

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
Ноябрьск (3496)41-32-12
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

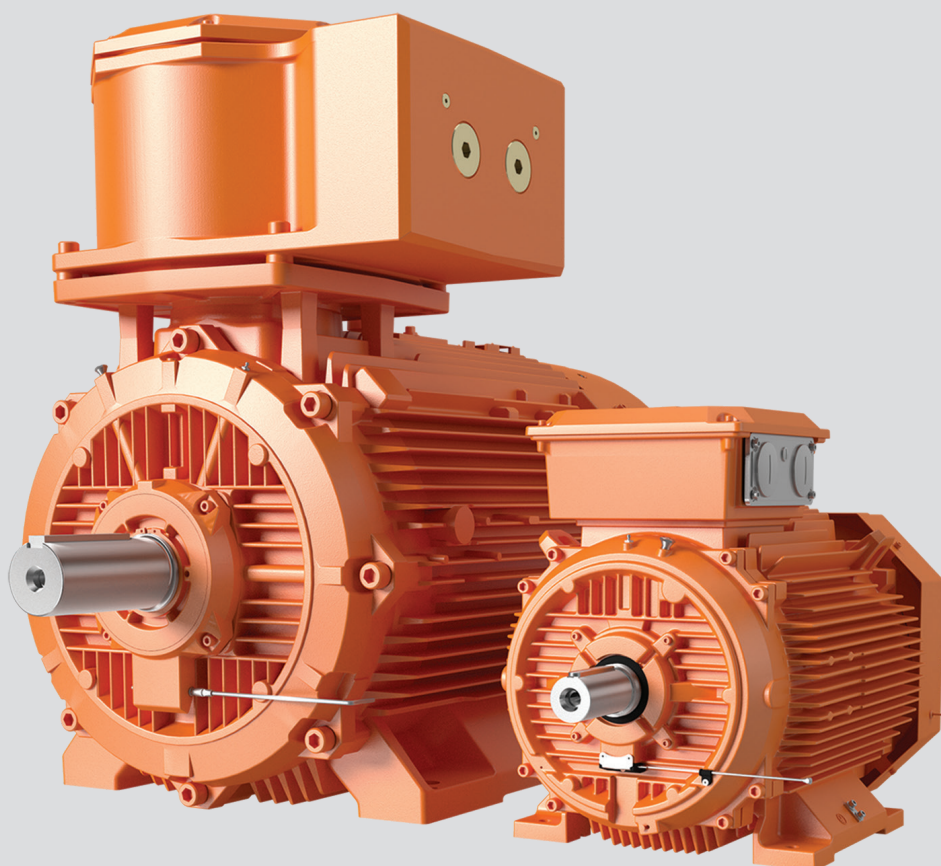
<https://abbengines.nt-rt.ru/> || aeg@nt-rt.ru

CATALOG | MAY 2018

Low voltage

Mining motors

440 V 60 Hz



With expertise, and a comprehensive portfolio of products and life-cycle services, we help value-minded industrial customers improve their energy efficiency and productivity.

Low voltage mining motors for 440 V 60 Hz markets

4	General information
4	Introduction to mining
7	Energy efficiency and safety regulation
10	Cast iron mining motors
10	Cast iron mining motors features
11	Technical data IE2
17	Technical data IE3
23	Dimension drawings
25	Total product offering
26	ABB's portfolio of drives

Introduction to mining



ABB has over 125 years of experience in manufacturing low voltage (LV) motors, and has been supplying mining motors from iron ore mines in Sweden and copper mines in Chile to coal mines in Australia. They are deployed in a broad range of applications, including conveyors, slurry and dewatering pumps, screens, ventilation fans, drill rigs, as well as crushers and mills.

ABB supplies two LV motor ranges for mining: cast iron motors suitable for the majority of mining applications and certified Ex d flameproof motors for group I applications where explosive gases may be present.

The mining motors are products of ABB's strong commitment to R&D, which delivers new technologies that create real value for motor users. Recent examples are higher efficiency new technology motors as well as solutions for remote condition monitoring that enable plant operators to reduce downtime, increase motor lifetime and save energy.

In highly competitive global commodities markets, safe, reliable and efficient motors from ABB help mine operators to strengthen their competitive edge by maximizing productivity, minimizing downtime and reducing costs.

Challenging conditions for electric motors

Mines are tough environments for electrical equipment, and ABB mining motors are designed to withstand harsh conditions above and below ground. Challenges that have to be faced include dust and mineral particles, vibration, moisture, heat and temperature fluctuations.

Dust and mineral particles tend to accumulate on the motor frame. This reduces heat dissipation, with the result that the motor will run hotter. The particles cause wear in cooling fans and on the bearing sealing system in motors fitted with conventional contacting rubber lip seals. Compromised seals allow dust, water and other contaminants to enter the bearing housing, which leads to deterioration of the grease and premature bearing failure.

Heavy vibration, which is typical of crusher and screening applications, causes bearing wear and fatigue fractures in the frame or feet. The insulation, particularly the winding overhang, can also be affected if it is not adequately braced and impregnated.

Moisture accelerates corrosion, especially in conjunction with mineral dust. The presence of moisture depends on the application and general site conditions. Moisture is a particular problem in underground coal mining applications, with possible sources of moisture including ingress of water from the surrounding bedrock, use of water sprays for dust control, and ventilation systems that use water mist to cool the incoming air. Excess heat can cause the grease in the bearings to lose its lubrication capabilities. As a general rule, the lifetime of grease is halved for every 15°C increase in bearing temperature. Excessive heat can also damage the insulation. To avoid these problems, motors should be correctly dimensioned for their application. It is recommended that temperature rise is maintained at class B (80 K) or below to ensure reasonable bearing temperatures.

Cast iron or Ex d flameproof

ABB cast iron motors are suitable for mining operations both above and below ground, including most mines extracting iron, copper, gold, aluminum, diamonds, rare earth minerals, etc.

In cases where an explosive atmosphere may be present – due to flammable gas – certified Ex d flameproof (group I) motors must be used. Explosive atmospheres are usually associated with underground coal mining. The flammable gas is generally methane, which is released from coal seams.

Special features for mining motors

ABB's mining motors are based on proven, reliable platforms with critical components upgraded to ensure they meet and exceed the challenges of the mining sector.

	Cast iron mining motors	Ex d flameproof mining motors
IP66 enclosures	•	•
Labyrinth seals	• *	• **
Steel fan	•	•
Winding temperature detectors (PTC)	•	•
Reinforced fan cover	-	•
Winding heater (available as option)	-	•

* Shaft height 160 mm and above. Smaller motors fitted with rubber lip seals.

** On small motors (shaft height 80-132 mm) D-end has labyrinth seal and N-end rubber lip seal. On larger motors both ends have metal labyrinth seal.

	Cast iron mining motors	Ex d flameproof mining motors
C5 category painting (for highly corrosive environments)	- (available as option)	•
Stainless external hardware	- (available as option)	•
Internal corrosion protection	- (available as option)	•

* Shaft height 160 mm and above. Smaller motors fitted with rubber lip seals.

** On small motors (shaft height 80-132 mm) D-end has labyrinth seal and N-end rubber lip seal. On larger motors both ends have metal labyrinth seal.

IP66 enclosures give maximum protection against the ingress of high pressure water, dust and volatile substances. IP66 protection means that the motors can be rinsed with water to clean off dust and dirt and ensure cooler running. The motors are finished in high visibility orange paint.

Labyrinth type bearing seals provide excellent protection against the entry of moisture and dust. These non-contacting seals are non-wearing and maintenance-free. Conventional rubber lip seals may require periodical replacement in dusty environments.

The fan is made of steel, which is more durable against abrasive airborne particles than the composite material used in non-mining motors.

PTC type winding temperature detectors help to further enhance safety and reliability. Temperature detectors protect and safeguard the winding from overheating.

Ex d motors also include a reinforced fan cover, winding heaters, additional internal corrosion protection, stainless steel external hardware and an offshore grade paint finish. These features further enhance the Ex d motors' internal and external corrosion protection as well as their ability to resist damage from impacts.

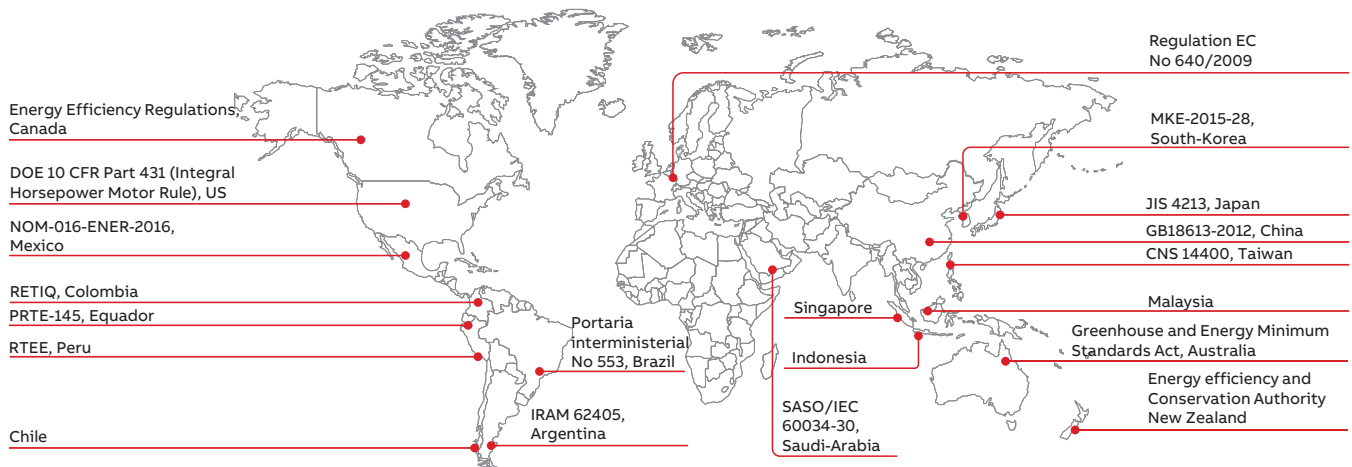
The motor windings are suitable for any type of variable speed drive (VSD) supply up to 500 V without filters. Special reinforced insulation for VSD duty must be used with supplies above 500 V.

