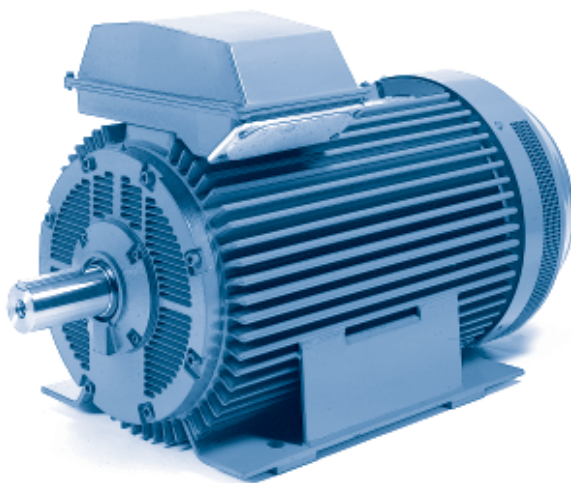


General Purpose Open Drip Proof Motors

Open drip proof squirrel cage three phase
low voltage motors,
Sizes 280 - 400, 110 to 800 kW



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Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

Mechanical design

Stator

The stator frame is made of profile-pressed sheet steel, giving the motor high mechanical strength, low weight and a good surface finish. The stator core is welded into the stator frame and contributes to its excellent mechanical properties.

Feet and lifting eyes are welded to the stator frame. The terminal box and end shields are of cast iron.

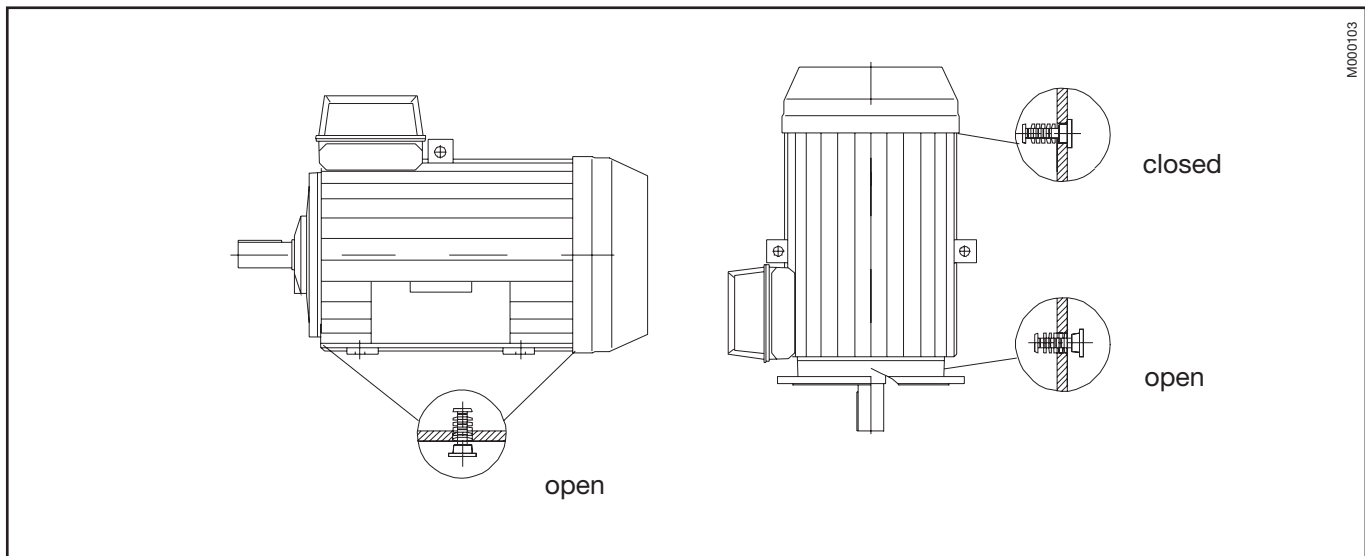
Drain holes

Motors that will be operated in very humid or wet environments, and especially under intermittent duty, should be provided with drain holes. The appropriate IM designation, such as IM V3 (IM 3031), is specified, on the basis of the method of motor mounting.

M2FA motors are fitted with drain holes and plugs. The

plugs are open on delivery. Check that the drain holes and grease outlet face downwards, when mounting designation differs from standard horizontal mounting.

In the case of vertical mounting, the upper plug must be hammered home completely. In very dusty environments the drain hole plug should be knocked in.



Terminal box

Terminal boxes are mounted either on the top of the motor, or on either side of the motor, see ordering information page .

In basic version the terminal box can be rotated 2x180° to allow cable entry from either side of the motor.

The terminal box is equipped with cable glands or cable boxes as standard, and terminations are suitable for Cu- and Al-cables. Cables are connected to the terminals by cable lugs which are not included with the motor.

To enable us to supply suitable terminations for the motor please state cable type, quantity and size when ordering.

For dimension drawings of terminal boxes, see drawings.

Co-ordination of terminal boxes and cable entries

If no ordering information on the cable is given, it is assumed to be p.v.c. -insulated type and termination parts are supplied according to the table below and on next page.

Deviations from standard design according to the following tables are available on request.

M2FA 280 to 400 motors with top-mounted terminal box

Standard cable entries and cable boxes

Voltage 380 - 690 V, 50 Hz

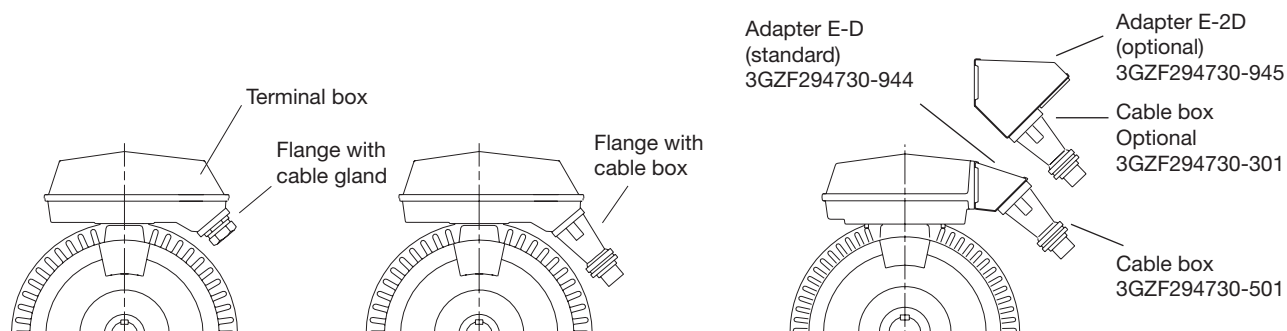
Motor size M2CA	Ter- minal box	Flange or adapter	Cable box or cable gland	Gland thread	Cable diameter	Max. connection cable area mm ²	Terminal bolt size	Voltage/ freq. code
3000 r/min (2 poles)								
280	122/4	3GZF 294730-749	2x 3GZF 294730-613		2x Ø32-49	2x150	M12	
315	142/4	3GZF 294730-753	2x 3GZF 294730-613		2x Ø32-49	2x240	M12	
355 SA	142/4	3GZF 294730-753	2x 3GZF 294730-613		2x Ø32-49	2x240	M12	
355 M ₋	162/4	3GZF 294730-944	3GZF 294730-301		2x Ø48-60	4x240	M12	D
	142/4	-	3GZF 294730-301		2x Ø48-60	2x240	M12	E
355 L ₋	162/4	3GZF 294730-944	3GZF 294730-301		2x Ø48-60	4x240	M12	
1500 r/min (4 poles)								
280	122/4	3GZF 294730-749	2x 3GZF 294730-613		2x Ø32-49	2x150	M12	
315	142/4	3GZF 294730-753	2x 3GZF 294730-613		2x Ø32-49	2x240	M12	
355 S ₋	142/4	3GZF 294730-753	2x 3GZF 294730-613		2x Ø32-49	2x240	M12	
355 M ₋	162/4	3GZF 294730-944	3GZF 294730-301		2x Ø48-60	4x240	M12	D
	142/4	-	3GZF 294730-301		2x Ø48-60	2x240	M12	E
355 LA	162/4	3GZF 294730-944	3GZF 294730-301		2x Ø48-60	4x240	M12	
355 LKD	162/4	3GZF 294730-944	3GZF 294730-501		2x Ø60-80	4x240	M12	
400 LKA	162/9	3GZF 294730-944	3GZF 294730-501		2x Ø60-80	4x240	M12	D
	162/4	3GZF 294730-944	3GZF 294730-501		2x Ø60-80	4x240	M12	E
400 LKB	162/9	3GZF 294730-944	3GZF 294730-501		2x Ø60-80	4x240	M12	
1000 r/min (6 poles)								
280	122/4	3GZF 294730-749	2x 3GZF 294730-613		2x Ø32-49	2x150	M12	
315	142/4	3GZF 294730-753	2x 3GZF 294730-613		2x Ø32-49	2x240	M12	
355 S ₋	142/4	3GZF 294730-753	2x 3GZF 294730-613		2x Ø32-49	2x240	M12	
750 r/min (8 poles)								
280	122/4	3GZF 294730-749	2x 3GZF 294730-613		2x Ø32-49	2x150	M12	
315	142/4	3GZF 294730-753	2x 3GZF 294730-613		2x Ø32-49	2x240	M12	
355 S ₋	142/4	3GZF 294730-753	2x 3GZF 294730-613		2x Ø32-49	2x240	M12	

Voltage/frequency codes:

D - 380-420 VD 50 Hz, 660-690 VY 50 Hz, 440-480 VD 60 Hz

E - 500 VD 50 Hz, 575 VD 60 Hz

Examples:



M000065

Alternatives for cable entries and cable boxes

The tables on previous pages show the standard terminal boxes and termination parts that are delivered when no information on the cable is given.

