB
7.8				2445		21.0	30.4	3250	77.3	3.33	39	241-DB
8.5					2705	20.8	30.0	3250	78.8	3.33	39	241-DB
# 4.5	1445					23.7	30.0	3835	69.1	2.42	30	241-EB
7.7		2450				23.7	30.0	3835	77.9	2.42	30	241-EB
8.6			2740			23.7	30.0	3835	79.4	2.42	30	241-EB
9.1				2885		23.7	30.0	3835	80.1	2.42	30	241-EB
9.9					3175	23.6	29.2	3835	82.6	2.42	30	241-EB
5.8	1740					29.0	31.6	3595	72.3	1.75	30	231-EB
9.6		2920				29.0	31.5	3595	80.1	1.75	30	231-EB
10.7			3255			29.0	31.5	3595	81.4	1.75	30	231-EB
7.0	2175					34.0	30.8	3835	75.7	1.25	15	231-FB
11.5		3590				34.0	30.7	3835	82.3	1.25	15	231-FB
12.8			3995			34.0	30.7	3835	83.4	1.25	15	231-FB
8.7	2820					41.0	29.6	5000	79.0	0.85	10	231-GB <sup>1</sup>
14.2		4590				41.0	29.6	5000	84.3	0.85	10	231-GB <sup>1</sup>

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 420 W

<sup>1</sup>) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 10% reduction of output.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 154
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
3.0		655				12.2	44.3	1055	56.3	11.51	164	141-AB
3.5			755			12.2	44.3	1055	59.7	11.51	164	141-AB
3.7				805		12.2	44.3	1055	61.1	11.51	164	141-AB
4.2					910	12.1	43.8	1055	64.0	11.51	164	141-AB
3.5		725				13.5	45.6	1280	58.6	9.85	141	151-AB
4.0			835			13.5	45.6	1280	61.8	9.85	141	151-AB
4.2				890		13.5	45.6	1280	63.1	9.85	141	151-AB
4.7					1005	13.4	45.0	1280	66.0	9.85	141	151-AB
3.5		790				13.7	42.6	1275	59.0	9.52	121	141-BB
4.0			910			13.7	42.6	1275	62.2	9.52	121	141-BB
4.3				970		13.7	42.6	1275	63.6	9.52	121	141-BB
4.8					1095	13.6	41.9	1275	66.4	9.52	121	141-BB
4.8		1040				17.0	44.0	1650	65.5	6.29	83	141-CB
5.4			1180			17.0	44.0	1650	68.1	6.29	83	141-CB
5.8				1250		17.0	44.0	1650	69.2	6.29	83	141-CB
6.4					1395	16.8	43.8	1650	71.4	6.29	83	141-CB
2.9	645					18.5	42.9	1895	54.8	5.16	67	141-DB
5.4		1200				18.5	43.1	1895	68.5	5.16	67	141-DB
6.1			1355			18.5	43.2	1895	70.8	5.16	67	141-DB
6.5				1435		18.5	43.2	1895	71.9	5.16	67	141-DB
7.1					1600	18.2	42.4	1895	74.0	5.16	67	141-DB
3.5	770					21.0	43.4	2200	58.7	4.07	54	141-EB
6.3		1390				21.0	43.5	2200	71.2	4.07	54	141-EB
7.1			1570			21.0	43.5	2200	73.4	4.07	54	141-EB
7.6				1660		21.0	43.5	2200	74.3	4.07	54	141-EB
8.3					1840	20.8	43.1	2200	76.1	4.07	54	141-EB
4.3	950					24.0	43.5	2610	64.2	2.97	41	141-FB
7.6		1660				24.0	43.5	2610	75.0	2.97	41	141-FB
8.5			1865			24.0	43.5	2610	76.9	2.97	41	141-FB
9.0				1970		24.0	43.5	2610	77.7	2.97	41	141-FB
9.8					2175	23.8	43.0	2610	79.2	2.97	41	141-FB
# 5.5	1165					29.2	45.1	3120	68.5	2.13	30	141-GB
9.4		1995				29.0	45.2	3120	77.9	2.13	30	141-GB
10.5			2230			29.0	45.2	3120	79.5	2.13	30	141-GB
11.1				2350		29.0	45.2	3120	80.2	2.13	30	141-GB
12.1					2590	28.7	44.6	3120	81.6	2.13	30	141-GB
# 6.2	1305					32.0	45.7	3120	70.7	1.76	25	131-CB
10.6		2210				32.0	45.7	3120	79.4	1.76	25	131-CB
11.8			2470			32.0	45.7	3120	80.0	1.76	25	131-CB
12.4				2600		32.0	45.7	3120	81.6	1.76	25	131-CB
13.2					2870	31.5	44.5	3120	82.9	1.76	25	131-CB
6.8	1470					34.0	44.0	3850	72.6	1.52	21	141-HB
11.4		2465				34.0	44.0	3850	80.7	1.52	21	141-HB
12.7			2750			34.0	44.0	3850	82.0	1.52	21	141-HB
13.3				2890		34.0	44.0	3850	82.6	1.52	21	141-HB
14.5					3180	33.6	43.5	3850	83.7	1.52	21	141-HB
# 7.8	1675					38.0	44.3	4340	75.0	1.22	17	141-KB
12.9		2785				38.0	44.3	4340	82.3	1.22	17	141-KB
14.4			3100			38.0	44.3	4340	83.5	1.22	17	141-KB
15.1				3260		38.0	44.3	4340	84.0	1.22	17	141-KB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 500 W

Data subject to change without prior notice.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 153
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
6.7		1325				21.0	47.9	1655	75.1	3.258	40.75	201-NA
7.5			1485			21.0	47.9	1655	76.9	3.258	40.75	201-NA
7.9				1571		21.0	47.9	1655	78.0	3.258	40.75	201-NA
8.0					1740	19.2	43.8	1810	80.1	3.258	40.75	201-NA
7.1		1445				22.0	47.1	1795	76.8	2.776	35.80	201-MA
8.6			1615			22.0	47.0	1795	78.5	2.776	35.80	201-MA
8.4				1708		22.0	47.0	1795	79.5	2.776	35.80	201-MA
8.5					1885	20.1	43.1	1960	81.3	2.776	35.80	201-MA
4.6	920					24.0	48.0	1890	68.9	2.416	31.20	201-LA
7.8		1565				24.0	47.9	1890	77.9	2.416	31.20	201-LA
8.8			1745			24.0	47.9	1890	79.5	2.416	31.20	201-LA
9.2				1850		24.0	47.9	1890	80.1	2.416	31.20	201-LA
9.1					2034	21.4	42.8	2115	81.9	2.416	31.20	201-LA
4.9	1010					25.0	46.3	2105	70.2	2.174	26.90	201-KA
8.2		1700				25.0	46.3	2105	78.8	2.174	26.90	201-KA
9.2			1900			25.0	46.3	2105	80.2	2.174	26.90	201-KA
9.7				2006		25.0	46.3	2105	81.2	2.174	26.90	201-KA
9.8					2207	22.9	42.4	2295	82.5	2.174	26.90	201-KA
5.5	1120					27.5	47.0	2435	72.5	1.783	22.90	201-JA
9.2		1870				27.5	47.0	2435	80.3	1.783	22.90	201-JA
10.3			2085			27.5	47.0	2435	81.7	1.783	22.90	201-JA
10.0				2197		27.5	47.0	2435	82.5	1.783	22.90	201-JA
11.5					2418	26.6	45.5	2515	83.7	1.783	22.90	201-JA
6.1	1240					30.0	46.7	2655	73.8	1.549	19.25	201-IA
10.1		2060				30.0	46.6	2655	81.2	1.549	19.25	201-IA
11.2			2295			30.0	46.6	2655	82.5	1.549	19.25	201-IA
11.7				2417		30.0	46.6	2655	83.3	1.549	19.25	201-IA
12.4					2654	28.8	44.8	2760	84.4	1.549	19.25	201-IA
6.8	1390					33.0	46.7	2920	75.7	1.275	15.90	201-HA
11.2		2295				33.0	46.6	2920	82.5	1.275	15.90	201-HA
12.4			2550			33.0	46.6	2920	83.6	1.275	15.90	201-HA
13.1				2687		33.0	46.6	2920	84.4	1.275	15.90	201-HA
13.7					2947	31.4	44.3	3065	85.4	1.275	15.90	201-HA
8.2	1575					39.0	50.0	2975	77.9	0.973	12.90	201-GA
13.5		2575				39.0	49.9	2975	84.0	0.973	12.90	201-GA
14.9			2860			39.0	49.9	2975	85.0	0.973	12.90	201-GA
15.2				3014		37.7	48.2	3080	85.7	0.973	12.90	201-GA
9.4	1800					44.0	49.9	3425	79.7	0.772	10.20	201-FA
15.3		2930				44.0	49.8	3425	85.2	0.772	10.20	201-FA
17.0			3250			44.0	49.8	3425	86.1	0.772	10.20	201-FA
17.4				3426		43.0	48.7	3500	86.7	0.772	10.20	201-FA
11.2	2100					51.0	51.0	3855	81.8	0.573	7.80	201-EA
18.0		3390				51.0	50.8	3855	86.6	0.573	7.80	201-EA
20.0			3760			51.0	50.8	3855	87.3	0.573	7.80	201-EA
13.4	2495					60.0	51.3	4460	83.5	0.425	5.75	201-DA
21.4		4000				60.0	51.1	4460	87.7	0.425	5.75	201-DA
15.9	3055					70.0	49.8	5000	85.4	0.298	4.00	201-CA

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 625 W

Data subject to change without prior notice.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 153
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
7.9		1160				25.0	65.2	1545	75.0	2.679	32.75	101-KA
8.9			1300			25.0	65.2	1545	76.8	2.679	32.75	101-KA
9.4				1375		25.0	65.2	1545	77.9	2.679	32.75	101-KA
8.9		1280				27.5	66.2	1790	76.9	2.196	27.90	101-JA
9.9			1435			27.5	66.2	1790	78.5	2.196	27.90	101-JA
10.5				1512		27.5	66.2	1790	79.6	2.196	27.90	101-JA
12.5					1668	27.5	66.2	1790	81.0	2.196	27.90	101-JA
# 9.8		1410				30.0	66.2	1950	77.9	1.908	23.45	101-IA
10.9			1575			30.0	66.1	1950	79.5	1.908	23.45	101-IA
11.5				1712		30.0	66.1	1950	80.4	1.908	23.45	101-IA
12.7					1837	30.0	66.1	1950	81.8	1.908	23.45	101-IA
10.9		1575				33.0	66.2	2145	79.5	1.569	19.40	101-HA
12.2			1760			33.0	66.1	2145	80.9	1.569	19.40	101-HA
12.8				1855		33.0	66.1	2145	81.7	1.569	19.40	101-HA
14.1					2043	33.0	66.1	2145	83.0	1.569	19.40	101-HA
7.9	1070					39.0	70.6	2240	74.0	1.195	15.70	101-GA
13.1		1790				39.0	70.5	2240	81.3	1.195	15.70	101-GA
14.6			1980			39.0	70.5	2240	82.6	1.195	15.70	101-GA
15.4				2090		39.0	70.4	2240	83.3	1.195	15.70	101-GA
# 9.1	1230					44.0	70.8	2515	76.2	0.947	12.40	101-FA
15.0		2030				44.0	70.6	2515	82.8	0.947	12.40	101-FA
16.7			2255			44.0	70.6	2515	83.9	0.947	12.40	101-FA
17.5				2373		44.0	70.6	2515	84.6	0.947	12.40	101-FA
# 10.9	1445					51.0	71.8	2835	78.7	0.708	9.50	101-EA
17.7		2355				51.0	71.6	2835	84.4	0.708	9.50	101-EA
19.6			2615			51.0	71.6	2835	85.3	0.708	9.50	101-EA
# 13.0	1720					60.0	72.2	3280	80.7	0.526	7.00	101-DA
21.0		2785				60.0	72.0	3280	85.7	0.526	7.00	101-DA
23.3			3085			60.0	72.0	3280	87.0	0.526	7.00	101-DA
15.5	2115					70.0	70.2	4050	83.0	0.368	4.85	101-CA
24.8		3390				70.0	69.9	4050	87.1	0.368	4.85	101-CA
27.5			3755			70.0	69.8	4050	87.8	0.368	4.85	101-CA
18.6	2705					82.0	65.5	5000	84.9	0.251	3.10	101-BA
29.3		4300				82.0	65.2	5000	88.1	0.251	3.10	101-BA
32.4			4755			82.0	65.1	5000	88.6	0.251	3.10	101-BA
23.0	3690					100	59.5	5000	86.7	0.149	1.75	101-AA

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 740 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 155
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
4.0		605				16.4	63.1	1480	56.1	8.93	132	241-AB
4.6			700			16.4	63.1	1480	59.5	8.93	132	241-AB
4.9				750		16.4	63.1	1480	61.0	8.93	132	241-AB
5.5					850	16.2	62.1	1480	64.1	8.93	132	241-AB
5.6		830				20.5	64.3	1725	63.7	5.73	87	241-BB
6.4			945			20.5	64.3	1725	66.5	5.73	87	241-BB
6.8				1000		20.5	64.3	1725	67.7	5.73	87	241-BB
7.5					1125	20.3	63.7	1725	70.1	5.73	87	241-BB
6.6		980				23.3	64.6	1950	67.0	4.50	68	241-CB
7.5			1110			23.3	64.6	1950	69.5	4.50	68	241-CB
8.0				1180		23.3	64.6	1950	70.7	4.50	68	241-CB
8.8					1315	23.0	63.9	1950	72.8	4.50	68	241-CB
8.3		1200				27.5	66.1	2200	71.7	3.18	51	241-DB
9.3			1350			27.5	66.1	2200	73.9	3.18	51	241-DB
9.9				1430		27.5	66.1	2200	74.8	3.18	51	241-DB
10.9					1585	27.2	65.7	2200	76.6	3.18	51	241-DB
5.3	745					30.5	67.6	1860	62.2	2.60	43	231-AB
9.4		1330				30.5	67.7	1860	73.8	2.60	43	231-AB
10.6			1495			30.5	67.7	1860	75.8	2.60	43	231-AB
11.2				1580		30.5	67.7	1860	76.7	2.60	43	231-AB
12.1					1755	30.1	65.9	1860	78.4	2.60	43	231-AB
5.6	830					32.0	64.9	2650	63.6	2.37	36	251-EB
10.0		1465				32.0	65.0	2650	74.8	2.37	36	251-EB
11.2			1650			32.0	65.0	2650	76.7	2.37	36	251-EB
11.8				1740		32.0	65.0	2650	77.5	2.37	36	251-EB
13.0					1925	31.6	64.4	2650	79.1	2.37	36	251-EB
6.6	945					36.0	66.5	2840	66.5	1.93	30	241-EB
11.5		1650				36.0	66.4	2840	76.7	1.93	30	241-EB
12.9			1850			36.0	66.4	2840	78.5	1.93	30	241-EB
13.6				1950		36.0	66.4	2840	79.3	1.93	30	241-EB
14.8					2155	35.6	65.5	2840	80.7	1.93	30	241-EB
7.7	1100					40.0	66.5	3160	70.1	1.51	24	251-FB
13.1		1880				40.0	66.5	3160	79.1	1.51	24	251-FB
14.6			2105			40.0	66.5	3160	80.7	1.51	24	251-FB
15.4				2215		40.0	66.5	3160	81.4	1.51	24	251-FB
16.8					2440	39.5	65.7	3160	82.6	1.51	24	251-FB
9.1	1280					46.0	68.0	3480	73.0	1.16	19	241-FB
15.4		2155				46.0	68.1	3480	81.1	1.16	19	241-FB
17.1			2405			46.0	68.1	3480	82.5	1.16	19	241-FB
18.0				2530		46.0	68.1	3480	83.1	1.16	19	241-FB
19.6					2785	45.4	67.2	3480	84.2	1.16	19	241-FB
10.6	1505					52.0	67.3	4000	75.4	0.92	15	241-GB
17.6		2500				52.0	67.3	4000	82.7	0.92	15	241-GB
19.7			2790			52.0	67.3	4000	83.9	0.92	15	241-GB
20.7				2935		52.0	67.3	4000	84.5	0.92	15	241-GB
12.7	1820					60.0	66.9	4000	78.7	0.65	11	231-DB
20.8		2990				60.0	66.6	4000	84.9	0.65	11	231-DB
23.2			3320			60.0	66.6	4000	85.9	0.65	11	231-DB
24.3				3490		60.0	66.6	4000	86.4	0.65	11	231-DB
15.6	2240					72.0	66.5	4000	81.0	0.47	8	231-EB
25.3		3640				72.0	66.5	4000	86.3	0.47	8	231-EB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 550 W

Data subject to change without prior notice.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 156
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
7.7		690				27.5	107	1250	65.6	4.01	60.3	341-AB
8.8			785			27.5	107	1250	68.3	4.01	60.3	341-AB
9.4				837		27.5	107	1250	70.0	4.01	60.3	341-AB
10.4					942	27.0	105	1250	72.8	4.01	60.3	341-AB
9.1		820				31.0	106	1410	69.0	3.16	46.2	341-BB
10.3			930			31.0	106	1410	71.4	3.16	46.2	341-BB
11.0				993		31.0	105	1410	73.0	3.16	46.2	341-BB
12.0					1111	30.5	104	1410	75.5	3.16	46.2	341-BB
5.9	555					35.0	102	1750	60.1	2.41	33.9	341-CB
10.7		1000				35.0	102	1750	72.5	2.41	33.9	341-CB
12.1			1130			35.0	102	1750	74.7	2.41	33.9	341-CB
12.8				1199		35.0	102	1750	76.0	2.41	33.9	341-CB
14.0					1337	34.4	100	1750	78.2	2.41	33.9	341-CB
7.9	720					43.0	105	2000	66.2	1.61	23.6	341-DB
13.8		1260				43.0	105	2000	76.7	1.61	23.6	341-DB
15.4			1410			43.0	105	2000	78.5	1.61	23.6	341-DB
16.3				1493		43.0	105	2000	79.6	1.61	23.6	341-DB
17.8					1654	42.3	103	2000	81.4	1.61	23.6	341-DB
# 9.4	835					49.0	107	2160	69.5	1.26	19.4	341-EB
16.0		1430				49.0	107	2160	78.9	1.26	19.4	341-EB
18.0			1600			49.0	107	2160	80.5	1.26	19.4	341-EB
19.0				1693		49.0	107	2160	81.5	1.26	19.4	341-EB
20.7					1870	48.2	105	2160	83.1	1.26	19.4	341-EB
10.2	980					51.0	99.0	2630	72.6	1.04	15.3	341-FB
17.1		1650				51.0	99.1	2630	80.9	1.04	15.3	341-FB
19.1			1840			51.0	99.1	2630	82.3	1.04	15.3	341-FB
20.2				1943		51.0	99.0	2630	83.2	1.04	15.3	341-FB
21.8					2144	50.2	97.4	2630	84.6	1.04	15.3	341-FB
# 12.7	1150					62.0	106	2920	75.4	0.77	11.8	341-GB
21.2		1915				62.0	105	2920	82.8	0.77	11.8	341-GB
23.6			2135			62.0	105	2920	84.1	0.77	11.8	341-GB
24.9				2251		62.0	105	2920	84.9	0.77	11.8	341-GB
26.8					2481	61.0	104	2920	86.1	0.77	11.8	341-GB
14.5	1380					69.0	100	3750	77.6	0.61	8.70	341-HB
23.9		2270				69.0	101	3750	84.3	0.61	8.70	341-HB
26.6			2525			69.0	100	3750	85.4	0.61	8.70	341-HB
27.3				2662		69.0	100	3750	86.1	0.61	8.70	341-HB
30.2					2923	67.9	98.7	3750	87.2	0.61	8.70	341-HB
16.2	1725					74.0	89.7	4000	81.1	0.45	5.03	341-KB
26.2		2795				74.0	89.6	4000	86.4	0.45	5.03	341-KB
29.1			3100			74.0	89.4	4000	87.3	0.45	5.03	341-KB
30.5				3264		74.0	89.4	4000	87.8	0.45	5.03	341-KB
32.9					3572	72.8	87.9	4000	88.7	0.45	5.03	341-KB
22.6	2220					100	97.0	4000	84.3	0.26	3.20	331-GB
36.1		3560				100	96.8	4000	88.5	0.26	3.20	331-GB
39.9			3945			100	96.7	4000	89.3	0.26	3.20	331-GB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 750 W

Data subject to change without prior notice.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 156
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
10.2		730				35.0	133	1200	68.8	2.81	42.0	241-AB
11.6			830			35.0	133	1200	71.3	2.81	42.0	241-AB
12.3				881		35.0	133	1200	72.8	2.81	42.0	241-AB
13.6					990	34.4	131	1200	75.4	2.81	42.0	241-AB
7.4	515					43.0	137	1410	61.6	1.88	29.2	241-BB
13.3		930				43.0	137	1410	73.6	1.88	29.2	241-BB
15.0			1045			43.0	137	1410	75.7	1.88	29.2	241-BB
15.9				1106		43.0	137	1410	77.0	1.88	29.2	241-BB
17.3					1236	42.3	134	1410	79.1	1.88	29.2	241-BB
8.9	605					49.0	140	1520	65.6	1.46	23.6	241-CB
15.6		1060				49.0	140	1520	76.2	1.46	23.6	241-CB
17.5			1190			49.0	140	1520	78.1	1.46	23.6	241-CB
18.5				1258		49.0	140	1520	79.2	1.46	23.6	241-CB
20.2					1399	48.2	138	1520	81.1	1.46	23.6	241-CB
9.7	715					51.0	130	1860	69.0	1.22	18.7	241-DB
16.7		1230				51.0	130	1860	78.5	1.22	18.7	241-DB
18.6			1375			51.0	130	1860	80.1	1.22	18.7	241-DB
19.7				1449		51.0	130	1860	81.1	1.22	18.7	241-DB
21.4					1606	50.2	127	1860	82.8	1.22	18.7	241-DB
12.2	845					62.0	138	2050	72.2	0.89	14.2	241-EB
20.7		1430				62.0	138	2050	80.7	0.89	14.2	241-EB
23.1			1595			62.0	138	2050	82.2	0.89	14.2	241-EB
24.4				1683		62.0	138	2050	83.1	0.89	14.2	241-EB
26.4					1861	61.0	136	2050	84.5	0.89	14.2	241-EB
# 14.0	1015					69.0	132	2500	74.8	0.71	10.5	241-FB
23.4		1700				69.0	132	2500	82.4	0.71	10.5	241-FB
26.1			1895			69.0	132	2500	83.7	0.71	10.5	241-FB
27.5				1997		69.0	132	2500	84.5	0.71	10.5	241-FB
29.8					2202	67.9	129	2500	85.8	0.71	10.5	241-FB
15.8	1285					74.0	118	3350	78.8	0.52	7.3	241-GB
25.8		2100				74.0	118	3350	84.9	0.52	7.3	241-GB
28.7			2335			74.0	117	3350	86.0	0.52	7.3	241-GB
30.1				2461		74.0	117	3350	86.6	0.52	7.3	241-GB
32.6					2697	72.8	115	3350	87.6	0.52	7.3	241-GB
# 22.1	1665					100	127	3900	82.5	0.30	4.6	241-HB
35.7		2690				100	127	3900	87.4	0.30	4.6	241-HB
39.6			2980			100	127	3900	88.2	0.30	4.6	241-HB
41.6				3132		100	127	3900	88.7	0.30	4.6	241-HB
44.7					3433	98.3	125	3900	89.5	0.30	4.6	241-HB
27.7	2280					122	116	4000	85.1	0.19	2.6	231-HB
44.1		3645				122	116	4000	88.9	0.19	2.6	231-HB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 830 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 156
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
11.8		765				38.5	148	1460	72.0	2.14	35	141-AB
13.3			860			38.5	148	1460	74.2	2.14	35	141-AB
14.1				910		38.5	148	1460	75.5	2.14	35	141-AB
16.1					1019	37.9	145	1460	77.7	2.14	35	141-AB
7.7	495					43.0	149	1610	63.5	1.69	29	141-BB
13.6		875				43.0	149	1610	74.7	1.69	29	141-BB
15.3			980			43.0	149	1610	76.7	1.69	29	141-BB
16.1				1037		43.0	149	1610	77.9	1.69	29	141-BB
17.7					1154	42.3	146	1610	79.8	1.69	29	141-BB
9.0	580					48.0	148	1830	66.8	1.35	23	141-CB
15.5		1000				48.0	148	1830	76.9	1.35	23	141-CB
17.4			1125			48.0	148	1830	78.7	1.35	23	141-CB
18.4				1189		48.0	148	1830	79.8	1.35	23	141-CB
20.0					1317	47.2	146	1830	81.6	1.35	23	141-CB
10.7	690					55.0	148	2080	70.0	1.05	17	141-DB
18.2		1170				55.0	148	2080	79.1	1.05	17	141-DB
20.3			1310			55.0	148	2080	80.7	1.05	17	141-DB
21.4				1385		55.0	148	2080	81.4	1.05	17	141-DB
23.3					1528	54.1	146	2080	83.2	1.05	17	141-DB
# 13.0	825					65.0	150	2470	72.7	0.80	13	141-EB
21.9		1390				65.0	150	2470	81.0	0.80	13	141-EB
24.4			1550			65.0	150	2470	82.4	0.80	13	141-EB
25.7				1639		65.0	150	2470	83.3	0.80	13	141-EB
27.9					1803	63.9	148	2470	84.7	0.80	13	141-EB
# 16.2	1045					77.0	148	3000	77.3	0.53	9.0	141-FB
26.7		1720				77.0	148	3000	84.0	0.53	9.0	141-FB
29.7			1915			77.0	148	3000	85.1	0.53	9.0	141-FB
31.2				2016		77.0	148	3000	85.8	0.53	9.0	141-FB
33.7					2216	75.7	145	3000	86.9	0.53	9.0	141-FB
# 21.6	1365					98.0	151	3780	81.5	0.32	6.0	141-GB
34.9		2215				98.0	151	3780	86.8	0.32	6.0	141-GB
38.7			2455			98.0	151	3780	87.7	0.32	6.0	141-GB
40.6				2579		98.0	151	3780	88.2	0.32	6.0	141-GB
43.7					2827	96.4	148	3780	89.1	0.32	6.0	141-GB
25.7	1880					114	131	4000	84.3	0.21	3.0	141-HB
41.0		3010				114	130	4000	88.4	0.21	3.0	141-HB
45.4			3330			114	130	4000	89.1	0.21	3.0	141-HB
47.6				3494		114	130	4000	89.4	0.21	3.0	141-HB
51.2					3827	112	128	4000	90.1	0.21	3.0	141-HB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 1000 W



Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)					Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 156
	260	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
11.7		465				43.0	242	920	65.2	2.74	44.5	401-AB
13.4			530			43.0	242	920	68.0	2.74	44.5	401-AB
14.4				568		43.0	242	920	69.8	2.74	44.5	401-AB
16.0					639	42.2	237	920	72.6	2.74	44.5	401-AB
13.5		545				47.0	238	1040	68.9	2.17	36.1	401-BB
15.4			620			47.0	238	1040	71.4	2.17	36.1	401-BB
16.4				661		47.0	238	1040	73.0	2.17	36.1	401-BB
18.1					740	46.2	234	1040	75.6	2.17	36.1	401-BB
15.3		635				51.0	229	1210	71.8	1.78	28.5	401-CB
17.3			720			51.0	229	1210	74.0	1.78	28.5	401-CB
18.4				763		51.0	229	1210	75.5	1.78	28.5	401-CB
20.2					856	50.1	225	1210	77.7	1.78	28.5	401-CB
10.3	415					60.0	236	1345	62.7	1.36	21.8	401-DB
18.5		750				60.0	236	1345	74.4	1.36	21.8	401-DB
20.9			845			60.0	236	1345	76.5	1.36	21.8	401-DB
22.1				896		60.0	236	1345	77.8	1.36	21.8	401-DB
24.2					1000	59.0	232	1345	79.9	1.36	21.8	401-DB
12.5	515					69.0	233	1645	66.8	1.03	16.0	401-EB
22.0		900				69.0	233	1645	77.2	1.03	16.0	401-EB
24.7			1010			69.0	233	1645	79.0	1.03	16.0	401-EB
26.1				1071		69.0	233	1645	80.1	1.03	16.0	401-EB
28.5					1192	67.8	229	1645	81.9	1.03	16.0	401-EB
16.5	660					85.0	239	1920	72.0	0.69	11.1	401-FB
28.2		1125				85.0	239	1920	80.8	0.69	11.1	401-FB
31.5			1260			85.0	239	1920	82.5	0.69	11.1	401-FB
33.3				1331		85.0	239	1920	83.2	0.69	11.1	401-FB
36.1					1466	83.5	235	1920	84.6	0.69	11.1	401-FB
20.9	895					99.0	223	2575	78.3	0.42	7.1	401-GB
34.4		1475				99.0	223	2575	84.9	0.42	7.1	401-GB
38.3			1645			99.0	223	2575	86.0	0.42	7.1	401-GB
40.3				1732		99.0	223	2575	86.8	0.42	7.1	401-GB
43.5					1899	97.3	219	2575	87.8	0.42	7.1	401-GB
26.8	1235					123	207	3000	81.3	0.28	4.0	401-HB
43.5		2010				123	207	3000	86.8	0.28	4.0	401-HB
48.3			2230			123	207	3000	87.8	0.28	4.0	401-HB
50.8				2344		123	207	3000	88.4	0.28	4.0	401-HB
54.7					2567	121	203	3000	89.2	0.28	4.0	401-HB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 1350 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 157
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
12.4	650	735	783	870	41.0	182	980	71.2	2.14	33.6	301-RC
14.0					41.0	182	980	73.5	2.14	33.6	301-RC
15.0					41.0	182	980	75.0	2.14	33.6	301-RC
16.3					40.3	179	980	77.3	2.14	33.6	301-RC
14.0	735	825	871	971	45.0	182	1050	73.5	1.75	28.2	301-PC
15.7					45.0	182	1050	75.5	1.75	28.2	301-PC
16.6					45.0	182	1050	76.8	1.75	28.2	301-PC
18.3					44.3	179	1050	78.9	1.75	28.2	301-PC
15.9	825	925	979	1087	50.0	185	1205	75.7	1.44	23.3	301-NC
17.9					50.0	185	1205	77.6	1.44	23.3	301-NC
18.0					50.0	185	1205	78.8	1.44	23.3	301-NC
20.7					49.2	182	1205	80.7	1.44	23.3	301-NC
18.2	935	1045	1106	1226	56.0	186	1400	77.6	1.17	18.9	301-MC
20.4					56.0	186	1400	79.3	1.17	18.9	301-MC
21.5					56.0	186	1400	80.5	1.17	18.9	301-MC
23.5					55.1	183	1400	82.2	1.17	18.9	301-MC
20.9	1075	1200	1267	1399	63.0	186	1575	79.8	0.92	14.9	301-LC
23.4					63.0	186	1575	81.4	0.92	14.9	301-LC
24.8					63.0	186	1575	82.4	0.92	14.9	301-LC
26.8					62.0	183	1575	83.9	0.92	14.9	301-LC
24.3	1245	1390	1468	1615	72.0	187	1850	81.5	0.72	11.5	301-KC
27.1					72.0	187	1850	82.9	0.72	11.5	301-KC
28.7					72.0	187	1850	83.9	0.72	11.5	301-KC
31.1					70.8	183	1850	85.3	0.72	11.5	301-KC
29.5	1490	1660	1747	1923	85.0	189	2125	84.1	0.50	8.4	301-HC
32.8					85.0	189	2125	85.3	0.50	8.4	301-HC
34.5					85.0	189	2125	86.0	0.50	8.4	301-HC
37.3					83.6	186	2125	87.2	0.50	8.4	301-HC
# 36.1	1830	2030	2134	2346	102	189	2470	86.2	0.35	5.9	301-GC
40.1					102	189	2470	87.2	0.35	5.9	301-GC
42.0					102	189	2470	87.9	0.35	5.9	301-GC
45.5					100	185	2590	88.9	0.35	5.9	301-GC
45.8	2330	2580	2711	2971	127	188	3325	88.4	0.22	3.8	301-FC
50.8					127	188	3325	89.2	0.22	3.8	301-FC
53.3					127	188	3325	89.7	0.22	3.8	301-FC
57.4					124	185	3325	90.5	0.22	3.8	301-FC
51.6	2630	2910	3050	3335	142	188	3500	89.8	0.18	3.0	301-EB
57.2					142	188	3500	90.6	0.18	3.0	301-EB
59.8					142	188	3500	90.8	0.18	3.0	301-EB
64.6					140	185	3500	91.4	0.18	3.0	301-EB
61.0	3165				166	184	3500	90.4	0.13	2.1	301-EC

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 1050 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 157
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
14.8	680	765	812	899	47.0	208	1080	75.4	1.59	26.3	601-RC
16.7					47.0	208	1080	77.3	1.59	26.3	601-RC
17.6					47.0	208	1080	78.6	1.59	26.3	601-RC
19.3					46.2	205	1080	80.5	1.59	26.3	601-RC
16.4	755	845	935	995	51.0	207	1180	76.9	1.36	22.1	601-PC
18.4					51.0	207	1180	78.7	1.36	22.1	601-PC
19.5					51.0	207	1180	79.5	1.36	22.1	601-PC
21.2					50.1	204	1180	81.7	1.36	22.1	601-PC
18.7	845	950	1003	1106	57.0	211	1280	78.9	1.12	18.3	601-NC
20.9					57.0	211	1280	80.5	1.12	18.3	601-NC
22.1					57.0	211	1280	81.6	1.12	18.3	601-NC
23.9					56.0	207	1280	83.0	1.12	18.3	601-NC
20.9	955	1065	1125	1245	63.0	210	1430	80.3	0.92	14.9	601-MC
23.4					63.0	210	1430	81.9	0.92	14.9	601-MC
24.8					63.0	210	1430	82.8	0.92	14.9	601-MC
26.8					61.9	206	1430	84.3	0.92	14.9	601-MC
24.4	1095	1220	1287	1418	72.0	213	1580	82.3	0.71	11.7	601-LC
27.3					72.0	213	1580	83.7	0.71	11.7	601-LC
28.8					72.0	213	1580	84.6	0.71	11.7	601-LC
31.2					70.8	210	1580	85.9	0.71	11.7	601-LC
28.5	1275	1420	1493	1644	82.5	214	1800	84.1	0.54	9.0	601-KC
31.7					82.5	214	1800	85.3	0.54	9.0	601-KC
33.4					82.5	214	1800	86.1	0.54	9.0	601-KC
36.2					81.1	210	1800	87.3	0.54	9.0	601-KC
34.1	1515	1680	1767	1942	97.0	215	2100	86.0	0.40	6.6	601-HC
37.9					97.0	215	2100	87.0	0.40	6.6	601-HC
39.8					97.0	215	2100	87.7	0.40	6.6	601-HC
43.0					95.3	212	2100	88.7	0.40	6.6	601-HC
41.1	1845	2050	2153	2365	115	213	2550	87.7	0.28	4.6	601-GC
45.6					115	213	2550	88.6	0.28	4.6	601-GC
48.0					115	213	2550	89.2	0.28	4.6	601-GC
51.7					113	209	2550	90.1	0.28	4.6	601-GC
43.2	2020	2240	2350	2570	120	204	3000	88.7	0.25	4.0	601-GB
47.9					120	204	3000	89.5	0.25	4.0	601-GB
50.2					120	204	3000	89.9	0.25	4.0	601-GB
54.3					119	202	3000	90.5	0.25	4.0	601-GB
52.5	2350	2605	2736	2995	144	213	3170	89.7	0.18	2.9	601-FC
58.1					144	213	3170	90.5	0.18	2.9	601-FC
61.0					144	213	3170	90.9	0.18	2.9	601-FC
65.0					140	207	3170	91.6	0.18	2.9	601-FC
56.4	2640	2925	3065	3350	154	204	3500	90.5	0.15	2.4	601-EB
62.4					154	204	3500	91.1	0.15	2.4	601-EB
65.2					154	203	3500	91.4	0.15	2.4	601-EB
70.4					152	201	3500	92.0	0.15	2.4	601-EB
70.0	3190				189	210	3500	91.6	0.10	1.7	601-EC <sup>1</sup>

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 1050 W

<sup>1</sup>) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 10% reduction of output.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 157
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
15.4	620	700	744	827	50.0	237	925	72.5	1.64	28.3	201-NC
17.4					50.0	237	925	74.7	1.64	28.3	201-NC
18.4					50.0	237	925	76.0	1.64	28.3	201-NC
20.2					50.0	233	925	78.2	1.64	28.3	201-NC
17.6	710	795	842	937	56.0	238	1125	74.6	1.33	22.9	201-MC
19.8					56.0	238	1125	76.6	1.33	22.9	201-MC
21.0					56.0	238	1125	77.9	1.33	22.9	201-MC
23.0					55.1	234	1125	79.9	1.33	22.9	201-MC
20.4	815	915	969	1072	63.0	239	1265	77.1	1.05	18.1	201-LC
22.9					63.0	239	1265	78.9	1.05	18.1	201-LC
24.2					63.0	239	1265	80.0	1.05	18.1	201-LC
26.3					62.0	235	1265	81.8	1.05	18.1	201-LC
23.8	950	1065	1126	1245	72.0	238	1490	79.1	0.83	13.85	201-KC
26.6					72.0	238	1490	80.7	0.83	13.85	201-KC
28.1					72.0	238	1490	81.7	0.83	13.85	201-KC
30.5					70.8	234	1490	83.3	0.83	13.85	201-KC
28.9	1145	1275	1346	1481	85.0	242	1690	82.0	0.58	10.2	201-HC
32.2					85.0	242	1690	83.4	0.58	10.2	201-HC
34.0					85.0	242	1690	84.3	0.58	10.2	201-HC
36.8					83.6	237	1690	85.6	0.58	10.2	201-HC
# 35.5	1410	1565	1644	1812	102	241	2000	84.4	0.40	7.05	201-GC
39.5					102	241	2000	85.6	0.40	7.05	201-GC
41.4					102	241	2000	86.3	0.40	7.05	201-GC
44.9					100	237	2000	87.5	0.40	7.05	201-GC
45.2	1800	1995	2099	2298	127	240	2675	86.9	0.25	4.50	201-FC
50.2					127	240	2675	87.9	0.25	4.50	201-FC
52.8					127	240	2675	88.5	0.25	4.50	201-FC
56.9					125	236	2675	89.4	0.25	4.50	201-FC
50.3	2030	2250	2360	2585	140	237	2980	88.6	0.21	3.63	201-EB
55.8					140	237	2980	89.4	0.21	3.63	201-EB
58.5					140	237	2980	89.7	0.21	3.63	201-EB
63.3					138	233	2980	90.7	0.21	3.63	201-EB
# 60.4	2450	2715	2848	3120	166	235	3500	89.2	0.15	2.55	201-EC
66.8					166	235	3500	90.0	0.15	2.55	201-EC
70.0					166	235	3500	90.4	0.15	2.55	201-EC
75.3					163	231	3500	91.1	0.15	2.55	201-EC
73.5	2920	3230	3386		200	241	3500	91.0	0.09	1.85	201-CB
79.5					200	240	3500	91.5	0.09	1.85	201-CB
83.7					200	240	3500	91.8	0.09	1.85	201-CB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 1250 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 157
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
18.1	640	720	763	846	57.0	270	1040	75.9	1.28	23.6	501-NC
20.3					57.0	270	1040	77.8	1.28	23.6	501-NC
21.5					57.0	270	1040	79.0	1.28	23.6	501-NC
23.5					56.0	265	1040	80.9	1.28	23.6	501-NC
20.4	725	815	861	957	63.0	269	1150	77.7	1.05	19.1	501-MC
22.9					63.0	269	1150	79.5	1.05	19.1	501-MC
24.2					63.0	269	1150	80.6	1.05	19.1	501-MC
26.3					61.9	264	1150	82.3	1.05	19.1	501-MC
23.9	840	935	989	1091	72.0	273	1280	80.1	0.81	15.1	501-LC
26.8					72.0	273	1280	81.6	0.81	15.1	501-LC
28.3					72.0	273	1280	82.6	0.81	15.1	501-LC
30.7					70.8	269	1280	84.1	0.81	15.1	501-LC
28.0	975	1090	1150	1264	82.5	274	1450	82.1	0.62	11.6	501-KC
31.2					82.5	274	1450	83.5	0.62	11.6	501-KC
33.0					82.5	274	1450	84.4	0.62	11.6	501-KC
35.7					81.1	269	1450	85.7	0.62	11.6	501-KC
33.6	1165	1295	1365	1500	97.0	276	1680	84.3	0.45	8.5	501-HC
37.4					97.0	276	1680	85.4	0.45	8.5	501-HC
39.4					97.0	276	1680	86.2	0.45	8.5	501-HC
42.6					95.3	271	1680	87.4	0.45	8.5	501-HC
40.6	1425	1585	1664	1832	115	273	2050	86.3	0.32	5.9	501-GC
45.2					115	273	2050	87.4	0.32	5.9	501-GC
47.5					115	273	2050	88.0	0.32	5.9	501-GC
51.2					113	268	2050	89.1	0.32	5.9	501-GC
42.5	1560	1730	1815	1990	120	260	2420	87.1	0.29	4.9	501-GB
47.2					120	260	2420	87.6	0.29	4.9	501-GB
49.4					120	260	2420	88.4	0.29	4.9	501-GB
53.6					118	257	2420	89.2	0.29	4.9	501-GB
52.0	1820	2015	2119	2322	144	273	2550	88.6	0.20	3.8	501-FC
57.6					144	273	2550	89.4	0.20	3.8	501-FC
60.5					144	273	2550	90.0	0.20	3.8	501-FC
65.2					142	268	2550	90.7	0.20	3.8	501-FC
55.8	2050	2270	2375	2600	154	261	3110	89.4	0.18	2.9	501-EB
61.8					154	261	3110	90.1	0.18	2.9	501-EB
64.8					154	261	3110	90.7	0.18	2.9	501-EB
69.5					151	256	3110	91.3	0.18	2.9	501-EB
69.5	2470	2735	2873	3139	189	269	3420	90.7	0.12	2.1	501-EC <sup>1</sup>
76.9					189	269	3420	91.3	0.12	2.1	501-EC <sup>1</sup>
80.6					189	269	3420	91.7	0.12	2.1	501-EC <sup>1</sup>
86.6					186	264	3420	92.3	0.12	2.1	501-EC <sup>1</sup>
77.9	2940	3250	3406		210	253	3500	91.6	0.09	1.5	501-CB
86.0					210	253	3500	92.1	0.09	1.5	501-CB
90.2					210	253	3500	92.4	0.09	1.5	501-CB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 1250 W

1) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 10% reduction of output.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 157
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
19.6	605	680	724	803	63.0	310	1000	73.8	1.24	22.6	101-LC
22.1					63.0	310	1000	75.9	1.24	22.6	101-LC
23.5					63.0	310	1000	77.2	1.24	22.6	101-LC
25.6					62.0	305	1000	77.2	1.24	22.6	101-LC
23.0	710	795	842	933	72.0	310	1175	76.2	0.97	17.3	101-KC
25.8					72.0	310	1175	78.0	0.97	17.3	101-KC
27.3					72.0	310	1175	79.2	0.97	17.3	101-KC
29.8					70.8	305	1175	82.0	0.97	17.3	101-KC
28.2	860	960	1013	1120	85.0	313	1330	79.5	0.68	12.7	101-HC
31.5					85.0	313	1330	81.1	0.68	12.7	101-HC
33.3					85.0	313	1330	82.1	0.68	12.7	101-HC
36.1					83.6	308	1330	83.7	0.68	12.7	101-HC
34.7	1060	1180	1243	1370	102	313	1565	82.3	0.48	8.85	101-GC
38.7					102	313	1565	83.6	0.48	8.85	101-GC
40.7					102	313	1565	84.5	0.48	8.85	101-GC
44.1					100	308	1565	85.8	0.48	8.85	101-GC
# 44.4	1360	1510	1590	1745	127	312	2105	85.1	0.30	5.65	101-FC
49.4					127	312	2105	86.2	0.30	5.65	101-FC
52.0					127	312	2105	86.9	0.30	5.65	101-FC
56.2					125	307	2105	88.0	0.30	5.65	101-FC
49.6	1540	1710	1790	1965	140	308	2350	87.1	0.25	4.6	101-EB
55.1					140	308	2350	88.0	0.25	4.6	101-EB
57.8					140	308	2350	88.6	0.25	4.6	101-EB
62.5					138	302	2350	89.5	0.25	4.6	101-EB
# 59.6	1860	2060	2168	2375	166	306	2815	87.9	0.18	3.2	101-EC
66.1					166	306	2815	88.7	0.18	3.2	101-EC
69.4					166	306	2815	89.3	0.18	3.2	101-EC
74.7					163	301	2815	90.1	0.18	3.2	101-EC
# 73.1	2220	2460	2579	2822	200	314	3230	90.3	0.11	2.3	101-CB
80.9					200	314	3230	90.9	0.11	2.3	101-CB
84.9					200	314	3230	91.3	0.11	2.3	101-CB
92.7					200	314	3230	91.9	0.11	2.3	101-CB
# 86.4	2815	3100	3259		234	294	3500	91.4	0.08	1.5	101-BB
95.5					234	294	3500	91.9	0.08	1.5	101-BB
98.1					234	293	3500	92.3	0.08	1.5	101-BB

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 1400 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 157
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
23.2	620	695	739	817	72.0	357	990	77.7	0.95	19.6	401-LC
26.0					72.0	357	990	79.5	0.95	19.6	401-LC
27.6					72.0	357	990	80.6	0.95	19.6	401-LC
30.0					70.8	350	990	82.0	0.95	19.6	401-LC
27.2	725	815	861	952	82.5	358	1130	80.0	0.73	15.0	401-KC
30.5					82.5	358	1130	81.2	0.73	15.0	401-KC
32.2					82.5	358	1130	82.2	0.73	15.0	401-KC
34.9					81.1	351	1130	83.8	0.73	15.0	401-KC
32.9	870	970	1023	1130	97.0	361	1310	82.4	0.53	11.0	401-HC
36.6					97.0	361	1310	83.8	0.53	11.0	401-HC
38.7					97.0	361	1310	84.7	0.53	11.0	401-HC
41.8					95.3	354	1310	85.7	0.53	11.0	401-HC
39.9	1070	1190	1253	1380	115	357	1590	84.8	0.37	7.6	401-GC
44.4					115	357	1590	85.9	0.37	7.6	401-GC
46.8					115	357	1590	86.7	0.37	7.6	401-GC
50.5					113	350	1590	87.6	0.37	7.6	401-GC
41.9	1180	1310	1375	1510	120	340	1900	85.7	0.33	6.6	401-GB
46.6					120	340	1900	86.7	0.33	6.6	401-GB
48.8					120	340	1900	87.2	0.33	6.6	401-GB
53.2					119	336	1900	88.1	0.33	6.6	401-GB
51.3	1370	1525	1600	1755	144	357	1985	87.5	0.24	4.9	401-FC
56.9					144	357	1985	88.4	0.24	4.9	401-FC
59.8					144	357	1985	89.0	0.24	4.9	401-FC
64.3					142	350	1985	89.5	0.24	4.9	401-FC
55.0	1550	1720	1805	1975	154	339	2450	88.0	0.21	4.0	401-EB
61.1					154	339	2450	88.9	0.21	4.0	401-EB
64.0					154	339	2450	89.4	0.21	4.0	401-EB
68.9					151	333	2450	90.2	0.21	4.0	401-EB
68.8	1870	2075	2178	2380	189	351	2690	89.8	0.14	2.8	401-EC <sup>1</sup>
76.2					189	351	2690	90.5	0.14	2.8	401-EC <sup>1</sup>
80.0					189	351	2690	90.9	0.14	2.8	401-EC <sup>1</sup>
85.8					186	344	2690	91.3	0.14	2.8	401-EC <sup>1</sup>
77.4	2230	2465	2589	2827	210	331	3480	90.8	0.10	2.0	401-CB
85.5					210	331	3480	91.4	0.10	2.0	401-CB
89.7					210	331	3480	91.8	0.10	2.0	401-CB
96.2					207	325	3480	92.3	0.10	2.0	401-CB
92.6	2810	3105	3254		250	315	3500	91.6	0.07	1.3	401-BB <sup>1</sup>
102					250	315	3500	92.1	0.07	1.3	401-BB <sup>1</sup>
107					250	315	3500	92.4	0.07	1.3	401-BB <sup>1</sup>

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 1400 W

<sup>1</sup>) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 10% reduction of output.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 157
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
21.8	410	460	489	548	72.0	508	715	72.2	1.21	29.0	701-LC
24.6					72.0	508	715	74.4	1.21	29.0	701-LC
26.1					72.0	508	715	75.8	1.21	29.0	701-LC
28.7					70.8	500	715	78.2	1.21	29.0	701-LC
25.8	485	545	577	644	82.5	509	815	75.0	0.94	22.2	701-KC
29.0					82.5	510	815	77.0	0.94	22.2	701-KC
30.8					82.5	510	815	78.3	0.94	22.2	701-KC
33.7					81.1	501	815	80.2	0.94	22.2	701-KC
31.4	585	655	690	769	97.0	514	945	78.2	0.69	16.3	701-HC
35.2					97.0	514	945	79.9	0.69	16.3	701-HC
37.2					97.0	514	945	81.0	0.69	16.3	701-HC
40.6					95.3	505	945	82.6	0.69	16.3	701-HC
38.5	725	810	851	947	115	508	1145	81.2	0.47	11.3	701-GC
43.0					115	508	1145	82.6	0.47	11.3	701-GC
45.3					115	508	1145	83.6	0.47	11.3	701-GC
49.3					113	499	1145	85.1	0.47	11.3	701-GC
40.6	800	890	935	1030	120	487	1350	82.2	0.43	9.6	701-GB
45.3					120	487	1350	83.6	0.43	9.6	701-GB
47.7					120	487	1350	84.2	0.43	9.6	701-GB
51.9					119	481	1350	85.3	0.43	9.6	701-GB
49.9	935	1045	1096	1207	144	509	1430	84.5	0.30	7.3	701-FC
55.5					144	509	1430	85.7	0.30	7.3	701-FC
58.4					144	509	1430	86.4	0.30	7.3	701-FC
63.3					142	500	1430	87.6	0.30	7.3	701-FC
53.8	1060	1170	1235	1353	154	487	1750	85.3	0.27	5.8	701-EB
59.8					154	487	1750	86.4	0.27	5.8	701-EB
62.8					154	487	1750	87.1	0.27	5.8	701-EB
67.7					151	478	1750	88.2	0.27	5.8	701-EB
67.4	1290	1430	1502	1644	189	500	1995	87.6	0.17	4.1	701-EC <sup>1</sup>
74.9					189	500	1995	88.5	0.17	4.1	701-EC <sup>1</sup>
78.7					189	500	1995	89.0	0.17	4.1	701-EC <sup>1</sup>
84.7					186	492	1995	89.8	0.17	4.1	701-EC <sup>1</sup>
# 76.4	1540	1705	1791	1962	210	473	2510	89.3	0.12	3.0	701-CB <sup>1</sup>
84.6					210	473	2510	90.0	0.12	3.0	701-CB <sup>1</sup>
88.8					210	473	2510	90.5	0.12	3.0	701-CB <sup>1</sup>
95.5					206	465	2510	91.2	0.12	3.0	701-CB <sup>1</sup>
91.7	1945	2155	2261	2471	250	450	2745	90.4	0.09	1.9	701-BB <sup>2</sup>
101					250	450	2745	91.0	0.09	1.9	701-BB <sup>2</sup>
106					250	450	2745	91.4	0.09	1.9	701-BB <sup>2</sup>
114					246	442	2745	91.9	0.09	1.9	701-BB <sup>2</sup>

\*\* Through field control with constant output. Please specify. Field loss (hot) = 2000 W

- 1) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 10% reduction of output.
- 2) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 15% reduction of output.



Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 159
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
27.0	650	730	770	850	85	400	2300	77.9	0.73	15.7	101-RC
31.0					85	400	2300	79.7	0.73	15.7	101-RC
32.2					85	400	2300	80.5	0.73	15.7	101-RC
35.3		84	397		2300	81.9	0.73	15.7	101-RC		
32.0	750	840	881	981	97	406	1500	80.2	0.63	12.4	101-PC
36.0					97	406	1500	81.7	0.63	12.4	101-PC
38.0					98	406	1500	82.7	0.63	12.4	101-PC
41.0		95	407		1500	84.2	0.63	12.4	101-PC		
37.0	880	980	1037	1144	111	407	2730	82.4	0.47	9.5	101-NC
42.0					111	407	2730	83.7	0.47	9.5	101-NC
44.0					111	400	2730	84.6	0.47	9.5	101-NC
48.0		109	396		2730	85.9	0.47	9.5	101-NC		
43.0	1040	1160	1223	1346	126	396	3740	84.0	0.37	7.0	101-LC
48.0					126	396	3740	85.2	0.37	7.0	101-LC
51.0					126	396	3740	86.0	0.37	7.0	101-LC
55.0		124	389		3740	87.1	0.37	7.0	101-LC		
53.0	1280	1420	1497	1635	152	398	3910*	86.0	0.26	4.8	101-HC
59.0					152	398	3910*	87.0	0.26	4.8	101-HC
63.0					152	398	3910*	87.7	0.26	4.8	101-HC
67.0		149	391		3910*	88.7	0.26	4.8	101-HC		
59.0	1400	1560	1644	1798	166	400	2100	87.2	0.21	4.1	101-GB
65.0					166	400	2100	88.1	0.21	4.1	101-GB
68.0					166	400	2100	88.7	0.21	4.1	101-GB
74.0		163	393		2100	89.6	0.21	4.1	101-GB		
69.0	1630	1810	1899	2087	192	402	4500*	88.2	0.16	3.1	101-FC
76.0					192	402	4500*	89.1	0.16	3.1	101-FC
80.0					192	402	4500*	89.6	0.16	3.1	101-FC
87.0		189	395		4500*	90.4	0.16	3.1	101-FC		
75.0	1840	2040	2153	2375	207	387	1950	89.0	0.13	2.5	101-EB
79.0					198	370	2040	89.9	0.13	2.5	101-EB
77.0					184	343	2200	90.6	0.13	2.5	101-EB
76.0		164	306		2470	91.3	0.13	2.5	101-EB		
89.0	2220	2460	2574	2817	245	384	4500*	90.2	0.10	1.7	101-DC <sup>1</sup>
99.0					245	384	4500*	90.8	0.10	1.7	101-DC <sup>1</sup>
104					245	384	4500*	91.2	0.10	1.7	101-DC <sup>1</sup>
116		241	377		4500*	91.9	0.10	1.7	101-DC <sup>1</sup>		
110	2640	2930	3073	3365	299	400	2660	91.4	0.06	1.3	101-CB <sup>1</sup>
111					272	363	2930	92.1	0.06	1.3	101-CB <sup>1</sup>
109					253	337	3140	92.5	0.06	1.3	101-CB <sup>1</sup>
112		227	318		3500	92.9	0.06	1.3	101-CB <sup>1</sup>		
137	3330	3690	3866*	4231*	368	393	3390	92.4	0.04	0.8	101-BB <sup>1</sup>
139					338	361	3960*	92.9	0.04	0.8	101-BB <sup>1</sup>
136					315	335	3950*	93.2	0.04	0.8	101-BB <sup>1</sup>
134		283	300		4400*	93.5	0.04	0.8	101-BB <sup>1</sup>		

\* Special design above 3800 rpm.

Field loss (hot) = 1520 W

\*\* Through field control with constant output. Please specify.

1) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 15% reduction of output.

Data subject to change without prior notice.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 159
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
27.0	540	600	635	705	85	472	1800	75.6	0.81	18.7	201-RC
30.0					85	472	1800	77.5	0.81	18.7	201-RC
31.5					85	472	1800	78.5	0.81	18.7	201-RC
34.6					84	469	1800	80.1	0.81	18.7	201-RC
31	625	700	739	822	97	479	1200	78.4	0.69	14.8	201-PC
35					97	479	1200	80.1	0.69	14.8	201-PC
37					97	479	1200	81.2	0.69	14.8	201-PC
40					95	471	1200	82.9	0.69	14.8	201-PC
37	735	820	866	957	111	480	2360	81.0	0.52	11.3	201-NC
41					111	480	2360	82.5	0.52	11.3	201-NC
43					111	480	2360	83.4	0.52	11.3	201-NC
47					109	472	2360	84.9	0.52	11.3	201-NC
43	875	975	1028	1130	126	467	3230	82.8	0.41	8.3	201-LC
48					126	467	3230	84.1	0.41	8.3	201-LC
50					126	467	3230	85.0	0.41	8.3	201-LC
55					124	459	3230	86.3	0.41	8.3	201-LC
53	1075	1195	1258	1385	152	469	3390	85.1	0.28	5.8	201-HC
59					152	469	3390	86.3	0.28	5.8	201-HC
62					152	469	3390	87.0	0.28	5.8	201-HC
66					149	461	3390	88.1	0.28	5.8	201-HC
58	1175	1310	1380	1514	166	471	1700	86.1	0.24	4.9	201-GB
65					166	471	1700	87.1	0.24	4.9	201-GB
69					166	471	1700	87.8	0.24	4.9	201-GB
73					163	463	1700	88.8	0.24	4.9	201-GB
# 68	1375	1530	1605	1760	192	474	4200*	87.9	0.17	3.7	201-FC
76					192	474	4200*	88.6	0.17	3.7	201-FC
80					192	474	4200*	89.2	0.17	3.7	201-FC
86					189	456	4200*	90.0	0.17	3.7	201-FC
74	1550	1720	1820	2000	207	453	2500	88.3	0.15	3.0	201-EB
82					207	457	2500	89.2	0.15	3.0	201-EB
86					207	457	2500	89.9	0.15	3.0	201-EB
93					205	452	2500	90.8	0.15	3.0	201-EB
89	1870	2070	2173	2380	245	453	4500*	89.5	0.11	2.1	201-DC
98					245	453	4500*	90.2	0.11	2.1	201-DC
103					245	453	4500*	90.7	0.11	2.1	201-DC
111					241	445	4500*	91.4	0.11	2.1	201-DC
110	2230	2470	2603	2846	299	471	2300	91.0	0.07	1.5	201-CB <sup>1</sup>
113					278	438	2470	91.8	0.07	1.5	201-CB <sup>1</sup>
109					259	407	2660	92.2	0.07	1.5	201-CB <sup>1</sup>
109					232	364	2960	92.7	0.07	1.5	201-CB <sup>1</sup>
136	2810	3110	3269	3577	368	464	2930	92.0	0.05	1.0	201-BB <sup>1</sup>
142					346	436	3110	92.6	0.05	1.0	201-BB <sup>1</sup>
140					322	405	3340	92.9	0.05	1.0	201-BB <sup>1</sup>
136					289	363	3720	93.2	0.05	1.0	201-BB <sup>1</sup>
168	3800				450	424	4000*	93.0	0.03	0.5	201-AB <sup>1</sup>

\* Special design above 3800 rpm.

Field loss (hot) = 1670 W

\*\* Through field control with constant output. Please specify.

1) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 15% reduction of output.

Data subject to change without prior notice.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 159
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
31	490				101	613	900	75.6	0.69	18.1	301-PC
35		550			101	613	900	77.6	0.69	18.1	301-PC
37			587		101	613	900	78.8	0.69	18.1	301-PC
41				649	99	603	900	80.8	0.69	18.1	301-PC
38	575				117	621	1860	78.2	0.53	13.9	301-NC
42		645			117	621	1860	80.0	0.53	13.9	301-NC
45			685		117	621	1860	81.1	0.53	13.9	301-NC
49				760	115	611	1860	82.8	0.53	13.9	301-NC
44	690				132	601	2550	80.5	0.40	10.2	301-LC
49		775			132	601	2550	82.1	0.40	10.2	301-LC
52			817		132	601	2550	83.0	0.40	10.2	301-LC
56				904	130	590	2550	84.6	0.40	10.2	301-LC
54	850				159	603	2690	83.1	0.28	7.1	301-HC
60		950			159	603	2690	84.4	0.28	7.1	301-HC
64			1003		159	603	2690	85.2	0.28	7.1	301-HC
68				1106	156	593	2690	86.5	0.28	7.1	301-HC
60	940				174	607	1360	84.6	0.26	6.0	301-GB
67		1050			174	607	1360	85.7	0.26	6.0	301-GB
70			1106		174	607	1360	86.5	0.26	6.0	301-GB
76				1216	171	597	1360	87.6	0.26	6.0	301-GB
70	1100				201	610	3330	86.3	0.19	4.5	301-FC
78		1225			201	610	3330	87.3	0.19	4.5	301-FC
82			1292		201	610	3330	88.0	0.19	4.5	301-FC
91				1418	198	599	3330	89.0	0.19	4.5	301-FC
77	1240				218	591	1330	86.9	0.17	3.6	301-EB
83		1380			211	571	1380	88.0	0.17	3.6	301-EB
81			1468		195	528	1500	88.9	0.17	3.6	301-EB
79				1615	173	469	1680	90.0	0.17	3.6	301-EB
# 93	1510				258	587	4500*	88.7	0.12	2.5	301-DC <sup>1</sup>
103		1670			258	587	4500*	89.5	0.12	2.5	301-DC <sup>1</sup>
108			1757		258	587	4500*	90.0	0.12	2.5	301-DC <sup>1</sup>
116				1923	254	576	4500*	90.7	0.12	2.5	301-DC <sup>1</sup>
115	1795				315	610	1810	90.1	0.08	1.8	301-CB <sup>1</sup>
116		2000			286	553	2000	91.0	0.08	1.8	301-CB <sup>1</sup>
113			2104		266	513	2150	91.6	0.08	1.8	301-CB <sup>1</sup>
111				2308	238	458	2400	92.2	0.08	1.8	301-CB <sup>1</sup>
# 142	2270				386	598	2310	91.3	0.05	1.2	301-BB <sup>1</sup>
144		2520			354	547	2520	92.0	0.05	1.2	301-BB <sup>1</sup>
141			2652		329	508	2710	92.4	0.05	1.2	301-BB <sup>1</sup>
138				2904	295	454	3020	92.9	0.05	1.2	301-BB <sup>1</sup>
167	3080				450	521	4000*	92.5	0.03	0.7	301-AB <sup>1</sup>
185		3400			450	521	4000*	92.9	0.03	0.7	301-AB <sup>1</sup>
194			3563		450	520	4000*	93.2	0.03	0.7	301-AB <sup>1</sup>

\* Special design above 3800 rpm.

Field loss (hot) = 1900 W

\*\* Through field control with constant output. Please specify.

1) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 15% reduction of output.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 159
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
33	450				105	688	1500	74.8	0.77	17.1	401-NC
37		510			105	688	1500	76.8	0.77	17.1	401-NC
39			538		105	688	1500	78.0	0.77	17.1	401-NC
42				601	103	676	1500	80.0	0.77	17.1	401-NC
40	545				125	702	2210	77.9	0.55	12.6	401-LC
45		610			125	702	2210	79.6	0.55	12.6	401-LC
48			646		125	702	2210	80.7	0.55	12.6	401-LC
52				716	123	690	2210	82.5	0.55	12.6	401-LC
51	680				152	712	2310	81.4	0.37	8.7	401-HC
57		760			152	712	2310	82.8	0.37	8.7	401-HC
59			803		152	712	2310	83.7	0.37	8.7	401-HC
65				885	149	700	2310	85.2	0.37	8.7	401-HC
53	760				155	668	1100	83.4	0.30	7.4	401-GB
59		845			155	668	1100	84.6	0.30	7.4	401-GB
63			891		155	668	1100	85.5	0.30	7.4	401-GB
67				981	152	656	1100	86.7	0.30	7.4	401-GB
64	875				187	701	2930	84.3	0.24	5.6	401-FC
72		975			187	701	2930	85.5	0.24	5.6	401-FC
75			1028		187	701	2930	86.3	0.24	5.6	401-FC
82				1135	184	688	2930	87.4	0.24	5.6	401-FC
68	1000				194	649	1300	86.0	0.19	4.5	401-EB
76		1110			194	649	1300	87.0	0.19	4.5	401-EB
79			1174		194	649	1340	87.6	0.19	4.5	401-EB
85				1288	189	631	1340	88.6	0.19	4.5	401-EB
# 87	1210				246	691	4500*	87.5	0.14	3.1	401-DC
97		1340			246	691	4500*	88.4	0.14	3.1	401-DC
102			1409		246	691	4500*	89.0	0.14	3.1	401-DC
110				1548	242	679	4500*	89.8	0.14	3.1	401-DC
101	1445				280	669	1770	89.3	0.09	2.3	401-CB <sup>1</sup>
112		1605			280	669	1770	90.0	0.09	2.3	401-CB <sup>1</sup>
118			1683		280	669	1770	90.5	0.09	2.3	401-CB <sup>1</sup>
119				1851	257	614	1925	91.3	0.09	2.3	401-CB <sup>1</sup>
# 126	1835				344	657	2250	90.7	0.06	1.5	401-BB <sup>1</sup>
140		2030			344	657	2250	91.3	0.06	1.5	401-BB <sup>1</sup>
147			2129		344	657	2250	91.6	0.06	1.5	401-BB <sup>1</sup>
149				2331	320	609	2425	92.2	0.06	1.5	401-BB <sup>1</sup>
166	2470				450	644	4000*	91.8	0.04	0.8	401-AB <sup>1</sup>
184		2730			450	644	4000*	92.3	0.04	0.8	401-AB <sup>1</sup>
193			2868		450	643	4000*	92.5	0.04	0.8	401-AB <sup>1</sup>
207				3125	442	631	4000*	92.9	0.04	0.8	401-AB <sup>1</sup>

\* Special design above 3800 rpm.

Field loss (hot) = 2240 W

\*\* Through field control with constant output. Please specify.

1) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 10% reduction of output.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 159
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
49	570				148	815	1700	79.8	0.42	10.3	501-HC
54		635			148	815	1700	81.3	0.42	10.3	501-HC
58			587		148	815	1700	82.3	0.42	10.3	501-HC
63				745	146	801	1700	83.9	0.42	10.3	501-HC
54	630				162	820	920	81.3	0.34	8.7	501-GB
60		705			162	820	920	82.8	0.34	8.7	501-GB
64			744		162	820	920	83.7	0.34	8.7	501-GB
69				817	159	806	920	85.1	0.34	8.7	501-GB
62	735				181	795	2450	83.0	0.27	6.6	501-FC
69		820			181	795	2450	84.3	0.27	6.6	501-FC
72			851		181	795	2450	85.1	0.27	6.6	501-FC
78				952	178	783	2450	86.3	0.27	6.6	501-FC
70	835				202	790	1070	84.4	0.22	5.3	501-EB
77		930			202	790	1070	85.5	0.22	5.3	501-EB
81			979		202	790	1070	86.3	0.22	5.3	501-EB
87				1082	194	761	1125	87.5	0.22	5.3	501-EB
84	1020				239	789	3400*	86.5	0.15	3.7	501-DC
94		1130			239	789	3400*	87.5	0.15	3.7	501-DC
98			1189		239	789	3400*	88.1	0.15	3.7	501-DC
106				1308	235	775	3400*	89.0	0.15	3.7	501-DC
104	1215				292	821	1450	88.2	0.11	2.7	501-CB <sup>1</sup>
116		1345			292	821	1450	89.0	0.11	2.7	501-CB <sup>1</sup>
121			1414		292	821	1450	89.5	0.11	2.7	501-CB <sup>1</sup>
120				1558	263	736	1620	90.5	0.11	2.7	501-CB <sup>1</sup>
# 130	1545				358	805	3000	89.8	0.07	1.7	501-BB <sup>1</sup>
144		1710			358	805	3000	90.4	0.07	1.7	501-BB <sup>1</sup>
150			1796		358	805	3000	90.9	0.07	1.7	501-BB <sup>1</sup>
150				1971	324	727	3000	91.6	0.07	1.7	501-BB <sup>1</sup>
# 166	2100				450	757	3200	91.4	0.05	1.0	501-AB <sup>1</sup>
183		2320			450	756	3200	91.9	0.05	1.0	501-AB <sup>1</sup>
192			2427		450	756	3200	92.2	0.05	1.0	501-AB <sup>1</sup>
206				2654	442	742	3200	92.6	0.05	1.0	501-AB <sup>1</sup>

\* Special design above 3200 rpm.

Field loss (hot) = 2400 W

\*\* Through field control with constant output. Please specify.

1) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 15% reduction of output.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. elec. speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Code number FR 159
	400	440	460	500					Resistance (Ohm)	Inductance (mH)	
66	610	440	724	798	194	1024	1200	82.7	0.26	10.5	601-BF
74					194	1024	1200	84.0	0.26	10.5	601-BF
77					194	1024	1200	84.8	0.26	10.5	601-BF
84					190	1007	1200	86.1	0.26	10.5	601-BF
66	670	750	793	875	196	930	1050	81.7	0.29	8.5	601-FF
73					196	930	1050	83.0	0.29	8.5	601-FF
78					196	930	1050	83.9	0.29	8.5	601-FF
84					192	914	1050	85.3	0.29	8.5	601-FF
75	770	860	900	1000	220	928	1200	83.3	0.22	6.8	601-EF
84					220	927	1200	84.5	0.22	6.8	601-EF
88					220	927	1200	85.3	0.22	6.8	601-EF
95					216	911	1200	86.5	0.22	6.8	601-EF
90	880	980	1028	1125	255	977	1350	86.6	0.14	5.6	601-BD
100					255	977	1350	87.6	0.14	5.6	601-BD
105					255	977	1350	88.2	0.14	5.6	601-BD
113					250	960	1350	89.1	0.14	5.6	601-BD
86	890	990	1047	1154	249	918	1400	84.7	0.18	5.2	601-DF
96					249	918	1400	85.8	0.18	5.2	601-DF
101					249	918	1400	86.5	0.18	5.2	601-DF
109					244	902	1400	87.6	0.18	5.2	601-DF
103	1060	1180	1243	1356	294	929	1700	86.5	0.13	3.8	601-CF
114					294	929	1700	87.4	0.13	3.8	601-CF
120					294	929	1700	88.0	0.13	3.8	601-CF
130					289	913	1700	88.9	0.13	3.8	601-CF
# 142	1310	1450	1527	1673	394	1039	2500	89.7	0.06	2.6	601-AF <sup>1</sup>
158					394	1039	2500	90.4	0.06	2.6	601-AF <sup>1</sup>
166					394	1039	2500	90.8	0.06	2.6	601-AF <sup>1</sup>
179					387	1021	2500	91.4	0.06	2.6	601-AF <sup>1</sup>
# 174	1850	2040	2143	2337	474	905	2800	91.4	0.05	1.4	601-AD <sup>1</sup>
193					474	904	2800	91.9	0.05	1.4	601-AD <sup>1</sup>
202					474	904	2800	92.2	0.05	1.4	601-AD <sup>1</sup>
217					465	888	2800	92.6	0.05	1.4	601-AD <sup>1</sup>

\*\* Through field control with constant output. Please specify.

Field loss (hot) = 2650 W

1) Cooling air inlet at N-end. Can be used with cooling air inlet at D-end with 15% reduction of output.

	Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2511
		400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	44.2	580	650	685	136	728	1980	81.1	0.494	9.3	2060	1320	
	49.5												136
	52.1	755	880	965	136	726	1980	83.3	0.495	9.3	2060	1320	
	57.4				136	726	1980	84.4	0.495	9.3	2060	1320	
##	56.9	750	835	880	169	725	2540	84.4	0.319	6.2	2060	1080	
	63.5												169
	66.8	965	990	1090	169	725	2540	86.0	0.320	6.2	2060	1080	
	73.3				169	725	2450	86.9	0.321	6.2	2060	1080	
##	64.1	845	940	990	187	724	2400	85.5	0.261	5.2	2020	0984	
	71.4												187
	75.0	1090	1210	1270	187	723	2400	87.1	0.262	5.2	2020	0984	
	82.3				187	721	2300	87.9	0.262	5.2	2020	0984	
##	81.5	1090	1210	1270	232	714	1950	87.7	0.170	3.3	2020	0792	
	90.6												233
	95.0	1390	1460	1530	232	714	1950	88.9	0.171	3.3	2020	0792	
	103.0				230	708	1950	89.7	0.170	3.3	2020	0792	
##	96.4	1320	1460	1530	271	697	3020	88.9	0.125	2.3	2050	0660	
	106												268
	112	1680	1720	1800	271	699	3020	89.9	0.126	2.3	2050	0660	
	122				270	694	3020	90.5	0.126	2.3	2050	0660	
##	109	1550	1720	1800	300	672	4000	90.8	0.0833	1.6	2300	0540	
	121												301
	127	1970	2080	2180	302	674	4000	91.4	0.0845	1.6	2300	0540	
	138				301	669	4000	91.8	0.0847	1.6	2300	0540	
##	135	1880	2080	2180	370	686	4000	91.1	0.0660	1.3	2020	0492	
	149												370
	156	2380	2440	2550	369	683	4000	91.8	0.0667	1.3	2020	0492	
	171				371	686	4000	92.1	0.0677	1.3	2020	0492	
##	153	2200	2440	2550	415	664	4000	92.2	0.0449	0.84	2300	0396	
	169												415
	176	2770	2730	2800	413	659	4000	92.6	0.0457	0.84	2300	0396	
	182				391	627	4000	93.0	0.0451	0.84	2300	0396	
##	161	2480	2730	2800	435	620	4000	92.5	0.0354	0.60	2550	0336	
	177				434	619	4000	92.7	0.0360	0.60	2550	0336	
##	173	3120			464	530	4000	93.2	0.0223	0.41	2440	0276	

\*\* Through field control with constant output. Please specify.

	Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2521
		400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	42.6	465	525	555	134	875	1620	79.4	0.557	11.6	2200	1320	
	47.8												610
	50.4	134	867	1640	81.7	0.560	11.6	2200	1320				
	55.6									134	870	1640	83.0
##	54.9	605	675	710	165	867	2110	83.0	0.362				
	61.4									780	166	869	2050
	64.6	166	869	2020	84.8	0.363	7.8	2190	1080				
	71.0									165	869	1960	85.9
	62.0	675	755	795	184	877	2000	84.3	0.296				
	69.1									870	184	874	1970
	72.7	184	873	1930	86.0	0.296	6.4	2220	0984				
	98.8									184	876	1840	86.9
##	79.3	885	985	1040	229	856	1610	86.7	0.193				
	88.1									1140	228	854	1610
	92.5	228	849	1610	88.1	0.193	4.2	2050	0792				
	101									227	846	1560	88.9
##	94.2	1060	1180	1240	267	849	2480	88.1	0.142				
	104									1350	266	842	2480
	109	265	839	2480	89.3	0.142	2.9	2190	0660				
	119									265	842	2480	89.9
##	108	1240	1380	1440	299	832	4000	90.2	0.0950				
	119									1580	298	824	4000
	125	299	829	4000	91.0	0.0957	1.9	2490	0540				
	136									297	822	4000	91.5
##	132	1490	1650	1730	365	846	4000	90.5	0.0756				
	146									1890	364	845	4000
	153	364	845	4000	91.3	0.0766	1.6	2220	0492				
	166									362	839	3920	91.7
##	151	1780	1970	2070	411	810	3590	91.8	0.0510				
	167									2250	412	810	3590
	174	410	803	3590	92.4	0.0518	1.0	2320	0396				
	190									410	806	3500	92.6
##	158	1990	2200	2310	428	758	4000	92.3	0.0406				
	174									2510	427	755	4000
	181	424	748	4000	92.7	0.0414	0.75	2570	0336				
	192									413	731	4000	93.0
##	195	2490			525	748	4000	92.9	0.0266				

\*\* Through field control with constant output. Please specify.



	Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2531							
		400	440	460	500					Resistance (Ohm)	Inductance (mH)									
##	41.2	385	430	455	133	1022	1340	77.1	0.631	14.5	2370	1320								
	46.5														134	1033	1370	78.9	0.634	14.5
	49.1												134	1031	1370	79.8	0.634	14.5	2370	1320
	54.2			505									133	1025	1370	81.3	0.634	14.5	2370	1320
##	53.4	505	570	600	164	1010	1680	81.2	0.411	9.7	2210	1080								
	59.8														164	1002	1650	82.7	0.411	9.7
	63.0												164	1003	1620	83.3	0.012	9.7	2210	1080
	69.3			660									164	1003	1570	84.5	0.412	9.7	2210	1080
	60.4	570	635	670	183	1012	1640	82.7	0.335	8.1	2240	0984								
	67.5														182	1015	1580	84.1	0.336	8.1
	71.1												183	1013	1550	84.7	0.336	8.1	2240	0984
	78.2			740									183	1009	1480	85.7	0.337	8.1	2240	0984
	77.1	735	820	865	225	1002	1370	85.6	0.219	5.2	2270	0792								
	85.9														225	1000	1370	86.6	0.220	5.2
	90.2												225	996	1350	87.1	0.220	5.2	2270	0792
	99.0			950									225	995	1260	87.9	0.221	5.2	2270	0792
##	92.8	900	1000	1050	266	985	2080	87.1	0.161	3.6	2180	0660								
	103														266	984	2080	88.0	0.161	3.6
	108												265	982	2080	88.5	0.161	3.6	2180	0660
	118			1150									265	980	2080	89.2	0.161	3.6	2180	0660
##	106	1060	1170	1230	296	955	3710	89.6	0.107	2.4	2510	0540								
	118														297	963	3930	90.2	0.108	2.4
	123												295	955	3880	90.6	0.107	2.4	2510	0540
	135			1340									297	962	3720	91.0	0.108	2.4	2510	0540
##	130	1270	1400	1470	362	978	3420	89.9	0.0850	2.0	2240	0492								
	144														362	982	3400	90.5	0.0855	2.0
	151												361	981	3330	90.8	0.0857	2.0	2240	0492
	165			1610									362	979	3150	91.3	0.0863	2.0	2240	0492
##	148	1490	1650	1730	404	949	3060	91.5	0.0572	1.3	2540	0396								
	164														405	949	3060	91.9	0.0579	1.3
	172												406	949	3060	92.1	0.0582	1.3	2540	0396
	187			1890									404	945	2850	92.5	0.0587	1.3	2540	0396
	158	1670	1850	1930	429	904	4000	92.1	0.0454	0.94	2760	0336								
	174														428	898	4000	92.5	0.0458	0.94
	182												427	901	4000	92.6	0.0460	0.94	2760	0336
	198			2110									426	896	4000	92.9	0.0466	0.94	2760	0336
#	199	2090	2310	2410	536	909	4000	92.9	0.0297	0.63	2800	0276								
	214														522	885	4000	93.2	0.0297	0.63
	214												498	848	4000	93.4	0.0292	0.63	2800	0276
	215	2300			577	893	4000	93.1	0.0246	0.53	2830	0252								

\*\* Through field control with constant output. Please specify.

	Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2611																
		400	440	460	500					Resistance (Ohm)	Inductance (mH)																		
##	46.8	350	395	420	152	1277	1220	77.1	0.559	14.9	2450	1480																	
	52.7												460	152	1274	1350	79.0	0.560	14.9	2450	1480								
	55.7																					152	1267	1350	79.8	0.560	14.9	2450	1480
	61.6																												
55.1	415	465	490	172	1268	1450	80.0	0.423	11.0	2500	1272																		
61.8												172	1269	1620	81.6	0.425	11.0	2500	1272										
65.2																				172	1271	1710	82.3	0.425	11.0	2500	1272		
71.9																												172	1272
##	69.4	520	580	610	209	1275	1610	83.0	0.290	7.9	2500																		
	77.6											209	1278	1610	84.3	0.291	7.9	2500	1080										
	81.7																			209	1279	1610	84.8	0.292	7.9	2500	1080		
	89.8																											209	1280
##	88.3	655	730	770	258	1287	1330	85.5	0.193	5.4	2530																		
	98.4											258	1287	1330	86.6	0.194	5.4	2530	0888										
	103																			257	1277	1330	87.2	0.193	5.4	2530	0888		
	113																											257	1277
##	105	795	885	930	301	1261	2710	87.2	0.141	3.7	2450																		
	117											302	1263	2710	88.1	0.142	3.7	2450	0740										
	123																			302	1263	2710	88.4	0.143	3.7	2450	0740		
	135																											303	1264
##	121	930	1030	1080	342	1243	3250	88.5	0.108	2.8	2420																		
	134											341	1242	3480	89.3	0.108	2.8	2420	0636										
	141																			342	1247	3480	89.6	0.109	2.8	2420	0636		
	154																											341	1236
##	149	1130	1250	1310	414	1259	3250	89.9	0.0745	2.0	2500																		
	165											414	1261	3250	90.6	0.0748	2.0	2500	0540										
	173																			414	1261	3250	90.8	0.0751	2.0	2500	0540		
	189																											414	1262
##	170	1330	1470	1540	465	1221	2960	91.4	0.0509	1.3	2870																		
	188											465	1221	2960	91.8	0.0512	1.3	2870	0444										
	196																			463	1215	2960	92.1	0.0512	1.3	2870	0444		
	214																											463	1216
##	198	1600	1770	1860	537	1182	3600	92.2	0.0375	0.92	2770																		
	219											538	1182	3600	92.5	0.0378	0.92	2770	0368										
	229																			537	1176	3600	92.7	0.0379	0.92	2770	0368		
	250																											538	1176
##	226	1830	2020	2120	610	1179	3600	92.6	0.0292	0.71	2810																		
	249											609	1177	3600	92.9	0.0294	0.71	2810	0324										
	261																			610	1176	3600	93.1	0.0296	0.71	2810	0324		
	284																											609	1174
#	250	2110	2330	2440	671	1132	3600	93.2	0.0211	0.52	3030																		
	276											671	1131	3600	93.4	0.0213	0.52	3030	0276										
	288																			669	1127	3600	93.5	0.0214	0.52	3030	0276		
	312																											666	1120
#	288	2480	2740		771	1109	3600	93.3	0.0160	0.37	2920																		
	302											734	1053	3600	93.6	0.0158	0.37	2920	0232										

\*\* Through field control with constant output. Please specify.

Data subject to change without prior notice.

	Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2621																
		400	440	460	500					Resistance (Ohm)	Inductance (mH)																		
##	44.5	280	315	335	147	1518	980	75.9	0.613	17.7	2780	1480																	
	50.2												370	146	1522	1100	77.9	0.613	17.7	2780	1480								
	53.1																					147	1514	1170	78.8	0.614	17.7	2780	1480
	58.8																												
52.6	335	375	395	167	1499	1170	78.9	0.464	13.1	2710	1272																		
59.1												435	167	1505	1310	80.5	0.466	13.1	2710	1272									
62.3																					167	1506	1380	81.3	0.466	13.1	2710	1272	
68.8																													167
##	66.4	415	465	490	202	1528	1420	82.1	0.318	9.4	2810	1080																	
	74.4												540	203	1528	1400	83.4	0.319	9.4	2810	1080								
	78.3																					202	1526	1380	84.1	0.319	9.4	2810	1080
	86.2																												
84.8	530	595	625	250	1528	1170	84.8	0.318	6.4	2620	0888																		
94.6												685	250	1518	1170	85.9	0.319	6.4	2620	0888									
99.5																					250	1520	1170	86.4	0.319	6.4	2620	0888	
109																													250
##	100	640	715	750	288	1492	2240	86.7	0.211	4.4	2810	0740																	
	112												820	291	1496	2400	87.5	0.212	4.4	2810	0740								
	117																					289	1490	2400	88.0	0.212	4.4	2810	0740
	129																												
117	750	835	875	333	1490	2620	87.9	0.155	3.3	2710	0636																		
130												960	333	1487	2920	88.7	0.157	3.3	2710	0636									
136																					332	1484	3060	89.1	0.156	3.3	2710	0636	
149																													332
##	144	915	1010	1060	402	1503	2860	89.5	0.118	2.4	2810	0540																	
	160												1160	404	1513	2860	90.1	0.119	2.4	2810	0540								
	168																					404	1514	2860	90.4	0.199	2.4	2810	0540
	183																												
164	1090	1200	1260	450	1437	2610	91.0	0.0812	1.6	2990	0444																		
181												1380	449	1440	2610	91.5	0.0819	1.6	2990	0444									
190																					450	1440	2610	91.7	0.0822	1.6	2990	0444	
207																													450
##	192	1310	1450	1520	523	1400	3310	91.8	0.0558	1.1	3120	0368																	
	213												1650	525	1403	3310	92.2	0.0561	1.1	3120	0368								
	222																					522	1395	3310	92.4	0.0564	1.1	3120	0368
	242																												
220	1500	1650	1730	596	1401	3370	92.3	0.0412	0.85	3160	0324																		
242												1890	593	1401	3370	92.7	0.0416	0.85	3160	0324									
253																					593	1397	3370	92.8	0.0417	0.85	3160	0324	
276																													593
##	244	1710	1920	2010	656	1339	3500	93.0	0.0321	0.62	3410	0276																	
	269												2190	656	1338	3500	93.2	0.0234	0.62	3410	0276								
	281																					654	1335	3500	93.3	0.0235	0.62	3410	0276
	305																												
278	2040	2250	2350	746	1301	3600	93.1	0.0178	0.44	3410	0232																		
297												723	1261	3600	93.4	0.0177	0.44	3410	0232										
297																				691	1207	3600	93.5	0.0174	0.44	3410	0232		

\*\* Through field control with constant output. Please specify.

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	Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2631
		400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	41.4	240	270	285	139	1647	840	74.2	0.694	21.3	2920	1480	
	46.9												140
	49.6	320	340	375	139	1662	990	77.3	0.695	21.3	2920	1480	
	55.1				140	1644	1070	78.9	0.697	21.3	2920	1480	
##	49.0	285	325	340	158	1642	990	77.4	0.528	15.7	2840	1272	
	55.2												158
	58.2	375	340	375	158	1635	1190	80.1	0.529	15.7	2840	1272	
	64.4				158	1640	1250	81.5	0.531	15.7	2840	1272	
##	62.1	355	400	420	192	1671	1240	80.9	0.362	11.3	2970	1080	
	69.6												192
	73.4	465	420	465	192	1669	1200	83.1	0.363	11.3	2970	1080	
	80.9				192	1661	1160	84.3	0.363	11.3	2970	1080	
##	79.4	455	510	535	237	1667	1060	83.9	0.240	7.7	3010	0888	
	88.6												236
	93.2	590	535	590	236	1664	1060	85.8	0.241	7.7	3010	0888	
	102				235	1651	1040	86.8	0.241	7.7	3010	0888	
##	95.7	555	620	650	279	1647	1940	85.7	0.176	5.3	2920	0740	
	106												277
	112	715	650	715	279	1646	2150	87.2	0.177	5.3	2920	0740	
	122				277	1630	2150	88.2	0.176	5.3	2920	0740	
##	110	645	715	750	315	1629	2250	87.3	0.134	3.9	3090	0636	
	122												314
	128	825	750	825	314	1630	2620	88.7	0.134	3.9	3090	0636	
	141				316	1632	2750	89.3	0.135	3.9	3090	0636	
##	136	800	885	930	382	1624	2580	89.1	0.0917	2.8	2970	0540	
	151												382
	159	1020	930	1020	384	1633	2580	90.1	0.0927	2.8	2970	0540	
	173				382	1620	2530	90.7	0.0928	2.8	2970	0540	
#	155	940	1040	1090	427	1575	2350	90.8	0.0630	1.9	3420	0444	
	172												428
	180	1190	1090	1190	427	1577	2350	91.6	0.0636	1.9	3420	0444	
	196				426	1573	2350	92.0	0.0638	1.9	3420	0444	
#	182	1140	1260	1320	496	1525	2980	91.7	0.0465	1.3	3380	0368	
	202												498
	211	1440	1320	1440	497	1527	2980	92.4	0.0469	1.3	3380	0368	
	230				496	1525	2980	92.7	0.0472	1.3	3380	0368	
#	208	1300	1430	1500	564	1528	3060	92.3	0.0361	1.0	3380	0324	
	230												564
	241	1640	1500	1640	564	1534	3060	92.8	0.0365	1.0	3380	0324	
	263				565	1531	3060	93.1	0.0368	1.0	3380	0324	
#	232	1510	1670	1750	623	1467	3160	93.1	0.0260	0.74	3530	0276	
	256												623
	268	1910	1750	1910	623	1463	3160	93.5	0.0263	0.74	3530	0276	
	292				623	1460	3160	93.7	0.0266	0.74	3530	0276	
#	265	1770	1950	2050	710	1430	3600	93.3	0.0199	0.52	3730	0232	
	293												712
	306	2230	2050	2230	710	1426	3600	93.7	0.0202	0.52	3730	0232	
	332				708	1422	3600	93.8	0.0204	0.52	3730	0232	

\*\* Through field control with constant output. Please specify.

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	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2711
	400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	67.9	315	355	415	221	2059	1100	76.9	0.389	11.5	3520	1272
	76.6				221	2061	1110	78.7	0.391	11.5	3520	1272
	80.9	375	415		221	2060	1110	79.6	0.391	11.5	3520	1272
	89.4				221	2057	1110	81.0	0.392	11.5	3520	1272
##	86.0	395	445	515	267	2079	1060	80.5	0.266	8.3	3660	1080
	96.5				267	2071	1060	82.1	0.267	8.3	3660	1080
	101	470	515		264	2052	1060	83.0	0.265	8.3	3660	1080
	112				267	2077	1060	84.0	0.268	8.3	3660	1080
##	97.4	445	500	580	297	2090	1020	82.0	0.219	6.9	3710	0984
	109				297	2082	1020	83.4	0.220	6.9	3710	0984
	114	525	580		294	2074	1020	84.3	0.218	6.9	3710	0984
	126				296	2075	1020	85.2	0.220	6.9	3710	0984
##	111	510	565	595	332	2079	970	83.5	0.176	5.6	3760	0888
	123				329	2079	970	85.0	0.175	5.6	3760	0888
	130	331	2087		970	85.5	0.177	5.6	3760	0888		
##	117	550	615	710	348	2032	1870	84.1	0.161	4.8	3610	0820
	131				349	2034	1870	85.3	0.162	4.8	3610	0820
	137	645	710		347	2028	1870	85.9	0.161	4.8	3610	0820
	151				348	2031	1870	86.8	0.163	4.8	3610	0820
##	153	725	810	930	440	2015	2240	87.0	0.0996	2.9	3520	0636
	170				439	2004	2240	88.0	0.100	2.9	3520	0636
	179	850	930		441	2011	2240	88.3	0.101	2.9	3520	0636
	196				440	2013	2240	89.1	0.101	2.9	3520	0636
##	173	850	940	1080	484	1944	2340	89.4	0.0689	2.1	4150	0540
	192				484	1951	2340	90.1	0.0694	2.1	4150	0540
	201	985	1080		483	1949	2340	90.4	0.0696	2.1	4150	0540
	220				484	1945	2340	90.9	0.0701	2.1	4150	0540
##	193	945	1050	1200	536	1950	2270	90.1	0.0570	1.7	4210	0492
	214				536	1946	2270	90.7	0.0575	1.7	4210	0492
	224	1100	1200		535	1945	2270	91.0	0.0576	1.7	4210	0492
	245				536	1950	2270	91.4	0.0581	1.7	4210	0492
##	217	1060	1170	1350	598	1955	2170	90.7	0.0461	1.4	4210	0444
	240				597	1959	2170	91.3	0.0465	1.4	4210	0444
	252	1230	1350		599	1957	2170	91.5	0.0467	1.4	4210	0444
	275				598	1945	2170	92.0	0.0471	1.4	4210	0444
##	233	1240	1370	1570	635	1794	2690	91.7	0.0350	0.96	4480	0368
	258				637	1798	2690	92.1	0.0354	0.96	4480	0368
	270	1440	1570		636	1791	2690	92.3	0.0355	0.96	4480	0368
	295				637	1794	2690	92.6	0.0359	0.96	4480	0368
##	266	1420	1570	1790	722	1789	2720	92.1	0.0278	0.74	4540	0324
	294				723	1788	2720	92.5	0.0281	0.74	4540	0324
	308	1640	1790		723	1794	2720	92.6	0.0283	0.74	4540	0324
	325				699	1734	2810	93.0	0.0280	0.74	4540	0324
##	324	1720	1900	2150	872	1799	2930	92.9	0.0193	0.54	4410	0276
	345				840	1734	3040	93.3	0.0191	0.54	4410	0276
	350	1980	2150		814	1688	3130	93.5	0.0189	0.54	4410	0276
	354				754	1572	3200	93.9	0.0184	0.54	4410	0276
##	339	2030	2220		908	1595	3200	93.4	0.0142	0.38	4290	0232
	339				823	1458	3200	93.6	0.0138	0.38	4290	0232
##	350	2200			934	1519	3200	93.7	0.0115	0.33	4290	0216

\*\* Through field control with constant output. Please specify.

Data subject to change without prior notice.

	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2721
	400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	64.4	260	295	345	212	2365	910	75.9	0.425	14.3	3860	1272
	72.8				213	2357	990	77.8	0.426	14.3	3860	1272
	76.9	310	212		2369	990	78.7	0.426	14.3	3860	1272	
	85.2		212		2358	990	80.2	0.428	14.3	3860	1272	
##	82.0	325	365	425	257	2410	930	79.6	0.290	10.3	4040	1080
	91.9				257	2405	930	81.3	0.291	10.3	4040	1080
	96.9	385	257		2404	930	82.1	0.291	10.3	4040	1080	
	107		257		2404	930	83.3	0.292	10.3	4040	1080	
##	92.7	365	410	475	285	2425	900	81.3	0.238	8.6	4100	0984
	103				282	2399	900	83.1	0.237	8.6	4100	0984
	109	430	284		2421	900	83.6	0.238	8.6	4100	0984	
	120		283		2413	900	84.7	0.239	8.6	4100	0984	
##	105	420	470	545	316	2388	870	83.2	0.190	7.0	3920	0888
	118				318	2398	870	84.3	0.192	7.0	3920	0888
	124	495	317		2392	870	85.0	0.192	7.0	3920	0888	
	137		319		2401	860	85.8	0.194	7.0	3920	0888	
##	112	445	500	580	336	2404	1550	83.4	0.176	5.9	3970	0820
	125				335	2388	1650	84.7	0.176	5.9	3970	0820
	131	525	333		2383	1650	85.4	0.176	5.9	3970	0820	
	144		333		2371	1650	86.4	0.176	5.9	3970	0820	
##	146	590	660	760	422	2363	2000	86.6	0.108	3.6	3980	0636
	163				423	2359	2000	87.5	0.109	3.6	3980	0636
	171	690	423		2367	2000	88.0	0.109	3.6	3980	0636	
	188		424		2362	2000	88.7	0.110	3.6	3980	0636	
##	181	730	810	930	512	2368	1880	88.4	0.0744	2.6	4030	0540
	201				512	2370	1880	89.2	0.0748	2.6	4030	0540
	211	850	512		2371	1880	89.6	0.0751	2.6	4030	0540	
	231		512		2372	1880	90.1	0.0756	2.6	4030	0540	
##	185	770	855	980	516	2294	2000	89.7	0.0623	2.1	4600	0492
	205				516	2290	2000	90.4	0.0627	2.1	4600	0492
	215	895	516		2294	2000	90.6	0.0630	2.1	4600	0492	
	235		516		2290	2000	91.1	0.0634	2.1	4600	0492	
##	208	870	965	1110	575	2283	1910	90.4	0.0504	1.7	4410	0444
	231				577	2286	1910	91.0	0.0508	1.7	4410	0444
	242	1010	576		2288	1910	91.3	0.0510	1.7	4410	0444	
	264		576		2271	1910	91.7	0.0513	1.7	4410	0444	
##	224	1010	1120	1280	612	2118	2380	91.4	0.0383	1.2	4810	0368
	248				613	2115	2380	91.9	0.0387	1.2	4810	0368
	260	1180	614		2104	2380	92.1	0.0389	1.2	4810	0368	
	283		612		2111	2380	92.4	0.0392	1.2	4810	0368	
##	256	1160	1280	1460	697	2108	2400	91.9	0.0304	0.93	4810	0324
	283				697	2111	2400	92.3	0.0308	0.93	4810	0324
	296	1340	696		2110	2400	92.4	0.0309	0.93	4810	0324	
	323		697		2113	2400	92.7	0.0313	0.93	4810	0324	
##	311	1390	1540	1750	839	2137	2600	92.7	0.0211	0.67	4950	0276
	344				841	2133	2600	93.0	0.0214	0.67	4950	0276
	355	1610	828		2106	2630	93.2	0.0213	0.67	4950	0276	
	363		776		1981	2810	93.6	0.0208	0.67	4950	0276	
##	346	1650	1810		930	2003	2810	93.1	0.0160	0.48	4870	0232
	351				854	1852	3060	93.5	0.0156	0.48	4870	0232
##	361	1790	1960		965	1126	2900	93.5	0.0130	0.41	4870	0216
	361				875	1759	3200	93.8	0.0126	0.41	4870	0216

\*\* Through field control with constant output. Please specify.

Data subject to change without prior notice.

