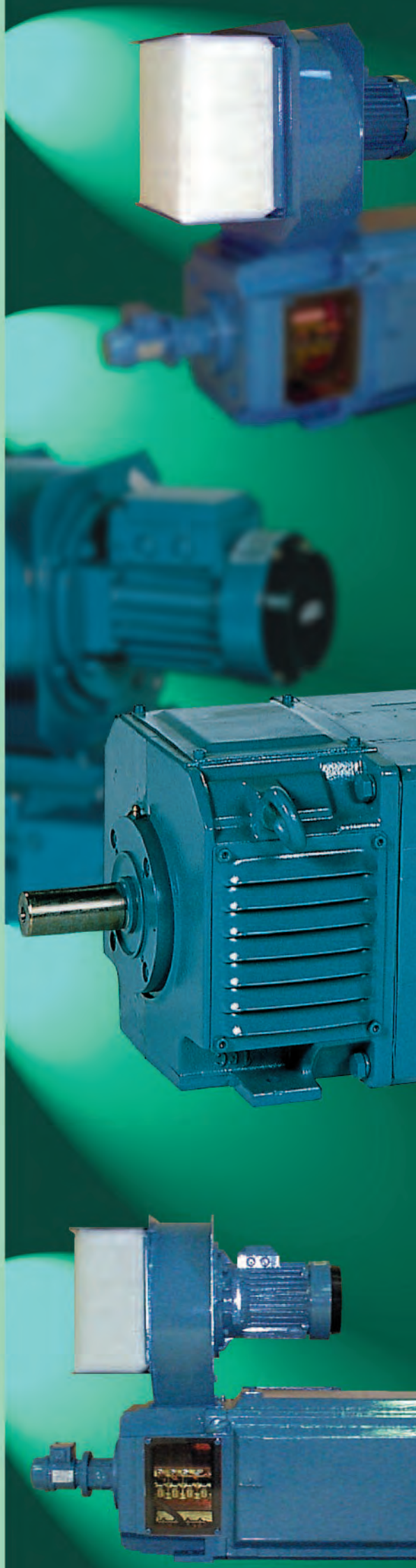


# DC Motors

DMP catalogue  
1-200 kW, 5-1000 Nm

**T-T Electric**



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# Introduction

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DMP d.c. motors are fully laminated, 2 or 4 pole, square frame.

Output: 1-200 kW

Torque: 5-1000 Nm

DMP motor range:

Frame size DMP	Core lengths
112-2	MA, LA
112-4	M, L
132-2	M
132-4	S, M, L, LB
160-4	S, SO, M, MO, L, LO, LB
180-4	A, B, C, D, E, F

Type designation example :

DMP 180-4E

DM = DC motor  
 P = Motor type  
 180 = Centre height in mm  
 4 = Number of poles  
 E = Core length

## Basic design characteristics

- Fully laminated stator, main poles and interpoles.
- Compact square 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.

# Options

Frame size	DMP	112-2	112-4	132-2	132-4	160	180
<b>Cooling forms</b>							
IC06	(IP23) Force ventilated	0	0	0	0	0	0
IC17	(IP23) Single pipe ventilated	0	0	0	0	0	0
IC37	(IP54) Double pipe ventilated	0	0	0	0	0	0
IC410	(IP54) Totally enclosed	0	0	0	0	0	0
IC416	(IP54) Totally enclosed, fan cooled	0	0	0	0	0	0
IC666	(IP54) Air-air cooled	0	0	0	0	0	0
IC86W	(IP54) Air-water cooled	0	0	0	0	0	0
<i>Other cooling forms available</i>							
<b>Protection</b>							
IP55		0	0	0	0	0	0
<b>Mounting forms</b>							
IM1001	Horizontal foot	0	0	0	0	0	0
IM1002	Horizontal foot, two shaft ends	0	0	0	0	0	0
IM2001	Horizontal foot and flange	0	0	0	0	0	0
IM2011	Vertical foot and flange	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
Pressure switch		0	0	0	0	0	0
Temperature sensor, interpole		0	0	0	0	0	0
Temperature sensor, field winding		0	0	0	0	0	0
Bearing sensor		0	0	0	0	0	0
Grounding brush		0	0	0	0	0	0
Heating element		0	0	0	0	0	0
Brush wear sensor		0	0	0	0	0	0
Special shaft		0	0	0	0	0	0
Roller bearing d-end		0	0	0	0	0	0
Shaft seal, d-end		0	0	0	0	0	0
Special balance Class 'R'		0	0	0	0	0	0
Special paint (RAL colour)		0	0	0	0	0	0
Special corrosion protection		0	0	0	0	0	0
Transparent inspection cover		0	0	0	0	0	0
Brake		0	0	0	0	0	0
Gearbox		0	0	0	0	0	0
<b>Tachos with coupling</b>							
REO 444R1	(60v/1000min <sup>-1</sup> )	0	0	0	0	0	0
TDP 0.2 LT-4	(60v/1000min <sup>-1</sup> )	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
HG650 or DG60L	(1024 ppr)	0	0	0	0	0	0
<i>Others available</i>							

# Application data

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## Standards

IEC 34 - IEC 72 etc.

## Insulation

Class H

## Temperature rise

Class F

## Balance

IEC 34-14 grade 'N' standard.  
Grade 'R' on request.

## Overload capacity

180% xFLC for  
15 sec. every 5 minutes  
30 sec. every 30 minutes

## Terminal box

Standard position: On right hand side (facing D-end).  
Mounting of terminal box on top or left hand side on request.  
DMP motors are delivered with a large terminal box IP55 including knockout openings:

DMP 112 – 132

2 x Ø 28.5 (PG 21)

2 x Ø 20.5 (PG 13.5)

Cable entry from Drive end.

DMP 160 – 180

2 x Ø 55 (PG 42)

4 x Ø 28.5 (PG 21)

Cable entry from above or below.

## 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 as standard.

For belt drive please contact our sales offices.

## Heat exchangers

Air/water (IC86W):

Air/water exchangers are especially recommended for polluted environment.

Standard is for clean water.  
For corrosive water on request.

Position on top of the motor as standard. Fan motor at N-end.  
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.

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.

A constant speed fan circulates the internal cooling air. A polyamide filter is provided for carbon dust.

*Detailed heat exchanger information on request.*

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.

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.

# Application data

## Fan blower motor data

DMP	$U_{net}, f_{net}$ (Y)	$I_Y$ (A)	$U_{net}, f_{net}$ ( $\Delta$ )	$I_{\Delta}$ (A)	$P_{fan}$ (kW)	$W_{fan}$ (kg)
<b>112</b>	3x380-420 V. 50 Hz	0.70	3x220-240 V. 50 Hz	1.20	0.25	7
<b>132-2M</b>	3x440-480 V. 60 Hz	0.70	3x250-280 V. 60 Hz	1.20	0.30	
<b>132-4S/M/L</b>	3x500 V. 50 Hz	0.60	-	-	0.25	
<b>132-4LB</b>	3x380-420 V. 50 Hz	2.10	3x220-240 V. 50 Hz	3.60	0.75	16
<b>160-4S/M/L</b>	3x440-480 V. 60 Hz	2.00	3x250-280 V. 60 Hz	3.50	0.90	
	3x500 V. 50 Hz	1.40	-	-	0.75	
<b>160-4LB</b>	3x380-420 V. 50 Hz	2.90	3x220-240 V. 50 Hz	5.00	1.30	18
	3x440-480 V. 60 Hz	2.80	3x250-280 V. 60 Hz	5.00	1.50	
	3x500 V. 50 Hz	2.30	-	-	1.30	
<b>180-4A/B/C/D</b>	3x380-420 V. 50 Hz	3.00	3x220-240 V. 50 Hz	5.20	1.50	18
	3x440-480 V. 60 Hz	2.90	3x250-280 V. 60 Hz	5.00	1.75	
	3x500 V. 50 Hz	2.70	-	-	1.50	
<b>180-4E/F</b>	3x380-420 V. 50 Hz	5.80	3x220-240 V. 50 Hz	10.0	2.70	20
	3x440-480 V. 60 Hz	5.80	3x250-280 V. 60 Hz	10.0	3.00	
	3x500 V. 50 Hz	4.60	-	-	2.70	

$U_{net}, f_{net}$ (Y)	Supply voltage, frequency Y
$I_Y$	Current Y
$P_{fan}$	Power
$U_{net}, f_{net}$ ( $\Delta$ )	Supply voltage, frequency $\Delta$
$I_{\Delta}$	Current $\Delta$
$W_{fan}$	Total fan weight

## Bearings

DMP	Drive end		Non-drive end
	Ball bearing	Roller bearing	
<b>112</b>	6308-C3	NU 308 ECP	6208-2RS 1-HT-C3
<b>132</b>	6309-C3	NU 309 ECP	6307-2RS 1-HT-C3
<b>160</b>	6310-C3	NU 310 ECP	6309-2RS 1-HT-C3
<b>180-4A/B/C/D/E</b>	6215-C3	NU 2215-ECP	6312-2RS1-HT-C3
<b>180-4F</b>	6315-C3	NU 315 ECP	6312-2RS1-HT-C3

# Output data

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Select motor frame size against voltage, output and speed. For intermediate output, take the nearest higher output listed under the next frame size. For intermediate speed take the next lower speed listed within 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.**

## **Constant power/constant torque**

The full field or base speed and maximum speed through field control with constant output is 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 S 1 and motors are fed from a 3-phase fully controlled thyristor where the form factor is 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**

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

The stock motors are available according to following specification. Motor fan, standard tachogenerator and coupling can be fitted on request.

- **IM 1001, IP 23, IC 17, designed for cooling air inlet at either D or N-end (when possible, cooling air inlet should always be at the D-end of DMP motors).**
- **Cylindrical roller bearing on D-end.**
- **Terminal box on right hand side (facing D-end).**
- **Balanced with half key.**
- **Thermostats NC.**
- **PTC thermistors.**
- **Name plate and documents in English.**
- **Rating data as standard motors but field weakening is only allowed up to 25 % overspeed for stock motors.**
- **Stock motors have a parallel /serial connection suitable for an excitation voltage of 170-180-190/340-360-380 V.**
- **Stock motors have reinforced impregnation.**

# Output data

## Technical data

	$n_{max}$	$n_0$	J	$P_f$	$U_{amax}$	$U_f$	$V_{cool}$	$P_r$	$W_{(foot)}$	$W_{(flange)}$
$n_{max}$	Max mechanical speed									
$n_0$	Min speed at constant torque									
J	Moment of inertia									
$P_f$	Excitation power									
$U_{amax}$	Max rated voltage									
$U_f$	Excitation voltage									
$V_{cool}$	Cooling air flow									
$P_r$	Static pressure drop (IC17, IC37)									
$W_{(foot)}$	Weight: foot mounting *									
$W_{(flange)}$	Weight: flange mounting *									

\*excl. accessories

Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	P	I	T	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 157...				$n_b$ (min <sup>-1</sup> )				(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	( $\Omega$ )	(mH)
$n_b$	Base speed													
$U_a$	Armature voltage													
P	Mechanical power													
I	Armature current													
T	Torque													
$\eta$	Efficiency IEC													
$n_2$	Max electrical speed													
$R_A$	Armature resistance													
$L_A$	Armature inductance													

Data subject to change without prior notice.



## Technical data

	$n_{max}$ 5000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.03 kgm <sup>2</sup>	$P_f$ 420 W	$U_{amax}$ 620 V	$U_f$ 110-440 V	$V_{cool}$ 235 m <sup>3</sup> /h	$Pr$ 375 Pa	$W_{(foot)}$ 90 kg	$W_{(flange)}$ 102 kg				
Cat. Nr	$U_a$ (V):	260	400	420	440	470	520	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 154...			$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)
241-AB			1000					3.2	12.2	31.0	61.1	1605	9.84	120
			1075					3.5	12.2	31.0	62.8			
			1145					3.7	12.2	31.0	64.1			
			1255					4.1	12.2	31.0	66.0			
			1440					4.6	12.0	30.4	68.9			
241-BB	645		1235					2.0	13.5	29.1	50.3	1960	7.78	88
			1315					3.8	13.5	29.3	65.0			
			1400					4.0	13.5	29.3	66.2			
			1525					4.3	13.5	29.3	67.5			
			1745					4.7	13.5	29.3	69.2			
241-CB	860		1570					2.8	17.0	30.8	57.4	2480	5.14	61
			1670					5.1	17.0	30.8	70.0			
			1770					5.4	17.0	30.8	71.2			
			1920					5.7	17.0	30.8	72.2			
			2180					6.2	17.0	30.8	73.6			
251-CB	1010		1795					3.2	18.5	30.2	61.1	3060	4.21	49
			1905					5.7	18.5	30.2	61.1			
			2015					6.0	18.5	30.2	73.5			
			2185					6.4	18.5	30.2	74.5			
			2475					6.9	18.5	30.2	75.7			
241-DB	1185		2070					3.8	21.0	30.4	64.4	3250	3.33	39
			2195					6.6	21.0	30.4	74.8			
			2320					7.0	21.0	30.4	75.7			
			2510					7.4	21.0	30.4	76.5			
			2832					8.0	21.0	30.4	77.7			
241-EB*	1445		2450					4.5	23.7	30.0	69.1	3835	2.42	30
			2595					7.7	23.7	30.0	77.9			
			2740					8.2	23.7	30.0	78.7			
			2955					8.6	23.7	30.0	79.4			
			3325					9.3	23.7	30.0	80.4			
231-EB	1740		2920					5.8	29.0	31.6	72.3	3595	1.75	30
			3085					9.6	29.0	31.5	80.1			
			3255					10.2	29.0	31.5	80.8			
								10.7	29.0	31.5	81.4			
231-FB	2175		3590					7.0	34.0	30.8	75.7	3835	1.25	15
			3790					11.5	34.0	30.7	82.3			
			3995					12.2	34.0	30.7	82.9			
								12.8	34.0	30.7	83.4			
231-GB <sup>1</sup>	2820		4590					8.7	41.0	29.6	79.0	5000	0.85	10
								14.2	41.0	29.6	84.3			