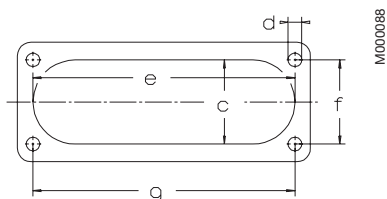
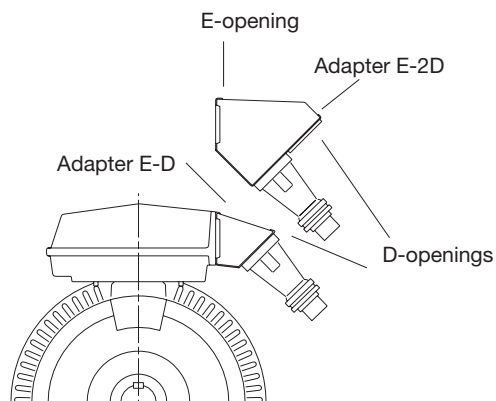
The table below shows the different alternatives avail-

able for cable boxes and cable entries. Other types on request.

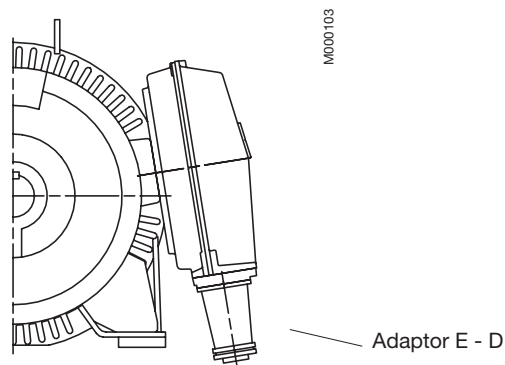
Motor size	Terminal box	Opening type	Max. rate current A (Y/D-conn.)	Max. size of conductor mm ²	Cable entry mm	Cable box	Blank plate
280	122/4	C (FL21)	210/360	2x150	1xPg29...42 2xPg29...42	1xØ36...52/Ø48...60 1xØ36...52/Ø48...60	MKLN 20
315	142/4	D (FL33)	370/640	2x185	1xPg36...42 2xPg36...48	1xØ36...52/Ø48...60 2xØ48...60/Ø50...68	MKLN 30
355, 400	142/4	D (FL33)	370/640	2x240	1xPg36...42 2xPg36...48	1xØ36...52/Ø48...60 2xØ48...60/Ø50...68	MKLN 30
	162/4	E-D ¹⁾	550/950	4x240	1xPg36...42 2xPg36...48	1xØ36...52/Ø48...60 2xØ48...60/Ø50...68 2x2Ø68...80	
		E-2D ¹⁾	550/950	4x240	2x1Pg36...42 2x2Pg36...48	2x1xØ36...52/Ø48...60 2x2xØ48...60/Ø50...68 2x2Ø68...80	

¹⁾ Terminal box type 162/4 is used with a combination of one E-opening and one or two D-openings, as described below:

Terminal box 162 with adapting flange 3GZF 294730-501 (E-D) or optional 3GZF 294730-301 (E-2D):



Terminal box 162 with adapting flange:



Opening	c	e	f	g	d
C (FL 21)	62	193	62	193	M8
D (FL 33)	100	300	80	292	M10
E (FL 40)	115	370	100	360	M12

Bearings

The motors are normally fitted with single-row deep groove ball bearings as listed in the table on the right. The complete ball bearing designation is stated on the rating plate.

If the bearing at the D-end is replaced with a roller bearing (NU- or NJ-), higher radial forces can be handled. Roller bearings are suitable for belt drive applications.

When there are high axial forces, angular-contact ball bearings should be used. This option is available on request. When a motor with angular-contact ball bearings is ordered, the method of mounting and direction and magnitude of the axial force must be specified. For special bearings, please see variant codes.

Standard bearing types

Motor size	Number of poles	Basic version with deep groove ball bearings		Version with roller bearings, variant code 037
		D-end	N-end	D-end
280	2	6316/C4	6316/C4	-
	4-8	6319/C3	6316/C3	(NU 319/C3)
315	2	6316/C4	6316/C4	-
	4-8	6319/C3	6316/C3	(NU319/C3)
355	2 ¹⁾	-	-	-
	4-8	6322/C3	6319/C3	(NU 322/C3)
400	4	6322/C3	6319/C3	(NU 322/C3)

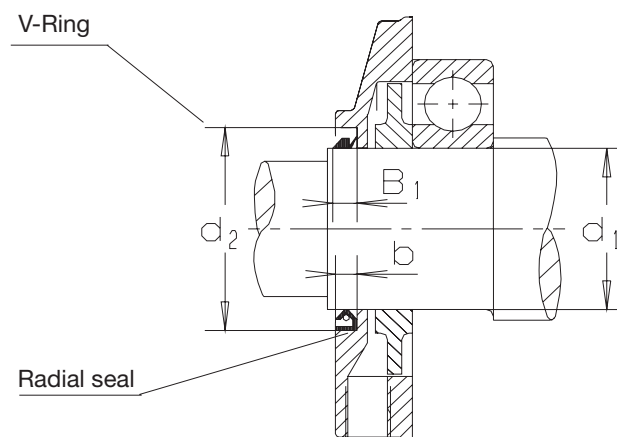
¹⁾ Please check technical construction with ABB.

Bearing seals

M2FA motors have, as standard, V-rings at both ends. The size and type of suitable seals are in accordance with the table below:

Motor size	Number of poles	d ₁	d ₂	B ₁	b	Standard design Axial seal		Alternative design Radial seal (DIN 3760)
						D-end	N-end	
280	2	80	100	13.5	10	VS 80	VS 80	80x100x10 ¹⁾
	4-8	95	120	13.5	12	VS 80	VS 80	95x120x12
315	2	80	100	13.5	10	VS 80	VS 80	80x100x10 ¹⁾
	4-8	95	120	13.5	12	VS 95	VS 80	95x120x12
355	2	95	120	13.5	12	VS 95	VS 95	95x120x12 ¹⁾
	4-8	110	140	15.5	12	VS 110	VS 95	110x140x12 ¹⁾
400	4-8	110	140	15.5	12	VS 110	VS 95	110x140x12 ¹⁾

¹⁾ Viton-seal



Permissible radial forces

The table below gives the permissible radial force in Newtons, assuming zero axial force. The values are based on normal conditions at 50 Hz and calculated bearing lives of 40,000 h.

At 60 Hz the values must be reduced by 10 %. For two-speed motors, the values must be based on the higher speed. Permissible loads of simultaneous radial and axial forces will be supplied on request.

Motors are B3 version with force directed sideways. In some cases the strength of the shaft affects the permissible forces.

Permissible radial and axial force for a bearing life of 40,000 hours

Motor size	Number of poles	Length of shaft extension E (mm)	Permissible radial force for:				Permissible axial force for ¹⁾ :		
			Horizontal mounting, sideways direction of force		Horizontal mounting, sideways direction of force		Horizontal mounting	Vertical mounting with shaft extension downwards	
			Ball bearing at point of application:		Roller bearing at point of application:		Direction of force		
			FX ₀ N	FX _{max} N	FX ₀ N	FX _{max} N	Outwards N	Upwards N	Downwards N
280	2	140	5850	4500	–	–	3800	7150	2250
	4	170	8900	7050	26100	11400	5300	8800	3800
	6	170	10200	8100	29500	11300	6500	10100	4700
	8	170	11200	8900	32100	11100	7450	11200	5500
315	2	140	5800	4800	–	–	3700	7450	1800
	4	170	9000	7300	26200	14000	5000	9250	2750
	6	170	10200	8350	29600	14200	6350	10800	3300
	8	170	11300	9200	32300	14300	7300	12200	4300
355	2	140	6200	5400	–	–	2100	²⁾	²⁾
	4	210	12100	9800	36500	18100	4100	²⁾	²⁾
	6	210	13800	11200	41500	20200	5500	²⁾	²⁾
	8	210	15200	12300	45000	21000	6900	²⁾	²⁾
400	2	170	²⁾	²⁾	–	–	²⁾	²⁾	²⁾
	4	210	12200	10500	37500	13500	3900	²⁾	²⁾
	6	210	²⁾	²⁾	²⁾	²⁾	²⁾	²⁾	²⁾
	8	210	²⁾	²⁾	²⁾	²⁾	²⁾	²⁾	²⁾

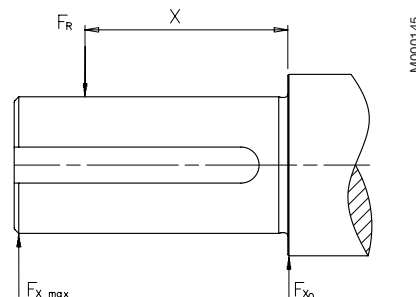
¹⁾ Flange-mounted motors with deep groove ball bearings at D-end. Other designs on request. No simultaneous radial forces allowed.