	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2731
	400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	60.4	215	245	285	203	2683	750	74.4	0.475	16.6	4320	1272
	68.4				203	2666	850	76.5	16.6	4320	1272	
	72.4	255	285		203	2711	880	77.4	0.477	16.6	4320	1272
	80.4				204	2694	870	79.0	0.478	16.6	4320	1272
##	77.3	270	305	360	246	2734	840	78.4	0.324	12.0	4210	1080
	87.0				247	2724	840	80.2	12.0	4210	1080	
	91.7	325	360		246	2695	840	81.0	0.325	12.0	4210	1080
	100				245	2679	820	82.4	0.325	12.0	4210	1080
##	87.2	310	345	400	272	2686	820	80.2	0.267	9.9	4350	0984
	97.8				272	2707	820	81.8	0.268	9.9	4350	0984
	103	365	400		271	2695	820	82.5	0.268	9.9	4350	0984
	113				269	2698	800	83.9	0.267	9.9	4350	0984
##	99.7	350	390	455	304	2720	780	81.9	0.215	8.1	4430	0888
	111				302	2718	780	83.6	0.214	8.1	4430	0888
	117	415	455		302	2692	780	84.2	0.215	8.1	4430	0888
	129				303	2708	750	85.2	0.216	8.1	4430	0888
##	105	380	425	490	317	2639	1330	82.7	0.195	6.9	4200	0820
	118				320	2652	1480	83.9	0.197	6.9	4200	0820
	124	445	490		319	2661	1490	84.5	0.197	6.9	4200	0820
	136				317	2651	1490	85.7	0.197	6.9	4200	0820
##	138	500	555	640	402	2636	1750	85.9	0.121	4.1	4320	0636
	154				403	2650	1800	86.9	0.122	4.1	4320	0636
	162	585	640		403	2645	1800	87.3	0.122	4.1	4320	0636
	177				401	2641	1800	88.2	0.122	4.1	4320	0636
##	171	615	685	790	487	2655	1710	87.9	0.0829	3.0	4270	0540
	190				487	2649	1710	88.7	0.0833	3.0	4270	0540
	200	720	790		488	2653	1710	89.1	0.0838	3.0	4270	0540
	219				488	2647	1710	89.7	0.0842	3.0	4270	0540
##	193	690	765	880	545	2671	1640	88.6	0.0684	2.5	4350	0492
	214				544	2672	1640	89.4	0.0687	2.5	4350	0492
	224	805	880		542	2657	1640	89.8	0.0688	2.5	4350	0492
	246				545	2670	1640	90.4	0.0694	2.5	4350	0492
##	198	735	815	935	550	2573	1730	90.0	0.0565	2.0	4950	0444
	219				549	2566	1730	90.7	0.0568	2.0	4950	0444
	229	855	935		547	2558	1730	91.0	0.0568	2.0	4950	0444
	251				549	2564	1730	91.4	0.0574	2.0	4950	0444
##	235	900	995	1140	646	2494	1950	90.9	0.0411	1.4	4780	0368
	260				646	2495	1950	91.4	0.0414	1.4	4780	0368
	272	1040	1140		645	2498	1950	91.7	0.0416	1.4	4780	0368
	297				645	2488	1950	92.1	0.0419	1.4	4780	0368
##	243	980	1080	1240	663	2638	2180	91.6	0.0340	1.1	5430	0324
	269				664	2379	2180	92.0	0.0343	1.1	5430	0324
	282	1140	1240		665	2362	2180	92.2	0.0345	1.1	5430	0324
	307				664	2364	2180	92.5	0.0348	1.1	5430	0324
##	296	1190	1320	1500	800	2375	2360	92.5	0.0235	0.78	5100	0276
	327				801	2366	2360	92.8	0.0238	0.78	5100	0276
	343	1380	1500		802	2374	2360	93.0	0.0239	0.78	5100	0276
	373				800	2375	2360	93.2	0.0242	0.78	5100	0276
#	341	1400	1540	1750	919	2326	2460	92.8	0.0182	0.55	5420	0232
	373				911	2313	2480	93.1	0.0184	0.55	5420	0232
	378	1610	1750		881	2242	2560	93.3	0.0181	0.55	5420	0232
	382				816	2085	2770	93.6	0.0176	0.55	5420	0232
#	377	1540	1690	1920	1012	2338	2390	93.1	0.0152	0.48	5010	0216
	394				957	2226	2530	93.5	0.0149	0.48	5010	0216
	397	1770	1920		921	2142	2630	93.7	0.0147	0.48	5010	0216
	397				845	1975	2860	93.9	0.0143	0.48	5010	0216

\*\* Through field control with constant output. Please specify.

Data subject to change without prior notice.

	Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2811
		400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	116	335	375	395	357	3307	750	81.3	0.190	8.2	5290	0984	
	131												361
	138	435	435	360	3337	750	84.4	0.193	8.2	5290	0984		
	152											361	3336
	132	385	430	450	398	3274	740	83.0	0.153	6.7	5370	0888	
	148												399
	156	400	3311	740	84.8	0.155	6.7	5370	0888				
	149	445	495	525	442	3198	980	84.2	0.125	4.6	5390	0732	
	166												441
	175	575	575	442	3189	980	86.9	0.126	4.6	5390	0732		
	192											443	3183
##	184	545	605	635	533	3224	1860	86.3	0.0881	3.4	5070	0636	
	205												534
	215	700	700	533	3220	1860	88.5	0.0891	3.4	5070	0636		
	236											533	3220
	207	640	710	745	583	3089	1730	88.8	0.0615	2.5	5700	0540	
	229												581
	241	815	815	581	3082	1730	90.5	0.0622	2.5	5700	0540		
	263											583	3089
##	232	715	790	830	647	3099	1680	89.7	0.0502	2.1	5780	0492	
	257												647
	269	910	910	645	3085	1680	91.2	0.0508	2.1	5780	0492		
	294											645	3085
	263	810	895	940	727	3101	1620	90.4	0.0402	1.7	5950	0444	
	291												727
	305	1030	1030	727	3097	1620	91.7	0.0409	1.7	5950	0444		
	334											729	3097
##	290	935	1040	1090	799	2962	2130	90.7	0.0336	1.2	5730	0372	
	320												797
	335	1180	1180	796	2857	2220	92.2	0.0335	1.2	5730	0372		
	353											796	2857
	321	1080	1190	1250	873	2838	2250	91.9	0.0244	0.89	6310	0324	
	355												874
	372	1360	1360	875	2725	2340	92.9	0.0245	0.89	6310	0324		
	388											875	2842
##	393	1310	1440	1510	1061	2865	2140	92.6	0.0171	0.65	5890	0276	
	409												997
	415	1640	1640	965	2625	2530	93.8	0.0165	0.65	5890	0276		
	421											965	2625

\*\* Through field control with constant output. Please specify.



	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2821
	400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	110	285	320	335	338	3686	680	81.3	0.201	9.9	5760	0984
	124				341	3701	680	82.6	0.203	9.9	5760	0984
	130				339	3706	680	83.4	0.202	9.9	5760	0984
	144				341	3717	680	84.4	0.204	9.9	5760	0984
	125	325	360	380	376	3673	670	83.0	0.162	8.0	5750	0888
	140				377	3714	670	84.3	0.163	8.0	5750	0888
	148				380	3719	670	84.8	0.164	8.0	5750	0888
	163				380	3706	670	85.8	0.164	8.0	5750	0888
	141	375	420	445	418	3591	880	84.3	0.133	5.5	5510	0732
	157				417	3570	880	85.6	0.133	5.5	5510	0732
	166				420	3562	880	86.0	0.134	5.5	5510	0732
	182				419	3584	880	86.9	0.134	5.5	5510	0732
##	173	455	510	535	500	3631	1590	86.5	0.0928	4.1	5370	0636
	193				501	3614	1710	87.5	0.0934	4.1	5370	0636
	203				502	3624	1710	87.9	0.0937	4.1	5370	0636
	223				503	3640	1710	88.6	0.0942	4.1	5370	0636
	215	560	625	655	609	3667	1420	88.3	0.0640	3.0	5630	0540
	239				609	3652	1420	89.1	0.0643	3.0	5630	0540
	251				610	3660	1420	89.5	0.0645	3.0	5630	0540
	275				610	3673	1420	90.1	0.0649	3.0	5630	0540
##	243	635	705	740	681	3655	1360	89.2	0.0518	2.5	5730	0492
	270				683	3657	1360	89.9	0.0522	2.5	5730	0492
	283				682	3652	1360	90.2	0.0523	2.5	5730	0492
	310				683	3655	1360	90.8	0.0526	2.5	5730	0492
	249	675	750	785	688	3523	1630	90.5	0.0428	2.0	6020	0444
	276				689	3514	1630	91.1	0.0430	2.0	6020	0444
	290				690	3528	1630	91.4	0.0432	2.0	6020	0444
	316				688	3509	1630	91.8	0.0434	2.0	6020	0444
##	274	785	870	910	753	3333	1950	90.9	0.0356	1.4	5930	0372
	304				756	3337	1950	91.4	0.0360	1.4	5930	0372
	318				754	3337	1950	91.7	0.0361	1.4	5930	0372
	347				754	3331	1950	92.1	0.0363	1.4	5930	0372
	331	925	1020	1070	901	3417	1880	91.9	0.0253	1.1	6200	0324
	365				899	3417	1880	92.3	0.0255	1.1	6200	0324
	383				900	3418	1880	92.5	0.0257	1.1	6200	0324
	417				898	3404	1890	92.8	0.0259	1.1	6200	0324
##	371	1080	1190	1250	1000	3281	1960	92.8	0.0182	0.78	6870	0276
	409				998	3282	1960	93.1	0.0184	0.78	6870	0276
	428				998	3270	1960	93.2	0.0185	0.78	6870	0276
	460				984	3230	2000	93.5	0.0186	0.78	6870	0276
	390	1180	1310	1370	1051	3156	2050	92.8	0.0166	0.63	6530	0248
	430				1050	3135	2050	93.1	0.0168	0.63	6530	0248
	439				1023	3060	2110	93.2	0.0167	0.63	6530	0248
	441				942	2846	2290	93.7	0.0162	0.63	6530	0248
##	433	1360	1490		1162	3041	2120	93.1	0.0130	0.48	6720	0216
	436				1059	2794	2330	93.6	0.0125	0.48	6720	0216

\*\* Through field control with constant output. Please specify.

Data subject to change without prior notice.

	Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2831
		400	440	460	500					Resistance (Ohm)	Inductance (mH)		
##	103	235	265	280	326	4186	600	79.1	0.238	11.9	5690	0984	
	116												
	122												
	135												
##	117	270	300	315	360	4138	580	81.2	0.190	9.7	5790	0888	
	132												
	139												
	153												
##	133	310	350	365	403	4097	780	82.6	0.155	6.6	6070	0732	
	149												
	156												
	172												
##	163	380	425	445	479	4096	1330	85.0	0.110	5.0	5870	0636	
	182												
	191												
	210												
##	204	470	525	550	585	4145	1250	87.2	0.0749	3.6	5490	0540	
	227												
	239												
	261												
##	230	530	585	615	652	4144	1350	88.2	0.0609	3.0	5690	0492	
	256												
	269												
	294												
##	237	565	625	655	661	4006	1290	89.6	0.0500	2.4	6610	0444	
	262												
	275												
	301												
##	261	650	725	760	723	3835	1710	90.2	0.0415	1.7	6570	0372	
	290												
	304												
	332												
##	313	770	855	895	857	3882	1660	91.3	0.0295	1.3	6700	0324	
	347												
	363												
	396												
##	353	905	1000	1050	955	3725	1730	92.4	0.0211	0.94	6810	0276	
	390												
	408												
	445												
##	372	990	1090	1140	1007	3588	1800	92.4	0.0192	0.76	7150	0248	
	410												
	429												
	444												
#	423	1140	1260	1320	1140	3544	1820	92.7	0.0152	0.57	7010	0216	
	440												
	441												
	441												

\*\* Through field control with constant output. Please specify.

Data subject to change without prior notice.

	Base speed (min <sup>-1</sup> ) at armature voltage (V)				Rated armature current (A)	Torque (Nm)	Max. electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit		Field loss (W)	Code number FR 2841
	400	440	460	500					Resistance (Ohm)	Inductance (mH)		
#	404	860			1093	4486	1355	92.4	0.021	1.07	6800	0276
	446		950		1092	4483	1380	92.9	0.021	1.07	6800	0276
	467			995	1091	4482	1390	93.0	0.021	1.07	6800	0276
	493			1085	1054	4339	1400	93.5	0.021	1.07	6800	0276
	449	1025			1208	4183	1550	92.9	0.016	0.65	7480	0216
	482		1130		1174	4073	1560	93.3	0.016	0.65	7480	0216
	488			1180	1134	3949	1620	93.5	0.016	0.65	7480	0216
	493			1280	1050	3678	1730	93.9	0.016	0.65	7480	0216

\*\* Through field control with constant output. Please specify.  
Other possibilities on request.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
165	333	372	400	447	476	543	500	4745	900	81,3	0,1123	1,98
185							500	4761	900	82,8		
200							500	4775	900	83,8		
225							500	4797	900	85,2		
239							500	4797	900	85,9		
274							500	4821	900	87,3		
210	418	464	498	557	591	673	614	4797	945	84,3	0,07500	1,32
234							614	4809	945	85,6		
252							614	4829	945	86,4		
282							614	4832	945	87,4		
300							614	4848	945	88,0		
342							614	4850	945	89,1		
359	700	776	831	925	981	1114	1000	4899	1800	89,2	0,02860	0,5
398							1000	4900	1800	89,9		
427							1000	4910	1800	90,4		
475							1000	4909	1800	91,1		
504							997	4903	1800	91,5		
547							955	4692	1850	92,3		
446	867	958	1027	1142	1211	1375	1227	4916	1850	90,5	0,01950	0,33
494							1227	4921	1850	91,1		
529							1227	4920	1850	91,5		
583							1214	4873	1900	92,1		
604							1185	4760	1930	92,5		
645							1116	4477	2030	93,1		
545	1056	1167	1251	1391	1476	1674	1485	4932	1400	91,7	0,01303	0,207
589							1451	4821	1410	92,2		
614							1408	4684	1450	92,6		
645							1333	4431	1550	93,1		
660							1285	4270	1600	93,4		
679							1169	3874	1760	93,8		
560	1219	1346	1440	1601	1698	1368	1510	4387	1550	92,5	0,00982	0,191
617							1510	4380	1550	92,9		
661							1510	4383	1550	93,1		
697							1435	4159	1650	93,5		
705							1368	3963	1720	93,7		

Field loss = 5700 W

\*\* Through field control with constant output. Please specify.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
162	273	305	328	368	393	448	500	5660	750	79,4	0,13100	2,7
182							500	5693	750	81,1		
196							500	5717	750	82,2		
221							500	5733	750	83,8		
236							500	5744	750	84,6		
270							500	5756	750	86,1		
206	343	382	411	460	488	556	614	5745	800	82,8	0,08700	1,85
231							614	5773	800	84,2		
249							614	5788	800	85,1		
279							614	5794	800	86,4		
397							614	5818	800	87,0		
339							614	5824	800	88,2		
356	579	641	687	765	812	923	1000	5877	1520	88,3	0,03342	0,706
395							1000	5892	1520	89,2		
425							1000	5902	1520	89,7		
474							1000	5913	1520	90,5		
503							997	5913	1520	90,9		
551							955	5700	1580	91,8		
444	715	792	848	944	1002	1137	1227	5925	1600	89,8	0,02200	0,46
492							1227	5930	1600	90,5		
527							1227	5938	1600	91,0		
585							1225	5923	1600	91,6		
610							1202	5814	1640	92,0		
660							1145	5544	1700	92,7		
544	874	966	1036	1153	1223	1387	1485	5940	1200	91,2	0,01500	0,25
594							1467	5869	1200	91,8		
622							1431	5732	1220	92,2		
662							1370	5482	1280	92,8		
682							1331	5324	1320	93,1		
717							1235	4939	1420	93,6		
550	1011	1117	1195	1327	1406	1444	1486	5195	1360	92,2	0,01112	0,207
607							1486	5192	1360	92,6		
651							1486	5202	1360	92,9		
722							1486	5195	1360	93,3		
743							1444	5045	1400	93,5		

Field loss = 6350 W

\*\* Through field control with constant output. Please specify.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
158	225	251	271	305	325	371	500	6713	650	77,2	0,14500	2,9
178							500	6779	650	79,1		
193							500	6792	650	80,4		
217							500	6803	650	81,1		
232							500	6812	650	82,9		
266							500	6857	650	84,7		
203	283	316	340	381	406	462	614	6841	670	81,1	0,09600	1,9
227							614	6869	670	82,6		
245							614	6894	670	83,6		
275							614	6904	670	85,0		
294							614	6907	670	85,7		
335							614	6934	670	87,2		
353	481	534	573	638	678	771	1000	7003	1300	87,3	0,03709	0,766
392							1000	7007	1300	88,2		
422							1000	7030	1300	88,8		
470							1000	7035	1300	89,7		
498							996	7017	1310	90,2		
551							968	6824	1350	91,2		
440	596	660	708	788	836	950	1227	7050	1360	88,9	0,02479	0,487
488							1227	7064	1360	89,8		
525							1227	7075	1360	90,3		
584							1225	7073	1360	91,0		
611							1209	6979	1380	91,4		
667							1162	6708	1440	92,2		
532	730	807	865	963	1022	1159	1458	6957	1020	90,6	0,01700	0,3
588							1458	6961	1020	91,2		
625							1443	6895	1030	91,7		
671							1393	6653	1080	92,3		
695							1361	6499	1100	92,7		
745							1284	6135	1170	93,3		
539	846	934	1000	1111	1177		1458	6085	1190	91,7	0,01300	0,26
595							1458	6088	1190	92,2		
637							1458	6086	1190	92,6		
707							1458	6080	1190	93,0		
750							1458	6085	1190	93,2		

Field loss = 7150 W

\*\* Through field control with constant output. Please specify.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
154	187	211	228	256	273	313	500	7846	550	74,6	0,16108	3,32
173							500	7818	550	76,8		
188							500	7882	550	78,1		
213							500	7936	550	80,1		
227							500	7950	550	81,0		
262							500	7988	550	83,0		
198	237	265	285	320	340	390	614	7985	570	78,9	0,10669	2,18
222							614	7994	570	80,7		
240							614	8042	570	81,8		
271							614	8085	570	83,4		
289							614	8120	570	84,2		
331							614	8103	570	85,8		
348	404	449	482	537	571	650	1000	8230	1110	86,0	0,04079	0,83
388							1000	8256	1110	87,1		
417							1000	8268	1110	87,8		
465							998	8278	1110	88,8		
490							989	8195	1120	89,3		
546							966	8027	1150	90,4		
436	502	556	597	665	706	803	1227	8301	1160	87,9	0,02824	0,56
485							1227	8323	1160	88,8		
520							1227	8318	1160	89,4		
578							1223	8303	1160	90,2		
606							1207	8202	1180	90,7		
668							1170	7947	1210	91,6		
516	617	682	730	813	863	980	1425	7992	890	89,9	0,01883	0,34
572							1425	8007	890	90,6		
614							1425	8028	890	91,1		
674							1404	7913	900	91,8		
702							1378	7766	920	92,1		
760							1315	7406	990	92,8		
525	715	791	847	940	997	1425	1425	7006	1010	91,2	0,01464	0,29
580							1425	7003	1010	91,8		
621							1425	7001	1010	92,1		
690							1425	7010	1010	92,6		
732							1425	7010	1010	92,9		

Field loss = 8100 W

\*\* Through field control with constant output. Please specify.

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
147	154	173	188	211	226	260	500	9132	460	71,6	0,18305	3,83
167							500	9234	460	74,0		
182							500	9236	460	75,5		
207							500	9381	460	77,7		
222							500	9373	460	78,8		
256							500	9416	460	81,0		
193	195	218	236	265	282	323	614	9438	480	76,5	0,12134	2,49
216							614	9478	480	78,4		
235							614	9491	480	79,7		
265							614	9566	480	81,5		
284							614	9605	480	82,4		
325							614	9623	480	84,2		
343	337	376	404	451	480	550	1000	9712	940	84,5	0,04707	0,96
383							1000	9721	940	85,7		
411							996	9713	940	86,6		
455							985	9325	950	87,8		
480							977	9550	960	88,3		
538							959	9345	970	89,5		
431	419	4666	500	557	593	673	1227	9821	970	86,7	0,03243	0,65
479							1227	9818	970	87,8		
515							1227	9845	970	88,4		
569							1213	9757	980	89,4		
599							1200	9648	990	89,9		
665							1170	9430	1010	90,9		
499	519	575	616	686	728	826	1385	9183	770	89,1	0,02197	0,40
554							1385	9195	770	89,9		
594							1385	9203	770	90,4		
662							1385	9213	770	91,1		
701							1383	9195	770	91,5		
767							1383	8871	826	92,3		
508	603	666	714	794	841	841	1385	8048	890	90,6	0,01674	0,33
562							1385	8056	890	91,2		
603							1385	8062	890	91,6		
670							1385	8059	890	92,2		
710							1385	8062	890	92,5		

Field loss = 9200 W

\*\* Through field control with constant output. Please specify.



Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
152	192	215	232	261	279	319	496	7551	870	74,5	0,13000	3,2
171							495	7592	870	76,7		
185							495	7634	870	78,1		
209							493	7651	870	80,0		
223							492	7624	870	81,1		
255							489	7648	870	83,1		
209	249	278	300	336	358	410	650	8019	915	78,9	0,08100	2,1
234							648	8026	915	80,7		
253							646	8045	920	81,8		
283							643	8036	920	83,5		
302							641	8051	920	84,3		
344							636	8004	930	85,9		
267	314	349	376	421	448	510	801	8128	855	82,2	0,05500	1,26
297							796	8135	860	83,7		
320							794	8128	865	84,6		
356							788	8084	870	86,0		
378							785	8062	875	86,6		
428							776	8018	885	88,0		
333	424	471	505	563	599	681	952	7494	1630	86,2	0,03300	0,82
367							944	7447	1630	87,2		
393							938	7427	1630	88,0		
434							927	7356	1630	89,0		
458							920	7305	1630	89,5		
512							903	7177	1630	90,5		
440	539	598	641	714	758	860	1231	7795	1630	88,4	0,02100	0,52
484							1217	7724	1630	89,3		
515							1206	7666	1630	89,9		
565							1186	7551	1630	90,7		
594							1175	7479	1630	91,1		
656							1143	7289	1630	91,9		
541	679	751	806	897	952	1080	1491	7607	1630	89,9	0,01397	0,354
590							1467	7503	1630	90,7		
625							1448	7411	1630	91,1		
680							1414	7240	1630	91,8		
711							1393	7131	1630	92,1		
775							1337	6849	1630	92,8		
649	820	907	972	1081	1146	1299	1765	7559	1630	91,2	0,00990	0,2
701							1724	7380	1630	91,8		
737							1690	7244	1630	92,2		
791							1631	6987	1630	92,7		
819							1592	6826	1630	93,0		
870							1494	6396	1630	93,5		
780	947	1046	1122	1247	1323	1498	2107	7865	1590	92,0	0,00742	0,15
838							2046	7653	1610	92,5		
876							1997	7459	1630	92,8		
932							1910	7136	1630	93,3		
958							1854	6917	1630	93,5		
999							1709	6369	1630	93,8		
792	1074	1188	1272	1413	1498	1731	2117	7040	1630	92,8	0,00560	0,11
836							2027	6723	1630	93,2		
864							1955	6484	1630	93,4		
892							1820	6028	1630	93,7		
897							1731	5720	1630	93,7		

\*\* Through field control with constant output. Please specify.

Field loss = 7200 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
145	156	176	190	214	229	262	484	8848	745	72,6	0,15400	3,6
163							483	8830	765	75,0		
177							482	8910	765	76,5		
201							480	8966	770	78,6		
215							479	8947	770	79,7		
246							476	8980	775	81,9		
200	203	228	246	276	294	336	633	9408	810	77,4	0,09600	2,25
225							630	9405	810	79,3		
243							629	9423	815	80,6		
273							626	9437	815	82,3		
291							625	9450	820	83,2		
332							620	9431	825	85,0		
256	257	287	308	346	367	419	778	9526	760	81,0	0,06450	1,46
285							775	9499	760	82,6		
308							772	9556	765	83,6		
345							767	9510	765	85,1		
365							765	9510	770	85,8		
415							758	9448	780	87,2		
323	349	388	416	465	494	562	931	8830	1605	85,3	0,03900	0,9
356							925	8771	1615	86,5		
382							919	8765	1625	87,2		
424							910	8700	1630	88,3		
447							905	8647	1630	88,8		
502							891	8527	1630	89,9		
428	445	493	529	589	626	711	1205	9188	1630	87,6	0,02434	0,564
471							1194	9122	1630	88,6		
503							1185	9076	1630	89,3		
554							1168	8977	1630	90,1		
583							1158	8890	1630	90,6		
648							1133	8706	1630	91,4		
529	553	612	657	731	775	880	1465	9136	1630	89,3	0,01620	0,38
579							1445	9036	1630	90,2		
615							1430	8946	1630	90,7		
673							1403	8789	1630	91,4		
705							1385	8682	1630	91,8		
775							1341	8406	1630	92,5		
637	676	747	801	892	946	1071	1740	9002	1485	90,8	0,01095	0,234
692							1705	8845	1515	91,4		
730							1678	8703	1540	91,9		
789							1630	8448	1585	92,4		
821							1598	8287	1620	92,7		
885							1520	7887	1630	93,3		
770	782	864	927	1030	1093	1237	2085	9403	1380	91,6	0,00839	0,19
832							2036	9194	1415	92,2		
875							1996	9010	1445	92,5		
937							1925	8690	1495	93,0		
970							1880	8475	1535	93,3		
1031							1764	7959	1620	93,7		
793	888	982	1051	1168	1238	2125	8525	1630	92,5	0,00630	0,13	
845						2052	8222	1630	93,0			
880						1993	7996	1630	93,3			
924						1885	7552	1630	93,6			
942						1815	7265	1630	93,7			

\*\* Through field control with constant output. Please specify.