<sup>1</sup> Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 5000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.04 kgm <sup>2</sup>	$P_f$ 500 W	$U_{amax}$ 620 V	$U_f$ 110-440 V	$V_{cool}$ 235 m <sup>3</sup> /h	$Pr$ 375 Pa	$W_{(foot)}$ 96 kg	$W_{(flange)}$ 108 kg		
Cat. Nr	$U_a$ (V): 260 400 420 440 470 520					$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 154...	$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	115°C (Ω)	(mH)
<b>141-AB</b>	655	705	755	830	964	3.0	12.2	44.3	56.3	1055	11.51	164
						3.3	12.2	44.3	58.1			
						3.5	12.2	44.3	59.7			
						3.9	12.2	44.3	61.8			
						4.4	12.0	43.6	65.3			
<b>151-AB</b>	725	780	835	915	1058	3.5	13.5	45.6	58.6	1280	9.85	141
						3.7	13.5	45.6	60.2			
						4.0	13.5	45.6	61.8			
						4.4	13.5	45.7	63.8			
						5.0	13.3	44.8	67.1			
<b>141-BB</b>	790	850	910	1000	1153	3.5	13.7	42.6	59.0	1275	9.52	121
						3.8	13.7	42.6	60.7			
						4.0	13.7	42.6	62.2			
						4.5	13.7	42.7	64.3			
						5.1	13.5	41.9	67.4			
<b>141-CB</b>	1040	1110	1180	1285	1472	4.8	17.0	44.0	65.5	1650	6.29	83
						5.1	17.0	44.0	66.8			
						5.4	17.0	44.0	68.1			
						5.9	17.0	44.1	69.8			
						6.7	16.7	43.3	72.5			
<b>141-DB</b>	645	1200	1275	1355	1470	2.9	18.5	42.9	54.8	1895	5.16	67
						5.4	18.5	43.1	68.5			
						5.8	18.5	43.1	69.7			
						6.1	18.5	43.2	70.8			
						6.7	18.5	43.1	72.4			
<b>141-EB</b>	770	1390	1480	1570	1705	3.5	21.0	43.4	58.7	2200	4.07	54
						6.3	21.0	43.5	71.2			
						6.7	21.0	43.5	72.3			
						7.1	21.0	43.5	73.4			
						7.8	21.0	43.6	74.8			
<b>141-FB</b>	950	1660	1765	1865	2020	4.3	24.0	43.5	64.2	2610	2.97	41
						7.6	24.0	43.5	75.0			
						8.0	24.0	43.5	76.0			
						8.5	24.0	43.5	76.9			
						9.2	24.0	43.5	78.1			
<b>141-GB*</b>	1165	1995	2110	2230	2410	5.5	29.2	45.1	68.5	3120	2.13	30
						9.4	29.0	45.2	77.9			
						10.0	29.0	45.2	78.7			
						10.5	29.0	45.2	79.5			
						11.4	29.0	45.1	80.6			
<b>131-CB*</b>	1305	2210	2340	2470	2665	6.2	32.0	45.7	70.7	3120	1.76	25
						10.6	32.0	45.7	79.4			
						11.2	32.0	45.7	80.2			
						11.8	32.0	45.7	80.0			
						12.7	32.0	45.7	81.9			
<b>141-HB</b>	1470	2465	2610	2750	2965	14.1	31.5	44.9	83.3	3850	1.52	21
						6.8	34.0	44.0	72.6			
						11.4	34.0	44.0	80.7			
						12.0	34.0	44.0	81.4			
						12.7	34.0	44.0	82.0			
<b>141-KB*</b>	1675	2785	2940	3100	3326	13.7	34.0	44.1	82.9	4340	1.22	17
						15.1	33.4	43.3	84.2			
						7.8	38.0	44.3	75.0			
						12.9	38.0	44.3	82.3			
						13.6	38.0	44.3	82.9			
						14.4	38.0	44.3	83.5			
						15.5	38.0	44.3	84.3			
						14.4	38.0	44.3	83.5			

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 5000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.037 kgm <sup>2</sup>	$P_f$ 625 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 270 m <sup>3</sup> /h	$Pr$ 480 Pa	$W_{(foot)}$ 103 kg	$W_{(flange)}$ 115 kg				
Cat. Nr	$U_a$ (V):	260	400	420	440	470	520	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 153...			$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	115°C ( $\Omega$ )	(mH)
201-NA			1325					6.7	21.0	47.9	75.1	1655	3.258	40.75
			1405					7.1	21.0	47.9	76.0	1655		
			1485					7.5	21.0	47.9	76.9	1655		
			1605					8.1	21.0	47.9	78.0	1655		
			1810					8.3	19.2	43.8	80.1	1810		
201-MA			1445					7.1	22.0	47.1	76.8	1795	2.776	35.80
			1530					7.5	22.0	47.1	77.7	1795		
			1615					8.6	22.0	47.0	78.5	1795		
			1745					8.6	22.0	47.0	79.5	1795		
			1960					8.8	20.1	43.1	81.3	1960		
201-LA	920		1565					4.6	24.0	48.0	68.9	1890	2.416	31.20
			1655					7.8	24.0	47.9	77.9	1890		
			1745					8.3	24.0	47.9	78.7	1890		
			1890					8.8	24.0	47.9	79.5	1890		
			2115					9.4	24.0	47.9	80.4	1890		
201-KA	1010		1700					4.9	25.0	46.3	70.2	2105	2.174	26.90
			1800					8.2	25.0	46.3	78.8	2105		
			1900					8.7	25.0	46.3	79.5	2105		
			2050					9.2	25.0	46.3	80.2	2105		
			2295					9.9	25.0	46.3	81.2	2105		
201-JA	1120		1870					10.2	22.9	42.4	82.5	2295	1.783	22.90
			1980					5.5	27.5	47.0	72.5	2435		
			2085					9.2	27.5	47.0	80.3	2435		
			2245					9.7	27.5	47.0	81.0	2435		
			2515					10.3	27.5	47.0	81.7	2435		
201-IA	1240		2060					11.1	27.5	47.0	82.5	2435	1.549	19.25
			2175					12.0	26.6	45.5	83.7	2515		
			2295					6.1	30.0	46.7	73.8	2655		
			2470					10.1	30.0	46.6	81.2	2655		
			2760					10.6	30.0	46.6	81.9	2655		
201-HA	1390		2295					11.2	30.0	46.6	82.5	2655	1.275	15.90
			2420					11.2	33.0	46.6	82.5	2920		
			2550					11.8	33.0	46.6	83.1	2920		
			2745					12.4	33.0	46.6	83.6	2920		
			3065					13.4	33.0	46.6	84.4	2920		
201-GA	1575		2575					14.2	31.4	44.3	85.4	3065	0.973	12.90
			2720					8.2	39.0	50.0	77.9	2975		
			2860					13.5	39.0	49.9	84.0	2975		
			3080					14.2	39.0	49.9	84.6	2975		
								14.9	39.0	49.9	85.0	2975		
201-FA	1800		2930					15.5	37.7	48.2	85.7	3080	0.772	10.20
			3090					9.4	44.0	49.9	79.7	3425		
			3250					15.3	44.0	49.8	85.2	3425		
			3500					16.1	44.0	49.8	85.7	3425		
								17.0	44.0	49.8	86.1	3425		
201-EA	2100		3390					17.8	43.0	48.7	86.7	3500	0.573	7.80
			3575					11.2	51.0	51.0	81.8	3855		
			3760					18.0	51.0	50.8	86.6	3855		
								19.0	51.0	50.8	87.0	3855		
								20.0	51.0	50.8	87.3	3855		
201-DA	2495		4000					13.4	60.0	51.3	83.5	4460	0.425	5.75
								21.4	60.0	51.1	87.7	4460		
201-CA	3055							15.9	70.0	49.8	85.4	5000	0.298	4.00

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 5000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.05 kgm <sup>2</sup>	$P_f$ 740 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 270 m <sup>3</sup> /h	$Pr$ 480 Pa	$W_{(foot)}$ 110 kg	$W_{(flange)}$ 122 kg		
Cat. Nr	$U_a$ (V): 260 400 420 440 470 520					$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 153...	$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	115°C ( $\Omega$ )	(mH)
101-KA	1160	1230	1300	1405	1735	7.9	25.0	65.2	75.0	1545	2.679	32.75
						8.4	25.0	65.2	76.0	1545		
						8.9	25.0	65.2	76.8	1545		
						9.6	25.0	65.2	77.9	1545		
101-JA	1280	1355	1435	1545	1735	8.9	27.5	66.2	76.9	1790	2.196	27.90
						9.4	27.5	66.2	77.8	1790		
						9.9	27.5	66.2	78.5	1790		
						10.7	27.5	66.2	79.6	1790		
101-IA*	1410	1495	1575	1700	1910	12.0	27.5	66.2	81.0	1790	1.908	23.45
						9.8	30.0	66.2	77.9	1950		
						10.4	30.0	66.2	78.7	1950		
						10.9	30.0	66.1	79.5	1950		
101-HA	1575	1670	1760	1895	2125	11.8	30.0	66.1	80.4	1950	1.569	19.40
						13.2	30.0	66.1	81.8	1950		
						10.9	33.0	66.2	79.5	2145		
						11.6	33.0	66.2	80.2	2145		
101-GA	1070	1790	1880	1980	2135	12.2	33.0	66.1	80.9	2145	1.195	15.70
						13.1	39.0	70.5	81.3	2240		
						13.9	39.0	70.5	82.0	2240		
						14.6	39.0	70.5	82.6	2240		
101-FA*	1230	2030	2145	2255	2425	15.7	39.0	70.4	83.3	2240	0.947	12.40
						9.1	44.0	70.8	76.2	2515		
						15.0	44.0	70.6	82.8	2515		
						15.8	44.0	70.6	83.3	2515		
101-EA*	1445	2355	2485	2615	2835	16.7	44.0	70.6	83.9	2515	0.708	9.50
						17.9	44.0	70.6	84.6	2515		
						10.9	51.0	71.8	78.7	2835		
						17.7	51.0	71.6	84.4	2835		
101-DA*	1720	2785	2935	3085	3280	18.6	51.0	71.6	84.9	2835	0.526	7.00
						19.6	51.0	71.6	85.3	2835		
						13.0	60.0	72.2	80.7	3280		
						21.0	60.0	72.0	85.7	3280		
101-CA	2115	3390	3575	3755	4050	22.1	60.0	72.0	86.2	3280	0.368	4.85
						23.3	60.0	72.0	87.0	3280		
						15.5	70.0	70.2	83.0	4050		
						24.8	70.0	69.9	87.1	4050		
101-BA	2705	4300	4525	4755	5000	26.1	70.0	69.9	87.5	4050	0.251	3.10
						27.5	70.0	69.8	87.8	4050		
						18.6	82.0	65.5	84.9	5000		
						29.3	82.0	65.2	88.1	5000		
101-AA	3690					32.4	82.0	65.1	88.4	5000	0.149	1.75

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

Technical data

	$n_{max}$ 5000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.09 kgm <sup>2</sup>	$P_f$ 550 W	$U_{amax}$ 620 V	$U_f$ 110-440 V	$V_{cool}$ 435 m <sup>3</sup> /h	$Pr$ 400 Pa	$W_{(foot)}$ 132 kg	$W_{(flange)}$ 147 kg		
Cat. Nr	$U_a$ (V):260 400 420 440 470 520					$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 154...	$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	115°C (Ω)	(mH)
<b>241-AB</b>	605	650	700	770	898	4.0	16.4	63.1	56.1	1460	8.93	132
						4.3	16.4	63.1	57.9	1480		
						4.6	16.4	63.1	59.5	1480		
						5.1	16.4	63.4	61.7	1480		
						5.8	16.1	62.1	65.2	1480		
<b>241-BB</b>	830	885	945	1035	1186	5.6	20.5	64.3	63.7	1725	5.73	87
						6.0	20.5	64.3	65.1	1725		
						6.4	20.5	64.3	66.5	1725		
						7.0	20.5	64.3	68.3	1725		
						7.9	20.2	63.3	71.2	1725		
<b>241-CB</b>	980	1045	1110	1210	1383	6.6	23.3	64.6	67.0	1950	4.50	68
						7.1	23.3	64.6	68.3	1950		
						7.5	23.3	64.6	69.5	1950		
						8.2	23.3	64.6	71.2	1950		
						9.2	22.9	63.5	73.8	1950		
<b>241-DB</b>	1200	1275	1350	1465	1664	8.3	27.5	66.1	71.7	2200	3.18	51
						8.8	27.5	66.1	72.8	2200		
						9.3	27.5	66.1	73.9	2200		
						10.1	27.5	66.1	75.3	2200		
						11.3	27.0	65.0	77.5	2200		
<b>231-AB</b>	745	1330	1415	1495	1620	5.3	30.5	67.6	62.2	1860	2.60	43
						9.4	30.5	67.7	73.8	1860		
						10.0	30.5	67.7	74.9	1860		
						10.6	30.5	67.7	75.8	1860		
						11.5	30.5	67.7	77.1	1860		
<b>251-EB</b>	830	1465	1555	1650	1785	5.6	32.0	64.9	63.6	2650	2.37	36
						10.0	32.0	65.0	74.8	2650		
						10.6	32.0	65.0	75.8	2650		
						11.2	32.0	65.0	76.7	2650		
						12.2	32.0	65.1	77.9	2650		
<b>241-EB</b>	945	1650	1750	1850	2000	6.6	36.0	66.5	66.5	2840	1.93	30
						11.5	36.0	66.4	76.7	2840		
						12.2	36.0	66.4	77.7	2840		
						12.9	36.0	66.4	78.5	2840		
						13.9	36.0	66.4	79.6	2840		
<b>251-FB</b>	1100	1880	1990	2105	2270	7.7	40.0	66.5	70.1	3160	1.51	24
						13.1	40.0	66.5	79.1	3160		
						13.9	40.0	66.5	79.9	3160		
						14.6	40.0	66.5	80.7	3160		
						15.8	40.0	66.5	81.7	3160		
<b>241-FB</b>	1280	2155	2280	2405	2595	17.5	39.3	65.3	83.2	3160	1.16	19
						9.1	46.0	68.0	73.0	3480		
						15.4	46.0	68.1	81.1	3480		
						16.3	46.0	68.1	81.8	3480		
						17.1	46.0	68.1	82.5	3480		
<b>241-GB</b>	1505	2500	2645	2790	2911	18.5	46.0	68.1	83.3	3480	0.92	15
						20.4	45.2	66.9	84.7	3480		
						10.6	52.0	67.3	75.4	4000		
						17.6	52.0	67.3	82.7	4000		
						18.7	52.0	67.3	83.3	4000		
<b>231-DB</b>	1820	2990	3155	3320	3000	19.7	52.0	67.3	83.9	4000	0.65	11
						21.2	52.0	67.4	84.7	4000		
						12.7	60.0	66.9	78.7	4000		
						20.8	60.0	66.6	84.9	4000		
						22.0	60.0	66.6	85.4	4000		
<b>231-EB</b>	2240	3640				23.2	60.0	66.6	85.9	4000	0.47	8
						15.6	72.0	66.5	81.0	4000		
						25.3	72.0	66.5	86.3	4000		

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

Data subject to change without prior notice.