²⁾ On request.

If the radial force is applied between points X₀ and X_{max}, the permissible force F_R can be calculated from the following formula:

$$F_R = F_{x_0} - \frac{X}{E} (F_{x_0} - F_{x_{max}})$$

E = length of shaft extension in basic version



M000145

Ordering information

Sample order

When placing an order, please state the following minimum data in the order, as in the example.

The product code of the motor is composed in accordance with the following example.

Motor type	M2FA 315SMA
Pole number	2
Mounting arrangement (IM-code)	IM B3 (IM 1001)
Rated output	200 kW
Product code	3GFA312210-ASB
Variant codes if needed	

A	B	C	D,E,F, G	A Motor type
M2FA	315	SMA	3GFA 312 210 - ADA, 003 etc.	B Motor size
		1 - 4	5-6 7 8-10 11 12 13 14	C Product code
				D Mounting arrangement code
				E Voltage and frequency code
				F Generation code
				G Variant codes

Explanation of the product code:

Positions 1 to 4

3GFA = Open drip proof squirrel cage three phase motor with steel frame

Positions 5 and 6

IEC-frame size

28 = 280 **35** = 355

31 = 315 **40** = 400

Position 7

Speed (pole pairs)

1 = 2 poles **6** = 8 poles

2 = 4 poles **7** => 12 poles

3 = 6 poles **8** = Two-speed motors

4 = 8 poles **9** = Multi-speed motors

5 = 10 poles

Position 8 to 10

Serial number

Position 11

- (dash)

Position 12

Mounting arrangement

A = Foot-mounted, top-mounted terminal box

L = Foot-mounted, terminal box LHS, seen from D-end

R = Foot-mounted, terminal box RHS, seen from D-end

B = Flange-mounted

L = Foot-mounted, terminal box LHS, seen from D-end

R = Foot-mounted, terminal box RHS, seen from D-end

H = Foot- and flange-mounted, top-mounted terminal box

S = Foot- and flange-mounted, terminal box LHS seen from D-end

T = Foot- and flange-mounted, terminal box RHS seen from D-end

Position 13

Voltage/frequency code

See tables below

Position 14

Generation code

A, B, C...

The product code must, if needed, followed by variant codes.

Code letters for supplementing the product code for voltage and frequency – single speed motors:

A	B	D	E	F	H
380 VY 50 Hz	380 VΔ 50 Hz	380-420 VΔ 50 Hz 660-690 VY 50 Hz 440-480 VΔ 60 Hz	500 VΔ 50 Hz 575 VΔ 60 Hz	500 VY 50 Hz 575 VY 60 Hz	415 VΔ 50 Hz
S	T	U	X		
220-240 VΔ 50 Hz 380-420 VY 50 Hz 440-480 VY 60 Hz	660 VΔ 50 Hz	690 VΔ 50 Hz	Other rated voltage, connection or frequency, max. 690 V		

Code letters for supplementing the product code for voltage and frequency – two-speed motors:

A	B	D	E	H	S
220 V 50 Hz	380 V 50 Hz	380-400 V 50 Hz 440-480 V 60 Hz	500 V 50 Hz 575 V 60 Hz	400-415 V 50 Hz 460-480 V 60 Hz	220-230 V 50 Hz

General purpose open drip proof motors

Technical data for squirrel cage

three phase motors, steel frame

IP 23 S – IC 01 – Insulation class F, temperature rise class B

Output kW	Motor type	Product code	r/min	Efficiency Speed %	Power factor 100%	Current		Torque		
						I_N cos φ A	I_s I_N	T_N Nm	T_s T_N	T_{max} T_N
3000 r/min = 2 poles			400 V 50 Hz			Basic design				
132	²⁾ M2FA 280 SMA	3GFA 281 210-••A	2971	94.5	0.84	241	7.0	424	2.1	2.4
160	M2FA 315 SA	3GFA 311 110-••A	2977	94.2	0.86	289	6.7	513	1.6	2.5
200	M2FA 315 SMA	3GFA 311 210-••A	2975	94.4	0.86	353	7.1	643	1.8	2.6
250	M2FA 315 MB	3GFA 311 320-••A	2975	94.5	0.87	431	7.1	804	1.9	2.6
315	M2FA 315 MC	3GFA 311 330-••A	2977	94.6	0.84	573	7.8	1012	2.1	2.8
355	¹⁾ M2FA 315 LA	3GFA 311 510-••A	2969	94.9	0.89	606	6.8	1142	2.0	2.5
400	M2FA 315 LB	3GFA 311 520-••A	2969	94.8	0.88	700	7.3	1288	2.0	2.6
400	⁵⁾ M2FA 355 SA	3GFA 351 110-••A	2982	94.7	0.88	680	7.1	1280	1.1	2.6
450	⁵⁾ M2FA 355 MA	3GFA 351 310-••A	2978	95.0	0.89	765	7.4	1443	1.3	3.0
500	⁵⁾ M2FA 355 MB	3GFA 351 320-••A	2973	95.1	0.90	851	6.7	1606	1.2	2.7
560	⁵⁾ M2FA 355 LA	3GFA 351 510-••A	2981	95.5	0.89	956	8.7	1794	1.5	3.1
3000 r/min = 2 poles			400 V 50 Hz			High-output design				
160	M2FA 280 MB	3GFA 281 320-••A	2971	94.9	0.88	279	7.0	514	2.0	2.7
1500 r/min = 4 poles			400 V 50 Hz			Basic design				
110	M2FA 280 SA	3GFA 282 110-••A	1476	93.1	0.83	211	5.8	713	1.8	2.4
132	M2FA 280 SMA	3GFA 282 210-••A	1477	93.8	0.84	245	5.9	853	1.8	2.3
160	M2FA 315 SA	3GFA 312 110-••A	1483	94.6	0.83	297	6.5	1030	1.8	2.5
200	M2FA 315 SMA	3GFA 312 210-••A	1482	94.7	0.83	366	6.5	1287	1.8	2.3
250	M2FA 315 MB	3GFA 312 320-••A	1481	94.9	0.83	452	6.7	1611	1.7	2.3
315	¹⁾ M2FA 315 LA	3GFA 312 510-••A	1477	94.5	0.83	577	6.7	2036	2.2	2.5
315	M2FA 355 SA	3GFA 352 110-••A	1484	95.0	0.85	555	6.4	2027	1.7	2.4
355	²⁾ M2FA 355 SB	3GFA 352 120-••A	1485	95.4	0.82	653	6.6	2282	1.9	2.5
400	²⁾ M2FA 355 SC	3GFA 352 130-••A	1484	95.3	0.82	733	5.9	2574	1.7	2.2
450	²⁾ M2FA 355 MA	3GFA 352 310-••A	1485	95.4	0.83	810	6.5	2896	1.8	2.4
500	¹⁾²⁾ M2FA 355 LA	3GFA 352 510-••A	1486	95.4	0.81	920	7.7	3213	2.0	2.8
600	M2FA 355 LKD	3GFA 352 540-••A	⁴⁾							
710	M2FA 400 LKA	3GFA 402 510-••A	⁴⁾							
800	M2FA 400 LKB	3GFA 402 520-••A	⁴⁾							
1500 r/min = 4 poles			400 V 50 Hz			High-output design				
160	M2FA 280 MB	3GFA 282 320-••A	1480	94.0	0.81	305	7.2	1032	2.5	2.6

The two bullets in the product code indicate choice of mounting arrangement, voltage and frequency (see ordering information page).

- ¹⁾ Temperature rise class F.
- ²⁾ Special winding for 415V 50 Hz.
- ³⁾ 415 V 50 Hz and 440 V 60 Hz on request.
- ⁴⁾ On request.
- ⁵⁾ Please check technical construction with ABB.