ABB mining motors are suitable as-is for most mining applications, but if required they can be enhanced by adding instrumentation and other accessories, or further tailored to include localized special features.

Support and service

ABB's mining motors are covered by the global ABB sales, support and service network – the most extensive network of any motor vendor. With a presence in more than 100 countries around the world, support is never far away – no matter how remote the location of the customer's mine.

Energy efficiency and safety regulation



Mining is global industry present on all continents and in almost every country. Legal regulations such as minimum efficiency performance standards (MEPS) and explosive atmosphere certifications vary between countries. Especially Ex-certification schemes among mining industry are geographically very fragmented. Where as in chemical, oil and gas industry almost the entire world can be covered with IECEx certification it is different in mining. In explosive atmosphere mining local, country specific, certification schemes have significant role and compliance to local scheme is mandatory. ABB has wide coverage in global and local explosive atmosphere certifications for electric motors. It is always advisable to let ABB know the country where the motor is to be commissioned.

Our motors are available in IEC efficiency classes IE2, IE3 and IE4, enabling compliance with MEPS standards in Europe and around the world. IE3 and IE4 premium efficiency motors not only use less energy but also run cooler, which helps to extend insulation and bearing lifetimes as well as reducing heat loading in underground mines.

Cast iron mining motors

10	Cast iron mining motors features
11	Technical data IE2
11	3600 r/min motors
13	1800 r/min motors
15	1200 r/min motors
17	Technical data IE3
17	3600 r/min motors
19	1800 r/min motors
21	1200 r/min motors
23	Dimension drawings

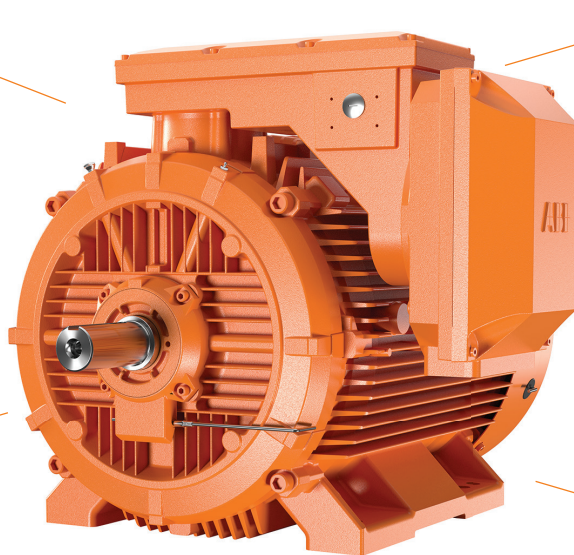
Cast iron mining motor features

Main terminal box can be relocated to either side of the motor using optional adapter on shaft height 225 and above.

Labyrinth seals on both ends from shaft height 160 and up.

Winding temperature detectors (PTC)

Class F insulation with class B temperature rise



Steel gland plate + metal closing plugs

Metal fan

Components cast from EN-GJL-200 and EN-GJL-250 grade material for extra strength.

Closable grease ejection port with handle located safely on side of motor.

Standard surface treatment.
Color RAL 2011 (orange).
IP 66 protection class

Cast iron mining motors are suitable for use in underground mines and open pit quarries. Typical applications include conveyors, pumps, fans, winches, crushers, mills and floatation tank agitators.

Cast iron mining motors

Output	0.55 - 1000 kW
Frame sizes	IEC 71 - 450
Poles	2 - 8
Efficiency classes	IE2, IE3, IE4
Voltages	230 – 1300 V (DOL) Up to 550 V (VSD)*

* Reinforced insulation for higher VSD voltages optionally available.

A robust steel fan is fitted to avoid wear caused by abrasive contaminants in the cooling air. The IP66 enclosure is dust tight and protects against powerful jets of water. All but the smallest motors in the range have labyrinth type bearing seals at both ends. These proven and safe seals protect against dust and water, as well as corrosion, and do not cause friction or require maintenance.

A steel gland plate and metal cable entry closing plugs complete the all steel and cast iron design.

Components are cast from high tensile strength EN-GJL-200 and -250 material.

The grease ports can be operated safely from the side of the motor without the need to reach close to the spinning shaft.

The cooling ribs on the end shields help to reduce bearing temperatures. Smooth, ribless end shields are available for vertical applications where it is necessary to prevent water from accumulating on top of the motor.

Technical data, 440 V 60 Hz

IE2 cast iron mining motors 3600 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB	
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S I _N	T _N Nm	T _I T _N	T _b T _N				
3600 r/min = 2 poles																
				440 V 60 Hz				CENELEC-design								
0.37	M3BP 71MA 2	3GBP071321---B	3369	76,2	76,6	74,1	0,82	0,79	5,2	1,03	2,4	2,6	0,00039	11	61	
0.55	M3BP 71MB 2	3GBP071322---B	3420	78,8	81,2	80,7	0,86	1,06	5,6	1,53	2,7	3,2	0,00051	11	59	
0.75	M3BP 80MB 2	3GBP081322---B	3500	80,4	78,8	74,5	0,76	1,63	8,7	2	4,5	4,8	0,001	16	60	
1.1	M3BP 80MC 2	3GBP081323---B	3475	82,8	82	79,1	0,82	2,15	7,5	3,01	3,9	5	0,0012	18	63	
1.5	M3BP 90SLB 2	3GBP091322---B	3495	84,1	84	81,9	0,89	2,67	7,5	4,08	2,5	2,8	0,00254	24	72	
2.2	M3BP 90SLC 2	3GBP091323---B	3490	85,9	86,1	84,7	0,89	3,73	7,3	6	1,6	2,6	0,0028	25	67	
3	M3BP 100LB 2	3GBP101322---B	3525	87,6	86,6	83,7	0,88	5,26	9,1	8,11	3,1	3,8	0,00528	36	71	
4	M3BP 112MB 2	3GBP111322---B	3500	84,9	84,5	82,6	0,9	6,85	8,7	10,87	2,9	3,5	0,0058	37	73	
5.5	M3BP 132SMB 2	3GBP131322---B	3475	86	85,6	83,4	0,86	9,03	7,3	15,05	2,4	2,8	0,0128	68	73	
7.5	M3BP 132SMC 2	3GBP131324---B	3495	89,3	89,1	87	0,91	12,6	8,2	20,54	2,2	4	0,0136	70	73	
11	M3BP 160MLA 2	3GBP161410---G	3541	90,9	91,3	90,4	0,91	17,4	7,9	29,6	2,3	3,2	0,044	127	73	
15	M3BP 160MLB 2	3GBP161420---G	3539	90,9	91,4	90,5	0,9	23,5	7,9	40,4	2,5	3,4	0,053	141	73	
15	M3BP 160MLA 2	3GBP161410---G	3499	89,3	91,2	91,5	0,92	23,9	5,7	40,9	1,7	2,3	0,044	127	73	
18.5	M3BP 160MLC 2	3GBP161430---G	3536	91,6	92,3	91,8	0,92	28,6	7,9	49,9	2,8	3,5	0,063	170	73	
22	M3BP 180MLA 2	3GBP181410---G	3554	91,6	91,9	90,8	0,88	35,5	8,1	59,1	2,7	3,4	0,076	190	73	
27	M3BP 180MLA 2	3GBP181410---G	3538	91,5	92,3	92,2	0,89	43,5	6,6	72,8	2,2	2,8	0,076	190	73	
30	M3BP 200MLA 2	3GBP201410---G	3557	92,3	92,2	91	0,9	47	7,9	80,5	2,6	3,1	0,178	283	76	
37	M3BP 200MLB 2	3GBP201420---G	3560	92,9	92,8	91,5	0,9	57,8	8,5	99,2	2,8	3,3	0,196	298	76	
45	M3BP 225SMA 2	3GBP221210---G	3562	93,3	93,1	91,9	0,89	71,1	7,1	120	2,4	2,5	0,244	347	78	
55	M3BP 250SMA 2	3GBP251210---G	3568	93,5	93,4	92,1	0,88	87,2	7	147	2,1	2,8	0,507	405	79	
75	¹⁾ M3BP 280SMA 2	3GBP281210---G	3577	93	92,4	90,6	0,88	119	7,8	199	2	3,1	0,8	625	80	
90	¹⁾ M3BP 280SMB 2	3GBP281220---G	3576	93,6	93,2	91,8	0,9	140	7,6	239	2	2,9	0,9	665	82	
110	¹⁾ M3BP 315SMA 2	3GBP311210---G	3582	93,3	92,5	90,5	0,87	178	7,6	293	2	3,3	1,2	940	83	
132	¹⁾ M3BP 315SMB 2	3GBP311220---G	3581	94,1	93,5	91,9	0,89	207	7,6	351	2	3	1,4	940	83	
160	¹⁾ M3BP 315SMC 2	3GBP311230---G	3581	94,6	94,1	92,8	0,89	248	7,7	426	2,1	3	1,7	1025	83	
200	¹⁾ M3BP 315MLA 2	3GBP311410---G	3580	95	94,8	93,6	0,9	305	7,9	532	2,4	3	2,1	1190	83	
250	¹⁾ M3BP 355SMA 2	3GBP351210---G	3584	95,5	95,1	93,7	0,89	384	7,9	666	1,6	3,4	3	1600	86	
315	¹⁾ M3BP 355SMB 2	3GBP351220---G	3582	95,6	95,3	94,2	0,89	484	7,2	839	2,1	3	3,4	1680	86	
355	¹⁾ M3BP 355SMC 2	3GBP351230---G	3583	95,7	95,4	94,3	0,89	547	7,4	945	2	3	3,6	1750	88	
400	¹⁾ M3BP 355MLA 2	3GBP351410---G	3580	96,4	96	95	0,89	612	7,6	1067	2,1	2,9	4,1	2000	88	
450	¹⁾ M3BP 355MLB 2	3GBP351420---G	3583	96,7	96,4	95,5	0,91	673	8,2	1199	2,2	3,7	4,3	2080	88	
500	¹⁾ M3BP 355LKA 2	3GBP351810---G	3582	96,7	96,5	95,8	0,91	749	8,3	1333	2,2	3,9	4,8	2320	88	
560	²⁾ M3BP 400LA 2	3GBP401510---G	3589	96,9	96,8	96,4	0,89	856	8,1	1491	2,2	3,6	7,9	2950	86	
560	²⁾ M3BP 400LKA 2	3GBP401810---G	3589	96,9	96,8	96,4	0,89	856	8,1	1491	2,2	3,6	7,9	2950	86	
560	¹⁾ M3BP 355LKB 2	3GBP351820---G	3583	96,8	96,9	96,6	0,91	838	9	1492	2	3,7	5,2	2460	88	
630	²⁾ M3BP 400LB 2	3GBP401520---G	3587	96,9	96,9	96,8	0,9	948	7,9	1677	2,8	4,1	8,2	3050	86	
630	²⁾ M3BP 400LKB 2	3GBP401820---G	3587	96,9	96,9	96,8	0,9	948	7,9	1677	2,8	4,1	8,2	3050	86	
710	²⁾ M3BP 400LC 2	3GBP401530---G	3586	97,1	97	96,5	0,9	1064	7,7	1890	2,7	3,6	9,3	3300	86	
710	²⁾ M3BP 400LKC 2	3GBP401830---G	3586	97,1	97	96,5	0,9	1064	7,7	1890	2,7	3,6	9,3	3300	86	
800	²⁾ M3BP 450LA 2	3GBP451510---G	3590	97,4	97,2	96,5	0,88	1227	7,4	2128	1,2	3,2	12,2	4000	90	
900	²⁾ M3BP 450LB 2	3GBP451520---G	3590	96,9	96,7	96	0,86	1411	7,2	2394	1,4	3,1	13,5	4200	90	