## Technical data

	$n_{max}$ 4000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.10 kgm <sup>2</sup>	$P_f$ 750 W	$U_{amax}$ 620 V	$U_f$ 110-440 V	$V_{cool}$ 470 m <sup>3</sup> /h	$Pr$ 550 Pa	$W_{(foot)}$ 115 kg	$W_{(flange)}$ 130 kg			
Cat. Nr	$U_a$ (V): 260 400 420 440 470 520				$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)		
FR 156...	$n_b$ (min <sup>-1</sup> )				(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	115°C (Ω)	(mH)		
<b>341-AB</b>	690	737	785	855	980	7.7	27.5	107.0	65.6	1250	4.01	60.30	
						8.2	27.5	107.0	67.0	1250			
						8.8	27.5	107.0	68.3	1250			
						9.6	27.5	107.0	70.0	1250			
						10.8	27.0	105.0	72.8	1250			
<b>341-BB</b>	820	875	930	1015	1155	9.1	31.0	106.0	69.0	1410	3.16	46.20	
						9.7	31.0	106.0	70.3	1410			
						10.3	31.0	106.0	71.4	1410			
						11.2	31.0	105.0	73.0	1410			
						12.5	30.5	104.0	75.5	1410			
<b>341-CB</b>	555	1000	1065	1130	1225	1390	5.9	35.0	102.0	60.1	1750	2.41	33.90
							10.7	35.0	102.0	72.5	1750		
							11.4	35.0	102.0	73.6	1750		
							12.1	35.0	102.0	74.7	1750		
							13.1	35.0	102.0	76.0	1750		
<b>341-DB</b>	720	1260	1335	1410	1525	1720	7.9	43.0	105.0	66.2	2000	1.61	23.60
							13.8	43.0	105.0	76.7	2000		
							14.6	43.0	105.0	77.6	2000		
							15.4	43.0	105.0	78.5	2000		
							16.7	43.0	105.0	79.6	2000		
<b>341-EB*</b>	835	1430	1515	1600	1730	1945	9.4	49.0	107.0	69.5	2160	1.26	19.40
							16.0	49.0	107.0	78.9	2160		
							17.0	49.0	107.0	79.7	2160		
							18.0	49.0	107.0	80.5	2160		
							19.4	49.0	107.0	81.5	2160		
<b>341-FB</b>	980	1650	1745	1840	1985	2230	10.2	51.0	99.0	72.6	2630	1.04	15.30
							17.1	51.0	99.1	80.9	2630		
							18.1	51.0	99.1	81.7	2630		
							19.1	51.0	99.1	82.3	2630		
							20.6	51.0	99.0	83.2	2630		
<b>341-GB*</b>	1150	1915	2025	2135	2300	2580	12.7	62.0	106.0	75.4	2920	0.77	11.80
							21.2	62.0	105.0	82.8	2920		
							22.4	62.0	105.0	83.5	2920		
							23.6	62.0	105.0	84.1	2920		
							25.4	62.0	105.0	84.9	2920		
<b>341-HB</b>	1380	2270	2395	2525	2720	3040	14.5	69.0	100.0	77.6	3750	0.61	8.70
							23.9	69.0	101.0	84.3	3750		
							25.2	69.0	101.0	84.8	3750		
							26.6	69.0	100.0	85.4	3750		
							28.6	69.0	100.0	86.1	3750		
<b>341-KB</b>	1725	2795	2945	3100	3335	3715	16.2	74.0	89.7	81.1	4000	0.45	5.03
							26.2	74.0	89.6	86.4	4000		
							27.6	74.0	89.6	86.9	4000		
							29.1	74.0	89.4	87.3	4000		
							31.2	74.0	89.4	87.8	4000		
<b>331-GB</b>	2220	3560	3750	3945			22.6	100.0	97.0	84.3	4000	0.26	3.20
							36.1	100.0	96.8	88.5	4000		
							38.0	100.0	96.8	88.9	4000		
							39.9	100.0	96.7	89.3	4000		

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 4000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	<b>J</b> 0.12 kgm <sup>2</sup>	<b>P<sub>f</sub></b> 830 W	<b>U<sub>amax</sub></b> 620 V	<b>U<sub>f</sub></b> 110-440 V	<b>V<sub>cool</sub></b> 470 m <sup>3</sup> /h	<b>Pr</b> 550 Pa	<b>W<sub>(foot)</sub></b> 145 kg	<b>W<sub>(flange)</sub></b> 160 kg			
<b>Cat. Nr</b>	<b>U<sub>a</sub> (V):260 400 420 440 470 520</b>			<b>P</b>	<b>I</b>	<b>T</b>	<b>η</b>	<b>n<sub>2</sub></b>	<b>R<sub>A</sub> (115°C)</b>	<b>L<sub>A</sub> (0Hz)</b>			
<b>FR 156...</b>	<b>n<sub>b</sub> (min<sup>-1</sup>)</b>			<b>(kW)</b>	<b>(A)</b>	<b>(Nm)</b>	<b>(%)</b>	<b>min<sup>-1</sup></b>	<b>(Ω)</b>	<b>(mH)</b>			
<b>241-AB</b>	730	780	830	900	10.2	35.0	133.0	68.8	1200	2.81	42.0		
					10.9	35.0	133.0	70.1	1200				
					11.6	35.0	133.0	71.3	1200				
					12.6	35.0	133.0	72.8	1200				
					14.1	34.4	131.0	75.4	1200				
<b>241-BB</b>	515	930	985	1045	1130	1285	7.4	43.0	137.0	61.6	1410	1.88	29.2
							13.3	43.0	137.0	73.6	1410		
							14.1	43.0	137.0	74.7	1410		
							15.0	43.0	137.0	75.7	1410		
							16.2	43.0	137.0	77.0	1410		
<b>241-CB</b>	605	1060	1125	1190	1285	1455	8.9	49.0	140.0	65.6	1520	1.46	23.6
							15.6	49.0	140.0	76.2	1520		
							16.5	49.0	140.0	77.2	1520		
							17.5	49.0	140.0	78.1	1520		
							18.9	49.0	140.0	79.2	1520		
<b>241-DB</b>	715	1230	1300	1375	1480	1670	9.7	51.0	130.0	69.0	1860	1.22	18.7
							16.7	51.0	130.0	78.5	1860		
							17.7	51.0	130.0	79.3	1860		
							18.6	51.0	130.0	80.1	1860		
							20.1	51.0	130.0	81.1	1860		
<b>241-EB</b>	845	1430	1510	1595	1720	1935	12.2	62.0	138.0	72.2	2050	0.89	14.2
							20.7	62.0	138.0	80.7	2050		
							21.9	62.0	138.0	81.5	2050		
							23.1	62.0	138.0	82.2	2050		
							24.9	62.0	138.0	83.1	2050		
<b>241-FB*</b>	1015	1700	1795	1895	2040	2290	14.0	69.0	132.0	74.8	2500	0.71	10.5
							23.4	69.0	132.0	82.4	2500		
							24.8	69.0	132.0	83.1	2500		
							26.1	69.0	132.0	83.7	2500		
							28.1	69.0	132.0	84.5	2500		
<b>241-GB</b>	1285	2100	2220	2335	2515	2805	15.8	74.0	118.0	78.8	3350	0.52	7.3
							25.8	74.0	118.0	84.9	3350		
							27.3	74.0	117.0	85.5	3350		
							28.7	74.0	117.0	86.0	3350		
							30.8	74.0	117.0	86.6	3350		
<b>241-HB*</b>	1665	2690	2835	2980	3200	3570	22.1	100.0	127.0	82.5	3900	0.03	4.6
							35.7	100.0	127.0	87.4	3900		
							37.6	100.0	127.0	87.8	3900		
							39.6	100.0	127.0	88.2	3900		
							42.5	100.0	127.0	88.7	3900		
<b>231-HB</b>	2280	3645					27.7	122.0	116.0	85.1	4000	0.19	2.6
									44.1	122.0	116.0		

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 4000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.14 kgm <sup>2</sup>	$P_f$ 1000 W	$U_{amax}$ 620 V	$U_f$ 110-440 V	$V_{cool}$ 470 m <sup>3</sup> /h	$Pr$ 550 Pa	$W_{(foot)}$ 170 kg	$W_{(flange)}$ 185 kg				
Cat. Nr	$U_a$ (V):	260	400	420	440	470	520	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 156...	$n_b$ (min <sup>-1</sup> )							(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)
<b>141-AB</b>	765							11.8	38.5	148.0	72.0	1460	2.14	35.00
								12.6	38.5	148.0	73.1	1460		
								13.3	38.5	148.0	74.2	1460		
								14.4	38.5	148.0	75.5	1460		
								16.1	37.9	145.0	77.7	1460		
<b>141-BB</b>	495	875	925	980	1060	1200		7.7	43.0	149.0	63.5	1610	1.69	29.00
								13.6	43.0	149.0	74.7	1610		
								14.4	43.0	149.0	75.7	1610		
								15.3	43.0	149.0	76.7	1610		
								16.5	43.0	149.0	77.9	1610		
<b>141-CB</b>	580	1000	1065	1125	1215	1370		9.0	48.0	148.0	66.8	1830	1.35	23.00
								15.5	48.0	148.0	76.9	1830		
								16.5	48.0	148.0	77.9	1830		
								17.4	48.0	148.0	78.7	1830		
								18.8	48.0	148.0	79.8	1830		
<b>141-DB</b>	690	1170	1240	1310	1415	1590		10.7	55.0	148.0	70.0	2080	1.05	17.00
								18.2	55.0	148.0	79.1	2080		
								19.3	55.0	148.0	79.9	2080		
								20.3	55.0	148.0	80.7	2080		
								21.9	55.0	148.0	81.7	2080		
<b>141-EB*</b>	825	1390	1470	1550	1675	1875		13.0	65.0	150.0	72.7	2470	0.08	13.00
								21.9	65.0	150.0	81.0	2470		
								23.1	65.0	150.0	81.7	2470		
								24.4	65.0	150.0	82.4	2470		
								26.3	65.0	150.0	83.3	2470		
<b>141-FB*</b>	1045	1720	1820	1915	2060	2305		16.2	77.0	148.0	77.3	3000	0.53	90.00
								26.7	77.0	148.0	84.0	3000		
								28.2	77.0	148.0	84.6	3000		
								29.7	77.0	148.0	85.1	3000		
								31.9	77.0	148.0	85.8	3000		
<b>141-GB*</b>	1365	2215	2335	2455	2635	2940		21.6	98.0	151.0	81.5	3780	0.32	60.00
								34.9	98.0	151.0	86.8	3780		
								36.8	98.0	151.0	87.3	3780		
								38.7	98.0	151.0	87.7	3780		
								41.5	98.0	151.0	88.2	3780		
<b>141-HB</b>	1880	3010	3170	3330	3570	3980		25.7	114.0	131.0	84.3	4000	0.21	3.00
								41.0	114.0	130.0	88.4	4000		
								43.2	114.0	130.0	88.7	4000		
								45.4	114.0	130.0	89.1	4000		
								48.6	114.0	130.0	89.4	4000		
								53.2	112.0	128.0	90.1	4000		

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.



## Technical data

	$n_{max}$ 5000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.20 kgm <sup>2</sup>	$P_f$ 1350 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 510 m <sup>3</sup> /h	$Pr$ 810 Pa	$W_{(foot)}$ 220 kg	$W_{(flange)}$ 235 kg		
Cat. Nr	$U_a$ (V): 260 400 420 440 470 520				$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)	
FR 156...	$n_b$ (min <sup>-1</sup> )				(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
<b>401-AB</b>	465	500	530	580	11.7	43.0	242	65.2	920	2.74	44.5	
					12.6	43.0	242	66.7				
					13.4	43.0	242	68.0				
					14.7	43.0	242	69.8				
					16.6	42.2	237	72.6				
<b>401-BB</b>	545	580	620	675	13.5	47.0	238	68.9	1040	2.17	36.1	
					14.5	47.0	238	70.2				
					15.4	47.0	238	71.4				
					16.8	47.0	238	73.0				
					18.8	46.2	234	75.6				
<b>401-CB</b>	635	680	720	780	15.3	51.0	229	71.8	1210	1.78	28.5	
					16.3	51.0	229	73.0				
					17.3	51.0	229	74.0				
					18.8	51.0	229	75.5				
					21.0	50.1	225	77.7				
<b>401-DB</b>	415	750	795	845	10.3	60.0	236	62.7	1345	1.36	21.8	
					18.5	60.0	236	74.4				
					19.7	60.0	236	75.5				
					20.9	60.0	236	76.5				
					22.6	60.0	236	77.8				
<b>401-EB</b>	515	900	955	1010	12.5	69.0	233	66.8	1645	1.03	16.0	
					22.0	69.0	233	77.2				
					23.3	69.0	233	78.1				
					24.7	69.0	233	79.0				
					26.7	69.0	233	80.1				
<b>401-FB</b>	660	1125	1190	1260	16.5	85.0	239	72.0	1920	0.69	11.1	
					28.2	85.0	239	80.8				
					29.8	85.0	239	81.5				
					31.5	85.0	239	82.5				
					34.0	85.0	239	83.2				
<b>401-GB</b>	895	1475	1560	1645	20.9	99.0	223	78.3	2575	0.42	7.1	
					34.4	99.0	223	84.9				
					36.4	99.0	223	85.5				
					38.3	99.0	223	86.0				
					41.2	99.0	223	86.8				
<b>401-HB</b>	1235	2010	2120	2230	45.2	97.3	219	87.8	3000	0.28	4.0	
					26.8	123.0	207	81.3				
					43.5	123.0	207	86.8				
					45.9	123.0	207	87.3				
					48.3	123.0	207	87.8				
				2395	51.9	123.0	207	88.4				
					2670	56.9	121.0	203				89.2

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 3500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.22 kgm <sup>2</sup>	$P_f$ 1050 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 880 m <sup>3</sup> /h	$Pr$ 980 Pa	$W_{(foot)}$ 190 kg	$W_{(flange)}$ 215 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 157...		$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
301-RC	650	695	735	800	905	975	12.4	41	182	71.2	980	2.14	33.6	
							13.3	41	182	72.5	980			
							14.0	41	182	73.5	980			
							15.3	41	182	75.0	980			
							17.0	40	179	77.3	980			
							18.0	40	178	78.4	980			
301-PC	735	775	825	890	1010	1080	14.0	45	182	73.5	1050	1.75	28.2	
							14.8	45	182	74.5	1050			
							15.7	45	182	75.5	1050			
							17.0	45	182	76.8	1050			
							19.0	44	179	78.9	1080			
							20.2	44	178	80.0	1080			
301-NC	825	875	925	1000	1130	1205	15.9	50	185	75.7	1205	1.44	23.3	
							16.9	50	185	76.7	1205			
							17.9	50	185	77.6	1205			
							19.4	50	185	78.8	1205			
							21.5	49	182	80.7	1205			
							22.9	49	181	81.7	1205			
301-MC	935	990	1045	1130	1275	1360	18.2	56	186	77.6	1400	1.17	18.9	
							19.3	56	186	78.5	1400			
							20.4	56	186	79.3	1400			
							22.0	56	186	80.5	1400			
							24.4	55	183	82.2	1400			
							25.6	54	180	83.1	1400			
301-LC	1075	1135	1200	1295	1455	1550	20.9	63	186	79.8	1575	0.92	14.9	
							22.2	63	186	80.6	1575			
							23.4	63	186	81.4	1575			
							25.3	63	186	82.4	1575			
							27.9	62	183	83.9	1575			
							29.3	61	181	84.7	1575			
301-KC	1245	1320	1390	1500	1680	1795	24.3	72	187	81.5	1850	0.72	11.5	
							25.7	72	187	82.3	1850			
							27.1	72	187	82.9	1850			
							29.3	72	187	83.9	1850			
							32.3	71	183	85.3	1850			
							34.0	70	181	86.0	1850			
301-HC	1490	1575	1660	1785	2000	2125	29.5	85	189	84.1	2125	0.50	8.4	
							31.1	85	189	84.7	2125			
							32.8	85	189	85.3	2125			
							35.3	85	189	86.0	2125			
							38.8	84	186	87.2	2125			
							41.0	83	184	87.8	2125			
301-GC*	1830	1930	2030	2180	2440	2590	36.1	102	189	86.2	2470	0.35	5.9	
							37.9	102	189	86.7	2470			
							40.1	102	189	87.2	2470			
							42.9	102	189	87.9	2470			
							47.3	100	185	88.9	2590			
							49.6	99	183	89.4	2590			
301-FC	2330	2455	2580	2770	3090	3280	45.8	127	188	88.4	3325	0.22	3.8	
							48.3	127	188	88.8	3325			
							50.8	127	188	89.2	3325			
							54.5	127	188	89.7	3325			
							59.7	125	185	90.5	3325			
							62.9	124	183	90.9	3325			
301-EB	2630	2770	2910	3120	3480		51.6	142	188	89.8	3500	0.18	3.0	
							54.4	142	188	90.2	3500			
							57.2	142	188	90.6	3500			
							61.3	142	188	91.0	3500			
							67.1	140	184	91.7	3500			
							61.0	166	184	90.4	3500	0.13	2.1	
301-EC	3165	3335					64.2	166	184	90.7	3500			