General purpose open drip proof motors

Technical data for squirrel cage

three phase motors, steel frame

IP 23 S – IC 01 – Insulation class F, temperature rise class B

Output kW	Motor type	Speed r/min	Efficiency %	Power factor cos φ	Current I _N A	Speed r/min	Efficiency %	Power factor cos φ	Current I _N A	Moment of inertia J = ¼ GD ² kgm ²	Weight kg	Sound pressure level L _p dB(A)
3000 r/min = 2 poles		380 V 50 Hz				415 V 50 Hz				Basic design		
132 ²⁾	M2FA 280 SMA	2969	94.4	0.86	246	2966	94.1	0.87	227	0.8	540	87
160	M2FA 315 SA	2975	94.2	0.87	302	2978	94.2	0.84	282	1.2	695	92
200	M2FA 315 SMA	2974	94.3	0.87	370	2978	94.4	0.84	344	1.4	770	92
250	M2FA 315 MB	2974	94.4	0.88	449	2976	94.5	0.85	420	1.7	840	92
315	M2FA 315 MC	2974	94.6	0.86	576	2971	94.6	0.88	530	1.7	840	92
355 ¹⁾	M2FA 315 LA	2965	94.8	0.89	635	2970	94.9	0.86	591	2.1	975	92
400	M2FA 315 LB	2966	94.7	0.88	720	2970	94.8	0.85	683	2.1	975	92
400 ⁵⁾	M2FA 355 SA	2980	94.6	0.90	700	2983	94.7	0.87	663	3.2	1220	93
450 ⁵⁾	M2FA 355 MA	2975	94.9	0.90	795	2979	95.0	0.87	746	3.5	1320	93
500 ⁵⁾	M2FA 355 MB	2970	95.1	0.90	880	2974	95.1	0.87	830	3.5	1320	93
560 ⁵⁾	M2FA 355 LA	2978	95.5	0.90	980	⁴⁾				4.8	1530	93
3000 r/min = 2 poles		380 V 50 Hz				415 V 50 Hz				High-output design		
160	M2FA 280 MB	2968	94.8	0.88	288	2973	94.9	0.86	269	1.15	580	89
1500 r/min = 4 poles		380 V 50 Hz				415 V 50 Hz				Basic design		
110	M2FA 280 SA	1474	92.8	0.85	217	1477	93.1	0.82	206	1.15	445	81
132	M2FA 280 SMA	1474	93.2	0.86	255	1478	93.8	0.83	239	1.4	490	81
160	M2FA 315 SA	1481	94.5	0.85	306	1481	94.6	0.84	283	2	680	86
200	M2FA 315 SMA	1480	94.6	0.85	379	1483	94.8	0.82	360	2.3	735	86
250	M2FA 315 MB	1479	94.7	0.86	470	1482	94.9	0.83	441	2.9	850	86
315 ¹⁾	M2FA 315 LA	1475	94.5	0.85	596	1473	93.5	0.86	540	3.5	970	87
315	M2FA 355 SA	1482	94.8	0.86	584	1485	95.0	0.83	541	5.5	1220	89
355 ²⁾	M2FA 355 SB	1484	95.3	0.84	670	1485	95.4	0.83	622	5.5	1220	89
400 ²⁾	M2FA 355 SC	1482	95.2	0.85	746	1483	95.1	0.84	685	5.5	1220	89
450 ²⁾	M2FA 355 MA	1483	95.3	0.85	835	1484	95.4	0.83	798	6.5	1350	89
500 ¹⁾²⁾	M2FA 355 LA	1484	95.3	0.84	949	1486	95.4	0.83	880	7.8	1550	89
600	M2FA 355 LKD	⁴⁾								9.8	1820	
710	M2FA 400 LKA	⁴⁾									2700	
800	M2FA 400 LKB	⁴⁾									2700	
1500 r/min = 4 poles		380 V 50 Hz				415 V 50 Hz				High-output design		
160	M2FA 280 MB	1478	93.9	0.84	310	1481	94.0	0.81	298	1.7	550	87

The two bullets in the product code indicate choice of mounting arrangement, voltage and frequency (see ordering information page).

- ¹⁾ Temperature rise class F.
- ²⁾ Special winding for 415V 50 Hz.
- ³⁾ 415 V 50 Hz and 440 V 60 Hz on request.
- ⁴⁾ On request.
- ⁵⁾ Please check technical construction with ABB.

General purpose open drip proof motors

Technical data for squirrel cage

three phase motors, steel frame

IP 23 S – IC 01 – Insulation class F, temperature rise class B

Output kW	Motor type	Product code	r/min	Efficiency Speed %	Power factor 100%	Current		Torque			
						I_N cos φ A	I_s I_N	T_N Nm	T_s T_N	T_{max} T_N	
1000 r/min = 6 poles			400 V 50 Hz			Basic design					
75	M2FA 280 SA	3GFA 283 110-••A	987	92.8	0.76	155	5.8	725	1.9	2.2	
90	¹⁾ M2FA 280 SMA	3GFA 283 210-••A	987	93.1	0.76	187	6.1	870	2.0	2.3	
110	M2FA 315 SA	3GFA 313 110-••A	988	93.5	0.81	210	7.4	1062	1.7	2.6	
132	M2FA 315 SMA	3GFA 313 210-••A	988	94.0	0.83	248	7.6	1275	1.8	2.7	
160	M2FA 315 MB	3GFA 313 320-••A	988	94.1	0.82	300	8.2	1545	1.9	2.8	
185	¹⁾ M2FA 315 LA	3GFA 313 510-••A	987	94.4	0.83	346	8.5	1788	1.9	2.9	
200	M2FA 355 SA	3GFA 353 110-••A	990	94.7	0.82	373	7.1	1927	1.6	2.5	
250	M2FA 355 SB	3GFA 353 120-••A	990	94.8	0.83	457	7.3	2409	1.6	2.5	
300	M2FA 355 MA	3GFA 353 310-••A	990	95.1	0.81	541	7.2	2894	1.7	2.4	
1000 r/min = 6 poles			400 V 50 Hz			High-output design					
110	¹⁾ M2FA 280 MB	3GFA 283 320-••A	987	93.6	0.76	227	6.5	1063	2.1	2.3	
750 r/min = 8 poles			400 V 50 Hz			Basic design					
55	M2FA 280 SA	3GFA 284 110-••A	738	91.2	0.78	117	5.6	711	1.2	2.0	
75	¹⁾ M2FA 280 SMA	3GFA 284 210-••A	738	91.8	0.76	161	6.1	970	1.4	2.1	
90	M2FA 315 SMA	3GFA 314 210-••A	739	92.9	0.79	183	6.8	1162	1.7	2.5	
110	M2FA 315 MB	3GFA 314 320-••A	739	93.4	0.78	224	7.3	1420	1.8	2.6	
132	¹⁾ M2FA 315 LA	3GFA 314 510-••A	739	93.3	0.78	268	7.2	1706	1.8	2.6	
150	M2FA 355 SA	3GFA 354 110-••A	740	93.4	0.75	318	5.3	1934	1.3	2.0	
185	¹⁾ M2FA 355 SB	3GFA 354 120-••A	740	93.9	0.76	381	5.6	2385	1.4	2.0	
750 r/min = 8 poles			400 V 50 Hz			High-output design					
90	¹⁾ M2FA 280 MB	3GFA 284 320-••A	739	92.6	0.75	192	6.7	1162	1.6	2.2	

The two bullets in the product code indicate choice of mounting arrangement, voltage and frequency (see ordering information page).

¹⁾ Temperature rise class F.

²⁾ On request.

General purpose open drip proof motors

Technical data for squirrel cage

three phase motors, steel frame

IP 23 S – IC 01 – Insulation class F, temperature rise class B

Output kW	Motor type	Speed r/min	Efficiency %	Power factor cos φ	Current I _N A	Speed r/min	Efficiency %	Power factor cos φ	Current I _N A	Moment of inertia J = ¼ GD ² kgm ²	Weight kg	Sound pressure level L _p dB(A)
1000 r/min = 6 poles		380 V 50 Hz				415 V 50 Hz				Basic design		
75	M2FA 280 SA	985	92.7	0.79	158	986	92.7	0.79	146	1.65	440	²⁾
90	¹⁾ M2FA 280 SMA	986	92.9	0.79	190	987	93.1	0.78	178	2.6	475	²⁾
110	M2FA 315 SA	986	93.4	0.85	212	989	93.5	0.78	209	2.9	630	²⁾
132	M2FA 315 SMA	986	93.7	0.85	256	989	94.0	0.81	242	3.8	720	²⁾
160	M2FA 315 MB	986	94.0	0.85	310	989	94.1	0.8	300	4.5	810	²⁾
185	¹⁾ M2FA 315 LA	986	94.2	0.85	352	988	94.4	0.79	340	5.4	915	²⁾
200	M2FA 355 SA	989	94.5	0.84	385	990	94.7	0.81	364	8.7	1220	²⁾
250	M2FA 355 SB	989	94.7	0.84	478	991	94.8	0.81	446	10.2	1320	²⁾
300	M2FA 355 MA	988	94.9	0.85	546	991	95.1	0.82	528	12.5	1550	²⁾
1000 r/min = 6 poles		380 V 50 Hz				415 V 50 Hz				High-output design		
110	¹⁾ M2FA 280 MB	986	93.4	0.79	231	988	93.6	0.77	219	2.9	545	²⁾
750 r/min = 8 poles		380 V 50 Hz				415 V 50 Hz				Basic design		
55	M2FA 280 SA	736	89.9	0.81	119	739	91.2	0.77	114	1.85	460	²⁾
75	¹⁾ M2FA 280 SMA	736	91.7	0.79	161	739	91.8	0.75	157	2.2	500	²⁾
90	M2FA 315 SMA	738	92.7	0.80	186	740	92.9	0.76	179	3.8	720	²⁾
110	M2FA 315 MB	738	93.2	0.80	233	740	93.4	0.76	219	4.5	810	²⁾
132	¹⁾ M2FA 315 LA	737	93.1	0.80	275	740	93.3	0.76	262	5.4	915	²⁾
150	M2FA 355 SA	739	93.3	0.77	322	741	93.4	0.73	311	8.7	1220	²⁾
185	¹⁾ M2FA 355 SB	739	93.7	0.78	393	741	93.9	0.74	372	10.2	1320	²⁾
750 r/min = 8 poles		380 V 50 Hz				415 V 50 Hz				High-output design		
90	¹⁾ M2FA 280 MB	738	92.5	0.78	192	740	92.6	0.74	188	2.9	575	²⁾

The two bullets in the product code indicate choice of mounting arrangement, voltage and frequency (see ordering information page).