¹⁾ -3dB(A) sound pressure level reduction with unidirectional fan construction. Direction of rotation must be stated when ordering, see variant codes 044 and 045.

²⁾ Unidirectional fan construction as standard. Direction of rotation must be stated when ordering, see variant codes 044 and 045.

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S I _N	T _N Nm	T _I T _N	T _b T _N			
				440 V 60 Hz	High-output-design										
22	M3BP 160MLD 2	3GBP161440...G	3539	91,6	92,3	91,8	0,92	34	8,6	59,3	3,1	3,8	0,063	170	73
27	M3BP 160MLE 2	3GBP161450...G	3525	92,3	93	92,5	0,92	41,9	9,3	72,9	3,3	3,9	0,072	184	73
30	M3BP 180MLB 2	3GBP181420...G	3553	92,3	92,7	92,1	0,9	47,1	8,1	80,6	2,8	3,4	0,092	208	73
45	M3BP 200MLC 2	3GBP201430...G	3559	93,3	93,3	92,3	0,89	71,1	8,5	120	2,9	3,4	0,196	298	76
55	M3BP 200MLD 2	3GBP201440...G	3555	93,5	93,9	93	0,9	85,3	8,2	147	2,8	3,3	0,217	314	76
55	M3BP 225SMB 2	3GBP221220...G	3563	93,4	93,3	92,1	0,89	86,5	6,8	147	2,2	2,5	0,274	369	78
75	M3BP 225SMC 2	3GBP221230...G	3570	94	94	92,9	0,89	117	8,2	200	3	3,1	0,309	396	78
75	M3BP 250SMB 2	3GBP251220...G	3572	94	93,9	93	0,9	115	8	200	2,6	3,1	0,583	451	79
80	M3BP 225SMD 2	3GBP221240...G	3566	94	94	93	0,89	124	7,8	214	2,8	2,9	0,329	410	78
90	M3BP 250SMC 2	3GBP251230...G	3572	94,9	94,9	94,1	0,89	139	7,9	240	2,4	3,1	0,644	487	79
110	¹⁾ M3BP 280SMC 2	3GBP281230...G	3578	93,9	93,6	92,4	0,91	169	8,1	292	2,3	3	1,15	725	82
160	¹⁾ M3BP 280MLB 2	3GBP281420...G	3576	95	94,9	94	0,92	240	7,9	426	2,6	3	1,55	890	84
250	¹⁾ M3BP 315LKA 2	3GBP311810...G	3580	95,1	94,9	93,9	0,89	386	8,4	666	2,6	2,9	2,65	1440	83
315	¹⁾ M3BP 315LKC 2	3GBP311830...G	3581	95,2	95	94,2	0,89	486	9,2	839	3,1	3,2	3,3	1630	83

¹⁾ -3dB(A) sound pressure level reduction with unidirectional fan construction. Direction of rotation must be stated when ordering, see variant codes 044 and 045.

²⁾ Unidirectional fan construction as standard. Direction of rotation must be stated when ordering, see variant codes 044 and 045.