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 3500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.24 kgm <sup>2</sup>	$P_f$ 1050 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 880 m <sup>3</sup> /h	$Pr$ 980 Pa	$W_{(foot)}$ 200 kg	$W_{(flange)}$ 225 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 156...	$n_b$ (min <sup>-1</sup> )						(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
601-RC	680	720	765	830	935	1000	14.8	47	208	75.4	1075	1.59	26.3	
							15.7	47	208	76.4				
							16.7	47	208	77.3				
							18.0	47	208	78.6				
							20.1	46	205	80.5				
601-PC	755	800	845	915	1035	1105	21.2	46	203	81.5	1180	1.36	22.1	
							16.4	51	207	76.9				
							17.4	51	207	77.9				
							18.4	51	207	78.7				
							19.9	51	207	79.5				
601-NC	845	900	950	1025	1150	1225	22.0	50	204	81.7	1280	1.12	18.3	
							23.3	50	202	82.6				
							18.7	57	211	78.9				
							19.8	57	211	79.8				
							20.9	57	211	80.5				
601-MC	955	1010	1065	1150	1295	1380	22.6	57	211	81.6	1430	0.92	14.9	
							24.9	56	207	83.0				
							26.3	55	205	83.9				
							20.9	63	210	80.3				
							22.2	63	210	81.1				
601-LC	1095	1160	1220	1315	1475	1575	23.4	63	210	81.9	1580	0.71	11.7	
							25.3	63	210	82.8				
							27.9	62	206	84.3				
							29.5	61	204	85.1				
							24.4	72	213	82.3				
601-KC	1275	1345	1420	1525	1710	1825	25.8	72	213	83.1	1800	0.54	9.0	
							27.3	72	213	83.7				
							29.4	72	213	84.6				
							32.4	71	210	85.9				
							33.8	69	205	86.6				
601-HC	1515	1595	1680	1805	2020	2155	28.5	83	214	84.1	2095	0.40	6.6	
							30.1	83	214	84.8				
							31.7	83	214	85.3				
							34.1	83	214	86.1				
							37.6	81	210	87.3				
601-GC	1845	1950	2050	2200	2460	2615	38.6	78	202	88.0	2155	0.28	4.6	
							34.1	97	215	86.0				
							36.0	97	215	86.5				
							37.9	97	215	87.0				
							40.7	97	215	87.7				
601-GB	2020	2130	2240	2400	2680	2850	44.7	95	212	88.7	3000	0.25	4.0	
							45.1	90	200	89.4				
							41.1	115	213	87.7				
							43.4	115	213	88.2				
							45.6	115	213	88.6				
601-FC	2350	2480	2605	2795	3115	3315	49.0	115	213	89.2	3170	0.18	2.9	
							53.8	113	209	90.1				
							54.1	107	197	90.6				
							43.2	120	204	88.7				
							45.5	120	204	89.1				
601-EB	2640	2780	2920	3140	3490	3735	47.9	120	204	89.5	3500	0.15	2.4	
							51.4	120	204	90.0				
							56.3	118	201	90.8				
							59.2	117	198	91.2				
							52.5	144	213	89.7				
601-EC <sup>1</sup>	3190	3360					55.3	144	213	90.1	3170	0.10	1.7	
							58.1	144	213	90.5				
							62.3	144	213	90.9	3170			
							67.6	140	207	91.6	3170			
							67.5	132	195	91.9	3315			
							56.4	154	204	90.5	3500			
							59.4	154	204	90.8				
							62.4	154	204	91.1				
							66.9	154	204	91.6				
							73.2	151	200	92.2				
							70.0	189	210	91.6	3500			
							73.7	189	210	91.8				

<sup>1</sup> Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

Data subject to change without prior notice.

## Technical data

	$n_{max}$ 3500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.25 kgm <sup>2</sup>	$P_f$ 1250 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 880 m <sup>3</sup> /h	$P_r$ 980 Pa	$W_{(foot)}$ 230 kg	$W_{(flange)}$ 245 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 157...		$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
201-NC	620	660	700	760	860	920	15.4	50	237	72.5	925	1.64	28.30	
							16.4	50	237	73.6	925			
							17.4	50	237	74.7	925			
							18.8	50	237	76.0	925			
							21.0	50	233	78.2	925			
							22.3	50	232	79.3	925			
201-MC	710	750	795	860	975	1040	17.6	56	238	74.6	1125	1.33	22.90	
							18.7	56	238	75.6	1125			
							19.8	56	238	76.6	1125			
							21.5	56	238	77.9	1125			
							23.9	55	234	79.9	1125			
							25.1	54	230	80.9	1125			
201-LC	815	865	915	990	1115	1190	20.4	63	239	77.1	1265	1.05	18.10	
							21.6	63	239	78.0	1265			
							22.9	63	239	78.9	1265			
							24.7	63	239	80.0	1265			
							27.4	62	235	81.8	1265			
							28.8	61	231	82.7	1265			
201-KC	950	1010	1065	1150	1295	1380	23.8	72	238	79.1	1490	0.83	13.85	
							25.2	72	238	79.9	1490			
							26.6	72	238	80.7	1490			
							28.7	72	238	81.7	1490			
							31.7	71	234	83.3	1490			
							33.5	70	232	84.2	1490			
201-HC	1145	1210	1275	1375	1540	1640	28.9	85	242	82.0	1690	0.58	10.20	
							30.6	85	242	82.8	1690			
							32.2	85	242	83.4	1690			
							34.7	85	242	84.3	1690			
							38.3	84	237	85.6	1690			
							40.5	83	235	86.3	1690			
201-GC*	1410	1485	1565	1680	1885	2000	35.5	102	241	84.4	2000	0.4	7.05	
							37.4	102	241	85.0	2000			
							39.5	102	241	85.6	2000			
							42.3	102	241	86.3	2000			
							46.7	100	237	87.5	2000			
							48.6	98	232	88.1	2000			
201-FC	1800	1895	1995	2145	2390	2540	45.2	127	240	86.9	2675	0.25	4.50	
							47.7	127	240	87.4	2675			
							50.2	127	240	87.9	2675			
							53.9	127	240	88.5	2675			
							59.2	125	236	89.4	2675			
							62.4	124	234	89.8	2675			
201-EB	2030	2140	2250	2420	2700	2860	50.3	140	237	88.6	2980	0.21	3.63	
							53.1	140	237	89.0	2980			
							55.8	140	237	89.4	2980			
							59.9	140	237	89.9	2980			
							65.6	138	233	90.7	2980			
							69.0	136	230	91.0	2980			
201-EC*	2450	2580	2715	2910	3245	3460	60.4	166	235	89.2	3500	0.15	2.55	
							63.6	166	235	89.6	3500			
							66.8	166	235	90.0	3500			
							71.7	166	235	90.4	3500			
							78.5	163	231	91.1	3500			
							201-CB	2920	3075	3230	3460			3700
77.4	200	241	91.2	3500										
81.2	200	240	91.5	3500										
87.0	200	240	91.8	3500										

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 3500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.27 kgm <sup>2</sup>	$P_f$ 1250 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 880 m <sup>3</sup> /h	$Pr$ 980 Pa	$W_{(foot)}$ 230 kg	$W_{(flange)}$ 255 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 157...		$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
501-NC	640	680	720	780	880	940	18.1	57	270	75.9	1035	1.28	23.6	
							19.2	57	270	76.9				
							20.3	57	270	77.8				
							22.0	57	270	79.0				
							24.4	56	265	80.9				
501-MC	725	770	815	880	995	1060	25.8	55	263	81.9	1150	1.05	19.1	
							20.4	63	269	77.7				
							21.7	63	269	78.7				
							22.9	63	269	79.5				
							24.7	63	269	80.6				
501-LC	840	885	935	1010	1135	1210	23.9	72	273	80.1	1275	0.81	15.1	
							25.3	72	273	80.9				
							26.8	72	273	81.6				
							28.9	72	273	82.6				
							31.9	71	269	84.1				
501-KC	975	1035	1090	1175	1315	1405	28.0	83	274	82.1	1450	0.62	11.6	
							29.6	83	274	82.9				
							31.2	83	274	83.5				
							33.7	83	274	84.4				
							37.1	81	269	85.7				
501-HC	1165	1230	1295	1395	1560	1660	33.6	97	276	84.3	1680	0.45	8.5	
							35.5	97	276	84.9				
							37.4	97	276	85.4				
							40.3	97	276	86.2				
							44.3	95	271	87.4				
501-GC	1425	1505	1585	1700	1905	2020	40.6	115	273	86.3	2045	0.32	5.9	
							42.9	115	273	86.9				
							45.2	115	273	87.4				
							48.5	115	273	88.0				
							53.3	113	268	89.1				
501-GB	1560	1650	1730	1860	2080	2210	56.1	112	265	89.6	2420	0.29	4.9	
							42.5	120	260	87.1				
							44.9	120	260	87.6				
							47.2	120	260	88.0				
							50.7	120	260	88.6				
501-FC	1820	1915	2015	2165	2415	2560	55.6	118	256	89.5	2560	0.20	3.8	
							58.5	117	253	89.9				
							52.0	144	273	88.6				
							54.8	144	273	89.0				
							57.6	144	273	89.4				
501-EB	2050	2160	2270	2430	2710	2880	61.8	144	273	90.0	3110	0.18	2.9	
							67.8	142	268	90.7				
							71.2	140	265	91.1				
							55.8	154	261	89.4				
							58.8	154	261	89.8				
501-EC'	2470	2605	2735	2935	3265	3465	66.3	154	261	90.7	3420	0.12	2.1	
							72.6	151	256	91.3				
							76.3	150	253	91.7				
							69.5	189	269	90.7				
							73.2	189	269	91.0				
501-CB	2940	3095	3250	3480			76.9	189	269	91.3	3420	0.09	1.5	
							82.4	189	269	91.7				
							90.1	186	264	92.3				
							94.6	184	261	92.6				
							77.9	210	253	91.6				

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 3500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.31 kgm <sup>2</sup>	$P_f$ 1400 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 880 m <sup>3</sup> /h	$Pr$ 980 Pa	$W_{(foot)}$ 275 kg	$W_{(flange)}$ 290 kg			
Cat. Nr	$U_a$ (V): 400 420 440 470 520 550				$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)		
FR 157...	$n_b$ (min <sup>-1</sup> )				(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)		
<b>101-LC</b>	605	645	680	740	835	19.6	63	310	73.8	1000	1.24	22.60	
						20.9	63	310	74.9	1000			
	710	750	795	860	970	1035	22.1	63	310	75.9	1000	0.97	17.30
							24.0	63	310	77.2	1000		
							26.6	62	305	79.2	1000		
							28.1	61	300	80.3	1000		
<b>101-KC</b>	860	910	960	1035	1165	23.0	72	310	76.2	1175	0.68	12.70	
						24.4	72	310	77.1	1175			
	1060	1120	1180	1270	1425	1515	25.8	72	310	78.0	1175	0.48	8.85
							27.9	72	310	79.2	1175		
							31.0	71	305	81.1	1175		
							32.7	70	301	82.0	1175		
<b>101-HC</b>	1360	1435	1510	1625	1815	28.2	85	313	79.5	1330	0.30	5.65	
						29.8	85	313	80.4	1330			
	1540	1620	1710	1840	2050	2180	31.5	85	313	81.1	1330	0.25	4.60
							34.0	85	313	82.1	1330		
							37.5	84	308	83.7	1330		
							39.7	83	306	84.4	1330		
<b>101-GC</b>	1860	1960	2060	2215	2470	34.7	102	313	82.3	1565	0.18	3.20	
						36.6	102	313	83.0	1565			
	2220	2340	2460	2635	2935	3110	38.7	102	313	83.6	1565	0.11	2.30
							41.6	102	313	84.5	1565		
							45.9	100	308	85.8	1565		
							48.3	99	304	86.4	1565		
<b>101-FC*</b>	2815	2960	3100	3330		44.4	127	312	85.1	2105	0.08	1.50	
						46.9	127	312	85.7	2105			
	3100	3240	3380	3555	3840	4020	49.4	127	312	86.2	2105	0.08	1.50
							53.1	127	312	86.9	2105		
							58.4	125	307	88.0	2105		
							61.6	124	305	88.5	2105		
<b>101-EB</b>	3500	3640	3780	3960	4140	49.6	140	308	87.1	2350	0.08	1.50	
						52.3	140	308	87.6	2350			
	4000	4140	4280	4460	4640	4820	55.1	140	308	88.0	2350	0.08	1.50
							59.1	140	308	88.6	2350		
							64.9	138	302	89.5	2350		
							68.2	136	299	90.0	2350		
<b>101-EC*</b>	4500	4640	4780	4960	5140	59.6	166	306	87.9	2815	0.11	2.30	
						62.8	166	306	88.3	2815			
	5000	5140	5280	5460	5640	5820	66.1	166	306	88.7	2815	0.11	2.30
							70.9	166	306	89.3	2815		
							77.7	163	301	90.1	2815		
							81.9	162	298	90.5	2815		
<b>101-CB*</b>	5500	5640	5780	5960	6140	73.1	200	314	90.3	3230	0.11	2.30	
						76.9	200	314	90.5	3230			
	6000	6140	6280	6460	6640	6820	80.9	200	314	90.9	3230	0.11	2.30
							86.7	200	314	91.3	3230		
							96.4	200	314	91.9	3230		
							102.0	200	314	92.2	3230		
<b>101-BB*</b>	6500	6640	6780	6960	7140	86.4	234	294	91.4	3500	0.08	1.50	
						91.0	234	294	91.7	3500			
	7000	7140	7280	7460	7640	7820	95.5	234	294	91.9	3500	0.08	1.50
							102.0	234	293	92.3	3500		