¹⁾ Temperature rise class F.

²⁾ On request.

General purpose open drip proof motors

Technical data for squirrel cage

three phase motors, steel frame, two speed

IP 23 S – IC 01 – Insulation class F, temperature rise class F

Output kW	Motor type	Product code	Speed r/min	Efficiency %	Power factor cos φ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg		
						I _N A	I _s I _N	T _N Nm	T _s T _N	T _{max} T _N				
1500/1000 r/min = 4/6-poles													Fan drive. two separate windings	
90/30	M2FA 280 SMA	3GFA 288 214-••A	1480/987	91.0/86.3	0.85/0.76	168/65	6.7/7.2	581/290	1.7/2.6	2.7/2.4	1.4	490		
110/32	M2FA 280 MB	3GFA 288 324-••A	1482/988	92.3/87.4	0.84/0.77	204/69	7.4/7.3	709/309	2.1/2.7	2.8/2.7	1.7	550		
132/40	M2FA 315 SMA	3GFA 318 214-••A	1484/989	92.6/89.2	0.85/0.79	239/84	6.3/6.4	849/386	1.5/2.1	2.4/2.4	2.3	735		
170/50	M2FA 315 MB	3GFA 318 324-••A	1486/988	93.4/89.7	0.83/0.78	310/103	7.3/6.3	1092/483	1.8/2.3	2.8/2.3	2.9	850		
200/63	M2FA 315 LA	3GFA 318 514-••A	1486/989	93.9/90.8	0.83/0.76	362/130	7.7/7.4	1285/608	2.0/2.8	2.9/2.7	3.5	970		
260/85	M2FA 355 SA	3GFA 358 114-••A	1487/990	94.5/91.8	0.83/0.78	473/171	6.3/7.0	1670/820	1.4/2.3	2.4/2.4	5.5	1220		
340/100	M2FA 355 MA	3GFA 358 314-••A	1488/989	95.0/92.0	0.82/0.79	620/199	7.0/6.5	2182/966	1.5/2.1	2.7/2.3	6.5	1320		
400/120	M2FA 355 LA	3GFA 358 514-••A	1487/992	94.9/92.1	0.88/0.78	680/240	7.0/8.8	2569/1155	1.3/2.3	2.4/3.0	7.8	1550		
1500/750 r/min = 4-8 poles													Fan drive. Dahlander-Connection	
100/25	M2FA 280 SMA	3GFA 288 219-••A	1478/735	92.0/87.6	0.85/0.68	185/62	6.2/4.1	646/325	1.5/1.5	2.4/1.7	1.4	490		
110/28	M2FA 280 MB	3GFA 288 329-••A	1479/735	92.4/88.3	0.86/0.68	199/67	6.7/4.1	710/364	1.7/1.5	2.4/1.7	1.7	550		
140/35	M2FA 315 SMA	3GFA 318 219-••A	1485/740	93.5/89.9	0.83/0.64	259/87	6.8/4.7	900/452	1.5/1.6	2.6/1.9	2.3	735		
185/46	M2FA 315 MB	3GFA 318 329-••A	1483/738	93.7/90.5	0.85/0.67	333/110	6.5/4.2	1191/595	1.5/1.4	2.4/1.7	2.9	850		
220/55	M2FA 315 LA	3GFA 318 519-••A	1485/739	94.2/91.2	0.83/0.64	397/136	7.6/4.6	1415/711	1.7/1.5	2.8/2.0	3.5	975		
250/63	M2FA 355 MA	3GFA 358 319-••A	1486/740	94.7/92.2	0.86/0.66	440/148	6.3/4.0	1607/813	1.1/1.0	2.3/1.7	6.5	1320		
315/80	M2FA 355 LA	3GFA 358 519-••A	1489/741	95.1/93.0	0.84/0.64	560/195	8.0/5.0	2020/1031	1.7/1.4	2.9/2.0	7.8	1550		
1500/1000 r/min = 4/6 poles													Constant torque, two separate windings	
75/50	M2FA 280 SMA	3GFA 289 214-••A	1480/984	89.6/87.9	0.86/0.77	140/105	6.2/6.3	484/485	1.5/2.4	2.3/2.4	1.4	490		
90/60	M2FA 280 MB	3GFA 289 324-••A	1481/987	91.0/89.3	0.86/0.73	169/131	6.8/6.9	580/581	1.7/2.7	2.5/2.6	1.7	550		
120/80	M2FA 315 SMA	3GFA 319 214-••A	1486/988	91.8/91.2	0.85/0.75	225/171	6.3/6.2	771/773	1.5/2.3	2.5/2.3	2.3	735		
150/100	M2FA 315 MB	3GFA 319 324-••A	1488/989	92.6/91.8	0.82/0.75	285/215	7.6/6.6	986/966	1.8/2.5	2.9/2.5	2.9	850		
185/125	M2FA 315 LA	3GFA 319 514-••A	1486/988	93.4/92.2	0.83/0.73	345/265	7.8/6.8	1189/1208	1.9/2.8	2.9/2.5	3.5	970		
200/130	M2FA 355 SA	3GFA 359 114-••A	1487/991	93.5/92.9	0.88/0.83	360/248	7.8/9.0	1284/1253	1.2/2.3	3.0/3.2	8.5	1220		
240/160	M2FA 355 MA	3GFA 359 314-••A	1489/991	94.1/93.4	0.84/0.84	439/289	8.6/8.8	1539/1542	1.6/2.4	3.4/2.8	10.2	1320		
1500/750 r/min = 4-8 poles													Constant torque, Dahlander-Connection	
85/48	M2FA 280 SMA	3GFA 289 219-••A	1480/740	91.2/89.9	0.84/0.65	159/119	5.5/5.4	548/619	1.5/2.7	2.2/2.3	2.6	475		
100/55	M2FA 280 MB	3GFA 289 329-••A	1479/740	91.2/90.6	0.87/0.70	183/125	5.4/5.5	646/710	1.6/2.5	2.1/2.2	2.9	545		
125/80	M2FA 315 SMA	3GFA 319 219-••A	1481/739	92.0/91.6	0.88/0.75	220/164	6.0/5.8	806/1034	1.3/1.8	2.1/2.0	4.1	755		
150/95	M2FA 315 MB	3GFA 319 329-••A	1481/739	92.4/91.9	0.88/0.75	262/194	6.1/5.7	967/1228	1.4/1.8	2.1/2.0	4.9	845		
185/120	M2FA 315 LA	3GFA 319 519-••A	1482/739	92.8/92.2	0.88/0.75	325/247	6.5/5.9	1192/1551	1.5/1.9	2.2/2.0	5.8	950		
225/125	M2FA 355 MA	3GFA 359 319-••A	1486/743	93.6/91.8	0.91/0.73	386/271	6.7/6.2	1446/1607	1.1/1.6	2.4/2.5	10.2	1320		
300/160	M2FA 355 LA	3GFA 359 519-••A	1489/744	94.0/92.5	0.88/0.68	512/368	8.1/7.1	1924/2054	1.5/2.0	2.8/2.9	12.5	1550		

The two bullets in the product code indicate choice of mounting arrangement, voltage and frequency (see ordering information page).

Data for other number of poles and bigger frame sizes on request.

General purpose open drip proof motors - Variant codes

Code ¹⁾	Variant	Motor size			
		280	315	355	400
Balancing					
052	Vibration acc. to grade A (IEC 60034-14).	S	S	S	S
417	Vibration acc. to grade B (IEC 60034-14).	P	P	P	P
424	Full key balancing.	P	P	P	P
Bearings and lubrication					
036	Transport lock for bearings.	P	P	P	P
037	Roller bearing at D-end.	P	P	P	P
043	SPM nipples.	P	P	P	P
058	Angular contact bearing at D-end, shaft force away from bearing.	P	P	P	P
107	Pt100 2-wire in bearings.	P	P	P	P
420	Bearing mounted PTC-thermistors.	P	P	P	P
Branch standard designs					
209	Non-standard voltage or frequency (special winding).	P	P	P	P
Coupling					
035	Assembly of customer supplied coupling-half.	P	P	P	P
Heating elements					
450	Heating element, 100-120 V.	P	P	P	P
451	Heating element, 200-240 V.	P	P	P	P
Insulation system					
014	Winding insulation class H.	R	R	R	R
Mounting arrangements					
009	IM 2001 foot/flange mounted, from IM 1001 (B35 from B3).	P	P	P	P
066	Modified for non-standard mounting position (please specify IM xxxx). (must be ordered for all mounting arrangements excluding IM B3 (1001) and B5 (3001)).	P	P	P	P
Painting					
114	Special paint colour, standard grade.	P	P	P	P
Protection					
005	Protective roof, vertical motor, shaft down.	P	P	P	P
072	Radial seal at D-end.	P	P	P	P
Rating & instruction plates					
002	Restamping voltage, frequency and output, continuous duty.	P	P	P	P
095	Restamping output (maintained voltage, frequency), intermittent duty.	P	P	P	P
135	Mounting of additional identification plate, stainless.	P	P	P	P
161	Additional rating plate delivered loose.	P	P	P	P

¹⁾ Certain variant codes cannot be used together.