Field loss = 7950 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
136	129	145	157	177	189	218	470	10094	615	70,5	0,17137	4,06
155							469	10239	670	73,0		
169							468	10285	675	74,6		
192							467	10350	675	76,9		
205							466	10381	675	78,1		
236							465	10354	680	80,4		
190	168	187	203	228	243	278	615	10800	715	75,7	0,10681	2,59
215							613	10957	715	77,7		
232							611	10906	715	79,1		
262							609	10967	720	81,0		
279							607	10968	720	81,9		
319							604	10962	725	83,8		
245	213	237	255	287	305	348	755	10964	665	79,5	0,0717	1,69
274							752	11026	670	81,3		
295							750	11065	670	82,4		
331							746	11011	675	84,0		
352							744	11016	675	84,8		
401							738	11002	685	86,4		
312	289	321	345	386	410	467	910	10303	1405	84,2	0,04342	1,04
345							905	10278	1420	85,5		
371							900	10267	1425	86,3		
412							893	10189	1425	87,4		
436							888	10164	1445	88,0		
491							876	10039	1465	89,2		
415	369	410	440	491	521	592	1178	10751	1510	86,8	0,0271	0,64
458							1169	10672	1520	87,8		
489							1161	10615	1530	88,5		
541							1148	10521	1550	89,5		
570							1139	10448	1560	90,0		
637							1118	10280	1590	90,9		
515	459	510	546	609	647	734	1433	10705	1430	88,6	0,01768	0,42
565							1417	10571	1445	89,5		
601							1405	10510	1460	90,1		
660							1382	10350	1480	90,9		
694							1367	10238	1500	91,3		
767							1332	9983	1540	92,1		
623	563	623	668	744	788	894	1707	10562	1295	90,2	0,01216	0,28
678							1680	10396	1310	90,9		
719							1658	10280	1335	91,4		
781							1618	10024	1365	92,0		
816							1594	9894	1390	92,4		
889							1530	9498	1445	93,0		
755	652	720	773	859	911	1033	2056	11065	1200	91,1	0,0093	0,22
820							2015	10876	1225	91,7		
865							1984	10692	1245	92,1		
935							1926	10400	1285	92,7		
974							1889	10207	1310	93,0		
1049							1796	9699	1375	93,5		
788	741	818	876	974	1033	1033	2120	10157	1630	92,1	0,007	0,16
847							2061	9892	1630	92,6		
887							2013	9673	1630	93,0		
944							1927	9252	1630	93,4		
971							1872	8976	1630	93,6		

\*\* Through field control with constant output. Please specify.

Field loss = 8850 W

# LAK 6400 D

# IC06/17/37/86W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
129	106	120	130	148	158	181	457	11630	500	67,9	0,18900	4,97
146							456	11648	565	70,7		
160							455	11754	615	72,4		
183							455	11791	700	74,9		
195							454	11814	750	76,2		
226							452	11943	780	78,7		
181	139	157	169	190	203	233	596	12428	660	73,6	0,11800	3,1
204							595	12387	745	75,8		
221							594	12483	810	77,3		
250							592	12566	830	79,3		
267							591	12574	830	80,4		
306							588	12557	835	82,5		
234	178	199	215	241	256	293	732	12534	770	77,8	0,07890	2
262							730	12565	770	79,7		
283							728	12558	775	80,9		
317							725	12572	780	82,7		
338							723	12616	780	83,5		
385							718	12563	785	85,3		
301	242	269	291	324	339	387	888	11874	1170	82,9	0,04800	1,184
334							884	11845	1245	84,3		
359							880	11785	1250	85,2		
400							874	11790	1255	86,5		
424							870	11934	1265	87,1		
478							860	11800	1280	88,4		
401	310	344	369	412	438	498	1151	12369	1325	85,8	0,03000	0,78
444							1143	12316	1335	86,9		
475							1136	12269	1340	87,6		
526							1125	12201	1365	88,7		
556							1118	12120	1380	89,2		
624							1101	11953	1430	90,2		
499	387	428	460	512	544	617	1400	12327	1250	87,8	0,02010	0,521
549							1386	12245	1265	88,8		
585							1376	12163	1275	89,4		
645							1357	12012	1290	90,3		
679							1345	11923	1305	90,7		
755							1316	11693	1330	91,6		
605	474	525	563	626	665	754	1672	12200	1130	89,5	0,01390	0,321
663							1649	12064	1145	90,3		
704							1631	11931	1155	90,8		
769							1599	11731	1180	91,5		
805							1579	11573	1190	91,9		
885							1528	11215	1235	92,6		
738	549	608	651	725	769	872	2020	12840	1045	90,5	0,01043	0,266
805							1987	12655	1065	91,2		
853							1961	12500	1075	91,6		
926							1915	12210	1100	92,3		
968							1885	12021	1120	92,6		
1055							1810	11553	1170	93,2		
780	624	690	740	823	872	986	2105	11935	1490	91,7	0,00780	0,193
843							2056	11663	1525	92,2		
886							2018	11443	1535	92,6		
953							1950	11056	1610	93,1		
986							1905	10806	1630	93,3		

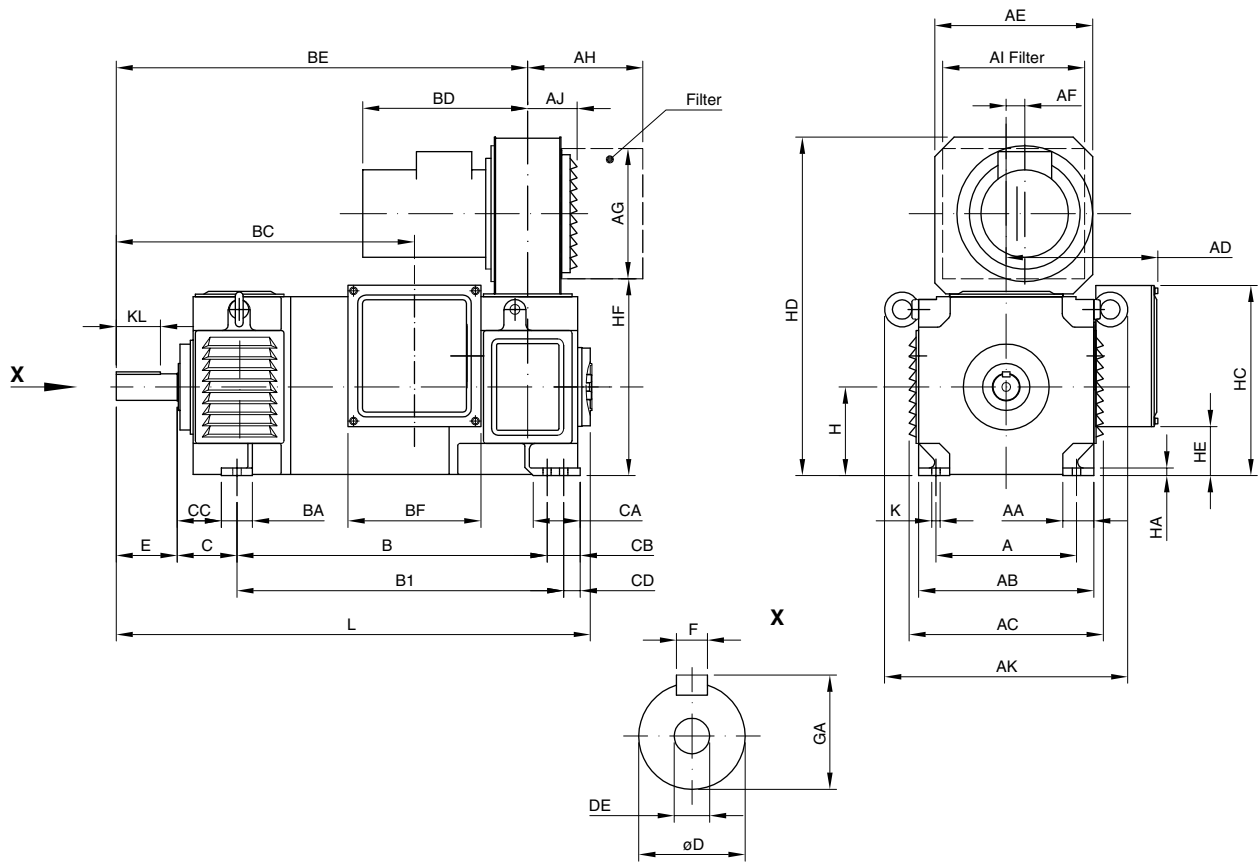
\*\* Through field control with constant output. Please specify.

Field loss = 9950 W

Cont. output (kW)	Base speed (min <sup>-1</sup> ) at armature voltage (V)						Rated armature current (A)	Torque (Nm)	Max electrical speed** (min <sup>-1</sup> )	Efficiency (%)	Armature circuit	
	400	440	470	520	550	620					Resistance (Ohm)	Inductance (mH)
121	88	100	109	123	132	153	445	13049	410	65,0	0,2125	5,68
138							444	13240	470	68,0		
151							444	13243	510	69,9		
173							443	13404	520	72,6		
185							442	13395	520	74,0		
215							440	13487	520	76,8		
170	116	130	141	159	170	195	579	14002	550	71,2	0,1328	3,55
193							578	14138	550	73,6		
210							577	14186	550	75,2		
238							575	14337	555	77,4		
255							575	14312	555	78,6		
294							572	14361	555	80,9		
222	147	165	178	200	214	244	655	14363	515	75,9	0,08891	2,37
249							708	14438	515	77,9		
269							706	14439	520	79,3		
304							704	14473	520	81,1		
324							702	14471	520	82,1		
370							698	14476	525	84,0		
289	202	226	243	272	289	330	867	13640	970	81,3	0,05372	1,42
322							863	13612	1030	82,9		
346							860	13608	1085	83,9		
386							855	13588	1090	85,3		
410							852	13556	1100	86,0		
465							844	13489	1110	87,4		
386	259	288	309	346	367	418	1123	14226	1160	84,5	0,03353	0,89
429							1116	14237	1165	85,8		
460							1111	14208	1170	86,6		
511							1102	14110	1180	87,7		
541							1095	14070	1185	88,3		
608							1082	13895	1205	89,5		
482	323	359	385	430	457	519	1365	14226	1095	86,9	0,02256	0,60
532							1355	14147	1105	87,9		
568							1346	14077	1110	88,6		
628							1331	13945	1125	89,5		
663							1322	13860	1130	90,0		
741							1298	13641	1155	91,0		
587	398	440	473	527	559	635	1634	14102	985	88,7	0,01554	0,37
645							1615	13977	995	89,6		
686							1601	13860	1005	90,1		
754							1575	13661	1020	90,9		
792							1559	13518	1030	91,3		
875							1518	13174	1060	92,1		
719	462	512	548	610	648	735	1979	14872	910	89,7	0,01141	0,31
786							1953	14680	920	90,5		
835							1932	14554	930	91,0		
913							1894	14284	950	91,7		
956							1870	14098	965	92,1		
1051							1810	13649	995	92,8		
768	526	581	623	693	734	734	2083	13951	1285	91,1	0,00858	0,23
834							2044	13709	1310	91,7		
881							2013	13494	1330	92,1		
954							1958	13149	1370	92,7		
993							1923	12911	1390	93,0		

\*\* Through field control with constant output. Please specify.

Field loss = 11150 W

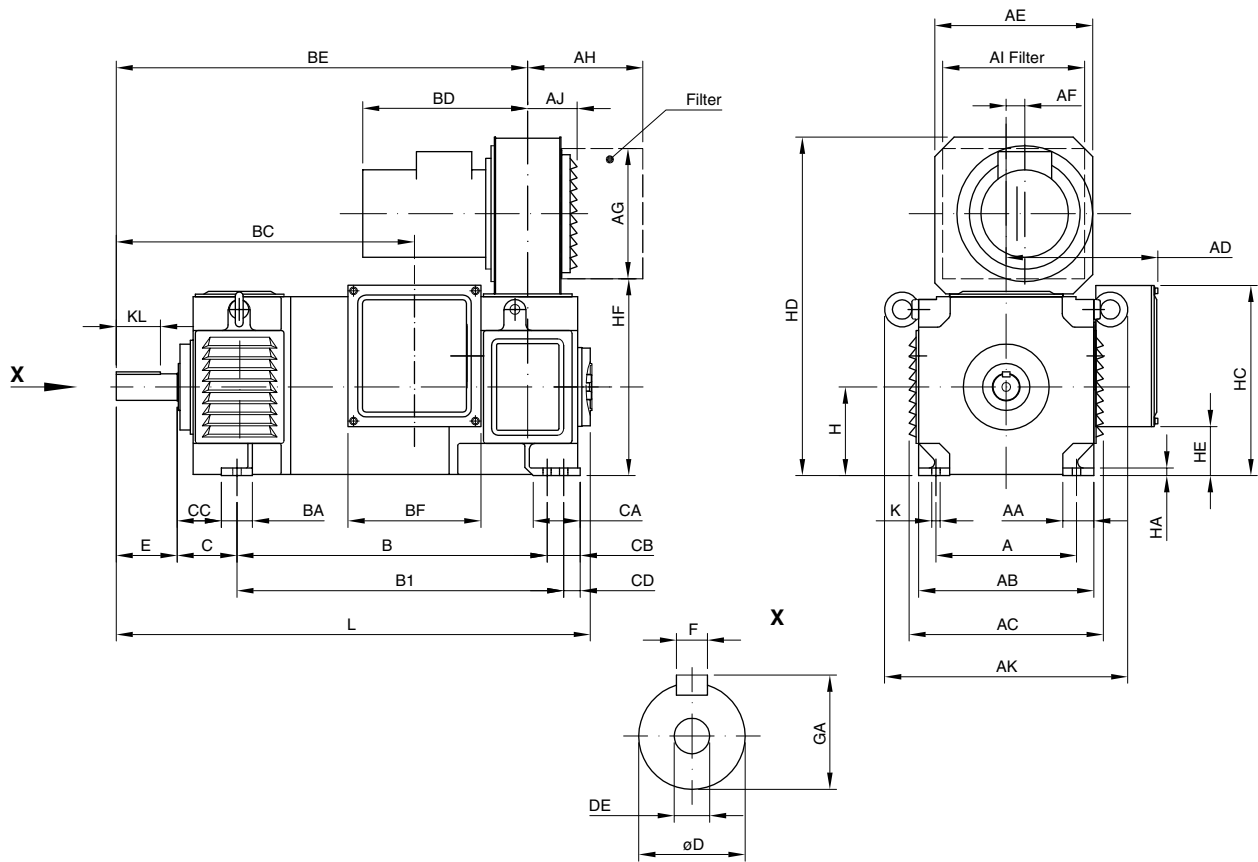


Dimensions in mm

Type	A	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	B	BA	BC	BD	BE	BF	B1	CD	C	CA	CB
LAK 2112MA	190	45	220	256	203	220	17	195	175	195	77	326	373	50	336	235	514	190	403	11	70	71	41
LAK 2112LA													428		391		569		458				
LAK 4112A													373		336		514		403				
LAK 4112B													428		391		569		458				
LAK 2132M	216	47.5	260	295	223	220	17	195	175	195	77	366	482	50	419	235	590	190	89	60	25		
LAK 4132A						220	17	195	175	195	77		437		374	235	545						
LAK 4132B						220	17	195	175	195	77		482		419	235	590						
LAK 4132C						220	17	195	175	195	77		532		469	235	640						
LAK 4132D						285	33.5	235	208	235	89		642		609	298	780						

Type	CC	D	DE	E	F	GA	H	HA	HC	HD	HE	HF	K	KL	L	L+REO444R1	L+TDP0.2LT	Weight (kg)
LAK 2112MA	45	38	M10	80	10	41	112	10	241	451	66	250	12	57	594.5	805.5	811.5	97
LAK 2112LA															649.5	860.5	866.5	103
LAK 4112A															594.5	805.5	811.5	110
LAK 4112B															649.5	860.5	866.5	117
LAK 2132M	64	38	M10	80	10	41	132	12	261	491	86	290	12	57	695.5	906.5	912.5	139
LAK 4132A															650.5	861.5	867.5	122
LAK 4132B															695.5	906.5	912.5	152
LAK 4132C															745.5	956.5	962.5	177
LAK 4132D															885	1096	1102	236

Dimensions are not binding.

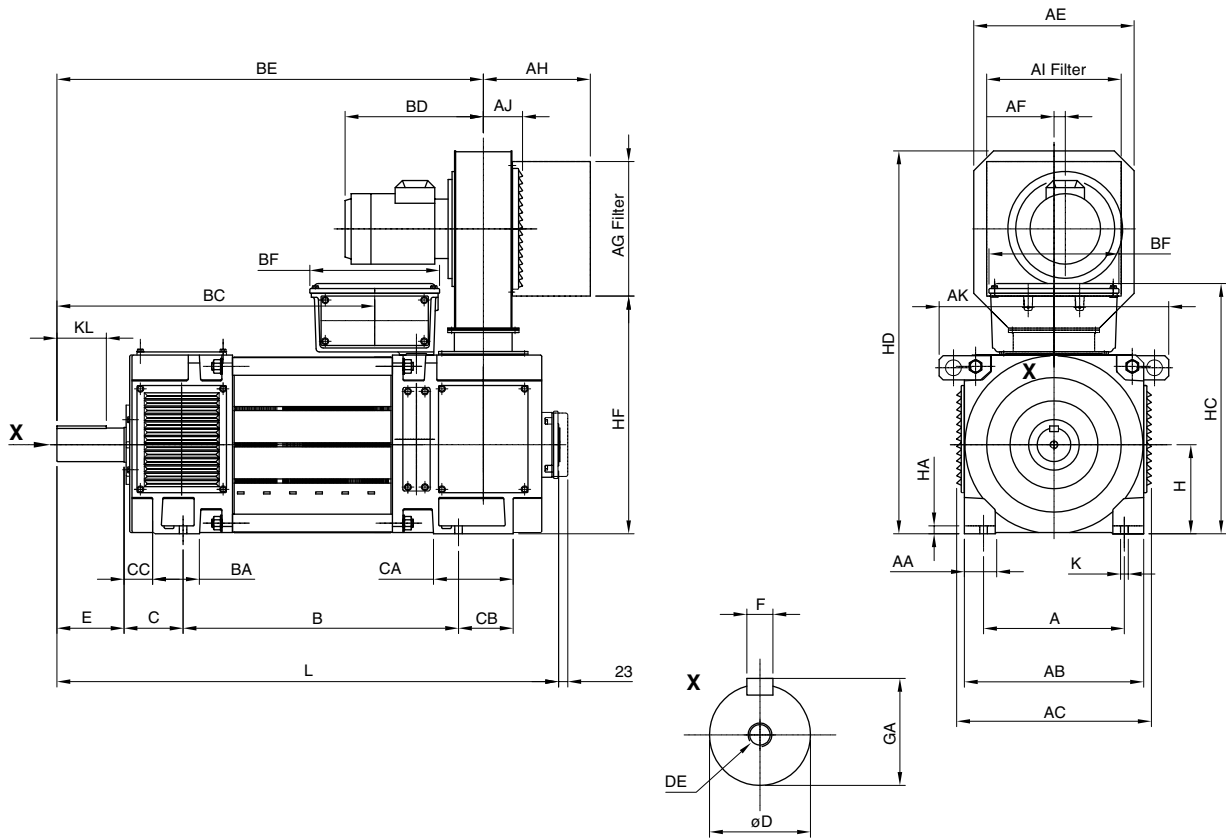


Dimensions in mm

Type	A	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	B	BA	BC	BD	BE	BF	B1	CD	C	
LAK 4160A/AA	254	56	316	351	274	285	33.5	235	208	235	89	439	475	56	426	298	631	240			108	
LAK 4160B/BB						285	33.5	235	208	235	89		522		473	298	678					
LAK 4160C/CC						285	33.5	235	208	235	89		587		538	298	743					
LAK 4160D						315	21.5	300	209	300	80		712		663.5	299	868.5					
LAK 4180AA	279	66	356	391	297	355	25.5	340	265	340	95	479	561	66	499	305	718	240			121	
LAK 4180BA		66				297	355		25.5		265		95	612	66	535	305					754
LAK 4180CA		66				297	355		25.5		265		95	677	66	616	305					835
LAK 4180DA		66				297	355		25.5		265		95	707	66	681	305					900
LAK 4180EA		66				297	405		28.5		270		105	720	66	741	349					960
LAK 4180FA		61				322	405		28.5		270		105	795	85	821	349					1071

Type	CA	CB	CC	D	DE	E	F	GA	H	HA	HC	HD	HE	HF	K	KL	L	L+REO 444R1	L+TDP 0.2LT	Weight (kg)
LAK 4160A/AA	65	28	80	48	M16	110	14	51.5	160	14	343.5	611	88.5	356	15	80	744	955	961	205/215
LAK 4160B/BB												611		356			791	1002	1008	245/255
LAK 4160C/CC												611		356			856	1067	1073	290/300
LAK 4160D												641		338			981	1192	1198	400
LAK 4180AA	195	50	91	55	M16	110	16	59	180	16	364	745	109	402	15	80	848.5	1059.5	1065.5	310
LAK 4180BA	195	35		55	M16	110	16	59		16	364	745	109	402	15	80	884.5	1095.5	1101.5	350
LAK 4180CA	195	21		60	M16	140	18	64		16	364	745	109	402	15	110	965.5	1176.5	1182.5	400
LAK 4180DA	195	56.5		70	M20	140	20	74.5		16	364	745	109	402	15	110	1030.5	1241.5	1247.5	490
LAK 4180EA	195	103.5		70	M20	140	20	74.5		16	364	815	109	448	15	110	1090.5	1301.5	1307.5	540
LAK 4180FA	95	40		70	M20	140	20	74.5		16	372.5	815	117.5	448	19	110	1248	1459	1465	650

Dimensions are not binding.



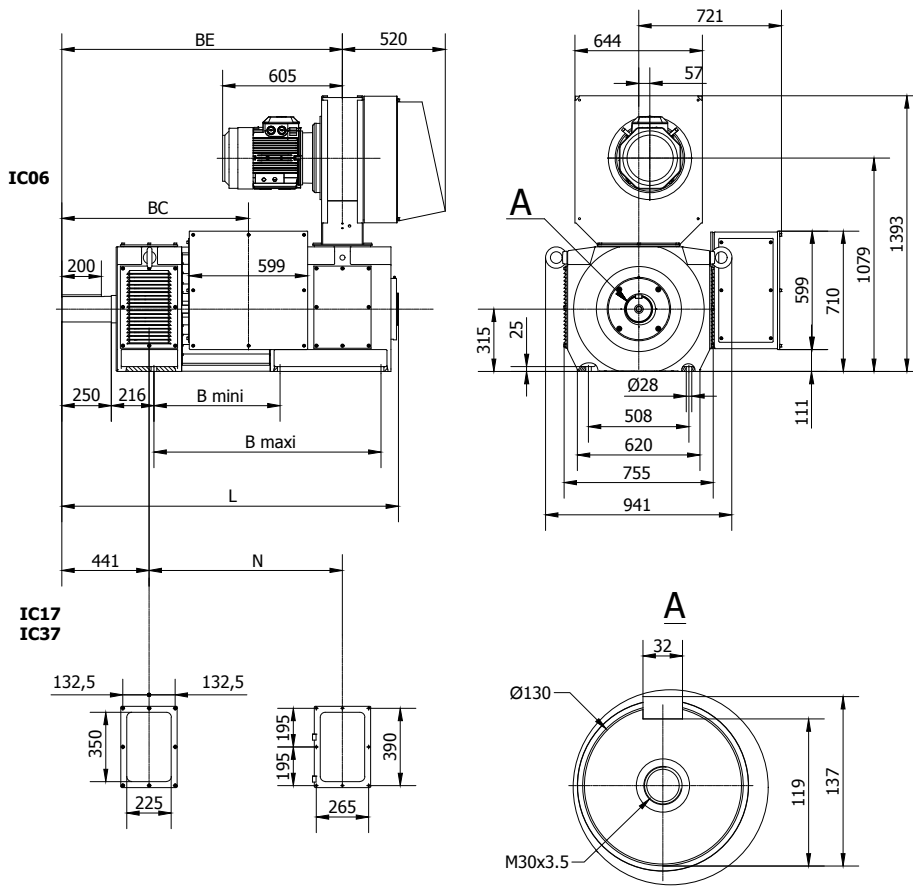
Dimensions in mm

Type	A	AA	AB	AC	AE	AF	AG	AH	AI	AJ	AK	B	BA	BC	BD	BE	BF	C	CA	CB
LAK 4200A	318	70	404	443	355	25.5	340	265.5	340	94	500	542	113	616	305.5	854.5	278	133	178	116
LAK 4200B												610		684		922.5				
LAK 4200C												678		752		990.5				
LAK 4225A	356	78	453	492	405	28.5	340	271	340	99	580	630	118	737	349	1012	328	149	201	138
LAK 4225B												696		803		1078				
LAK 4225C												762		869		1144				
LAK 4250A	406	84	502	541	460	40	450	346	450	135	629	679	138	793	426	1083	328	168	229	160
LAK 4250B												751		865		1155				
LAK 4250C												823		937		1227				
LAK 4280A	457	89	560	599	460	40	450	346	450	135	687	735	155	863	426	1208	423	190	242	166
LAK 4280B												815		943		1288				
LAK 4280C												895		1023		1368				
LAK 4280D												975		1103		1448				

Type	CC	D	DE	E	F	GA	H	HA	HC	HD	HF	K	KL	L	L+REO 444R1	L+TDP0.2LT	Weight (kg)
LAK 4200A	59	75	M20	140	20	79.5	200	20	550	858	515	19	100	1032	1243	1249	530
LAK 4200B														1100	1311	1317	590
LAK 4200C														1168	1379	1385	660
LAK 4225A	72	85	M20	170	22	90	225	20	633	968	601	19	125	1202	1413	1419	760
LAK 4225B														1268	1479	1485	830
LAK 4225C														1334	1545	1551	930
LAK 4250A	75	95	M20	170	25	100	250	23	682	1107	652	24	125	1309	1520	1526	1030
LAK 4250B														1381	1592	1598	1140
LAK 4250C														1453	1664	1670	1310
LAK 4280A	81	100	M20	210	28	106	280	26	790	1206	751	24	160	1468	1679	1685	1290
LAK 4280B														1548	1759	1765	1500
LAK 4280C														1628	1839	1845	1700
LAK 4280D														1708	1919	1925	1900

Dimensions are not binding.