Technical data, 440 V 60 Hz

IE2 cast iron mining motors 1800 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB	
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s I _N	T _N Nm	T _i T _N	T _b T _N				
1800 r/min = 4 poles																
				440 V 60 Hz				CENELEC-design								
0.25	M3BP 71MA 4	3GBP072321...B	1695	72,9	73,6	71,6	0,78	0,57	4	1,43	2,1	2,3	0,00074	10	48	
0.37	M3BP 71MB 4	3GBP072322...B	1700	74,9	75,3	73,1	0,82	0,77	5,3	2,06	1,7	2,4	0,00088	11	48	
0.55	M3BP 80MA 4	3GBP082321...B	1683	75,5	77,1	74,6	0,74	1,27	5,7	3,03	2,2	3,2	0,00144	15	48	
0.75	M3BP 80MD 4	3GBP082324...B	1735	82,6	82,3	79,5	0,72	1,64	5,8	4,13	2,7	3,4	0,00205	17	53	
1.1	M3BP 90SLB 4	3GBP092322...B	1735	85,2	85,3	83,3	0,79	2,17	6,9	6	2,5	3,7	0,0044	25	53	
1.5	M3BP 90SLD 4	3GBP092325...B	1735	85,9	86,1	84,5	0,82	2,8	7,1	8,25	2,8	3,7	0,0053	27	59	
2.2	M3BP 100LC 4	3GBP102323...B	1750	87,5	87	85	0,79	4,13	8,5	12,02	2,8	4,4	0,00948	36	59	
3	M3BP 100LD 4	3GBP102324...B	1750	87,7	87,6	85,9	0,81	5,45	8,6	16,4	3	3,7	0,011	38	61	
4	M3BP 112MB 4	3GBP112322...B	1735	87,5	87,6	86,4	0,85	7,1	7,6	22	2,5	3,1	0,0125	44	62	
5.5	M3BP 132SMB 4	3GBP132322...B	1765	89,8	89,7	88	0,81	9,73	7	29,85	2,1	3,3	0,0328	70	70	
7.5	M3BP 132SMC 4	3GBP132323...B	1755	90,4	90,6	89,2	0,83	13	7,7	40,96	2,4	3,7	0,0366	73	67	
11	M3BP 160MLA 4	3GBP162410...G	1769	91	91,6	90,8	0,84	18,8	7,1	59,3	2,1	2,9	0,081	135	66	
15	M3BP 160MLB 4	3GBP162420...G	1772	92	92,3	91,7	0,85	25,1	7,5	80,8	2,5	3	0,099	165	66	
18.5	M3BP 180MLA 4	3GBP182410...G	1778	92,4	92,8	92,2	0,85	30,9	7,6	99,3	2,5	2,9	0,166	205	66	
22	M3BP 180MLB 4	3GBP182420...G	1777	92,8	93,3	92,7	0,84	36,9	7,6	118	2,6	3	0,195	222	66	
30	M3BP 200MLA 4	3GBP202410...G	1781	93,5	93,9	93,2	0,84	50,1	7,7	160	2,7	3	0,309	291	67	
37	M3BP 225SMA 4	3GBP222210...G	1780	93,4	93,6	92,6	0,86	60,4	7,5	198	2,5	3	0,356	324	70	
45	M3BP 225SMB 4	3GBP222220...G	1782	94	94,1	93,2	0,86	73	7,9	241	2,7	3,3	0,44	356	70	
55	M3BP 250SMA 4	3GBP252210...G	1781	94,3	94,5	93,9	0,85	89,7	6,3	294	2,1	2,4	0,765	414	71	
75	M3BP 280SMA 4	3GBP282210...G	1784	94,1	94,1	93,2	0,86	121	7,3	400	2,4	2,8	1,25	625	72	
90	M3BP 280SMB 4	3GBP282220...G	1783	94,6	94,7	94	0,86	145	7,6	481	2,4	2,7	1,5	665	72	
110	M3BP 315SMA 4	3GBP312210...G	1787	94,4	94,2	93,1	0,87	175	7,5	587	2,2	2,8	2,3	900	74	
132	M3BP 315SMB 4	3GBP312220...G	1787	95	95	94	0,87	210	7,4	704	2,2	2,7	2,6	960	74	
200	M3BP 315MLA 4	3GBP312410...G	1786	95,2	95,2	94,6	0,87	317	7,6	1069	2,4	2,9	3,5	1160	74	
250	M3BP 355SMA 4	3GBP352210...G	1788	95,4	95,3	94,6	0,85	402	7,5	1334	2,2	2,7	5,9	1610	79	
315	M3BP 355SMB 4	3GBP352220...G	1788	95,8	95,7	95	0,87	498	7,7	1681	2,2	2,8	6,9	1780	77	
355	M3BP 355SMC 4	3GBP352230...G	1787	95,6	95,6	94,9	0,88	556	7,1	1896	2,3	2,7	7,2	1820	83	
400	M3BP 355MLA 4	3GBP352410...G	1790	96	95,9	95,1	0,86	635	7,2	2134	2,3	2,7	8,4	2140	83	
450	M3BP 355MLB 4	3GBP352420...G	1790	96,6	96,3	95,8	0,86	705	8,2	2401	2,4	2,7	8,4	2140	83	
500	M3BP 355LKA 4	3GBP352810...G	1790	97	96,3	95,6	0,87	785	7,7	2667	2,2	3,1	10	2500	83	
560	M3BP 400LKA 4	3GBP402810...G	1790	96,5	96,4	95,8	0,86	891	7,1	2986	2,4	2,8	15	3200	83	
560	M3BP 355LKB 4	3GBP352820...G	1790	96,4	96,4	95,8	0,86	882	7,8	2988	2,5	2,6	10,6	2600	83	
560	M3BP 400LA 4	3GBP402510...G	1790	96,5	96,4	95,8	0,86	891	7,1	2986	2,4	2,8	15	3200	83	
630	M3BP 400LB 4	3GBP402520...G	1791	96,6	96,6	96,1	0,87	986	8,2	3359	2	3	16	3300	83	
630	M3BP 400LKB 4	3GBP402820...G	1791	96,6	96,6	96,1	0,87	986	8,2	3359	2	3	16	3300	83	
710	M3BP 400LC 4	3GBP402530...G	1792	96,9	96,9	96,4	0,86	1119	7,3	3785	2,3	3	17	3400	83	
710	M3BP 400LKC 4	3GBP402830...G	1792	96,9	96,9	96,4	0,86	1119	7,3	3785	2,3	3	17	3400	83	
800	M3BP 450LA 4	3GBP452510...G	1791	96,7	96,6	96,1	0,86	1256	6,2	4263	1,3	3	23	4050	89	
900	M3BP 450LB 4	3GBP452520...G	1792	97	96,9	96,3	0,86	1416	7,3	4795	1,2	2,8	25	4350	89	
1000	M3BP 450LC 4	3GBP452530...G	1791	97,2	97,2	96,6	0,87	1557	6,6	5332	1,3	2,5	30	4700	89	

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S I _N	T _N Nm	T _I T _N	T _b T _N			
				440 V 60 Hz	High-output-design										
18.5	M3BP 160MLC 4	3GBP162430...G	1771	92,4	92,8	92,4	0,85	30,9	8,1	99,7	3	3,3	0,11	173	66
22	M3BP 160MLD 4	3GBP162440...G	1766	92,4	93,2	92,8	0,85	36,7	7,2	118	2,4	3	0,125	187	66
30	M3BP 180MLC 4	3GBP182430...G	1776	93	93,6	93,2	0,84	50,3	7,7	161	2,6	3	0,217	235	66
37	M3BP 200MLB 4	3GBP202420...G	1780	93,9	94,4	94,2	0,86	60,1	7,4	198	2,6	3	0,343	307	67
45	M3BP 200MLC 4	3GBP202430...G	1781	94,2	94,5	94,1	0,84	73,7	8	241	2,9	3,3	0,366	319	67
55	M3BP 225SMC 4	3GBP222230...G	1780	94,2	94,5	94	0,87	88	7,9	295	2,8	3,1	0,474	370	70
64	M3BP 225SMD 4	3GBP222240...G	1781	94,3	94,4	93,7	0,87	102	8,8	343	3,1	3,4	0,542	399	70
75	M3BP 250SMB 4	3GBP252220...G	1779	94,6	95	94,5	0,87	119	7,7	402	2,8	3,2	0,866	450	71
90	M3BP 250SMC 4	3GBP252230...G	1780	95	95,3	94,7	0,86	144	8	482	3,2	3,4	0,941	478	71
110	M3BP 280SMC 4	3GBP282230...G	1785	95,1	95,2	94,5	0,87	174	8,1	588	2,9	3	1,85	725	72
132	M3BP 280MLA 4	3GBP282410...G	1784	95,4	95,4	94,8	0,87	209	7,4	706	2,6	2,8	2,3	840	77
160	M3BP 280MLB 4	3GBP282420...G	1784	95,6	95,6	95,1	0,86	255	7,9	855	2,9	2,9	2,5	890	77
250	M3BP 315LKA 4	3GBP312810...G	1787	95,2	95,1	94,2	0,86	401	7,8	1335	2,5	2,9	4,4	1410	82
280	M3BP 315LKB 4	3GBP312820...G	1786	95,1	95,1	94,2	0,87	444	8	1496	2,6	3	5	1520	82
315	M3BP 315LKC 4	3GBP312830...G	1788	95,2	95,1	94,2	0,86	504	8,3	1681	2,6	3,3	5,5	1600	82