M = On modification of a stocked motor, or on new manufacture, the number per order may be limited.

R = On request

S = Included as standard

P = New manufacture only

Code ¹⁾	Variant	Motor size			
		280	315	355	400
Shaft & rotor					
069	Two shaft extensions as per basic catalogue.	P	P	P	P
070	One or two special shaft extensions, standard shaft material.	P	P	P	P
Stator winding temperature sensors					
121	Bimetal detectors, break type (NCC), (3 in series), 130°C, in stator winding.	P	P	P	P
122	Bimetal detectors, break type (NCC), (3 in series), 150°C, in stator winding.	P	P	P	P
123	Bimetal detectors, break type (NCC), (3 in series), 170°C, in stator winding.	P	P	P	P
125	Bimetal detectors, break type (NCC), (2x3 in series), 150°C, in stator winding.	P	P	P	P
127	Bimetal detectors, break type (NCC), (3 in series, 130°C & 3 in series, 150°C), in stator winding.	P	P	P	P
435	PTC-thermistors (3 in series), 130°C, in stator winding.	P	P	P	P
436	PTC-thermistors (3 in series), 150°C, in stator winding.	S	S	S	S
437	PTC-thermistors (3 in series), 170°C, in stator winding.	P	P	P	P
439	PTC-thermistors (2x3 in series), 150°C, in stator winding.	P	P	P	P
441	PTC-thermistors (3 in series, 130°C & 3 in series, 150°C), in stator winding.	P	P	P	P
442	PTC-thermistors (3 in series 150°C & 3 in series 170°C), in stator winding.	P	P	P	P
445	Pt100 2-wire in stator winding, 1 per phase.	P	P	P	P
446	Pt100 2-wire in stator winding, 2 per phase.	P	P	P	P
Terminal box					
021	Terminal box LHS, seen from D-end (= L prod.code).	P	P	P	P
180	Terminal box RHS, seen from (reconnection from D).	P	P	P	P
022	Cable entry LHS (seen from D-end).	P	P	P	P
468	Cable entry from D-end.	P	P	P	P
Testing					
145	Type test report from a catalogue motor, 400 V 50 Hz.	P	P	P	P
146	Type test with report for motor from specific delivery batch.	P	P	P	P
147	Type test with report for motor from specific delivery batch, customer witnessed.	P	P	P	P
148	Routine test report.	P	P	P	P
149	Testing according to separate test specification.	R	R	R	R
222	Torque/speed curve, type test and multi-point load test with report for motor from specific delivery batch.	P	P	P	P
153	Reduced test for classification society.	P	P	P	P
760	Vibration level test.	P	P	P	P
761	Vibration spectrum test.	P	P	P	P
762	Noise level test.	P	P	P	P
763	Noise spectrum test.	P	P	P	P

¹⁾ Certain variant codes cannot be used together.

M = On modification of a stocked motor, or on new manufacture, the number per order may be limited.

R = On request

S = Included as standard

P = New manufacture only

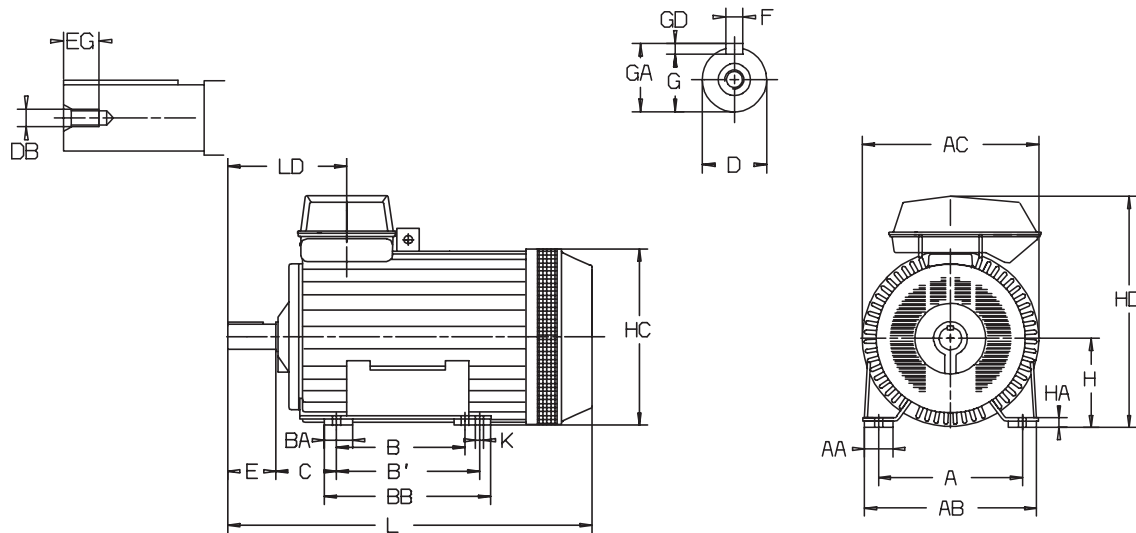
General purpose open drip proof motors

Sizes 280 - 315

Dimension drawings

Foot-mounted; IM B3 (IM 1001), IM B6 (IM 1051), IM B8 (IM 1071), IM V5 (IM 1011)

Terminal box top-mounted



Motor size	Poles	A	AA	AB	AC	B	B'	BA	BB	C	D	DB	E	EG
280 SA	4-8	457	80	545	555	368	-	100	450	190	80	M20	170	40
280 SMA	2	457	80	545	555	368	419	100	501	190	65	M20	140	40
280 SMA	4-8	457	80	545	555	368	419	100	501	190	80	M20	170	40
280 MB	2	457	80	545	555	419	-	100	501	190	65	M20	140	40
280 MB	4-8	457	80	545	555	419	-	100	501	190	80	M20	170	40
315 SA	2	508	100	622	624	406	-	100	535	216	70	M20	140	40
315 SA	4-6	508	100	622	624	406	-	100	535	216	90	M24	170	48
315 SMA	2	508	100	622	624	406	457	100	540	216	70	M20	140	40
315 SMA	4-8	508	100	622	624	406	457	100	540	216	90	M24	170	48
315 MB, MC	2	508	100	622	624	457	-	100	540	216	70	M20	140	40
315 MB	4-8	508	100	622	624	457	-	100	540	216	90	M24	170	48
315 LA, LB	2	508	100	622	624	508	-	100	592	216	70	M20	140	40
315 LA, LB	4-8	508	100	622	624	508	-	100	592	216	90	M24	170	48

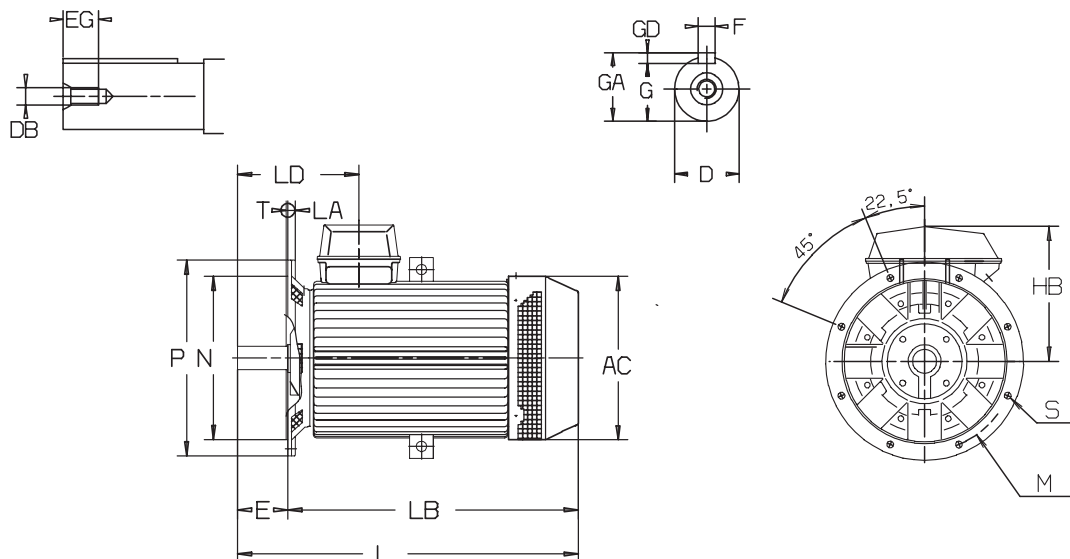
Motor size	Poles	F	G	GA	GD	H	HA	HC	HD	K	L	LD
280 SA	4-8	22	71	85	14	280	32	556	730	24	1020	415
280 SMA	2	18	58	69	11	280	32	556	730	24	1060	385
280 SMA	4-8	22	71	85	14	280	32	556	730	24	1090	415
280 MB	2	18	58	69	11	280	32	556	730	24	1120	385
280 MB	4-8	22	71	85	14	280	32	556	730	24	1150	415
315 SA	2	20	62.5	74.5	12	315	32	625	820	28	1123	392
315 SA	4-6	25	81	95	14	315	32	625	820	28	1153	422
315 SMA	2	20	62.5	74.5	12	315	32	625	820	28	1223	392
315 SMA	4-8	25	81	95	14	315	32	625	820	28	1153	422
315 MB, MC	2	20	62.5	74.5	12	315	32	625	820	28	1223	392
315 MB	4-8	25	81	95	14	315	32	625	820	28	1253	422
315 LA, LB	2	20	62.5	74.5	12	315	32	625	820	28	1293	392
315 LA, LB	4-8	25	81	95	14	315	32	625	848	28	1323	422