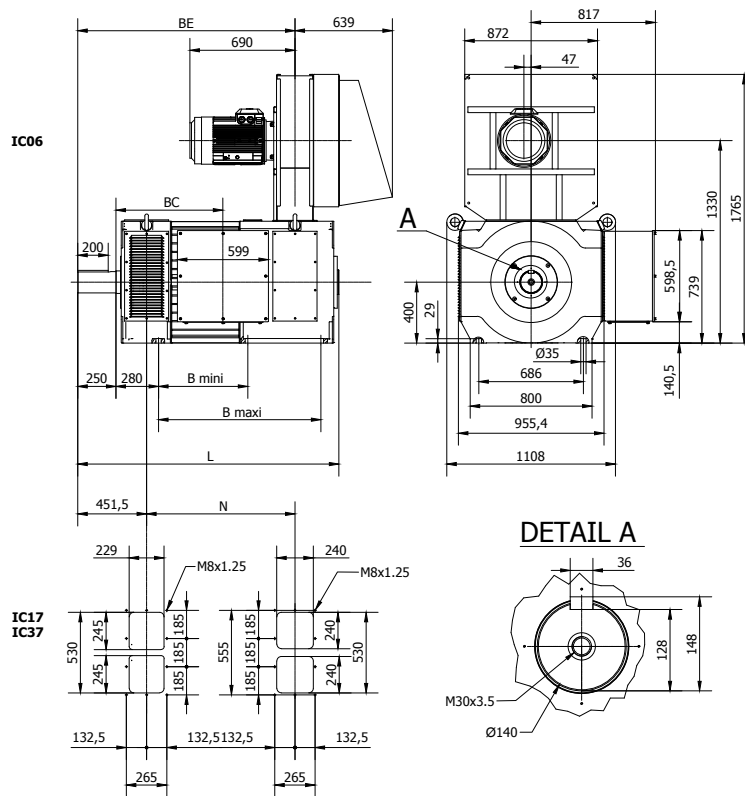


Dimensions in mm

Type	BC	BE	B mini	B maxi	L	N	Weight kg (IC06)
LAK 6315 A	944	1419	638	1148	1702	978	2060
LAK 6315 B	1034	1509	728	1235	1792	1068	2250
LAK 6315 C	1136	1611	830	1340	1894	1170	2480
LAK 6315 D	1249	1724	943	1453	2007	1283	2740
LAK 6315 E	1384	1859	1078	1588	2142	1418	3050

IC666, IC86W and flanges : on request

Dimensions are not binding.

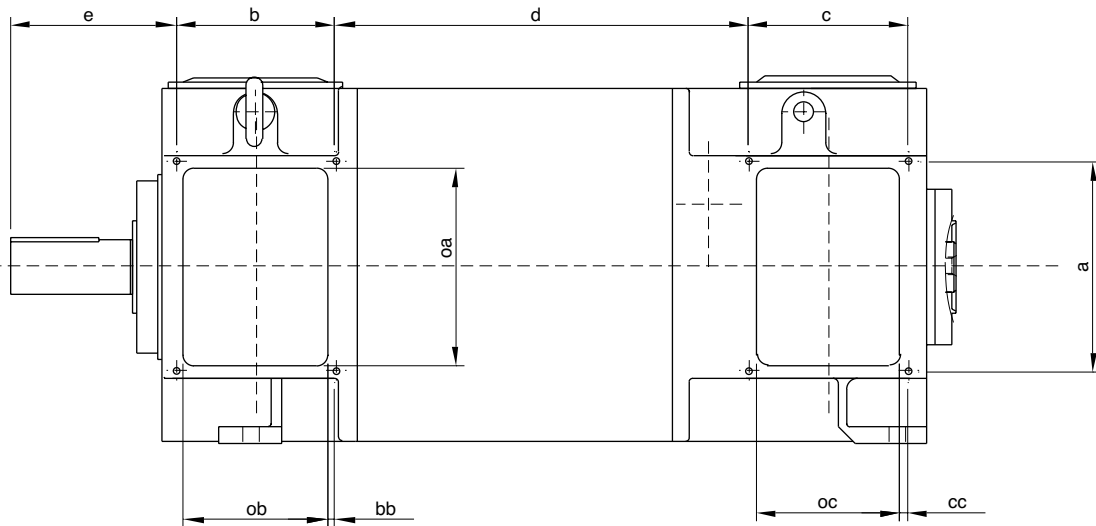


Dimensions in mm

Type	BC	BE	B mini	B maxi	L	N	Weight kg (IC06)
LAK 6400 A	953	1426	586	1066	1714	974,5	3100
LAK 6400 B	1043	1516	676	1156	1804	1064,5	3500
LAK 6400 C	1145	1618	778	1258	1906	1166,5	3900
LAK 6400 D	1258	1731	891	1371	2019	1279,5	4300
LAK 6400 E	1393	1866	1026	1506	2154	1414,5	4900

IC666, IC86W and flanges : on request

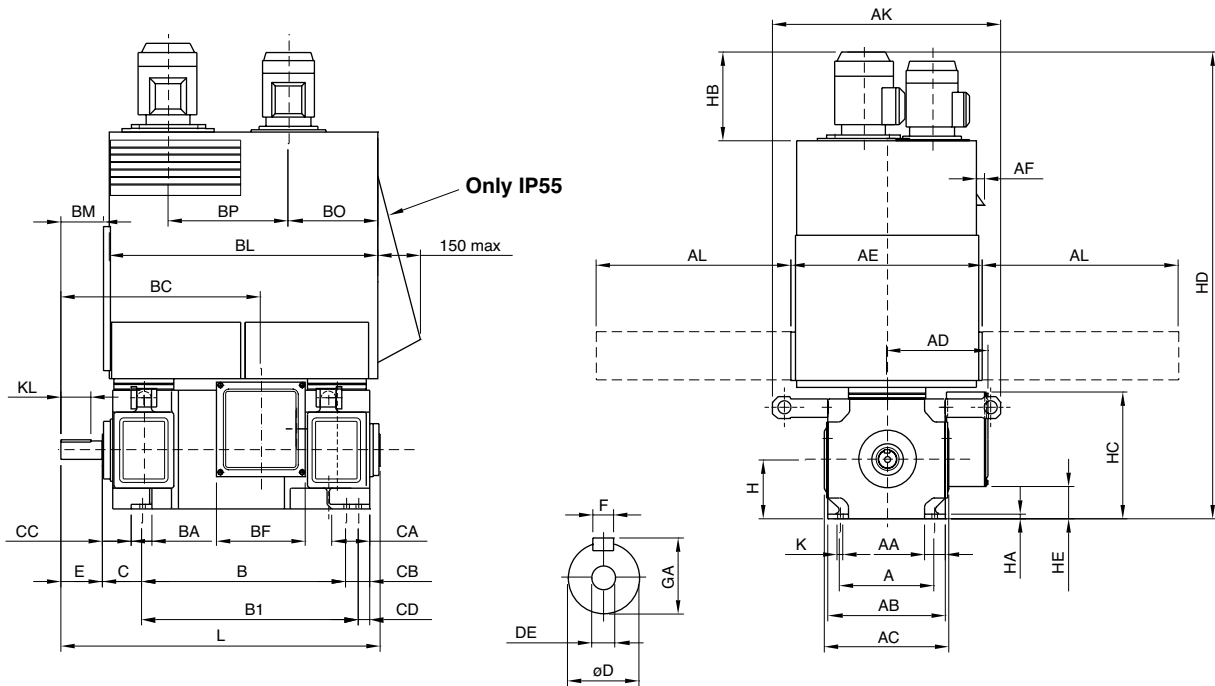
Dimensions are not binding.



Dimensions in mm

Type	a	b	bb	c	cc	d	e	oa	ob	oc	t	Weight (kg)
LAK 2112MA	110	110	5	110	5	245	104	110	100	100	M6	90
LAK 2112LA						300						96
LAK 4112A						245						103
LAK 4112B						300						110
LAK 2132M	150	125	7.5	125	7.5	286	116.5	145	110	110	M6	132
LAK 4132A						241						115
LAK 4132B						286						145
LAK 4132C						336						170
LAK 4132D						446	146.5					220
LAK 4160A/AA	190	145	7.5	145	7.5	263	150	180	130	130	M6	190/200
LAK 4160B/BB						310						230/240
LAK 4160C/CC						375						275/285
LAK 4160D						500						380
LAK 4180AA	210	160	7.5	160	7.5	320	158.5	200	145	145	M8	290
LAK 4180BA			7.5		7.5	356	158.5	200	145	145		330
LAK 4180CA			7.5		7.5	407	188.5	200	145	145		380
LAK 4180DA			7.5		7.5	472	188.5	200	145	145		470
LAK 4180EA			7.5		7.5	532	188.5	200	145	145		520
LAK 4180FA			10		10	660	171	210	140	155		630
LAK 4200A	220	175	8	175	8	400	192.5	210	159	159	M8	495
LAK 4200B						468						560
LAK 4200C						536						630
LAK 4225A	254	209	17	209	11	485	211	239	170	191	M8	730
LAK 4225B						551						800
LAK 4225C						617						900
LAK 4250A	274	209	14.5	209	9	526	227.5	260	180	191	M8	970
LAK 4250B						598						1070
LAK 4250C						670						1240
LAK 4280A	330	240	15	240	9	585	263	312	200	222	M8	1210
LAK 4280B						665						1420
LAK 4280C						745						1620
LAK 4280D						825						1820

Dimensions are not binding.

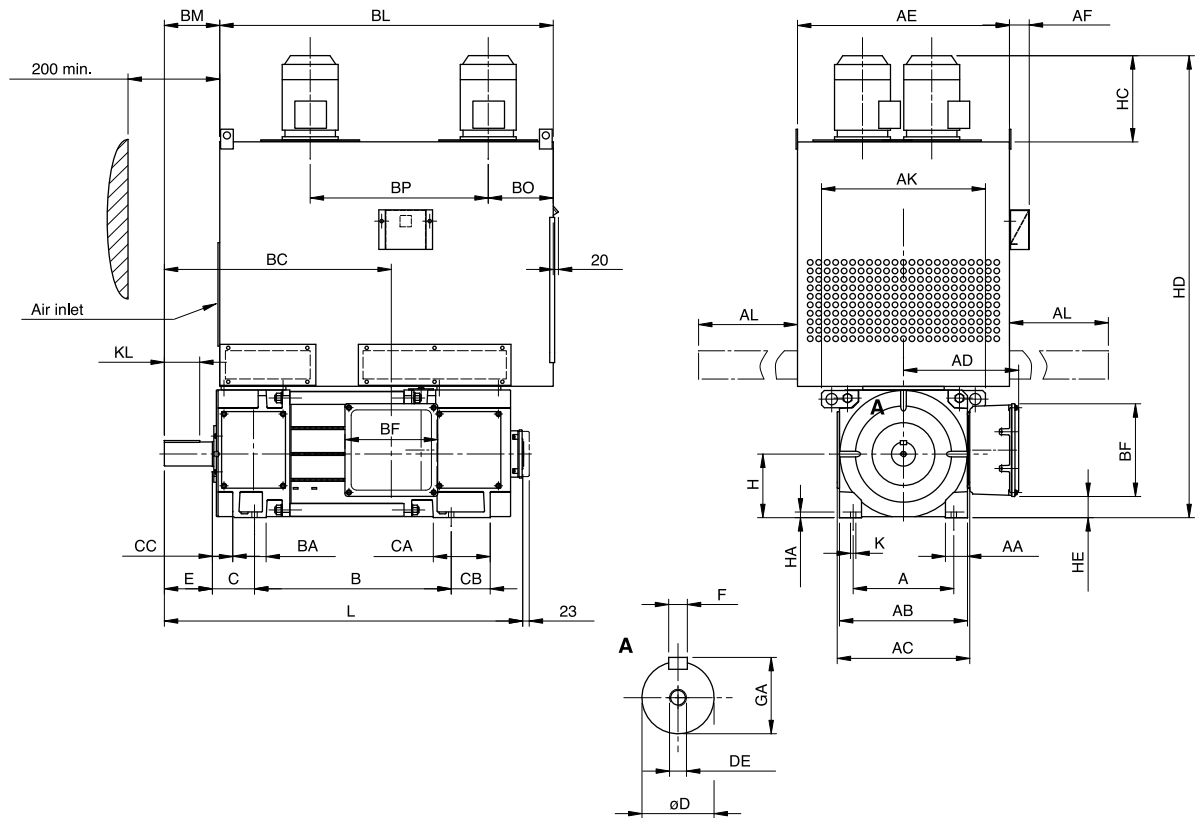


Dimensions in mm

Type	A	AA	AB	AC	AD	AE	AF	AK	AL	B	BA	BC	BF	BL	BM	BP	BO	C	B1	CA	
LAK 2132M	216	47.5	260	279	223	390	20	440	390	482	50	419	190	647	91	290	223	89		60	
LAK 4132A										437		374		647							
LAK 4132B										482		419		647							
LAK 4132C										532		469		647							
LAK 4132D										642		609		772							
LAK 4160A/AA	254	56	316	335	274	515	20	616	527.5	475	56	426	240	723	115	325	240	108		65	
LAK 4160B/BB						515			522	473		723									
LAK 4160C/CC						515			587	538		723									
LAK 4160D						606			597	663		843									
LAK 4180AA	279	66	356	375	297	606	25	656	597	561	66	499	240	843	126.5	320	278	121	720	195	
LAK 4180BA		66			297	606			597	612	66	535		843	126.5	320	278			195	
LAK 4180CA		66			297	606			597	677	66	616		843	156.5	320	278			195	
LAK 4180DA		66			297	606			597	707	66	681		843	156.5	320	278			195	
LAK 4180EA		66			297	720			715	720	66	741		1047	164	500	337			795	195
LAK 4180FA		61			322	720			715	795	85	821		1047	131	500	337			95	

Type	CB	CC	CD	D	DE	E	F	GA	H	HA	HB	HC	HD	HE	K	KL	L	Weight (kg)	
LAK 2132M	25	64		38	M10	80	10	41	132	12	215	261	1089	86	12	57	695.5	212	
LAK 4132A				38		80	10	41									650.5	205	
LAK 4132B				38		80	10	41									695.5	225	
LAK 4132C				38		80	10	41									745.5	250	
LAK 4132D				42		110	12	45									885.5	310	
LAK 4160A/AA	28	80		48	M16	110	14	51.5	160	14	240	343.5	1259	88.5	15	80	744	310	
LAK 4160B/BB											240		1259				791	340	
LAK 4160C/CC											240		1259				856	385	
LAK 4160D											240		1334				981	500	
LAK 4180AA	50.5	91		55	M16	110	16	59	180	16	240	364	1356	109	15	80	848.5	525	
LAK 4180BA	35.5			55	M16	110	16	59		16	240	364	1356	109	15	80	884.5	555	
LAK 4180CA	21.5			60	M16	140	18	64		16	240	364	1356	109	15	110	965.5	615	
LAK 4180DA	56.5			43.5	70	M20	140	20		74.5	16	240	364	1356	109	15	110	1030.5	645
LAK 4180EA	103.5			28.5	70	M20	140	20		74.5	16	280	364	1451	109	15	110	1090.5	725
LAK 4180FA	40			70	M20	140	20	74.5		16	280	372.5	1451	117.5	19	110	1248	820	

Dimensions are not binding.

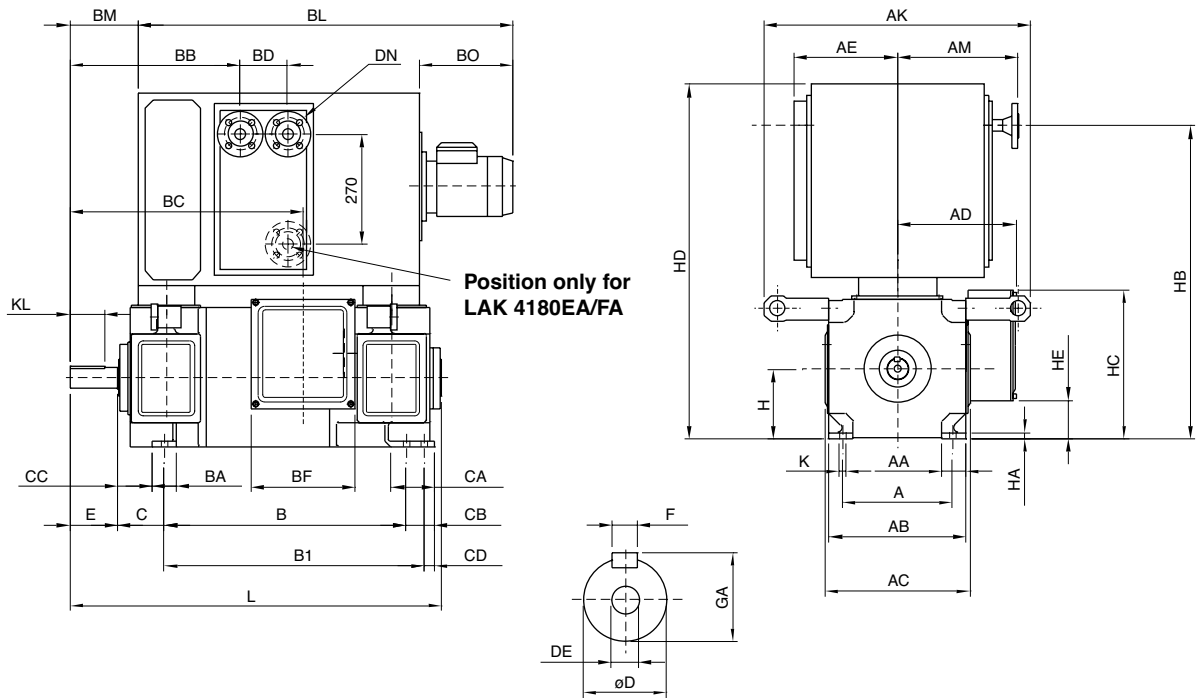


Dimensions in mm

Type	A	AA	AB	AC	AD	AE	AF	AL	AK	B	BA	BC	BF	BL	BM	BO	BP	C	CA	CB
LAK 4200A	318	70	404	420	350	690	70	680	500	542	113	616	278	1030	170	200	500	133	178	116
LAK 4200B										610		684								
LAK 4200C										678		752								
LAK 4225A	356	78	453	469	408	750	70	375	580	630	118	737	328	1180	196	230	630	149	201	138
LAK 4225B										696		803								
LAK 4225C										762		869								
LAK 4250A	406	84	502	518	432	750	70	375	629	679	138	793	328	1180	212	230	630	168	229	160
LAK 4250B										751		865								
LAK 4250C										823		937								
LAK 4280A	457	89	560	576	510	860	70	430	687	735	155	863	423	1500	240	310	720	190	242	166
LAK 4280B										815		943								
LAK 4280C										895		1023								
LAK 4280D										975		1103								

Type	CC	D	DE	E	F	GA	H	HA	HC	HE	HD	K	KL	L	L+REO444R1	L+TDP0.2LT	Weight (kg)
LAK 4200A	59	75	M20	140	20	79.5	200	20	280	77	1455	19	100	1032	1243	1249	700
LAK 4200B														1100	1311	1317	760
LAK 4200C														1168	1379	1385	835
LAK 4225A	72	85	M20	170	22	90	225	20	305	75	1635	19	125	1202	1413	1419	1030
LAK 4225B														1268	1479	1485	1100
LAK 4225C														1334	1545	1551	1200
LAK 4250A	75	95	M20	170	25	100	250	23	305	106	1684	24	125	1309	1520	1526	1270
LAK 4250B														1381	1592	1598	1370
LAK 4250C														1453	1664	1670	1540
LAK 4280A	81	100	M20	210	28	106	280	26	310	93.5	2013	24	160	1468	1679	1685	1610
LAK 4280B														1548	1759	1765	1820
LAK 4280C														1628	1839	1845	2020
LAK 4280D														1708	1919	1925	2220

Dimensions are not binding.

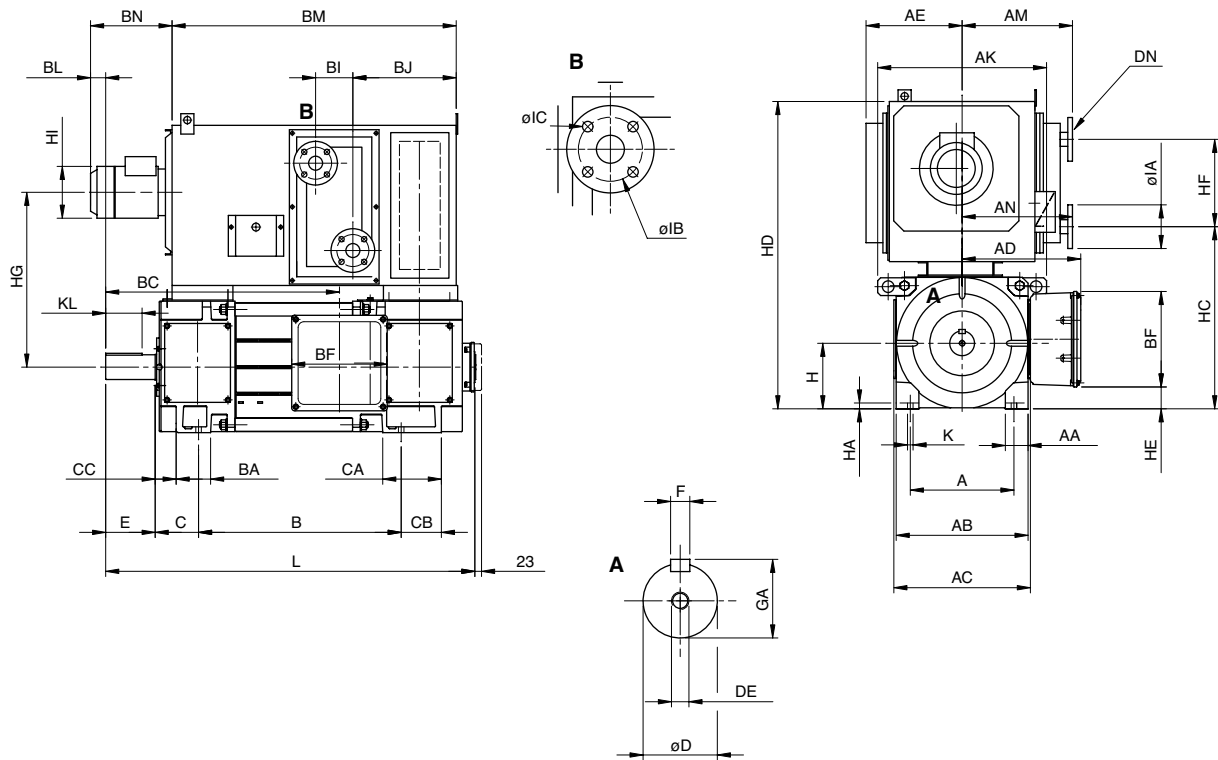


Dimensions in mm

Type	A	AA	AB	AC	AD	AE	AK	AM	B	BA	BB	BC	BD	BF	BL	BM	BO	C	B1	CA	CB
LAK 2132M	216	47.5	260	279	223	195	440	230	482	50	314	419	110	190	791	99	220	89	60	25	
LAK 4132A									437		314	374			741	99					
LAK 4132B									482		314	419			841	99					
LAK 4132C									532		314	469			841	99					
LAK 4132D									642		344	609			951	129					
LAK 4160A/AA	254	56	316	335	274	240	616	278	475	56	393	426	110	240	753	158	215	108	65	28	
LAK 4160B/BB									522			473			800						
LAK 4160C/CC									587			538			865						
LAK 4160D									712			663			990						
LAK 4180AA	279	66	356	375	297	295	656	328	561	66	453.5	499	110	240	860	168.5	240	121	195	50.5	
LAK 4180BA					297	295		328	612	66	453.5	535	110		896	168.5	240		195	35.5	
LAK 4180CA					297	295		328	677	66	483.5	616	110		947	198.5	240		195	21.5	
LAK 4180DA					297	295		328	707	66	483.5	681	110		1012	198.5	240		720	195	56.5
LAK 4180EA					297	292		337	720	66	542.5	741	142		1112	198.5	280		795	195	103.5
LAK 4180FA					322	292		337	795	85	525	821	142		1240	181	280		95	40	

Type	CC	D	DE	DN	E	F	GA	H	HA	HB	HC	HD	HE	K	KL	L	CD	Weight (kg)
LAK 2132M	64	38	M10	20	80	10	41	132	12	599	261	719	86	12	57	695.5		220
LAK 4132A		38			80	10	41								57	650.5		200
LAK 4132B		38			80	10	41								57	695.5		235
LAK 4132C		38			80	10	41								57	745.5		260
LAK 4132D		42			110	12	45								80	885		330
LAK 4160A/AA	80	48	M16	20	110	14	51.5	160	14	723	343.5	819	88.5	15	80	744		310
LAK 4160B/BB															80	791		340
LAK 4160C/CC															80	856		400
LAK 4160D															80	981		500
LAK 4180AA	91	55	M16	20	110	16	59	180	16	761	364	857	109	15	80	848.5		410
LAK 4180BA		55	M16	20	110	16	59		16	761	364	857	109	15	80	884.5		460
LAK 4180CA		60	M16	20	140	18	64		16	761	364	857	109	15	110	965.5		510
LAK 4180DA		70	M20	20	140	20	74.5		16	761	364	857	109	15	110	1030.5	43.5	600
LAK 4180EA		70	M20	25	140	20	74.5		16	769	364	867	109	15	110	1090.5	28.5	660
LAK 4180FA		70	M20	25	140	20	74.5		16	769	372.5	867	117.5	19	110	1248		790

Dimensions are not binding.