Technical data, 440 V 60 Hz

IE2 cast iron mining motors 1200 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB	
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s I _N	T _N Nm	T _i T _N	T _b T _N				
1200 r/min = 6 poles																
				440 V 60 Hz				CENELEC-design								
0.18	M3BP 71MA 6	3GBP073321---B	1110	68,8	69	65,3	0,66	0,52	3,6	1,54	2,3	2,5	0,00089	10	45	
0.25	M3BP 71MB 6	3GBP073322---B	1115	72,8	72,3	68,1	0,66	0,68	4,3	2,1	2,8	3,1	0,0011	12	45	
0.37	M3BP 80MA 6	3GBP083321---B	1130	74,8	74,7	71,1	0,68	0,95	4,8	3,1	2,5	2,8	0,00187	15	49	
0.55	M3BP 80MB 6	3GBP083322---B	1125	73,1	71,8	67,9	0,71	1,28	4,4	4,6	1,9	2,6	0,00239	17	49	
0.75	M3BP 90SLC 6	3GBP093323---B	1160	79,5	77,6	72,7	0,59	2	5,5	6,1	2,4	3,4	0,00491	25	46	
1.1	M3BP 90SLE 6	3GBP093324---B	1135	81,2	81,6	79,1	0,68	2,78	4,1	9,2	2,1	2,6	0,0054	28	47	
1.5	M3BP 100L 6	3GBP103322---B	1155	82,1	82,2	80,1	0,71	3,33	4,6	12,45	1,4	2,9	0,00873	37	52	
2.2	M3BP 112MB 6	3GBP113322---B	1155	84,8	84,8	82,8	0,71	4,82	4,8	18,25	1,6	2,4	0,0125	44	69	
3	M3BP 132SMB 6	3GBP133321---B	1175	87	85,8	82,6	0,67	7,08	6,1	24,4	1,7	3	0,0334	69	60	
4	M3BP 132SMC 6	3GBP133322---B	1165	86,8	86,6	84,8	0,74	8,6	4,9	32,89	1,4	2,3	0,0334	69	60	
5.5	M3BP 132SMF 6	3GBP133324---B	1165	87,4	87,1	85,2	0,73	11,2	5,4	45,07	1,9	2,4	0,0487	86	60	
7.5	M3BP 160MLA 6	3GBP163410---G	1177	89,5	90,1	89,4	0,79	13,9	7,7	60,8	1,6	3,3	0,087	134	63	
11	M3BP 160MLB 6	3GBP163420---G	1174	90,2	90,9	90,3	0,79	20,2	7,8	89,4	1,8	3	0,114	172	63	
15	M3BP 180MLA 6	3GBP183410---G	1178	91,1	91,7	91,1	0,77	28	6,1	121	1,7	2,8	0,168	207	63	
18.5	M3BP 200MLA 6	3GBP203410---G	1188	92,1	92,3	91,5	0,81	32,5	6,9	148	2,3	2,9	0,382	269	67	
22	M3BP 200MLB 6	3GBP203420---G	1187	92,5	93,1	92,4	0,83	37,5	6,9	176	2,2	2,9	0,448	291	67	
30	M3BP 225SMA 6	3GBP223210---G	1187	93	93,5	92,7	0,84	50,3	7,4	241	2,6	2,9	0,663	349	67	
37	M3BP 250SMA 6	3GBP253210---G	1186	93,5	93,9	93,3	0,83	62,5	7,1	297	2,4	2,7	1,13	395	67	
45	M3BP 250SMA 6	3GBP253210---G	1186	92,7	93,8	93,8	0,84	75,7	5,9	362	1,9	2,2	1,13	395	67	
45	M3BP 280SMA 6	3GBP283210---G	1190	92,8	92,9	91,9	0,84	76	7,3	361	2,5	2,6	1,85	605	70	
55	M3BP 280SMB 6	3GBP283220---G	1190	93,1	93,2	92,3	0,85	91	7,3	440	2,7	2,7	2,2	645	70	
75	M3BP 315SMA 6	3GBP313210---G	1192	94,1	94	93,1	0,85	123	8	600	2,4	2,9	3,2	830	75	
90	M3BP 315SMB 6	3GBP313220---G	1192	94,6	94,7	93,9	0,83	150	7,9	720	2,4	2,9	4,1	930	75	
110	M3BP 315SMC 6	3GBP313230---G	1191	94,7	94,8	94,1	0,84	182	7,8	881	2,5	2,9	4,9	1000	75	
132	M3BP 315MLA 6	3GBP313410---G	1191	95,1	95,1	94,5	0,84	217	7,9	1057	2,7	3	5,8	1150	72	
160	M3BP 355SMA 6	3GBP353210---G	1193	95,1	95	94,2	0,84	264	7,3	1280	2	2,6	7,9	1520	80	
200	M3BP 355SMB 6	3GBP353220---G	1193	95	95	94,3	0,83	330	7,5	1600	2,2	2,7	9,7	1680	80	
250	M3BP 355SMC 6	3GBP353230---G	1193	95,4	95,3	94,5	0,83	414	7,8	2000	2,6	2,9	11,3	1820	80	
315	M3BP 355MLB 6	3GBP353420---G	1192	95,9	95,8	95	0,84	515	7,3	2523	2,5	2,7	13,5	2180	80	
355	M3BP 355LKA 6	3GBP353810---G	1192	95,8	95,6	94,8	0,82	594	8	2844	2,7	2,9	15,5	2500	80	
400	M3BP 400LA 6	3GBP403510---G	1193	96,2	96,1	95,5	0,84	652	7,6	3202	2,1	2,8	17	2900	79	
400	M3BP 400LKA 6	3GBP403810---G	1193	96,2	96,1	95,5	0,84	652	7,6	3202	2,1	2,8	17	2900	79	
400	M3BP 355LKB 6	3GBP353820---G	1192	95,8	95,7	95	0,83	652	7,9	3204	2,6	2,6	16,5	2600	80	
450	M3BP 400LB 6	3GBP403520---G	1194	96	95,9	95,3	0,84	731	7,3	3599	2,2	2,9	20,5	3150	79	
450	M3BP 400LKB 6	3GBP403820---G	1194	96	95,9	95,3	0,84	731	7,3	3599	2,2	2,9	20,5	3150	79	
500	M3BP 400LC 6	3GBP403530---G	1193	96,2	96,2	95,6	0,85	801	7,5	4002	2,4	2,7	22	3300	79	
500	M3BP 400LKC 6	3GBP403830---G	1193	96,2	96,2	95,6	0,85	801	7,5	4002	2,4	2,7	22	3300	79	
560	M3BP 400LD 6	3GBP403540---G	1194	96,4	96,4	95,8	0,86	882	7,2	4483	2,2	2,9	24	3400	80	
560	M3BP 400LKD 6	3GBP403840---G	1194	96,4	96,4	95,8	0,86	882	7,2	4483	2,2	2,9	24	3400	80	
630	M3BP 450LA 6	3GBP453510---G	1194	96,6	96,6	96,1	0,85	1009	6,3	5039	1	2,7	31	4150	85	
710	M3BP 450LB 6	3GBP453520---G	1195	97,2	97,2	96,7	0,85	1122	7,5	5673	1,2	2,7	37	4500	85	
800	M3BP 450LC 6	3GBP453530---G	1195	97,2	97,1	96,6	0,85	1271	7,7	6391	1,1	2,9	41	4800	85	

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current			Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB	
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S I _N	T _N Nm	T _I T _N	T _b T _N					
1200 r/min = 6 poles			440 V 60 Hz				High-output-design										
15	M3BP 160MLC 6	3GBP163430...G	1173	90,2	91,2	90,7	0,77	28,3	7,4	122	1,7	3,7	0,131	185	63		
18.5	M3BP 180MLB 6	3GBP183420...G	1177	91,9	92,5	92,1	0,79	33,4	6,1	150	1,7	2,8	0,198	221	63		
30	M3BP 200MLC 6	3GBP203430...G	1186	93	93,6	93	0,84	50,3	7,3	241	2,4	2,9	0,531	318	67		
37	M3BP 225SMB 6	3GBP223220...G	1186	93,6	94,1	93,7	0,84	61,7	6,9	297	2,3	2,7	0,821	393	67		
45	M3BP 250SMB 6	3GBP253220...G	1190	93,7	94,2	93,7	0,83	75,9	7,3	361	2,5	2,8	1,37	441	67		
45	M3BP 225SMC 6	3GBP223230...G	1185	93,3	94	93,8	0,83	76,2	6,7	362	2,3	2,6	0,821	393	67		
52	M3BP 250SMB 6	3GBP253220...G	1187	93,1	94,1	94	0,85	86,2	6,4	418	2,1	2,4	1,37	441	67		
55	M3BP 250SMC 6	3GBP253230...G	1189	93,8	94,3	94	0,85	90,5	7,5	441	2,6	2,8	1,5	468	67		
60	M3BP 250SMC 6	3GBP253230...G	1187	93,4	94,3	94,1	0,85	99,1	6,9	482	2,4	2,6	1,5	468	67		
75	M3BP 280SMC 6	3GBP283230...G	1190	93,2	93,4	92,7	0,85	124	7,7	601	2,8	2,7	2,85	725	70		
90	M3BP 280MLA 6	3GBP283410...G	1190	93,6	93,6	92,7	0,83	151	7,6	721	2,4	2,5	3,1	840	76		
110	M3BP 280MLB 6	3GBP283420...G	1190	94,1	94,1	93,2	0,84	183	8	882	2,7	2,6	4,1	890	76		
160	M3BP 315LKA 6	3GBP313810...G	1192	95	94,9	94,1	0,83	265	7,9	1281	2,6	2,8	7,3	1410	78		
180	M3BP 315LKB 6	3GBP313820...G	1192	95	95	94,2	0,83	298	7,8	1441	2,6	2,8	8,3	1520	78		
200	M3BP 315LKC 6	3GBP313830...G	1189	95,1	95,3	94,8	0,84	328	7,2	1606	2,5	2,6	9,2	1600	78		