Tolerances:

A,B	ISO js 14	H	0, -0.5 (M2FA 250)
D	ISO m6		0, -1.0 (M2FA 280-315)
F	ISO h9		

Dimension drawings

Flange-mounted; IM B5 (IM 3001), IM V1 (IM 3011)



M000106

Motor size	Poles	AC	D	DB	E	EG	F	G	GA	GD	HB
280 SA	4-8	551	80	M20	170	40	22	71	85	14	450
280 SMA	2	551	65	M20	140	40	18	58	69	11	450
280 SMA	4-8	551	80	M20	170	40	22	71	85	14	450
280 MB	2	551	80	M20	140	40	18	58	69	11	450
280 MB	4-8	551	80	M20	170	40	22	71	85	14	450
315 SA	2	620	70	M20	140	40	20	62.5	74.5	12	505
315 SA	4-6	620	90	M24	170	48	25	81	95	14	505
315 SMA	2	620	70	M20	140	40	20	62.5	74.5	12	505
315 SMA	4-8	620	90	M24	170	48	25	81	95	14	505
315 MB, MC	2	620	70	M20	140	40	20	62.5	74.5	12	505
315 MB	4-8	620	90	M24	170	48	25	81	95	14	505
315 LA	2	620	70	M20	140	40	20	62.5	74.5	12	505
315 LA	4-8	620	90	M24	170	48	25	81	95	14	505
315 LB	2	620	70	M20	140	10	20	62.5	74.5	12	533

Motor size	Poles	L	LA	LB	LD	M	N	P	S	T
280 SA	4-8	1020	25	850	410	600	550	660	23	6
280 SMA	2	1060	25	920	380	600	550	660	23	6
280 SMA	4-8	1090	25	920	410	600	550	660	23	6
280 MB	2	1120	25	980	380	600	550	660	23	6
280 MB	4-8	1150	25	980	410	600	550	660	23	6
315 SA	2	1123	25	983	390	740	680	800	23	6
315 SA	4-6	1153	25	983	420	740	680	800	23	6
315 SMA	2	1223	25	1083	390	740	680	800	23	6
315 SMA	4-8	1153	25	983	420	740	680	800	23	6
315 MB, MC	2	1223	25	1083	390	740	680	800	23	6
315 MB	4-8	1253	25	1083	420	740	680	800	23	6
315 LA	2	1293	25	1153	390	740	680	800	23	6
315 LA	4-8	1323	25	1153	420	740	680	800	23	6
315 LB	2	1293	25	1153	390	740	680	800	23	6

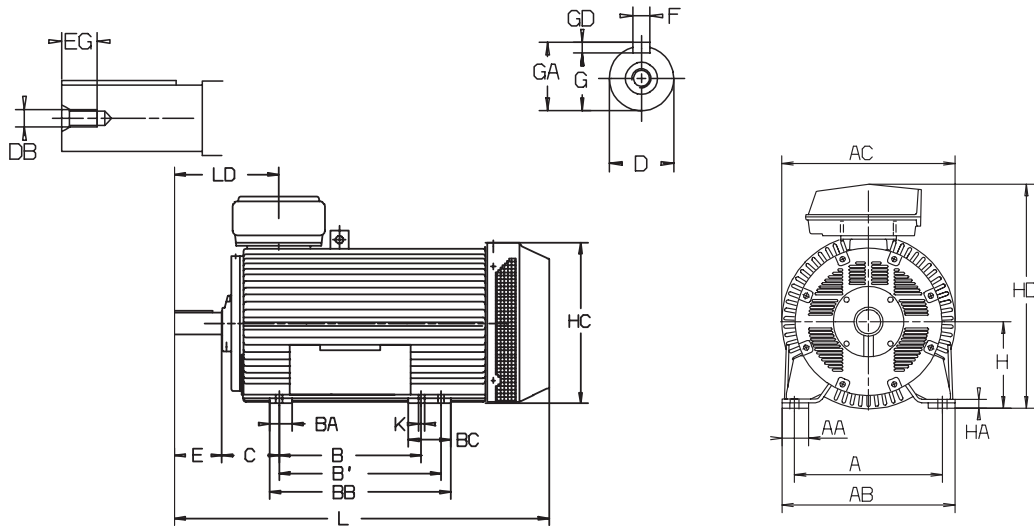
Tolerances:

D ISO m6
F ISO h9
N ISO js6

Dimension drawings

Foot-mounted; IM B3 (IM 1001), IM B6 (IM 1051), IM B8 (IM 1071), IM V5 (IM 1011)

Terminal box top-mounted



M000105

Motor size	Poles	A	AA	AB	AC	B	B'	BA	BB	BC	C	D	DB	E	EG
355 S_	2	610	110	714	716	500	-	100	584	-	254	75	M20	140	40
355 SA	4-8	610	110	714	716	500	-	100	584	-	254	100	M24	210	48
355 SB,SC	4	610	110	714	716	500	-	100	584	-	254	100	M24	210	48
355 SB,SC	6-8	610	110	714	716	500	-	100	584	-	254	100	M24	210	48
355 M_	2	610	110	714	716	560	-	100	644	-	254	75	M20	140	40
355 M_	4	610	110	714	716	560	-	100	644	-	254	100	M24	210	48
355 M_	6-8	610	110	714	716	560	-	100	644	-	254	100	M24	210	48
355 L_	2	610	110	714	716	630	-	100	714	-	254	75	M20	140	40
355 L_	4	610	110	714	716	630	-	100	714	-	254	100	M24	210	48
355 L_	6-8	610	110	714	716	630	-	100	714	-	254	100	M24	210	48
355 LK_	2	610	110	714	716	630	710	100	802	180	254	75	M20	140	40
355 LK_	4-8	610	110	714	716	630	710	100	802	180	254	100	M24	210	48
400 LK_	2	686	140	820	810	710	800	140	935	220	280	90	M24	170	48
400 LK_	4-8	686	140	820	810	710	800	140	935	220	280	100	M24	210	48

Motor size	Poles	F	G	GA	GD	H	HA	HC	HD	K	L	LD
355 S_	2	20	67.5	79.5	12	355	36	713	920	28	1310	397
355 SA	4-8	28	90	106	16	355	36	713	892	28	1380	467
355 SB,SC	4	28	90	106	16	355	36	713	920	28	1380	467
355 SB,SC	6-8	28	90	106	16	355	36	713	892	28	1380	467
355 M_	2	20	67.5	79.5	12	355	36	713	920	28	1370	397
355 M_	4	28	90	106	16	355	36	713	920	28	1440	467
355 M_	6-8	28	90	106	16	355	36	713	892	28	1440	467
355 L_	2	20	67.5	79.5	12	355	36	713	920	28	1450	397
355 L_	4	28	90	106	16	355	36	713	920	28	1520	467
355 L_	6-8	28	90	106	16	355	36	713	892	28	1520	467
355 LK_	2	20	67.5	79.5	12	355	36	713	920	28	1590	397
355 LK_	4-8	28	90	106	16	355	36	713	920	28	1660	467
400 LK_	2	25	81	95	14	400	45	805	1003	35	1786	438
400 LK_	4-8	28	90	106	16	400	45	805	1003	35	1826	478

Tolerances:

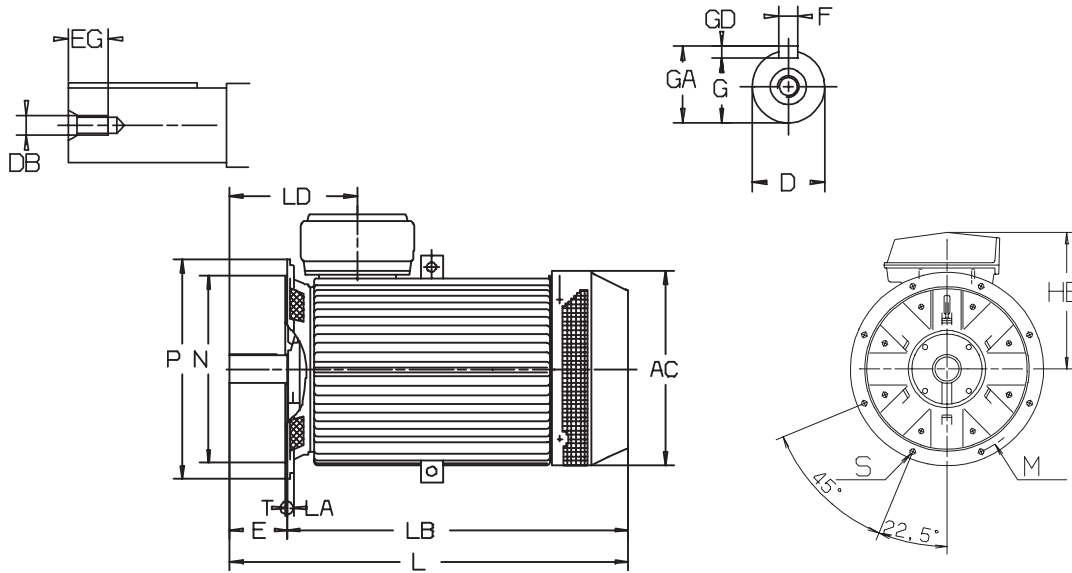
- A,B ISO js 14
- D ISO m6
- F ISO h9
- H 0, -1.0