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 3500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.33 kgm <sup>2</sup>	$P_f$ 1400 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 880 m <sup>3</sup> /h	$Pr$ 980 Pa	$W_{(foot)}$ 280 kg	$W_{(flange)}$ 305 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 157...	$n_b$ (min <sup>-1</sup> )						(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
401-LC	620	660	695	755	850	910	23.2	72	357	77.7	990	0.95	19.6	
							24.6	72	357	78.6				
							26.0	72	357	79.5				
							28.2	72	357	80.6				
							31.2	71	350	82.0				
401-KC	725	770	815	880	990	1055	32.9	70	346	82.9	1130	0.73	15	
							27.2	83	358	80.0				
							28.9	83	358	80.7				
							30.5	83	358	81.2				
							32.9	83	358	82.2				
401-HC	870	920	970	1045	1175	1250	36.3	81	351	83.8	1310	0.53	11	
							38.4	80	348	84.6				
							32.9	97	361	82.4				
							34.7	97	361	83.1				
							36.6	97	361	83.8				
401-GC	1070	1130	1190	1280	1435	1530	39.5	97	361	84.7	1590	0.37	7.6	
							43.5	95	354	85.7				
							45.9	94	350	86.4				
							39.9	115	357	84.8				
							42.2	115	357	85.4				
401-GB	1180	1250	1310	1410	1580	1680	44.4	115	357	85.9	1900	0.33	6.6	
							47.8	115	357	86.7				
							52.5	113	349	87.6				
							55.3	112	346	88.2				
							41.9	120	340	85.7				
401-FC	1370	1450	1525	1635	1825	1940	44.3	120	340	86.2	1985	0.24	4.9	
							46.6	120	340	86.7				
							50.1	120	340	87.4				
							55.1	118	334	88.5				
							58.0	117	330	89.0				
401-EB	1550	1640	1720	1850	2060	2190	51.3	144	357	87.5	2450	0.21	4.0	
							54.1	144	357	87.9				
							56.9	144	357	88.4				
							61.1	144	357	89.0				
							66.9	142	350	89.5				
401-EC <sup>1</sup>	1870	1970	2075	2225	2475	2630	70.3	140	346	89.9	2690	0.14	2.8	
							55.0	154	339	88.0				
							58.1	154	339	88.5				
							61.1	154	339	88.9				
							65.6	154	339	89.4				
401-CB	2230	2350	2465	2645	2940	3120	71.9	151	333	90.2	3480	0.1	2	
							75.5	150	329	90.7				
							77.4	210	331	90.8				
							81.4	210	331	91.1				
							85.5	210	331	91.4				
401-BB <sup>1</sup>	2810	2960	3105	3325			91.6	210	331	91.8	3500	0.07	1.3	
							100.1	207	325	92.3				
							105.1	204	321	92.5				
							92.6	250	315	91.6				
							97.5	250	315	91.8				
							102.3	250	315	92.1				
							109.6	250	315	92.4				

<sup>1</sup> Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 3500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.46 kgm <sup>2</sup>	$P_f$ 2000 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 880 m <sup>3</sup> /h	$Pr$ 980 Pa	$W_{(foot)}$ 380 kg	$W_{(flange)}$ 405 kg			
Cat. Nr	$U_a$ (V): 400 420 440 470 520 550			$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)			
FR 157...	$n_b$ (min <sup>-1</sup> )			(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)			
701-LC	410	435	460	500	570	615	21.8	72	508	72.2	715	1.21	29
							23.2	72	508	73.4			
							24.6	72	508	74.4			
							26.7	72	508	75.8			
							29.9	71	500	78.2			
							31.7	70	494	79.4			
701-KC	485	515	545	590	670	715	25.8	83	509	75.0	815	0.94	22.2
							27.4	83	510	76.1			
							29.0	83	510	77.0			
							31.5	83	510	78.3			
							35.0	81	501	80.2			
							37.1	80	496	81.2			
701-HC	585	620	655	705	800	850	31.4	97	514	78.2	945	0.69	16.3
							33.3	97	514	79.0			
							35.2	97	514	79.9			
							38.0	97	514	81.0			
							42.2	95	505	82.6			
							44.6	94	500	83.5			
701-GC	725	765	810	870	985	1045	38.5	115	508	81.2	1145	0.47	11.3
							40.7	115	508	81.9			
							43.0	115	508	82.6			
							46.3	115	508	83.6			
							51.3	113	499	85.1			
							54.1	112	494	85.9			
701-GB	800	840	890	960	1070	1150	40.6	120	487	82.2	1350	0.43	9.6
							43.0	120	487	82.9			
							45.3	120	487	83.6			
							48.9	120	487	84.5			
							53.9	118	479	85.8			
							56.8	117	474	86.5			
701-FC	935	990	1045	1120	1255	1335	49.9	144	509	84.5	1430	0.30	7.3
							52.7	144	509	85.1			
							55.5	144	509	85.7			
							59.7	144	509	86.4			
							65.8	142	500	87.6			
							69.2	140	495	88.1			
701-EB	1060	1110	1170	1260	1410	1500	53.8	154	487	85.3	1750	0.27	5.8
							56.8	154	487	85.9			
							59.8	154	487	86.4			
							64.3	154	487	87.1			
							70.7	151	478	88.2			
							74.4	150	473	88.7			
701-EC <sup>1</sup>	1290	1360	1430	1535	1710	1820	67.4	189	500	87.6	1995	0.17	4.1
							71.1	189	500	88.0			
							74.9	189	500	88.5			
							80.4	189	500	89.0			
							88.1	186	492	89.8			
							92.6	184	486	90.3			
701-CB <sup>1</sup>	1540	1625	1705	1830	2040	2165	76.4	210	473	89.3	2510	0.12	3
							80.5	210	473	89.7			
							84.6	210	473	90.0			
							90.7	210	473	90.5			
							99.3	207	465	91.2			
							104.3	204	460	91.5			
701-BB <sup>2</sup>	1945	2050	2155	2310	2570	2725	91.7	250	450	90.4	2745	0.09	1.9
							96.6	250	450	90.7			
							101.4	250	450	91.0			
							108.7	250	450	91.4			
							118.9	246	442	91.9			
							124.8	243	437	92.2			

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

2 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 15% reduction of power.

\* Normally kept in stock with reinforced impregnation.



## Technical data

	$n_{max}$ 4500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.39 kgm <sup>2</sup>	$P_f$ 1520 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 1300 m <sup>3</sup> /h	$Pr$ 1250 Pa	$W_{(foot)}$ 290 kg	$W_{(flange)}$ 320 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 159...		$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
101-RC	650	700	730	790	900	950	27	85	400	77.9	2300	0.73	15.7	
							29	85	400	78.9				
							31	85	400	79.7				
							33	85	400	80.8				
							37	84	394	82.5				
							39	83	389	83.4				
101-PC	750	800	840	900	1020	1090	32	97	406	80.2	1500	0.63	12.4	
							34	97	406	81.0				
							36	97	406	81.7				
							39	97	406	82.7				
							43	95	399	84.2				
							45	94	395	85.0				
101-NC	880	930	980	1060	1190	1260	37	111	407	82.4	2730	0.47	9.5	
							40	111	407	83.1				
							42	111	407	83.7				
							45	111	407	84.6				
							50	109	400	85.9				
							52	108	396	86.6				
101-LC	1040	1100	1160	1250	1400	1490	43	126	396	84.0	3740	0.37	7	
							46	126	396	84.6				
							48	126	396	85.2				
							52	126	396	86.0				
							57	124	389	87.1				
							60	123	385	87.8				
101-HC	1280	1350	1420	1530	1700	1810	53	152	398	86.0	3910	0.26	4.8	
							56	152	398	86.5				
							59	152	398	87.0				
							64	152	398	87.7				
							70	149	391	88.7				
							81	148	387	89.2				
101-GB	1400	1480	1560	1680	1870	1990	59	166	400	87.2	2100	0.21	4.1	
							62	166	400	87.6				
							65	166	400	88.1				
							70	166	400	88.7				
							77	163	393	89.6				
							94	162	389	90.0				
101-FC*	1630	1720	1810	1940	2170	2300	69	192	402	88.2	4500	0.16	3.1	
							72	192	402	88.7				
							76	192	402	89.1				
							82	192	402	89.6				
							90	189	395	90.4				
							94	187	391	90.6				
101-EB	1840	1930	2040	2200	2470	2620	75	207	387	89.0	1950	0.13	2.5	
							79	207	387	89.4				
							79	198	370	89.9				
							79	184	343	90.6				
							79	164	306	91.3				
							79	154	287	91.6				
101-DC <sup>1</sup>	2220	2340	2460	2630	2930	3110	89	245	384	90.2	4500	0.1	1.7	
							94	245	384	90.5				
							99	245	384	90.8				
							106	245	384	91.2				
							116	241	377	91.9				
							122	238	373	92.1				
101-CB <sup>1</sup>	2640	2780	2930	3140	3500	3720	110	299	400	91.4	2660	0.06	1.3	
							111	286	382	91.8				
							111	272	363	92.1				
							111	253	337	92.5				
							111	227	302	92.9				
							111	214	284	93.1				
101-BB <sup>1</sup>	3330	3500	3690	3950	4400	4400	137	368	393	92.4	3390	0.04	0.8	
							139	356	380	92.6				
							139	338	361	92.9				
							139	315	335	93.2				
							139	283	300	93.5				
							139	283	300	93.5				

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 15% reduction of power.

\* Normally kept in stock with reinforced impregnation.

Data subject to change without prior notice.

## Technical data

	$n_{max}$ 4500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.47 kgm <sup>2</sup>	$P_f$ 1670 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 1300 m <sup>3</sup> /h	$Pr$ 1250 Pa	$W_{(foot)}$ 330 kg	$W_{(flange)}$ 360 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 159...		$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
201-RC	540							27	85	472	75.6	1800	0.81	18.7
								28	85	472	76.6			
								30	85	472	77.5			
								32	85	472	78.8			
								36	84	464	80.7			
								38	83	459	81.7			
201-PC	625							31	97	479	78.4	1200	0.69	14.8
								33	97	479	79.3			
								35	97	479	80.1			
								38	97	479	81.2			
								42	95	471	82.9			
								44	94	466	83.8			
201-NC	735							37	111	480	81.0	2360	0.52	11.3
								39	111	480	81.8			
								41	111	480	82.5			
								44	111	480	83.4			
								49	109	472	84.9			
								52	108	467	85.6			
201-LC	875							43	126	467	82.8	3230	0.41	8.3
								45	126	467	83.5			
								48	126	467	84.1			
								51	126	467	85.0			
								57	124	459	86.3			
								60	123	454	86.9			
201-HC	1075							53	152	469	85.1	3390	0.28	5.8
								56	152	469	85.7			
								59	152	469	86.3			
								63	152	469	87.0			
								69	149	461	88.1			
								73	148	456	88.6			
201-GB	1175							58	166	471	86.1	1700	0.24	4.9
								61	166	471	86.7			
								65	166	471	87.1			
								70	166	471	87.8			
								76	163	463	88.8			
								80	162	458	89.3			
201-FC*	1375							68	192	474	87.7	4200	0.17	3.7
								72	192	474	88.2			
								76	192	474	88.6			
								82	192	474	89.2			
								89	189	456	90.0			
								94	187	461	90.5			
201-EB	1550							74	207	453	87.8	2500	0.15	3
								78	207	457	88.4			
								82	207	457	88.8			
								88	207	457	89.4			
								96	204	449	90.1			
								101	202	444	90.5			
201-DC	1870							89	245	453	89.5	4500	0.11	2.1
								94	245	453	89.9			
								98	245	453	90.2			
								105	245	453	90.7			
								115	241	445	91.4			
								121	238	441	91.7			
201-CB'	2230							110	299	471	91.0	2300	0.07	1.5
								113	293	462	91.4			
								113	278	438	91.8			
								113	259	407	92.2			
								113	232	364	92.7			
								113	219	342	92.9			
201-BB'	2810							136	368	464	92.0	2930	0.05	1
								142	365	460	92.2			
								142	346	436	92.6			
								142	322	405	92.9			
								141	289	363	93.2			
								141	273	341	93.4			
201-AB'	3800							168	450	424	93.0	4000	0.03	0.5

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 15% reduction of power.

\* Normally kept in stock with reinforced impregnation.

Data subject to change without prior notice.

## Technical data

	$n_{max}$ 4500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.55 kgm <sup>2</sup>	$P_f$ 1900 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 1300 m <sup>3</sup> /h	$Pr$ 1250 Pa	$W_{(foot)}$ 380 kg	$W_{(flange)}$ 410 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 159...		$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
301-PC	490	520	550	600	675	725	31	101	613	75.6	900	0.69	18.1	
							33	101	613	76.6				
							35	101	613	77.6				
							38	101	613	78.8				
							43	99	603	80.8				
							45	98	596	81.7				
301-NC	575	610	645	700	790	845	38	117	621	78.2	1860	0.53	13.9	
							40	117	621	79.1				
							42	117	621	80.0				
							46	117	621	81.1				
							51	115	611	82.8				
							53	114	605	83.7				
301-LC	690	730	775	835	940	1000	44	132	601	80.5	2550	0.4	10.2	
							46	132	601	81.3				
							49	132	601	82.1				
							53	132	601	83.0				
							58	130	590	84.6				
							61	128	584	85.3				
301-HC	850	900	950	1025	1150	1225	54	159	603	83.1	2690	0.28	7.1	
							57	159	603	83.8				
							60	159	603	84.4				
							65	159	603	85.2				
							71	156	593	86.5				
							75	155	587	87.2				
301-GB	940	995	1050	1130	1265	1345	60	174	607	84.6	1360	0.26	6	
							63	174	607	85.1				
							67	174	607	85.7				
							72	174	607	86.5				
							79	171	597	87.6				
							83	169	591	88.2				
301-FC	1100	1165	1225	1320	1475	1565	70	201	610	86.3	3330	0.19	4.5	
							74	201	610	86.8				
							78	201	610	87.3				
							84	201	610	88.0				
							93	198	599	89.0				
							97	196	593	89.4				
301-EB	1240	1310	1380	1500	1680	1790	77	218	591	86.9	1330	0.17	3.6	
							81	218	591	87.4				
							83	211	571	88.0				
							83	195	528	88.9				
							82	173	469	90.0				
							82	163	440	90.5				
301-DC <sup>1*</sup>	1510	1590	1670	1795	2000	2125	93	258	587	88.7	4500	0.12	2.5	
							98	258	587	89.1				
							103	258	587	89.5				
							110	258	587	90.0				
							121	254	576	90.7				
							127	251	570	91.1				
301-CB <sup>1</sup>	1795	1900	2000	2150	2400	2550	115	315	610	90.1	1810	0.08	1.8	
							116	301	583	90.6				
							116	286	553	91.0				
							115	266	513	91.6				
							115	238	458	92.2				
							115	224	431	92.4				
301-BB <sup>1*</sup>	2270	2395	2520	2710	3020	3200	142	386	598	91.3	2310	0.05	1.2	
							144	372	576	91.6				
							144	354	547	92.0				
							144	329	508	92.4				
							144	295	454	92.9				
							143	278	427	93.0				
301-AB <sup>1</sup>	3080	3230	3400	3640			167	450	521	92.5	4000	0.03	0.7	
							176	450	521	92.8				
							185	450	521	92.9				
							198	450	520	93.2				

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 15% reduction of power.

\* Normally kept in stock with reinforced impregnation.

Data subject to change without prior notice.