Technical data, 440 V 60 Hz

IE3 cast iron mining motors 3600 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s I _N	T _N Nm	T _I T _N	T _b T _N			
3600 r/min = 2 poles				440 V 60 Hz				CENELEC-design							
0.55	M3BP 71ME 2	3GBP071350---L	3363	76,8	77,6	75,9	0,84	1,10	7,9	1,56	3,0	3,6	0,00045	11	59
0.75	M3BP 80MC 2	3GBP081330---L	3478	77,0	76,3	72,5	0,82	1,50	8,1	2,0	3,6	4,7	0,001	17	60
1.1	M3BP 80ME 2	3GBP081350---L	3466	84,0	84,2	82,4	0,84	2,1	8,1	3,1	3,7	4,6	0,0012	18	63
1.5	M3BP 90SLA 2	3GBP091010---L	3505	84,0	83,7	81,6	0,89	2,6	8,3	4,0	2,0	3,7	0,0028	27	72
2.2	M3BP 90LA 2	3GBP091510---L	3504	85,5	85,6	84,2	0,89	3,8	9,4	6,0	3,0	4,0	0,0036	30	67
3	M3BP 100MLA 2	3GBP101410---L	3492	84,5	84,5	83,1	0,92	5,0	8,6	8,2	3,2	4,2	0,0013	42	71
4	M3BP 112ME 2	3GBP111350---L	3487	88,5	89,3	89,2	0,93	6,3	9,0	10,7	2,9	4,0	0,0139	56	73
5.5	M3BP 132SMC 2	3GBP131230---L	3510	88,5	87,9	85,6	0,90	9,0	7,8	15,0	2,1	4,0	0,0182	69	73
7.5	M3BP 132SME 2	3GBP131250---L	3519	90,2	89,9	88,6	0,91	12,0	8,8	20,4	2,3	4,5	0,0203	75	73
11	M3BP 160MLA 2	3GBP161410---L	3545	91,0	91,2	90,3	0,92	17,3	7,9	29,6	2,4	3,6	0,057	144	75
15	M3BP 160MLB 2	3GBP161420---L	3550	91,0	91,2	90,1	0,90	23,6	7,8	40,3	3,4	4,4	0,063	152	74
18.5	M3BP 160MLC 2	3GBP161430---L	3551	91,7	92,0	91,1	0,90	28,8	9,6	49,7	3,5	4,3	0,076	164	75
22	M3BP 180MLA 2	3GBP181410---L	3557	91,7	91,9	90,8	0,90	34,1	8,4	59,0	3,7	4,3	0,11	205	77
22	M3BP 200MLA 2	3GBP201410---L	3559	92,4	92,5	91,4	0,89	47,2	7,9	80,5	2,5	3,2	0,182	263	78
30	M3BP 200MLB 2	3GBP201420---L	3561	93,0	93,1	92,3	0,89	57,8	7,8	99,3	2,9	3,1	0,222	289	78
30	M3BP 250SMA 2	3GBP251210---L	3566	93,6	93,2	91,9	0,89	85,9	7,2	147	2,4	3,8	0,426	400	81
37	M3BP 280SMB 2	3GBP281220---L	3577	94,1	93,5	91,8	0,88	118	7,3	200	2,4	3,1	0,9	665	74
37	M3BP 225SMA 2	3GBP221210---L	3568	93,6	93,2	91,8	0,88	71,8	7,2	121	3,0	3,4	0,296	335	79
45	M3BP 280SMC 2	3GBP281230---L	3576	95,0	94,6	93,3	0,87	143	7,0	240	2,0	2,8	0,99	690	77
45	M3BP 315SMB 2	3GBP311220---L	3583	95,0	94,4	92,8	0,88	173	7,2	293	1,6	2,8	1,3	910	81
55	M3BP 315SMC 2	3GBP311230---L	3583	95,0	94,5	93,1	0,88	207	7,0	351	1,8	2,9	1,5	965	81
55	M3BP 315MLA 2	3GBP311410---L	3584	95,8	95,6	94,6	0,89	308	8,0	533	2,3	3,1	2,1	1190	84
75	M3BP 315SMD 2	3GBP311240---L	3584	95,4	95,0	93,7	0,88	250	7,6	426	2,0	2,9	1,7	1025	81
75	¹⁾ M3BP 355SMA 2	3GBP351210---L	3584	95,8	95,2	93,5	0,89	386	7,9	666	2,0	3,3	3	1600	86
75	¹⁾ M3BP 355SMC 2	3GBP351230---L	3584	95,8	95,5	94,4	0,89	545	7,4	946	2,0	3,0	3,6	1750	86
90	¹⁾ M3BP 355SMB 2	3GBP351220---L	3582	95,8	95,5	94,4	0,89	486	7,2	840	2,0	3,0	3,4	1680	86

¹⁾ -3dB(A) sound pressure level reduction with unidirectional fan construction. Direction of rotation must be stated when ordering, see variant codes 044 and 045.

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S I _N	T _N Nm	T _I T _N	T _b T _N			
				440 V 60 Hz	High-output-design										
3600 r/min = 2 poles															
90	M3BP 160MLD 2	3GBP161440...L	3546	91,7	92,3	91,5	0,91	34,1	8,9	59,3	3,2	3,9	0,071	174	78
110	M3BP 180MLC 2	3GBP181430...L	3555	93,0	93,5	93,0	0,90	57,5	9,3	99,4	3,1	3,8	0,115	229	78
110	M3BP 180MLB 2	3GBP181420...L	3559	93,3	93,8	93,2	0,89	47,2	9,2	80,5	3,0	3,9	0,104	215	78
132	M3BP 200MLC 2	3GBP201430...L	3557	93,6	94,1	93,7	0,89	70,3	8,3	121	2,8	3,3	0,214	305	81
160	M3BP 225SMB 2	3GBP221220...L	3567	93,6	93,6	92,6	0,90	85,0	7,9	147	2,7	2,9	0,274	355	83
200	M3BP 225SMC 2	3GBP221230...L	3568	94,1	94,3	93,4	0,90	115	8,5	201	3,1	3,1	0,329	408	83
250	M3BP 250SMC 2	3GBP251230...L	3570	95,0	95,1	94,3	0,91	136	8,8	241	2,5	3,4	0,644	495	85
250	M3BP 250SMB 2	3GBP251220...L	3572	94,1	94,1	93,3	0,90	115	8,2	201	2,7	3,3	0,644	479	85
315	M3BP 280SMD 2	3GBP281240...L	3578	95,0	94,7	93,5	0,89	171	7,8	294	2,3	3,1	1,15	725	78
355	M3BP 315LKB 2	3GBP311820...L	3584	95,8	95,7	94,8	0,91	377	8,0	666	2,3	3,3	2,9	1540	84

Technical data, 440 V 60 Hz

IE3 cast iron mining motors 1800 r/min

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s I _N	T _N Nm	T _i T _N	T _b T _N			
1800 r/min = 4 poles				440 V 60 Hz				CENELEC-design							
0.25	M3BP 71MD 4	3GBP072340---L	1719	73,4	74,0	71,8	0,79	0,54	5,4	1,38	2,1	2,9	0,0009	11	48
0.37	M3BP 71MLE 4	3GBP072450---L	1733	78,2	78,1	75,5	0,76	0,80	6,5	2,0	2,8	3,7	0,00122	15	48
0.55	M3BP 80MLC 4	3GBP082430---L	1744	81,1	81,1	78,7	0,80	1,10	7,5	3,3	3,1	3,9	0,0028	20	48
0.75	M3BP 80MLE 4	3GBP082450---L	1749	83,5	83,3	80,8	0,78	1,50	8,3	4,1	3,7	4,4	0,0033	22	53
1.1	M3BP 90LA 4	3GBP092510---L	1743	84,0	84,1	82,2	0,76	2,2	8,7	6,0	3,4	4,5	0,0049	28	59
1.5	M3BP 90LB 4	3GBP092520---L	1746	86,5	86,6	85,0	0,77	2,9	9,1	8,2	3,7	4,9	0,0067	32	59
2.2	M3BP 100LA 4	3GBP102510---L	1749	87,5	87,4	85,8	0,81	4,0	8,1	12,0	2,2	3,8	0,0109	38	59
3	M3BP 100MLB 4	3GBP102420---L	1745	87,5	88,4	87,9	0,82	5,4	7,6	16,4	3,3	4,4	0,0121	42	61
4	M3BP 112ME 4	3GBP112350---L	1754	89,5	89,5	88,5	0,75	7,9	8,6	21,5	3,5	4,6	0,0188	52	62
5.5	M3BP 132SMB 4	3GBP132220---L	1764	89,5	89,4	87,8	0,75	10,6	8,1	30,0	2,7	4,1	0,0295	68	73
7.5	M3BP 132SME 4	3GBP132250---L	1763	89,5	89,5	88,2	0,78	13,9	8,4	40,6	2,9	4,2	0,0376	78	67
11	M3BP 160MLA 4	3GBP162410---L	1778	92,4	92,4	91,3	0,83	18,9	7,9	59,2	2,5	3,7	0,11	160	68
15	M3BP 160MLB 4	3GBP162420---L	1778	93,0	92,9	91,9	0,83	25,7	8,7	80,6	2,9	3,7	0,135	179	67
18.5	M3BP 180MLB 4	3GBP182420---L	1782	93,6	93,9	93,6	0,83	37,0	8,5	118	2,9	3,3	0,243	229	67
18.5	M3BP 180MLA 4	3GBP182410---L	1781	93,6	93,8	93,5	0,83	31,2	7,6	99,1	2,8	3,1	0,219	215	68
22	M3BP 200MLA 4	3GBP202410---L	1784	94,1	94,2	93,4	0,85	49,5	7,5	161	2,5	3,5	0,385	292	69
30	M3BP 225SMA 4	3GBP222210---L	1781	94,5	94,8	94,4	0,84	61,6	8,1	198	3,2	3,2	0,427	322	65
30	M3BP 225SMB 4	3GBP222220---L	1782	95,0	95,1	94,6	0,85	73,4	8,1	241	2,6	4,3	0,525	357	72
37	M3BP 250SMA 4	3GBP252210---L	1782	95,4	95,3	94,4	0,84	90,2	7,4	295	2,9	4,0	0,694	406	73
37	M3BP 280SMB 4	3GBP282220---L	1784	94,5	94,2	93,2	0,85	121	6,8	401	2,3	2,9	1,38	645	78
45	M3BP 280SMC 4	3GBP282230---L	1785	95,4	95,3	94,4	0,86	144	7,5	481	2,4	2,9	1,73	700	78
55	M3BP 315SMC 4	3GBP312230---L	1789	95,0	95,0	94,2	0,86	211	7,0	705	2,1	3,0	2,9	1000	74
55	M3BP 315SMB 4	3GBP312220---L	1790	95,8	95,5	94,6	0,85	178	7,3	587	2,0	3,1	2,43	930	74
75	M3BP 315SMD 4	3GBP312240---L	1789	95,0	94,9	94,1	0,86	255	7,2	854	2,1	3,1	3,2	1065	74
75	M3BP 315MLB 4	3GBP312420---L	1788	96,2	96,2	95,7	0,87	314	7,1	1068	2,3	3,0	3,9	1220	77
90	M3BP 355SMA 4	3GBP352210---L	1791	96,2	96,1	95,2	0,86	393	6,7	1333	2,0	3,0	5,9	1610	81
110	M3BP 355SMC 4	3GBP352230---L	1790	96,2	96,1	95,4	0,87	557	6,6	1893	2,2	2,9	7,2	1820	81