General purpose open drip proof motors

Sizes 355 - 400

Dimension drawings

Flange-mounted; IM B5 (IM 3001), IM V1 (IM 3011)



M000107

Motor size	Poles	AC	D	DB	E	EG	F	G	GA	GD	HB
355 S_	2	716	75	M20	140	40	20	67.5	79.5	12	565
355 SA	4-8	716	100	M24	210	48	28	90	106	16	537
355 SB,SC	4	716	100	M24	210	48	28	90	106	16	565
355 SB,SC	6-8	716	100	M24	210	48	28	90	106	16	537
355 M_	2	716	75	M20	140	40	20	67.5	79.5	12	565
355 M_	4	716	100	M24	210	48	28	90	106	16	565
355 M_	6-8	716	100	M24	210	48	28	90	106	16	537
355 L_	2	716	75	M20	140	40	20	67.5	79.5	12	565
355 L_	4	716	100	M24	210	48	28	90	106	16	565
355 L_	6-8	716	100	M24	210	48	28	90	106	16	537
355 LK_	2	716	75	M20	140	40	20	67.5	79.5	12	565
355 LK_	4-8	716	100	M24	210	48	28	90	106	16	565
400 LK_	2	810	90	M24	170	48	25	81	95	14	565
400 LK_	4-8	810	100	M24	210	48	28	90	106	16	565

Motor size	Poles	L	LA	LB	LD	M	N	P	S	T
355 S_	2	1310	25	1170	395	740	680	800	23	6
355 SA	4-8	1380	25	1170	465	740	680	800	23	6
355 SB,SC	4	1380	25	1170	465	740	680	800	23	6
355 SB,SC	6-8	1380	25	1170	465	740	680	800	23	6
355 M_	2	1370	25	1230	395	740	680	800	23	6
355 M_	4	1440	25	1230	465	740	680	800	23	6
355 M_	6-8	1440	25	1230	465	740	680	800	23	6
355 L_	2	1450	25	1310	395	740	680	800	23	6
355 L_	4	1520	25	1310	465	740	680	800	23	6
355 L_	6-8	1520	25	1310	465	740	680	800	23	6
355 LK_	2	1590	25	1450	395	740	680	800	23	6
355 LK_	4-8	1660	25	1450	465	740	680	800	23	6
400 LK_	2	1786	28	1616	438	940	880	1000	28	6
400 LK_	4-8	1826	28	1616	478	940	880	1000	28	6

Tolerances:

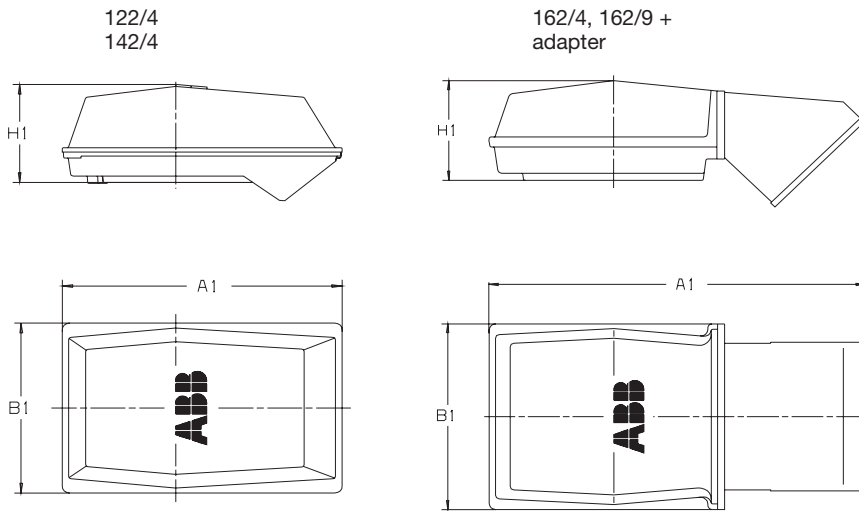
D	ISO m6
F	ISO h9
N	ISO js6

General purpose open drip proof motors

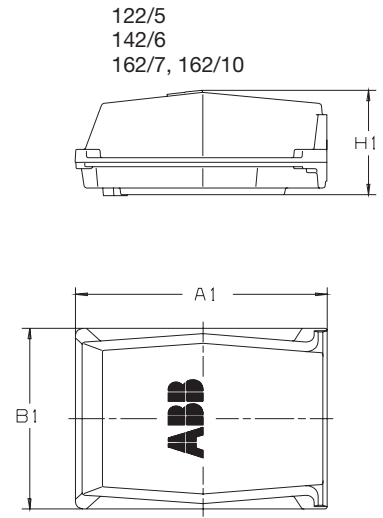
Dimension drawings

Terminal box in standard design
with 6 terminals

Top-mounted terminal box:



Side-mounted terminal box:



M000080

Terminal box type	Motor size	A1	B1	H1
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Top-mounted terminal box:

122/4	280	455	280	177
142/4	315 - 355	536	349	197
162/4, 162/9 + Adapter	315 - 400	787	410	226

Side-mounted terminal box:

122/5	280	383	280	180
142/6	315 - 355	426	347	201
162/7, 162/10	315 - 400	508	412	226

Further details on terminal boxes on earlier pages.
For motor dimensions please see dimension drawings on earlier pages.

Rating plate

The rating plate is in table form giving values for speed, current and power factor for six voltages.

ABB Oy, Motors Vaasa, Finland						
3~ Motor M2FA 315 MB 4 B3						
IEC 315 S/M 80						
S1				No. 0320-010119452		
				Ins.cl. F		IP 23 S
V	Hz	kW	r/min	▲	cosφ	Duty
690 Y	50	250	1481	261	0,83	S1
400 D	50	250	1481	452	0,83	S1
660 Y	50	250	1479	271	0,86	S1
380 D	50	250	1479	470	0,86	S1
415 D	50	250	1482	441	0,83	S1
440 D	60	287	1779	460	0,86	S1
Prod. code 3GBA313220-ADD						
				Nmax		r/min
6319/C3		6316/C3				850 kg
				ABB		IEC 60034-1

M000109

5

General purpose open drip proof motors in brief, basic design

Motor frame size		280	315	355	400	
Stator	Material	Profile-pressed sheet steel				
	Paint colour shade	Blue, Munsell 8B 4.5/3.25 / NCS 4822-B05G / RAL 5014				
	Paint thickness	Two-pack epoxy paint, thickness $\geq 70 \mu\text{m}$				
Bearing end shields	Material	Cast iron GG 20/GRS 200				
	Paint colour shade	Blue, Munsell 8B 4.5/3.25 / NCS 4822-B05G / RAL 5014				
	Paint thickness	Two-pack epoxy paint, thickness $\geq 70 \mu\text{m}$				
Bearings	D-end	2-pole 4-12 poles	6316/C4 6319/C3	6316/C4 6319/C4	on request 6322/C3	on request 6322/C3
	N-end	2-pole 4-12 poles	6316/C4 6316/C3	6316/C4 6316/C3	on request 6319/C3	on request 6319/C3
Axially-locked bearings	Inner bearing cover	As standard, locked at D-end				
Bearing seal		V-ring as standard, radial seal on request				
Lubrication		Regreasing nipples, M10x1 Grease for bearing temperatures -30°C to $+120^{\circ}\text{C}$				
Rating plate		Stainless steel, with individual serial number				
SPM-nipples		On request				
Terminal box	Frame material	Cast iron GG 15 / GRS 150				
	Cover material	Cast iron GG 15 / GRS 150				
	Cover screw material	Steel 5G, coated with zinc and yellow chromated				
Connections	Cable	2 - 4 pole 6 pole	2 x M63 2 x M63	2 x $\text{Ø}50/80$ 2 x $\text{Ø}60$	2 x $\text{Ø}80$ 2 x $\text{Ø}60/80$	
	Terminals		6 terminals for connection with cable lugs (not included)			
Fan	Material	Siluminium				
Fan cover	Material	Sheet steel				
	Paint colour shade	Blue, Munsell 8B 4.5/3.25 / NCS 4822-B05G / RAL 5014				
	Paint thickness	Two-pack epoxy polyester paint, thickness $\geq 80 \mu\text{m}$				
Stator winding	Material	Copper				
	Insulation	Insulation class F; temperature rise class B unless otherwise stated.				
	Winding protection	PTC-thermistors 150°C , 3 in series, as standard				
Rotor winding	Material	Pressure die-cast aluminium				
Balancing method		Half key balancing as standard				
Key way		Closed key way				
Heating elements	On request	50 W	2x50 W	2x65 W	2x65 W	
Drain holes		As standard, open on delivery				
Enclosure		IP 23S				
Cooling method		IC 01				

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
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Благовещенск (4162)22-76-07
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Вологда (8172)26-41-59
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Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
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Красноярск (391)204-63-61
Курск (4712)77-13-04
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Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
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Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
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Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47