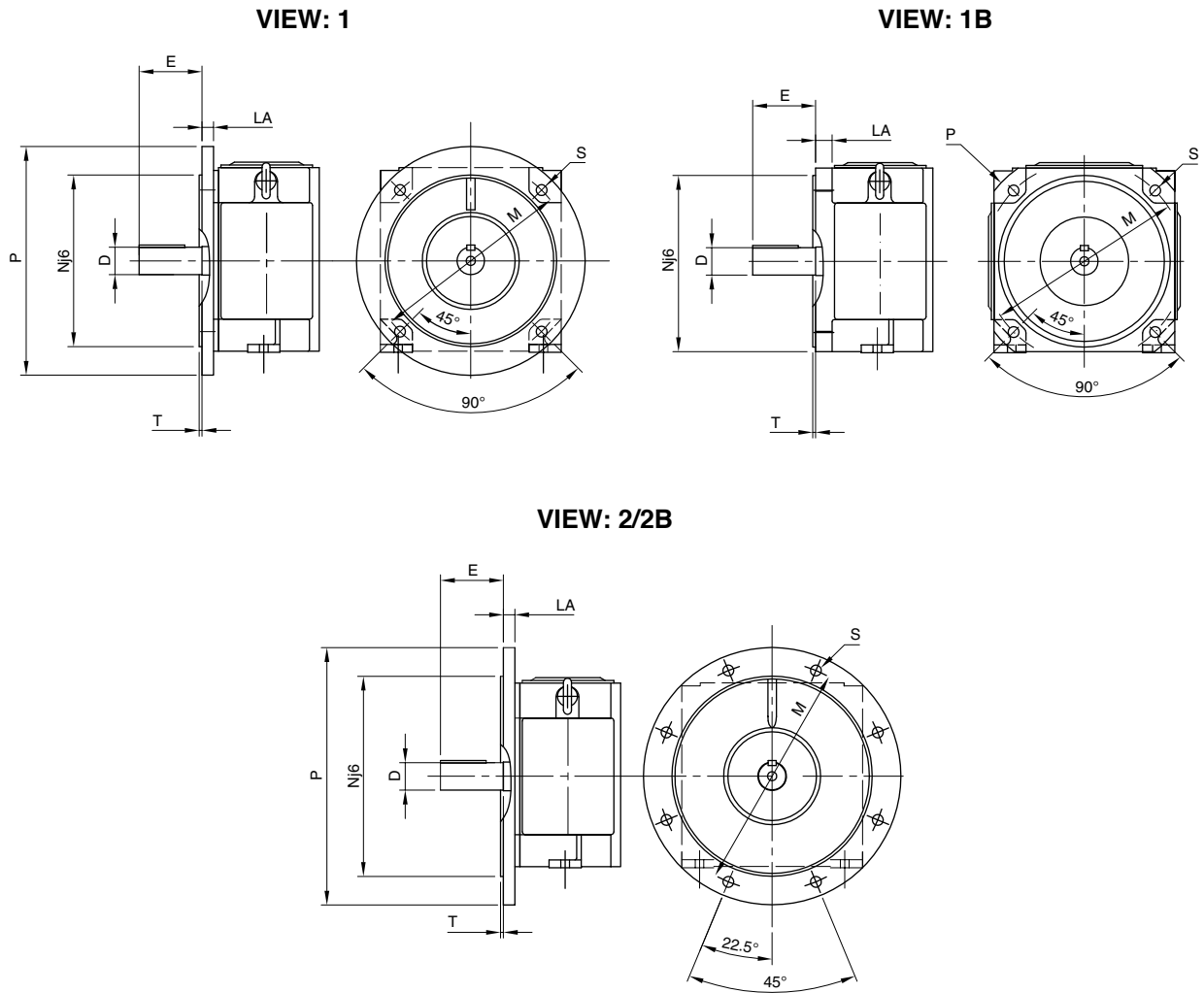


### Dimensions in mm

Type	A	AA	AB	AC	AD	AE	AK	AM/N	B	BA	BC	BF	BI	BJ	BL	BM	BN	C	CA	CB	CC
LAK 4200A	318	70	404	420	350	280	500	329	542	113	616	278	128	283	38	730	240	133	178	116	59
LAK 4200B									610		684					798					
LAK 4200C									678		752					866					
LAK 4225A	356	78	453	469	408	330	580	379	630	118	737	328	128	355	52	910	280	149	201	138	72
LAK 4225B									696		803					976					
LAK 4225C									762		869					1042					
LAK 4250A	406	84	502	518	432	330	629	379	679	138	793	328	128	355	39	959	280	168	229	160	75
LAK 4250B									751		865					1031					
LAK 4250C									823		937					1103					
LAK 4280A	457	89	560	576	510	480	687	529	735	155	863	423	120	500	99	1072	380	190	242	166	81
LAK 4280B									815		943					1152					
LAK 4280C									895		1023					1232					
LAK 4280D									975		1103					1312					

Type	D	DE	DN	E	F	GA	H	HA	HC	HD	HE	HF	HG	HI	IA	IB	IC	K	KL	L	Weight (kg)
LAK 4200A	75	M20	32	140	20	79.5	200	20	610	910	77	150	515	158	140	100	18	19	100	1032	660
LAK 4200B																				1100	720
LAK 4200C																				1168	800
LAK 4225A	85	M20	40	170	22	90	225	20	625	1055	75	300	600	178	150	110	18	19	125	1202	940
LAK 4225B																				1268	1010
LAK 4225C																				1334	1100
LAK 4250A	95	M20	40	170	25	100	250	23	675	1105	106	300	625	178	150	110	18	24	125	1309	1180
LAK 4250B																				1381	1280
LAK 4250C																				1453	1450
LAK 4280A	100	M20	40	210	28	106	280	26	933	1508	93.5	300	841	250	150	110	18	24	160	1468	1540
LAK 4280B																				1548	1750
LAK 4280C																				1628	1950
LAK 4280D																				1708	2140

Dimensions are not binding.



Dimensions in mm

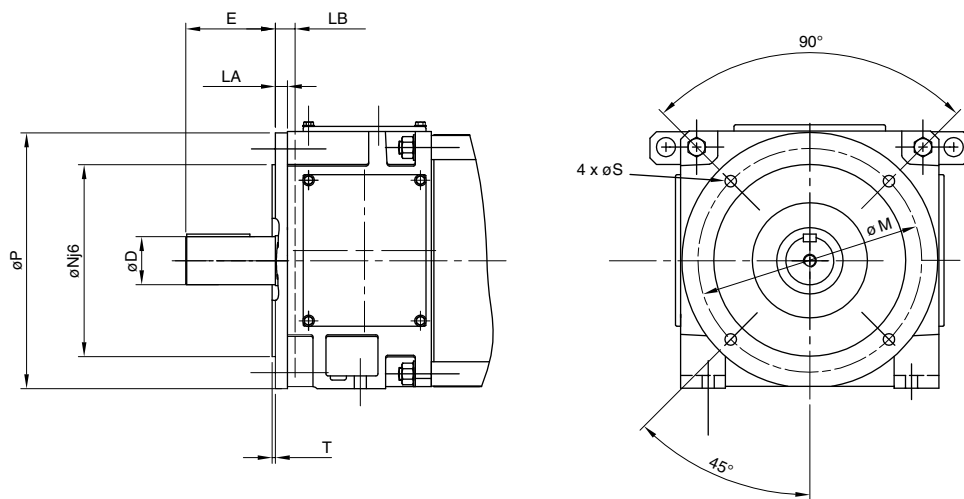
Type	Shaft diameter D	Shaft length E	Flange size	LA	M	Nj6	P	S	T	View
LAK 2112MA/LA	38	80	F215	14	215	180	250	15	4	1B
			F265	14	265	230	300	15	4	1B
LAK 4112A/B	38	80	F215	14	215	180	250	15	4	1B
			F265	14	265	230	300	15	4	1B
LAK 4132A/B/C	38	80	F265	17	265	230	300	15	4	1B
			F300	17	300	250	350	19	5	1B
LAK 4132D	42	110	F265	17	265	230	300	15	4	1B
			F300	17	300	250	350	19	5	1B
LAK 4160A/B/C/D	48	110	F350	20	350	300	400	19	5	1B
LAK 4180AA/BA	55	110	F350	17	350	300	400	19	5	1B
			F400	17	400	350	450	19	5	2B
LAK 4180CA	60	140	F350	17	350	300	400	19	5	1B
			F400	17	400	350	450	19	5	2B
LAK 4180DA/EA	70	140	F350	17	350	300	400	19	5	1B
			F400	17	400	350	450	19	5	2B
LAK 4180FA	70	140	F500	20	500	450	550	19	5	2

Other dimensions on request.

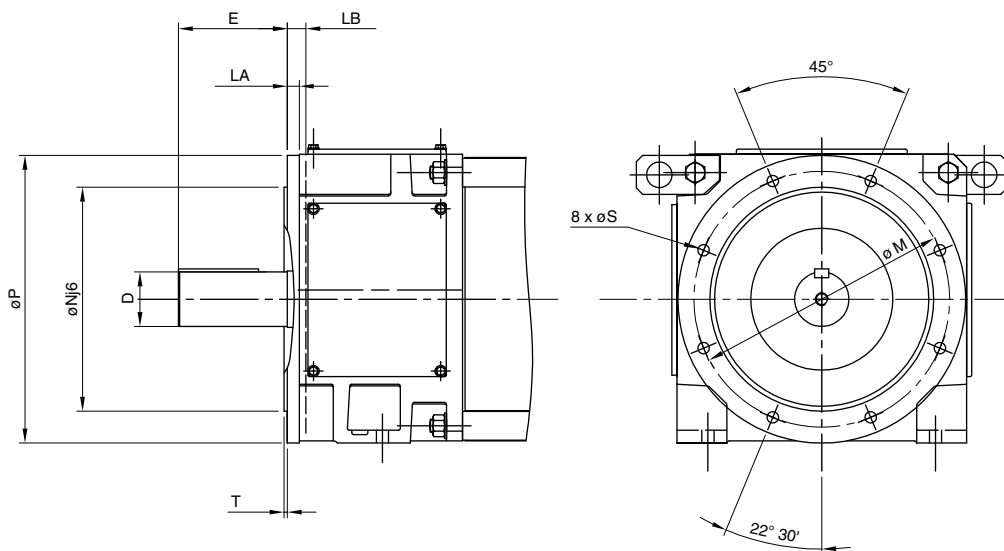
Dimensions are not binding.



VIEW: 1



VIEW: 2



Dimensions in mm

Type	Shaft diameter D	Shaft length E	Flange size	LA	LB	M	Nj6	P	S	T	View
LAK 4200	75	140	F350	19	30	350	300	400	18	5	1
LAK 4225	85	170	F400	19	32	400	350	450	18	5	2
LAK 4250	95	170	F400	22	36	400	350	450	18	5	2
LAK 4280	100	210	F500	23	42	500	450	550	18	5	2

Other dimensions on request.

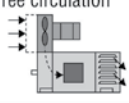
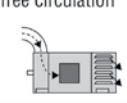
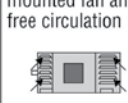
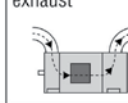
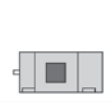
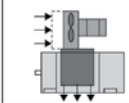
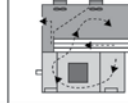
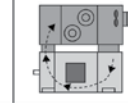
Dimensions are not binding.

# Ordering

To ..... Fax +33 1 34 70 21 79  
 From ..... Ref. Number .....  
 Cust. name ..... Applic. type: .....

Unit(s) DC motors/Generators

## Cooling:

<input type="checkbox"/> IC 06 Motor mounted fan and free circulation 	<input type="checkbox"/> IC 17 Ducted air supply and free circulation 	<input type="checkbox"/> IC 01 Self ventilated motor with shaft mounted fan and free circulation 	<input type="checkbox"/> IC 37 Ducted air supply and exhaust 	<input type="checkbox"/> IC 410 Totally enclosed 	<input type="checkbox"/> IC 416 Totally enclosed fan cooled 	<input type="checkbox"/> IC 666 Air/Air cooler 	<input type="checkbox"/> IC 86 W Air/Water cooler 
<b>Enclosure IP 23</b>				<b>Enclosure IP 54/55</b>			

Operating range	Min. operating speed	Base speed	Max. field-weakening speed	Mounting arrangement	As viewed from D-end fill in below						
					right	left	above	below	D-end	N-end	
Speed											
Power											
Torque											
Armature voltage											
Armature current											
Field voltage											

Catalogue number: .....

Position number: .....

## Remarks

STANDARD MODEL	SPECIAL DESIGN
If data not given, following values will be assumed: - Altitude, max 1000 m above sea level - Located indoors - Ambient temperature • 40 •C - Ambient air dust-free, chemically neutral - Air humidity 5 to 20 g/m <sup>3</sup> - IEC Standard - Insulation class H, utilization F - Duty type S1 - Overload per Catalog LAK 4000 - Supplied from fully controlled 3-phase bridge - Enclosure IP 23 - Frame type IM 1001 - Standard colour and finish - Anti-corrosion coating - 1 shaft extension, standard - Deep-groove ball bearings - Normal seal - Balancing class "N" - Rotation: both directions - Separate excitation	Please specify variations from standard <input type="checkbox"/> Outdoors <input type="checkbox"/> not protected <input type="checkbox"/> with cover <input type="checkbox"/> NEMA Standard <input type="checkbox"/> CSA Standard <input type="checkbox"/> Utilization H, B <input type="checkbox"/> Duty type S ..... / ..... % ED <input type="checkbox"/> IP 54 <input type="checkbox"/> IP 55 <input type="checkbox"/> IM 1011 (V5) <input type="checkbox"/> IM 1031 (V6) <input type="checkbox"/> IM 1051 (B6) <input type="checkbox"/> IM 1061 (B7) <input type="checkbox"/> IM 2001 (B35) <input type="checkbox"/> IM 2011 (V15) <input type="checkbox"/> IM 2031 (V36) Flange dimension F ..... (dim. M) <input type="checkbox"/> Special colour per RAL <input type="checkbox"/> Anti-corrosive protection paint <input type="checkbox"/> Special shaft    D ..... L ..... <input type="checkbox"/> Second shaft extension dimensions    D ..... L ..... <input type="checkbox"/> Rollerbearing on drive end <input type="checkbox"/> Shaft seal on drive end <input type="checkbox"/> Balancing class "R" <input type="checkbox"/> Balancing class "S" <input type="checkbox"/> Clockwise <input type="checkbox"/> Anticlockwise (seen from D.E.) <input type="checkbox"/> Excitation series wound <input type="checkbox"/> Stabilisation winding <input type="checkbox"/> Tropicalisation

ACCESSORIES	Delivery week
<input type="checkbox"/> Mounted fan 380 Vac / 50 Hz <input type="checkbox"/> Filter for fan <input type="checkbox"/> Air pressure switch <input type="checkbox"/> Air / air heat exch. blower 380 V ..... / ..... 50 Hz or V ..... / ..... Hz <input type="checkbox"/> Air / water heat exchanger <input type="checkbox"/> Without tachometer <input type="checkbox"/> With tachometer, type <input type="checkbox"/> REO 444 N1 <input type="checkbox"/> REO 444 L1 <input type="checkbox"/> REO 444 R1 <input type="checkbox"/> REO 444 R2 <input type="checkbox"/> TDP 0.2 T4 <input type="checkbox"/> + FSL <input type="checkbox"/> REO 588 <input type="checkbox"/> GTR 9.16 (Hollow shaft) <input type="checkbox"/> ..... <input type="checkbox"/> With coupling type <input type="checkbox"/> BOWEX <input type="checkbox"/> ROTEX <input type="checkbox"/> THOMAS <input type="checkbox"/> Mtg. of pulse generator <input type="checkbox"/> Litton <input type="checkbox"/> Leine Linde <input type="checkbox"/> Hubner with pulse number per rotg.: <input type="checkbox"/> 1024 <input type="checkbox"/> 2048 <input type="checkbox"/> ..... <input type="checkbox"/> Mtg. of brake type MAYR size: <input type="checkbox"/> 6 (26Nm) <input type="checkbox"/> 7 (50Nm) <input type="checkbox"/> 8 (100Nm) <input type="checkbox"/> 9 (200Nm) <input type="checkbox"/> 10 (400Nm) <input type="checkbox"/> 11 (800Nm) or type: <input type="checkbox"/> .....Nm Brake DC voltage <input type="checkbox"/> 24 V <input type="checkbox"/> 96 V <input type="checkbox"/> 170 V <input type="checkbox"/> 190 V <input type="checkbox"/> .....V <input type="checkbox"/> Brake terminal box <input type="checkbox"/> Rectifier ..... Vac <input type="checkbox"/> Brake enclosure IP 55 <input type="checkbox"/> Hand release <input type="checkbox"/> Heating element <input type="checkbox"/> 110 V <input type="checkbox"/> 220 V <input type="checkbox"/> .....V <input type="checkbox"/> Thermistor <input type="checkbox"/> Bimetallic sensor <input type="checkbox"/> PT 100 (Resistor-thermometer) <input type="checkbox"/> Transparent inspection cover <input type="checkbox"/> Earth brush <input type="checkbox"/> Loctite screw blocking <input type="checkbox"/> SPM	<input type="checkbox"/> EX WORKS <input type="checkbox"/> DDU <input type="checkbox"/> FOB <input type="checkbox"/> C I F <input type="checkbox"/> LORRY <input type="checkbox"/> AIR <input type="checkbox"/> SEA Delivery address: ..... ..... Marking: ..... Motor unit price: ..... Accessories prices: ..... ..... Total: ..... - multiplier/discount ..... Net unit price: ..... When <input type="checkbox"/> → with extra price    When <input type="checkbox"/> → without extra price

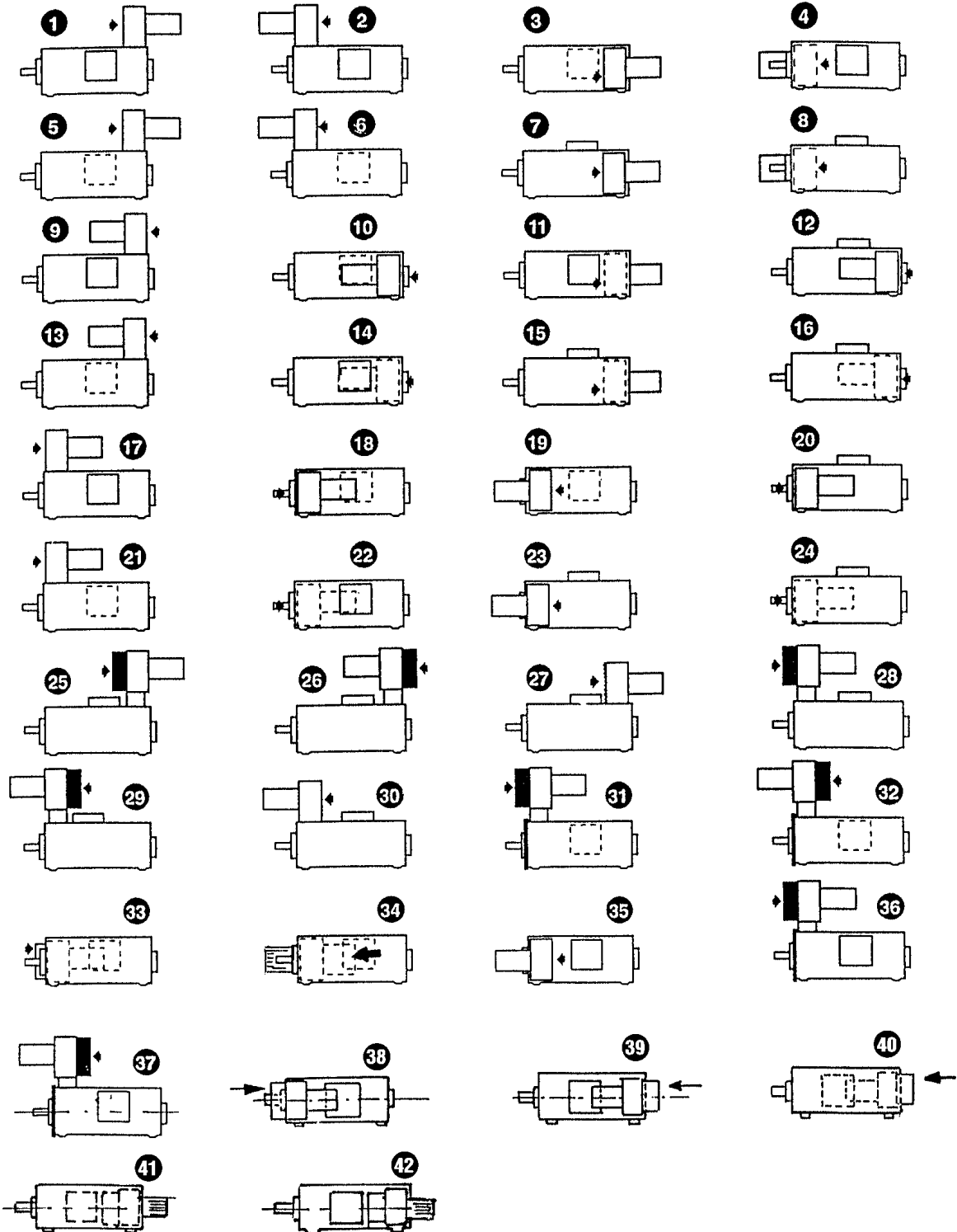
# Ordering

## Fan blower

The fan blower can be mounted on top or on either side, at the drive end or at the non-drive end. The location does not affect the output of the motor (except when specified in the tables). The fan can be delivered with a

slotted cover, a filter or a flange for an air-duct. On request a pressure switch can be installed on the fan blower and the terminal box can be arranged in 42 different mounting combinations.

Pos 25-42:  
Additional price for blower and terminal box mounted on same side for LAK 4112-4180.



Founded over 100 years ago, T-T Electric is a world-class supplier of top-quality industrial electric motors and drives. Pioneers in the industry, we are an experienced and established manufacturer of a comprehensive and cost-effective range of highly reliable drive products. They are used around the world in the toughest of application environments and in all industrial segments.

Driven by customer demand, T-T Electric is continually researching product excellence and manufacturing

process perfection. The flexible product design ensures easy adaptations to customer requirements. This, combined with unequalled short delivery times, make T-T Electric a reference within industry. Our extensive support services include diagnostics and maintenance on site as well as full overhaul in our own repair facilities.

T-T Electric is committed to a working partnership with our customers. For mutual benefit, we focus on complete and innovative solutions together.

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Web: [www.t-telectric.co.uk](http://www.t-telectric.co.uk)

Company No: 11111122