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S I _N	T _N Nm	T _I T _N	T _b T _N			
				440 V 60 Hz	High-output-design										
110	M3BP 200MLB 4	3GBP202420...L	1781	94,5	95,0	94,7	0,83	61,9	7,9	198	2,8	3,0	0,362	305	68
132	M3BP 160MLC 4	3GBP162430...L	1774	92,4	92,8	92,0	0,82	31,9	8,6	99,6	3,0	3,5	0,124	180	71
132	M3BP 225SMC 4	3GBP222230...L	1779	94,1	94,5	93,9	0,85	89,7	8,0	295	3,1	3,3	0,536	391	75
160	M3BP 180MLC 4	3GBP182430...L	1778	94,3	94,2	93,2	0,83	50,2	7,9	161	2,6	3,4	0,191	235	65
160	M3BP 250SMB 4	3GBP252220...L	1782	95,4	95,5	94,9	0,85	121	8,4	402	3,3	3,6	0,941	464	77
200	M3BP 280SMD 4	3GBP282240...L	1786	95,8	96,0	95,5	0,86	175	7,8	588	2,6	3,0	1,95	750	80
250	M3BP 280MLA 4	3GBP282410...L	1784	95,7	95,7	95,3	0,87	208	7,4	706	2,6	2,8	2,3	840	78
250	M3BP 315LKA 4	3GBP312810...L	1789	96,2	96,2	95,6	0,86	397	7,3	1335	2,4	3,3	4,4	1410	81
315	M3BP 280MLB 4	3GBP282420...L	1785	95,9	96,0	95,6	0,87	249	8,1	855	2,9	2,9	2,5	890	78
355	M3BP 315LKC 4	3GBP312830...L	1789	96,1	96,3	95,5	0,85	504	8,1	1682	2,9	3,5	4,4	1600	81

Technical data, 440 V 60 Hz

IE3 cast iron mining motors 1200 r/min

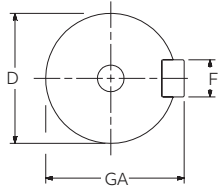
IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _s I _N	T _N Nm	T _i T _N	T _b T _N			
1200 r/min = 6 poles				440 V 60 Hz				CENELEC-design							
0.25	M3BP 80MB 6	3GBP083320---L	1144	71,4	69,7	64,6	0,61	0,72	5,6	2,1	2,9	3,3	0,0019	14	50
0.75	M3BP 90SLD 6	3GBP093040---L	1144	82,5	82,8	81,2	0,74	1,62	4,8	6,2	2,0	3,0	0,0056	29	47
1.1	M3BP 90LF 6	3GBP093560---L	1147	75,0	76,8	76,0	0,75	2,5	5,1	9,1	2,0	3,0	0,0068	33	47
1.5	M3BP 100MLB 6	3GBP103420---L	1160	85,1	85,3	83,6	0,68	3,4	5,7	12,3	2,6	3,6	0,012	41	52
2.2	M3BP 112MJ 6	3GBP113390---L	1162	88,5	88,3	86,6	0,70	4,7	4,4	18,0	1,4	2,4	0,0196	53	69
3	M3BP 132SMB 6	3GBP133220---L	1172	87,5	86,9	84,5	0,63	7,1	6,9	24,0	2,5	3,8	0,0355	75	60
4	M3BP 132SMF 6	3GBP133260---L	1182	87,5	86,9	84,8	0,63	9,5	6,9	32,0	2,5	3,8	0,0416	82	60
5.5	M3BP 132SMJ 6	3GBP133290---L	1176	91,0	91,4	90,7	0,76	10,4	5,2	44,7	1,6	2,7	0,0408	81	60
7.5	M3BP 160MLA 6	3GBP163410---L	1176	91,0	91,5	91,1	0,78	14,0	6,1	60,8	1,3	3,4	0,089	146	68
11	M3BP 160MLB 6	3GBP163420---L	1177	91,7	92,1	91,7	0,77	20,4	6,6	89,3	1,7	3,2	0,138	180	67
15	M3BP 180MLA 6	3GBP183410---L	1180	91,7	92,1	91,6	0,79	27,0	5,3	122	1,5	2,8	0,212	212	69
18.5	M3BP 200MLB 6	3GBP203420---L	1190	93,0	92,9	91,8	0,82	38,1	7,6	177	2,8	3,8	0,585	297	68
18.5	M3BP 200MLA 6	3GBP203410---L	1189	93,0	93,0	92,1	0,83	31,7	6,9	149	2,3	3,4	0,496	272	68
22	M3BP 225SMA 6	3GBP223210---L	1189	93,4	93,5	92,6	0,79	53,5	8,1	241	3,2	4,0	0,724	349	67
30	M3BP 250SMA 6	3GBP253210---L	1190	94,1	94,3	93,9	0,81	63,8	6,8	297	2,4	4,0	1,3	431	69
37	M3BP 280SMC 6	3GBP283230---L	1192	94,5	94,6	93,8	0,85	90,2	7,9	441	2,7	3,0	2,57	725	74
37	M3BP 280SMB 6	3GBP283220---L	1191	94,5	94,4	93,4	0,84	74,4	7,8	360	2,7	3,1	1,87	645	75
45	M3BP 315SMB 6	3GBP313220---L	1194	95,0	94,8	93,9	0,84	124	7,0	600	1,8	2,6	4,1	930	78
45	M3BP 315SMD 6	3GBP313240---L	1194	95,0	94,9	94,0	0,84	180	7,6	880	2,2	3,1	4,9	1040	78
55	M3BP 315MLB 6	3GBP313420---L	1195	95,8	95,6	94,7	0,83	218	7,6	1055	2,3	3,2	6,3	1200	72
55	M3BP 315SMC 6	3GBP313230---L	1194	95,0	95,0	94,1	0,85	147	7,5	720	2,0	3,0	4,6	1000	79
75	M3BP 355SMA 6	3GBP353210---L	1193	95,8	96,0	95,3	0,83	266	7,0	1281	2,4	2,6	7,9	1520	78
75	M3BP 355SMB 6	3GBP353220---L	1193	95,8	95,9	95,3	0,82	332	7,0	1601	2,5	2,5	9,7	1680	78
90	M3BP 355SMC 6	3GBP353230---L	1193	95,8	95,9	95,3	0,82	417	8,1	2000	2,9	3,1	11,3	1820	78
110	M3BP 355MLB 6	3GBP353420---L	1193	95,8	95,8	95,2	0,84	511	7,2	2521	2,5	3,2	13,5	2180	79
132	M3BP 355LKA 6	3GBP353810---L	1194	95,8	95,8	95,2	0,82	591	7,9	2840	2,8	3,2	15,5	2500	76

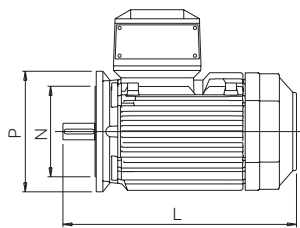
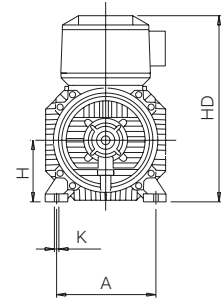
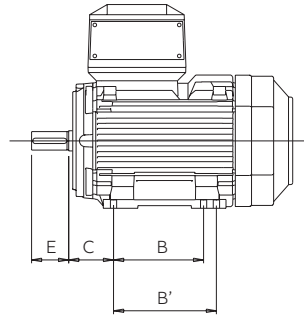
Output kW	Motor type	Product code	Speed r/min	Efficiency IEC 60034-30-1; 2014			Power factor Cosφ	Current		Torque			Moment of inertia J = 1/4 GD ² kgm ²	Weight kg	Sound pres- sure Level L _{PA} dB
				Full load 100%	3/4 load 75%	1/2 load 50%		I _N A	I _S I _N	T _N Nm	T _I T _N	T _b T _N			
				440 V 60 Hz	High-output-design										
1200 r/min = 6 poles															
160	M3BP 180MLB 6	3GBP183420...L	1181	93,0	93,2	92,4	0,76	34,3	7,1	150	2,2	3,2	0,22	219	69
160	M3BP 250SMC 6	3GBP253230...L	1190	94,5	94,9	94,4	0,83	92,0	7,7	441	3,0	3,2	1,49	466	72
180	M3BP 225SMB 6	3GBP223220...L	1187	94,1	94,5	94,1	0,81	63,9	7,4	298	2,7	3,0	0,813	382	72
200	M3BP 250SMB 6	3GBP253220...L	1192	94,5	94,6	93,8	0,81	77,4	7,9	361	2,9	3,3	1,5	465	72
200	M3BP 280SMD 6	3GBP283240...L	1192	94,8	94,8	94,1	0,86	120	8,0	601	2,8	3,0	3	740	76
250	M3BP 315LKA 6	3GBP313810...L	1194	95,8	95,7	94,9	0,83	265	7,9	1279	2,2	3,1	7,3	1410	79
315	M3BP 315LKB 6	3GBP313820...L	1197	95,8	95,7	95,0	0,83	297	8,0	1439	2,3	3,1	8,3	1520	79
355	M3BP 315LKC 6	3GBP313830...L	1193	96,0	96,1	95,7	0,83	329	7,4	1600	2,2	2,8	9,2	1600	79