## Technical data

	$n_{max}$ 4500 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.69 kgm <sup>2</sup>	$P_f$ 2240 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 1300 m <sup>3</sup> /h	$Pr$ 1250 Pa	$W_{(foot)}$ 470 kg	$W_{(flange)}$ 500 kg				
Cat. Nr	$U_a$ (V):	400	420	440	470	520	550	P	I	T	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)
FR 159...		$n_b$ (min <sup>-1</sup> )					(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)	
401-NC	450	480	510	550	625	670	33	105	688	74.8	1500	0.77	17.1	
							35	105	688	75.8				
							37	105	688	76.8				
							40	105	688	78.0				
							44	103	676	80.0				
							47	102	670	81.0				
401-LC	545	580	610	660	745	800	40	125	702	77.9	2210	0.55	12.6	
							43	125	702	78.8				
							45	125	702	79.6				
							49	125	702	80.7				
							54	123	690	82.5				
							57	122	683	83.3				
401-HC	680	720	760	820	920	980	51	152	712	81.4	2310	0.37	8.7	
							54	152	712	82.1				
							57	152	712	82.8				
							61	152	712	83.7				
							68	149	700	85.2				
							71	148	693	85.9				
401-GB	760	800	845	910	1020	1085	53	155	668	83.4	1100	0.3	7.4	
							56	155	668	84.0				
							59	155	668	84.6				
							64	155	668	85.5				
							70	152	656	86.7				
							74	151	649	87.3				
401-FC	875	925	975	1050	1180	1255	64	187	701	84.3	2930	0.24	5.6	
							68	187	701	84.9				
							72	187	701	85.5				
							77	187	701	86.3				
							85	184	688	87.4				
							89	182	681	88.0				
401-EB	1000	1055	1110	1200	1340	1430	68	194	649	86.0	1300	0.19	4.5	
							72	194	649	86.5				
							76	194	649	87.0				
							81	194	649	87.6				
							88	189	631	88.6				
							88	176	586	89.3				
401-DC*	1210	1275	1340	1440	1610	1710	87	246	691	87.5	4500	0.14	3.1	
							92	246	691	88.0				
							97	246	691	88.4				
							104	246	691	89.0				
							114	242	679	89.8				
							120	239	671	90.2				
401-CB'	1445	1525	1605	1720	1925	2045	101	280	669	89.3	1770	0.09	2.3	
							107	280	669	89.7				
							112	280	669	90.0				
							121	280	669	90.5				
							124	257	614	91.3				
							123	242	576	91.6				
401-BB'*	1835	1930	2030	2175	2425	2575	126	344	657	90.7	2250	0.06	1.5	
							133	344	657	91.0				
							140	344	657	91.3				
							150	344	657	91.6				
							155	320	609	92.2				
							154	301	572	92.5				
401-AB'	2470	2600	2730	2930	3250	3450	166	450	644	91.8	4000	0.04	0.8	
							175	450	644	92.0				
							184	450	644	92.3				
							197	450	643	92.5				
							215	442	631	92.9				
							225	438	625	93.1				

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 10% reduction of power.

\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 3800 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 0.81 kgm <sup>2</sup>	$P_f$ 2400 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 1500 m <sup>3</sup> /h	$Pr$ 1530 Pa	$W_{(foot)}$ 520 kg	$W_{(flange)}$ 550 kg			
Cat. Nr	$U_a$ (V): 400 420 440 470 520 550				$P$	$I$	$T$	$\eta$	$n_2$	$R_A$ (115°C)	$L_A$ (0Hz)		
FR 159...	$n_b$ (min <sup>-1</sup> )				(kW)	(A)	(Nm)	(%)	min <sup>-1</sup>	(Ω)	(mH)		
501-HC	570	605	635	690	775	825	49	148	815	79.8	1700	0.42	10.3
							51	148	815	80.6			
							54	148	815	81.3			
							59	148	815	82.3			
							65	146	801	83.9			
							69	144	792	84.6			
501-GB	630	665	705	760	850	910	54	162	820	81.3	920	0.34	8.7
							57	162	820	82.1			
							60	162	820	82.8			
							65	162	820	83.7			
							72	159	806	85.1			
							76	158	798	85.8			
501-FC	735	780	820	870	990	1055	62	181	795	83.0	2450	0.27	6.6
							65	181	795	83.6			
							69	181	795	84.3			
							74	181	795	85.1			
							81	178	783	86.3			
							86	176	775	87.0			
501-EB	835	885	930	1000	1125	1200	70	202	790	84.4	1070	0.22	5.3
							74	202	790	85.0			
							77	202	790	85.5			
							83	202	790	86.3			
							90	194	761	87.5			
							90	181	711	88.3			
501-DC	1020	1075	1130	1215	1360	1445	84	239	789	86.5	3400	0.15	3.7
							89	239	789	87.0			
							94	239	789	87.5			
							100	239	789	88.1			
							110	235	775	89.0			
							116	233	766	89.5			
501-CB <sup>1</sup>	1215	1280	1345	1445	1620	1725	104	292	821	88.2	1450	0.11	2.7
							110	292	821	88.6			
							116	292	821	89.0			
							124	292	821	89.5			
							125	263	736	90.5			
							125	247	691	90.9			
501-BB <sup>1</sup>	1545	1625	1710	1835	2040	2170	130	358	805	89.8	3000	0.07	1.7
							137	358	805	90.1			
							144	358	805	90.4			
							154	358	805	90.9			
							169	352	790	91.6			
							177	348	781	91.9			
501-AB <sup>1</sup>	2100	2200	2320	2480	2760		166	450	757	91.4	3200	0.05	1
							175	450	756	91.7			
							183	450	756	91.9			
							196	450	756	92.2			
							214	442	742	92.6			

1 Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 15% reduction of power.

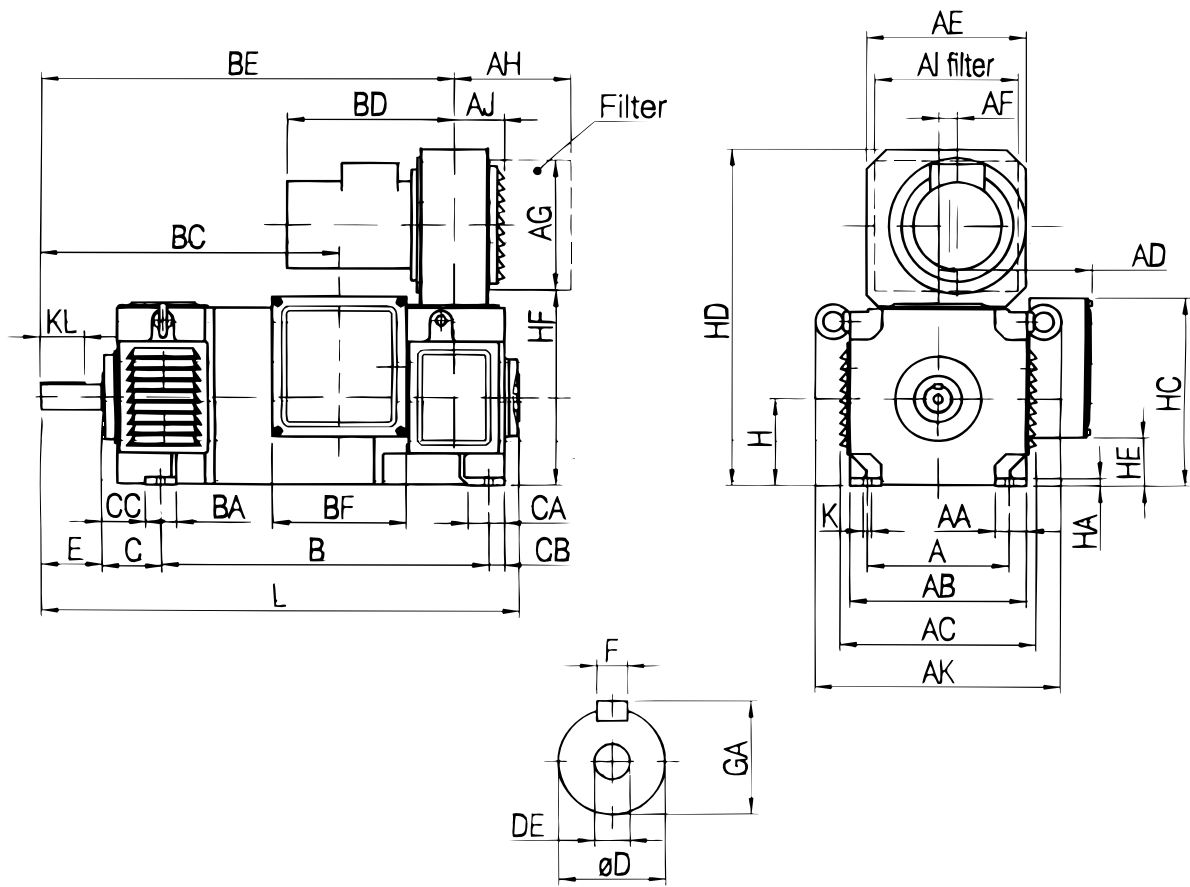
\* Normally kept in stock with reinforced impregnation.

## Technical data

	$n_{max}$ 3000 min <sup>-1</sup>	$n_0$ 40 min <sup>-1</sup>	$J$ 1.05 kgm <sup>2</sup>	$P_f$ 2650 W	$U_{amax}$ 550 V	$U_f$ 110-440 V	$V_{cool}$ 1900 m <sup>3</sup> /h	$Pr$ 1400 Pa	$W_{(foot)}$ 630 kg	$W_{(flange)}$ 660 kg			
Cat. Nr	$U_a$ (V): 400 420 440 470 520 550		$n_b$ (min <sup>-1</sup> )			$P$ (kW)	$I$ (A)	$T$ (Nm)	$\eta$ (%)	$n_2$ min <sup>-1</sup>	$R_A$ (115°C) (Ω)	$L_A$ (0Hz) (mH)	
FR 159...													
601-BF	610	650	680	740	830	880	66	194	1024	82.7	1200	0.26	10.5
							69	194	1024	83.4			
							73	194	1024	84.0			
							79	194	1024	84.8			
							87	194	1007	86.1			
							92	189	996	86.8			
601-FF	670	710	750	810	910	970	65	196	930	81.7	1050	0.29	8.5
							69	196	930	82.4			
							73	196	930	83.0			
							79	196	930	83.9			
							87	193	914	85.3			
							86	191	904	86.0			
601-EF	770	810	860	920	1040	1100	75	220	928	83.3	1200	0.22	6.8
							79	220	928	83.9			
							83	220	927	84.5			
							90	220	927	85.3			
							99	216	911	86.5			
							104	214	902	87.1			
601-BD	880	930	980	1050	1170	1250	90	255	977	86.6	1800	0.14	5.6
							95	255	977	87.1			
							100	255	977	87.6			
							108	255	977	88.2			
							118	251	960	89.1			
							124	248	950	89.6			
601-DF	890	940	990	1070	1200	1270	86	249	918	84.7	1400	0.18	5.2
							91	249	918	85.3			
							95	249	918	85.8			
							103	249	918	86.5			
							113	245	902	87.6			
							119	242	892	88.1			
601-CF	1060	1120	1180	1270	1410	1500	103	294	929	86.5	1700	0.13	3.8
							109	294	929	87.0			
							115	294	929	87.4			
							123	294	929	88.0			
							135	289	913	88.9			
							142	286	903	89.4			
601-AF <sup>1*</sup>	1310	1380	1450	1560	1740	1840	143	394	1039	89.7	2500	0.06	2.6
							151	394	1039	90.1			
							158	394	1039	90.4			
							170	394	1039	90.8			
							186	387	1021	91.4			
							195	383	1010	91.8			
601-AD <sup>1*</sup>	1850	1940	2040	2190	2430	2580	175	474	905	91.4	2800	0.05	1.4
							184	474	905	91.7			
							193	474	904	91.9			
							207	474	904	92.2			
							226	466	888	92.6			
							237	461	878	92.8			

<sup>1</sup> Cooling air inlet at commutator side. Can be used with cooling air inlet at shaft side with 15% reduction of power.

\* Normally kept in stock with reinforced impregnation.

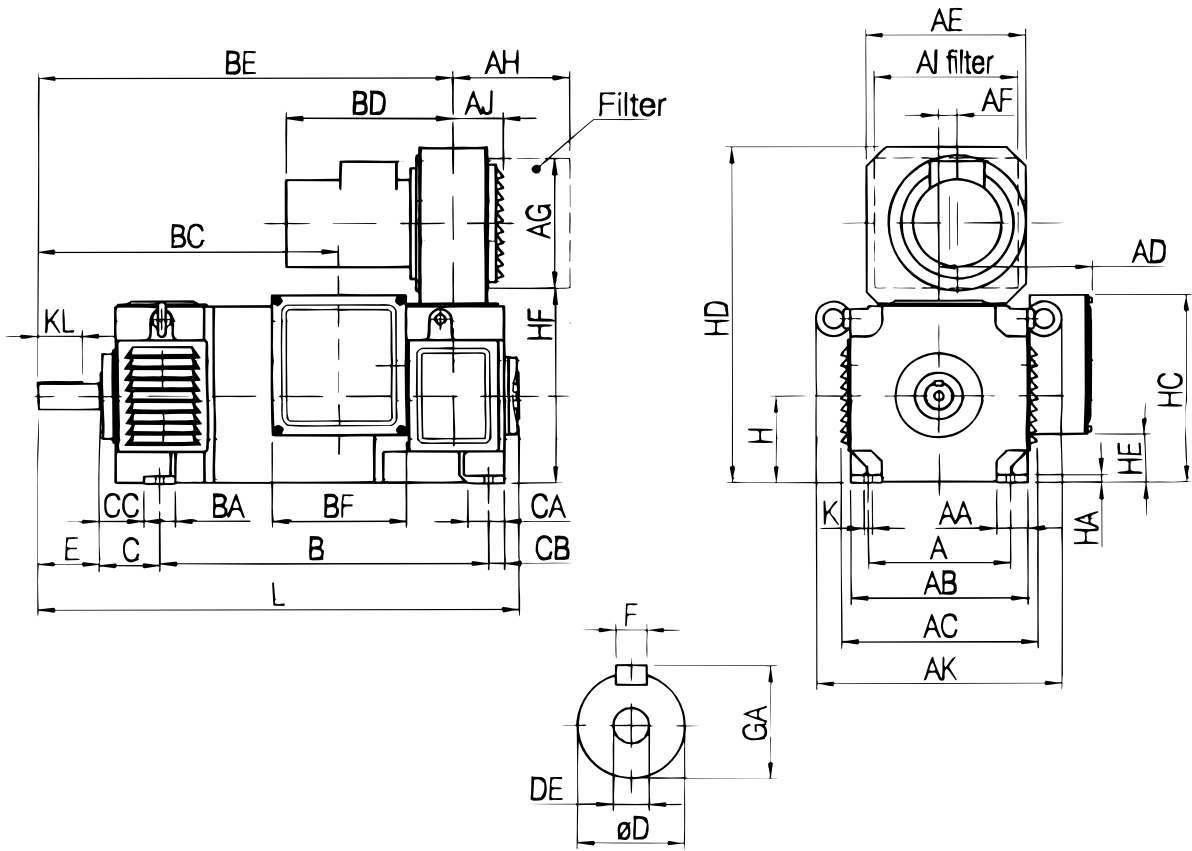


Dimensions in mm

DMP	A	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	B	BA	BC	BD	BE	BF
112-2MA	190	45	220	256	203	220	17	195	175	195	77	326	373	50	336	235	514	190
112-2LA													428		391		569	
112-4M													373		336		514	
112-4L													428		391		569	
132-2M	216	47.5	260	295	223	220	17	195	175	195	77	366	482	50	419	335	590	190
132-4S						220	17	195	175	195	77		437		374	335	545	
132-4M						220	17	195	175	195	77		482		419	335	590	
132-4L						220	17	195	175	195	77		532		469	335	640	
132-4LB						285	33.5	235	208	235	89		642		609	298	780	