Dimension drawing

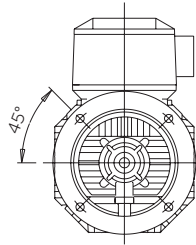
Cast iron mining motors



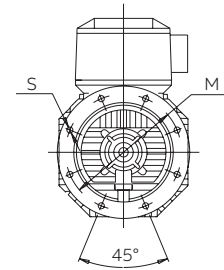
Foot-mounted motor IM 1001, IM B3



Flange-mounted motor IM 3001, IM B5



Sizes 80 to 200



Sizes 225 to 450

Motor size	D poles		GA poles		F poles		E poles		L max poles		O	A	B	B'	C	HD	K	H	M	N	P	S
	2	≥ 4	2	≥ 4	2	≥ 4	2	≥ 4	2	≥ 4												
71M_	14	14	16	16	5	5	30	30	264	264	20	112	90		45	178	7	71	130	110	160	10
71ML_	14	14	16	16	5	5	30	30	294	294	20	112	90		45	178	7	71	130	110	160	10
80M_	19	19	21.5	21.5	6	6	40	40	331	331	20	125	100		50	194	10	80	165	130	200	12
80ML_	19	19	21.5	21.5	6	6	40	40	363	363	20	125	100	112	50	194	10	80	165	130	200	12
90SL_	24	24	27	27	8	8	50	50	356	356	20	140	100	125	56	218	10	90	165	130	200	12
90L_	24	24	27	27	8	8	50	50	390	390	20	140	100	125	56	218	10	90	165	130	200	12
100L_	28	28	31	31	8	8	60	60	381	381	25	160	140		63	247	12	100	215	180	250	15
100ML_	28	28	31	31	8	8	60	60	403	403	25	160	140		63	247	12	100	215	180	250	15
100LK_	28	28	31	31	8	8	60	60	435	435	25	160	140	160	63	247	12	100	215	180	250	15
112 ¹⁾	28	28	31	31	8	8	60	60	403	403	25	190	140		70	259	12	112	215	180	250	15
112 ²⁾	28	28	31	31	8	8	60	60	442	442	25	190	140		70	258	12	112	215	180	250	15
132	38	38	41	41	10	10	80	80	532	532	30	216	140	178	89	300	12	132	265	230	300	15
160 ³⁾	42	42	45	45	12	12	110	110	584	584	45	254	210	254	108	421	14.5	160	300	250	350	19
160 ⁴⁾	42	42	45	45	12	12	110	110	681	681	45	254	210	254	108	421	14.5	160	300	250	350	19
180	48	48	51.5	51.5	14	14	110	110	726	726	50	279	241	279	121	461	14.5	180	300	250	350	19
200	55	55	59	59	16	16	110	110	821	821	70	318	267	305	133	528	18.5	200	350	300	400	19
225	55	60	59	64	16	18	110	140	849	879	80	356	286	311	149	573	18.5	225	400	350	450	19
250	60	65	64	69	18	18	140	140	884	884	90	406	311	349	168	626	24	250	500	450	550	19
280SM_	65	75	69	79.5	18	20	140	140	1088	1088	100	457	368	419	190	762 ⁵⁾	24	280	500	450	550	18
280ML_	65	75	69	79.5	18	20	140	140	1189	1189	100	457	419	457	190	762 ⁵⁾ / 785 ⁶⁾	24	280	500	450	550	18
315SM_	65	75	69	85	18	22	140	170	1174	1204	115	508	406	457	216	852 ⁶⁾	28	315	600	550	660	23
315ML_	65	75	69	95	18	25	140	170	1285	1315	115	508	457	508	216	852 ⁶⁾	28	315	600	550	660	23

¹⁾ IE2

²⁾ IE3

³⁾ IE2: MLA, MLB 2 and 8, MLC 2. IE3: MLA 2 only

⁴⁾ IE2: MLB 4-6, MLC 4-8, MLD, MLE. IE3: all others

⁵⁾ Terminal box 210

⁶⁾ Terminal box 370

⁷⁾ Terminal box 750

⁸⁾ Terminal box 1200

Motor size	D poles		GA poles		F poles		E poles		L max poles		O	A	B	B ¹⁾	C	HD	K	H	M	N	P	S
	2	≥ 4	2	≥ 4	2	≥ 4	2	≥ 4	2	≥ 4												
315LK_	65	75	69	95	18	25	140	170	1491	1521	115	508	508	560	216	852 ⁶⁾ / 880 ⁷⁾	28	315	600	550	660	23
355SM_	70	100	74.5	106	20	28	140	210	1409	1479	130	610	500	560	254	944 ⁶⁾ / 958 ⁷⁾	35	355	740	680	800	23
355ML_	70	100	74.5	106	20	28	140	210	1514	1584	130	610	560	630	254	944 ⁶⁾ / 958 ⁷⁾	35	355	740	680	800	23
355LK_	70	100	74.5	106	20	28	140	210	1764	1834	130	610	630	710	254	944 ⁶⁾ / 958 ⁷⁾	35	355	740	680	800	23
400L_	80	110	85	116	22	28	170	210	1851	1891	150	710	900	1000	224	1045 ⁷⁾	35	400	940	880	1000	28
400LK_	80	100	85	106	22	28	170	210	1851	1891	150	686	710	800	280	1045 ⁷⁾	35	400	740	680	800	24
450	80	120	85	127	22	32	170	210	2147	2187	180	800	1000	1120	250	1169 ⁷⁾ / 1293 ⁸⁾	42	450	1080	1000	1150	28

¹⁾ IE2

²⁾ IE3

³⁾ IE2: MLA, MLB 2 and 8, MLC 2. IE3: MLA 2 only

⁴⁾ IE2: MLB 4-6, MLC 4-8, MLD, MLE. IE3: all others

⁵⁾ Terminal box 210

⁶⁾ Terminal box 370

⁷⁾ Terminal box 750

⁸⁾ Terminal box 1200

IM B14 (IM3601), IM3602

Motor size	LA	M	N	P	S	T
71	8	85	70	105	M6	2.5
80	8	100	80	120	M6	3
90	10	115	95	140	M8	3
100	10	130	110	160	M8	3.5
112 ¹⁾	10	130	110	160	M8	3.5
112 ²⁾	14	130	110	160	M8	3.5
132	12	165	130	200	M10	3.5

¹⁾ IE2

²⁾ IE3

Tolerances:

A, B	ISO js 14
C	±0.8
D	ISO j6 < Ø 38 mm ISO k6 ≥ Ø 38 mm, < Ø 50 mm ISO m6 > Ø 50 mm
F	ISO h9
H	+0 / -0.5

Total product offering

Motors, generators and mechanical power transmission products with a complete portfolio of services



IEC motors

- Low voltage motors
- High voltage induction and synchronous motors
- Marine motors
- Motors for explosive atmospheres
- Motors for food and beverage
- Motors for variable speed drives
- Permanent magnet motors
- Synchronous reluctance motors
- Traction motors

NEMA motors

- Low voltage motors
- High voltage induction and synchronous motors
- Marine motors
- Motors for explosive atmospheres
- Motors for variable speed drives
- Permanent magnet motors
- Servomotors
- Washdown motors

Generators

- Generators for wind turbines
- Generators for diesel and gas engine power plants
- Generators for steam and gas turbine power plants
- Generators for marine applications
- Generators for industrial applications
- Generators for traction applications
- Synchronous condensers for reactive power compensation

Mechanical power transmission components, bearings, gearings

- Mounted bearings
- Enclosed gearing
- Mechanical drive components
- Couplings
- Sheaves and bushings
- Conveyor components
- Geared motor units

Life cycle services

ABB's portfolio of drives

Optimal solution for you



Being able to rely on the continuous high performance and efficiency of your operations is something you want to take for granted. ABB variable-frequency drives are made with all this in mind, established upon more than 40 years of experience and backed by a broad range of life cycle services.

ABB drives help you to optimize your processes and systems with state-of-the-art motor control technology, resulting in increased energy efficiency, better product quality, and reduced operating costs with higher output, less downtime, and reduced need for maintenance. All ABB drives are designed for easy selection, ordering, installation and use, and they offer integrated safety features, giving you more time to focus on what matters for you and your business.

Our portfolio offers low-voltage AC and DC drives, medium-voltage AC drives, and motion control drives spanning the fractional-kilowatt to multi-megawatt power level. There is a drive available for essentially every industry and application, which can be used with all types of motors, in environments ranging from clean electrical rooms in buildings, to harsh coal mines and windy offshore platforms. This wide product range allows you to select the best-fitting drive solution, providing maximum reliability and efficiency for every need.

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
Ноябрьск (3496)41-32-12
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

<https://abbengines.nt-rt.ru/> || aeg@nt-rt.ru