DMP	C	CA	CB	CC	D	DE	E	F	GA	H	HA	HC	HD	HE	HF	K	KL	L	L+REO444R1	L+TDP0.2LT	W (kg)
112-2MA	70	55	25	45	38	M10	80	10	41	112	10	241	451	66	250	12	60	594.5	805.5	811.5	97
112-2LA																		649.5	860.5	866.5	103
112-4M																		594.5	805.5	811.5	110
112-4L																		649.5	860.5	866.5	117
132-2M	89	60	25	64	38	M10	80	10	41	132	12	261	491	86	290	12	60	695.5	906.5	912.5	139
132-4S					38		80	10	41								60	650.5	861.5	867.5	122
132-4M					38		80	10	41								60	695.5	906.5	912.5	152
132-4L					38		80	10	41								60	745.5	956.5	962.5	177
132-4LB					42		110	12	45								80	885	1096	1102	236

Dimensions are not binding



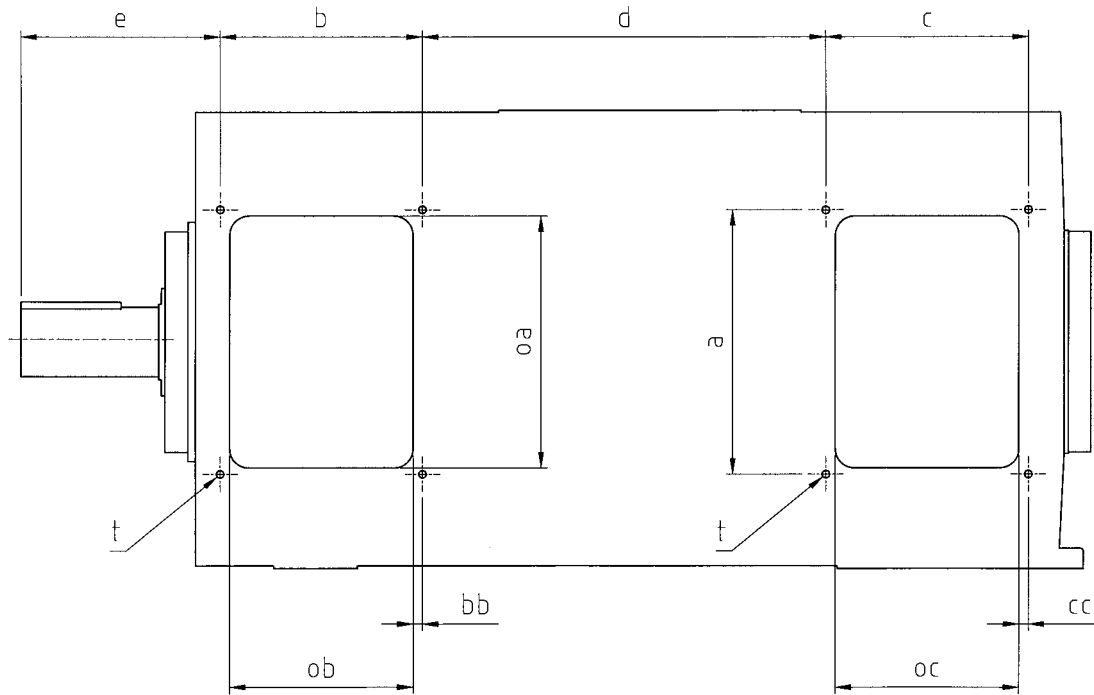
Dimensions in mm

DMP	A	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	B	BA	BC	BD	BE	BF
160-4S/SO	254	56	316	351	274	285	33.5	235	208	235	89	439	475	56	426	298	631	240
160-4M/MO						285	33.5	235	208	235	89		522		473	298	678	
160-4L/LO						285	33.5	235	208	235	89		587		538	298	743	
160-4LB						315	21.5	300	208	300	80		712		663.5	299	868	
180-4A	279	66	356	391	294	355	25.5	340	265	340	95	479	561	66	499	305	718	240
180-4B		66			294	355	25.5		265		95		612	66	535	305	754	
180-4C		66			294	355	25.5		265		95		677	66	616	305	835	
180-4D		66			294	355	25.5		265		95		707	66	681	305	900	
180-4E		61			294	405	28.5		270		105		720	66	741	349	960	
180-4F		61			392	405	28.5		270		105		795	85	821	349	1071	

DMP	C	CA	CB	CC	D	DE	E	F	GA	H	HA	HC	HD	HE	HF	K	KL	L	L+REO444R1	L+TDP0.2LT	W (kg)
160-4S/SO	108	65	28	80	48	M16	110	14	51.5	160	14	343.5	611	88.5	356	15	80	744	955	961	206/216
160-4M/MO													611		356			791	1002	1008	246/256
160-4L/LO													611		356			856	1067	1073	291/301
160-4LB													641		338			981	1192	1198	398
180-4A	121	195	50	91	55	M16	110	16	59	180	18	364	745	109	402	15	80	848.5	1059.5	1065.5	308
180-4B		195	35		55	M16	110	16	59		18	364	745	109	402	15	80	884.5	1095.5	1101.5	348
180-4C		195	21		60	M16	140	18	64		18	364	745	109	402	15	110	965.5	1176.5	1182.5	398
180-4D		195	43		70	M20	140	20	74.5		18	364	745	109	402	15	110	1030.5	1241.5	1247.5	488
180-4E		195	28		70	M20	140	20	74.5		18	364	815	109	448	15	110	1190.5	1301.5	1307.5	540
180-4F		95	40		70	M20	140	20	74.5		18	372.5	815	117.5	444	19	110	1248	1459	1465	650

Dimensions are not binding

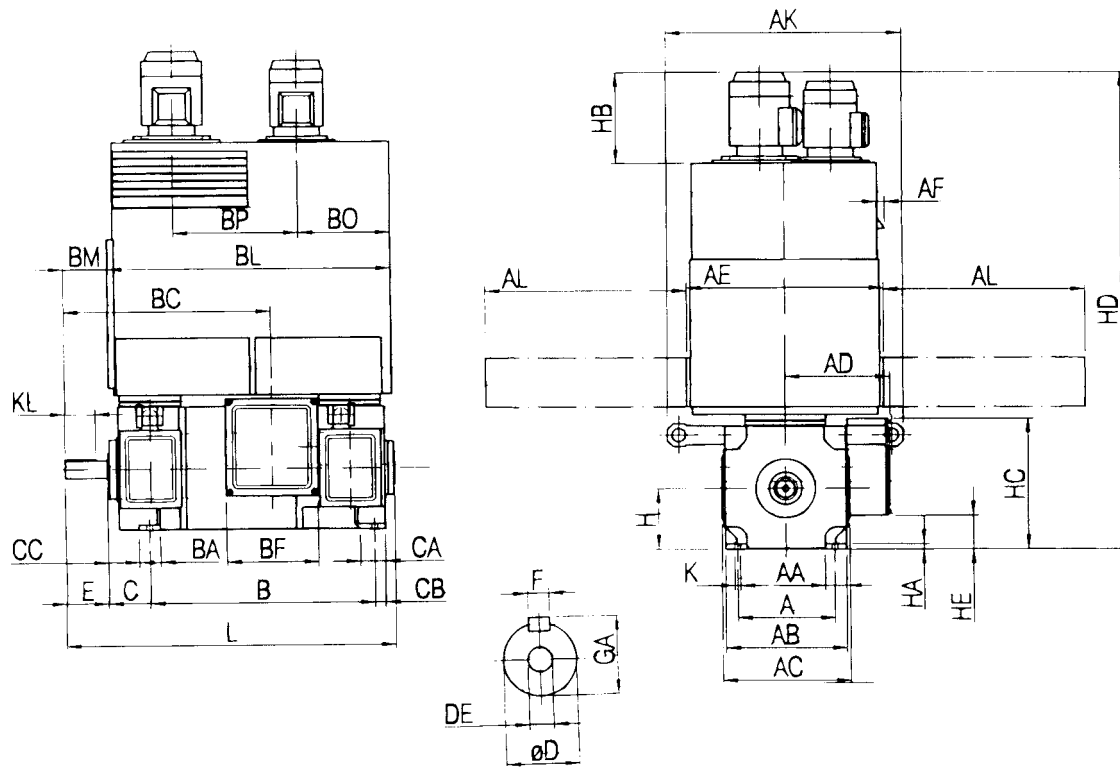




Dimensions in mm

DMP	a	b	bb	c	cc	d	e	oa	ob	oc	t	W (kg)
112-2MA	110	110	5	110	5	245	104	110	100	100	M6	90
112-2LA						300						96
112-4M						245						103
112-4L						300						110
132-2M	150	125	7.5	125	7.5	286	116.5	145	110	110	M6	132
132-4S						241	116.5					115
132-4M						286	116.5					145
132-4L						336	116.5					170
132-4LB						446	146.5					220
160-4S/MO	190	145	7.5	145	7.5	263	150	180	130	130	M6	190/200
160-4M/MO						310						230/240
160-4L/LO						375						275/285
160-4LB						500						380
180-4A	210	160	7.5	160	7.5	320	158.5	200	145	145	M8	290
180-4B			7.5		7.5	356	158.5	200	145	145		330
180-4C			7.5		7.5	407	188.5	200	145	145		380
180-4D			7.5		7.5	472	188.5	200	145	145		470
180-4E			7.5		7.5	532	188.5	200	145	145		520
180-4F			10		10	660	171	210	140	155		630

Dimensions are not binding

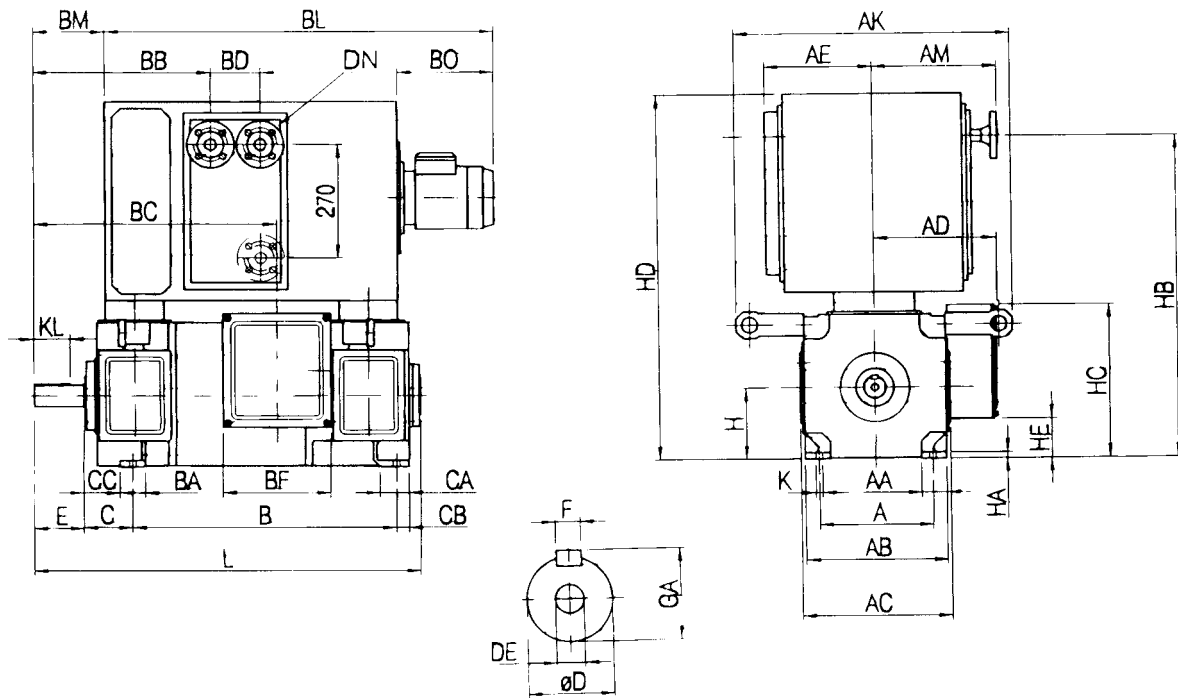


Dimensions in mm

DMP	A	AA	AB	AC	AD	AE	AF	AK	AL	B	BA	BC	BF	BL	BM	BP	BO	C
132-2M	216	47.5	260	279	223	390	20	440	390	482	50	419	190	647	91	290	223	89
132-4S										437		374		647	91	290	223	
132-4M										482		419		647	91	290	223	
132-4L										532		469		647	91	290	223	
132-4LB										642		609		772	121	400	238	
160-4S/SO	254	56	316	335	274	515	20	616	527.5	475	426	240	723	115	325	240	108	
160-4M/MO									527.5	522	473		723		325	240		
160-4L/LO									515	587	538		723		325	240		
160-4LB									606	712	663		843		320	278		
180-4A	279	66	356	375	294	606	20	656	600	561	66	499	240	843	126.5	320	278	121
180-4B		66			294	606			600	612	66	535		843	126.5	320	278	
180-4C		66			294	606			600	677	66	616		843	156.5	320	278	
180-4D		66			294	606			600	707	66	681		843	156.5	320	278	
180-4E		66			294	720			740	720	66	741		1047	149	500	337	
180-4F		61			322	720			740	795	85	821		1047	131	500	337	

DMP	CA	CB	CC	D	DE	E	F	GA	H	HA	HB	HC	HD	HE	K	KL	L	W (kg)
132-2M	60	25	64	38	M10	80	10	41	132	12	215	261	1089	86	12	60	695.5	212
132-4S				38		80	10	41								60	650.5	205
132-4M				38		80	10	41								60	695.5	225
132-4L				38		80	10	41								60	745.5	250
132-4LB				42		110	12	45								80	885	310
160-4S/SO	65	28	80	48	M16	110	14	51.5	160	14	215	343.5	1259	88.5	15	80	744	310
160-4M/MO											215		1259				791	340
160-4L/LO											215		1259				856	385
160-4LB											240		1334				981	500
180-4A	195	50	91	55	M16	110	16	59	180	18	240	364	1356	109	15	80	848.5	525
180-4B	195	35		55	M16	110	16	59		18	240	364	1356	109	15	80	884.5	555
180-4C	195	21		60	M16	140	18	64		18	240	364	1356	109	15	110	965.5	615
180-4D	195	43		70	M20	140	20	74.5		18	240	364	1356	109	15	110	1030.5	645
180-4E	195	28		70	M20	140	20	74.5		18	280	364	1451	109	15	110	1090.5	725
180-4F	95	40		70	M20	140	20	74.5		16	280	372.5	1451	117.5	19	110	1248	820

Dimensions are not binding

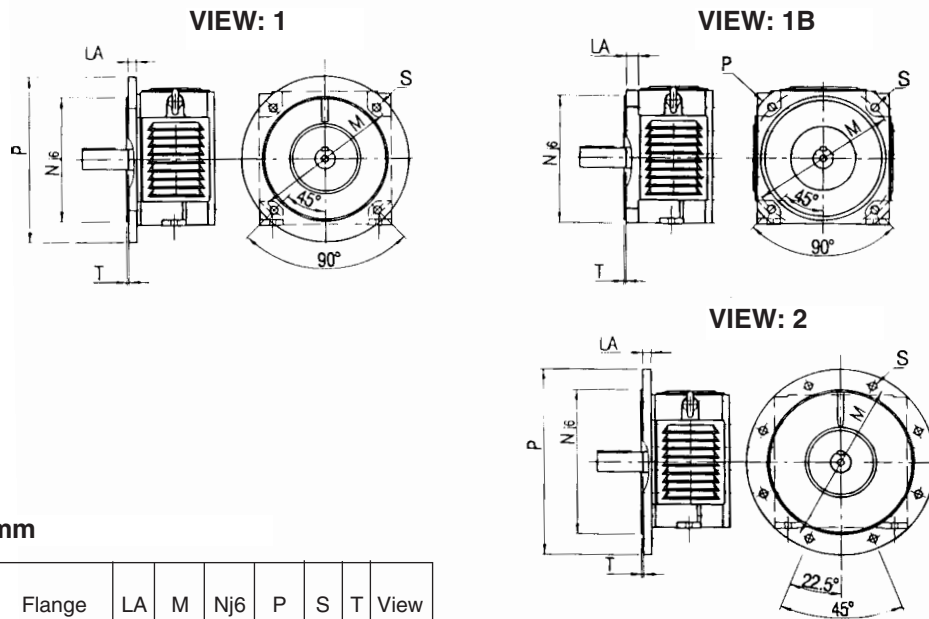


Dimensions in mm

DMP	A	AA	AB	AC	AD	AE	AK	AM	B	BA	BB	BC	BD	BF	BL	BM	BO	C
132-2M	216	47.5	260	279	223	195	440	230	482	50	314	419	110	190	791	99	220	89
132-4S									437		314	374			746	99		
132-4M									482		314	419			791	99		
132-4L									532		314	469			841	99		
132-4LB									642		344	609			951	129		
160-4S/SO	254	56	316	335	274	240	616	278	475	56	393	426	110	240	753	158	215	108
160-4M/MO									522			473			800			
160-4L/LO									587			538			865			
160-4LB									712			663			990			
180-4A	279	66	356	375	294	295	656	328	561	66	453.5	499	110	240	860	168.5	240	121
180-4B		66			294	295		328	612	66	453.5	535	110		896	168.5	240	
180-4C		66			294	295		328	677	66	483.5	616	110		947	198.5	240	
180-4D		66			294	295		328	707	66	483.5	681	110		1012	198.5	240	
180-4E		66			294	292		337	720	66	542.5	741	142		1112	198.5	280	
180-4F		61			322	292		337	795	85	525	821	142		1240	181	280	

DMP	CA	CB	CC	D	DE	DN	E	F	GA	H	HA	HB	HC	HD	HE	K	KL	L	W (kg)
132-2M	60	25	64	38	M10	20	80	10	41	132	12	599	261	719	86	12	60	695.5	220
132-4S				38			80	10	41									650.5	200
132-4M				38			80	10	41									695.5	235
132-4L				38			80	10	41									745.5	260
132-4LB				42			110	12	45									885.5	330
160-4S/SO	65	28	80	48	M16	20	110	14	51.5	160	14	723	343.5	819	88.5	15	80	744	310
160-4M/MO																		791	340
160-4L/LO																		856	400
160-4LB																		981	500
180-4A	195	50	91	55	M16	20	110	16	59	180	18	761	364	857	109	15	80	848.5	410
180-4B	195	35		55	M16	20	110	16	59		18	761	364	857	109	15	80	884.5	460
180-4C	195	21		60	M16	20	140	18	64		18	761	364	857	109	15	110	965.5	510
180-4D	195	43		70	M20	20	140	20	74.5		18	761	364	857	109	15	110	1030.5	600
180-4E	195	28		70	M20	25	140	20	74.5		18	769	364	867	109	15	110	1090.5	660
180-4F	95	40		70	M20	25	140	20	74.5		16	769	372.5	867	117.5	19	110	1248	790

Dimensions are not binding



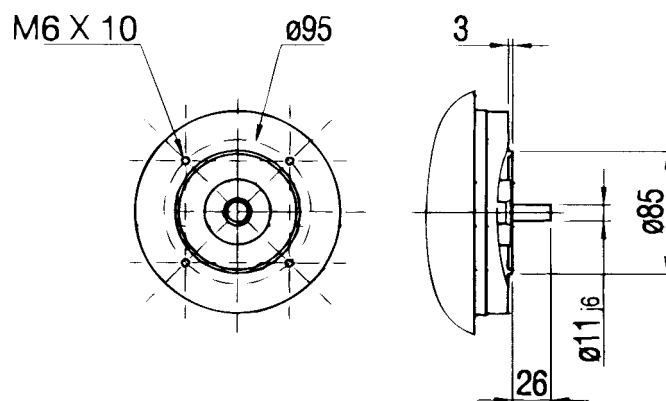
Dimensions in mm

DMP	Flange	LA	M	Nj6	P	S	T	View
112	F215	14	215	180	250	15	4	1B
	F265	14	265	230	300	15	4	1B
132	F265	17	265	230	300	15	4	1B
	F300	17	300	250	350	19	5	1B
160	F350	20	350	300	400	19	5	1B
180-4A/B/C/D/E	F300	41	300	250	350	19	5	1
	F350	17	350	300	400	19	5	1B
	F400	17	400	350	450	19	5	2B
	F500	20	500	450	550	19	5	2
180-4F	F300	41	300	250	350	19	5	1
	F500	20	500	450	550	19	5	2

Other dimensions on request

## Dimension drawing, DMP

## tachometer flange

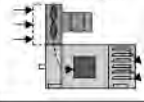
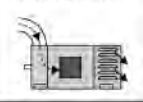
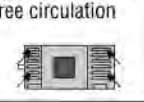


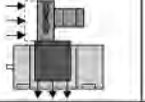




Dimensions are not binding

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

Unit(s) DC motors/Generators DMP

**Cooling:**

<input type="checkbox"/> <b>IC 06</b> Motor mounted fan and free circulation 	<input type="checkbox"/> <b>IC 17</b> Ducted air supply and free circulation 	<input type="checkbox"/> <b>IC 01</b> Self ventilated motor with shaft mounted fan and free circulation 	<input type="checkbox"/> <b>IC 37</b> Ducted air supply and exhaust 	<input type="checkbox"/> <b>IC 410</b> Totally enclosed 	<input type="checkbox"/> <b>IC 416</b> Totally enclosed fan cooled 	<input type="checkbox"/> <b>IC 666</b> Air/Air cooler 	<input type="checkbox"/> <b>IC 86 W</b> 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
Speed			r/min
Power			kW
Torque			Nm
Armature voltage			V
Armature current			A
Field voltage			V

Mounting arrangement	As viewed from D-end fill in below					
	right	left	above	below	D-end	N-end
Terminal box						
Fan motor D.e						
Fan motor N.e						
Duct connection D.e						
Duct connection N.e						
Cooler						

Catalogue number: .....

Position number: .....

**Remarks**

<p><b>STANDARD MODEL</b></p> <p>If data not given, following values will be assumed:</p> <ul style="list-style-type: none"> <li>- Altitude, max 1000 m above sea level</li> <li>- Located indoors</li> <li>- Ambient temperature • 40 •C</li> <li>- Ambient air dust-free, chemically neutral</li> <li>- Air humidity 5 to 20 g/m<sup>3</sup></li> <li>- IEC Standard</li> <li>- Insulation class H, utilization F</li> <li>- Duty type S1</li> <li>- Overload per Catalog DMP</li> <li>- Supplied from fully controlled 3-phase bridge</li> <li>- Enclosure IP 23</li> <li>- Frame type IM 1001</li> <li>- Standard colour and finish</li> <li>- Anti-corrosion coating</li> <li>- 1 shaft extension, standard</li> <li>- Deep-groove ball bearings</li> <li>- Normal seal</li> <li>- Balancing class "N"</li> <li>- Rotation: both directions</li> <li>- Separate excitation</li> </ul>	<p><b>SPECIAL DESIGN</b></p> <p>Please specify variations from standard</p> <p><input type="checkbox"/> Outdoors    <input type="checkbox"/> not protected    <input type="checkbox"/> with cover</p> <p><input type="checkbox"/> NEMA Standard    <input type="checkbox"/> CSA Standard</p> <p><input type="checkbox"/> Utilization H, B</p> <p><input type="checkbox"/> Duty type S..... / ..... % ED</p> <p><input type="checkbox"/> IP 54    <input type="checkbox"/> IP 55</p> <p><input type="checkbox"/> IM 1011 (V5)    <input type="checkbox"/> IM 1031 (V6)    <input type="checkbox"/> IM 1051 (B6)    <input type="checkbox"/> IM 1061 (B7)</p> <p><input type="checkbox"/> IM 2001 (B35)    <input type="checkbox"/> IM 2011 (V15)    <input type="checkbox"/> IM 2031 (V36)</p> <p>Flange dimension F..... (dim. M)</p> <p><input type="checkbox"/> Special colour per RAL</p> <p><input type="checkbox"/> Anti-corrosive protection paint</p> <p><input type="checkbox"/> Special shaft    D..... L.....</p> <p><input type="checkbox"/> Second shaft extension dimensions    D..... L.....</p> <p><input type="checkbox"/> Rollerbearing on drive end</p> <p><input type="checkbox"/> Shaft seal on drive end</p> <p><input type="checkbox"/> Balancing class "R"    <input type="checkbox"/> Balancing class "S" (seen from D.E.)</p> <p><input type="checkbox"/> Clockwise    <input type="checkbox"/> Anticlockwise</p> <p><input type="checkbox"/> Excitation series wound    <input type="checkbox"/> Stabilisation winding</p> <p><input type="checkbox"/> Tropicalisation</p>
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<b>ACCESSORIES</b>	
<input type="checkbox"/> Mounted fan 380 Vac / 50 Hz	<input type="checkbox"/> Air pressure switch
<input type="checkbox"/> Filter for fan	<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 with pulse number per rotg.:	<input type="checkbox"/> Litton <input type="checkbox"/> Leine Linde <input type="checkbox"/> Hubner
	<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	

Delivery week	<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



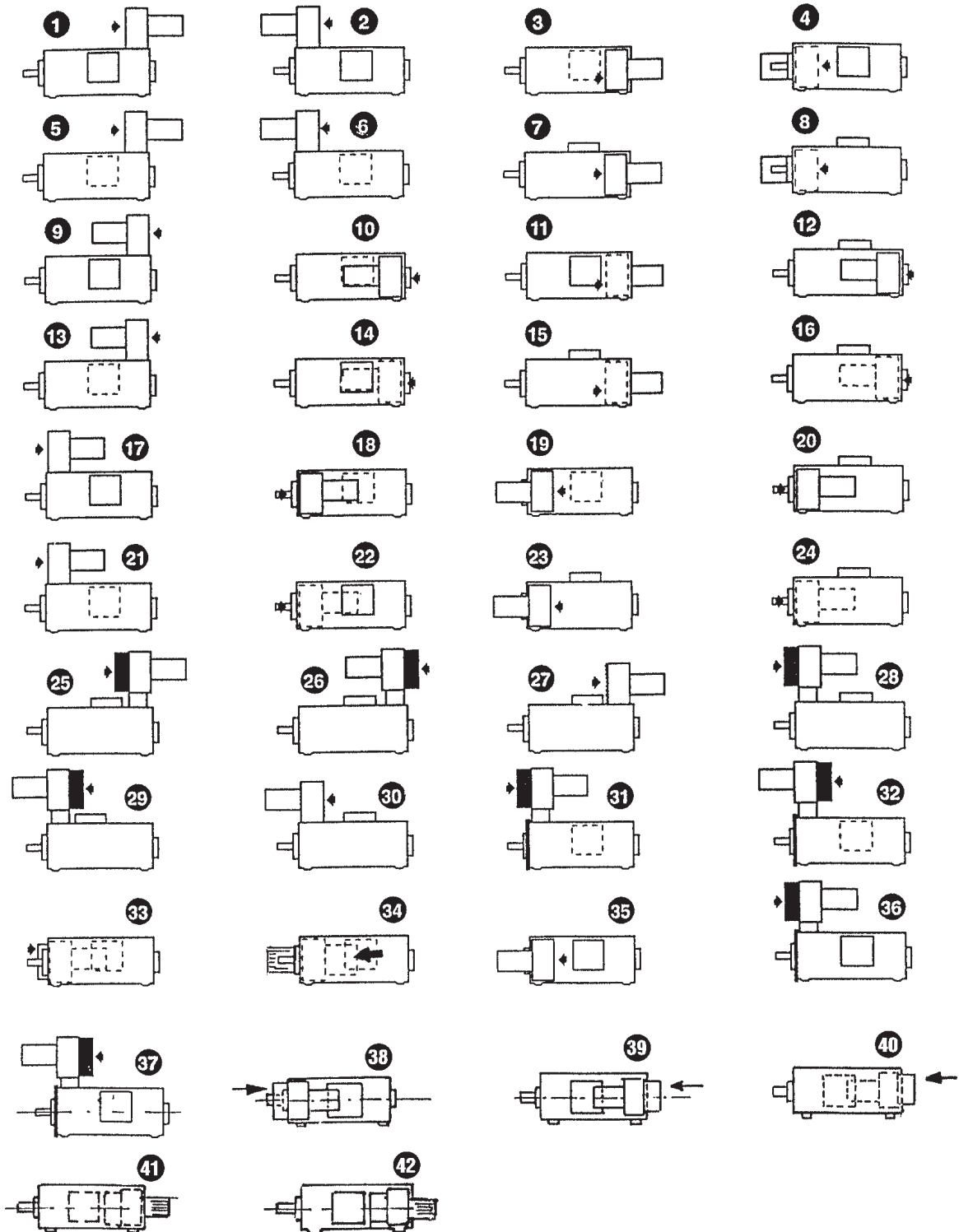
# Ordering

## 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.



TTE UK & IRELAND LTD  
Unit 7A  
Waterloo Industrial Park  
Upper Brook Street  
Stockport  
SK1 3BP  
Tel: +44 (0)161 480 0037  
Fax: +44 (0)161 476 4390  
Email: [info@t-telectric.co.uk](mailto:info@t-telectric.co.uk)  
Web: [www.t-telectric.co.uk](http://www.t-telectric.co.uk)  
Company No: 11111122