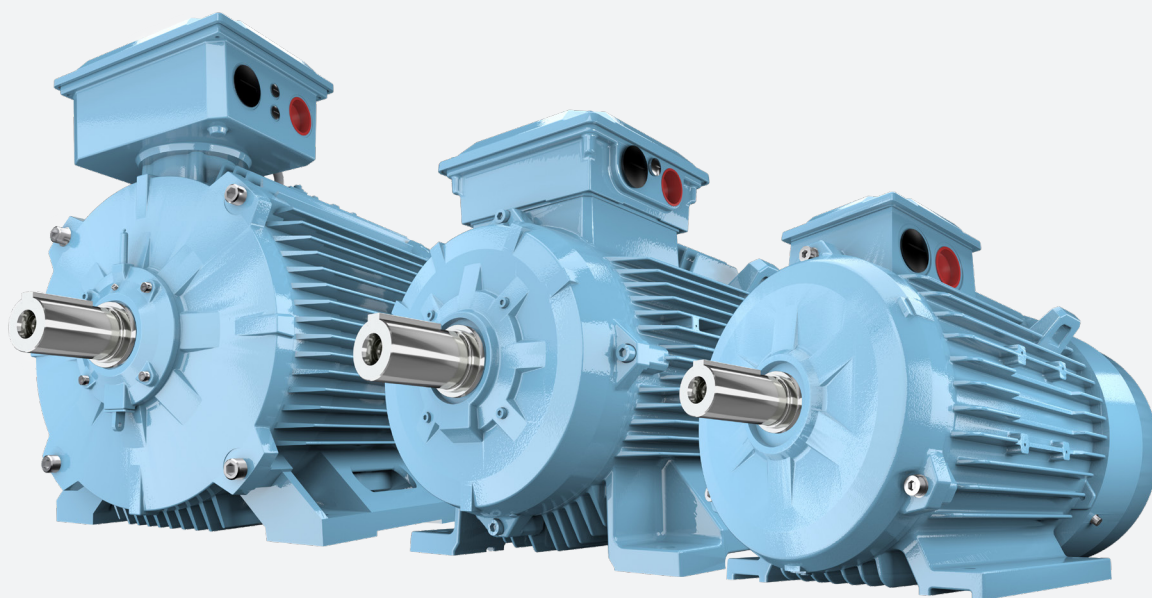

IE4 M2BAF低压一般用途电机

IE4 M2BAF - Low voltage

General performance motors



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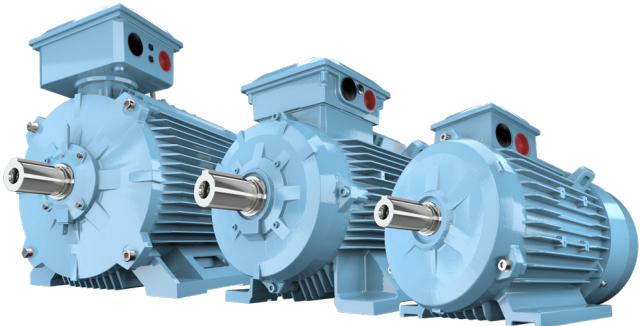
产品概述

General information

标准

ABB 电机采用全封闭三相鼠笼型设计，其工艺符合 IEC 国际标准以及中国 GB 标准。效率达到 IE4 能效等级。

生产厂家通过 ISO9001 国际质量认证及 ISO14000 环境标准。



基本特征	
绝缘等级	F
防护等级	IP55
冷却方式	IC411
额定电压	380V
额定频率	50Hz
接法	3kW及以下Y接，3kW以上Δ接
环境温度	-20℃ ~ 40℃
海拔不超过	1000m

产品简介

M2BAF 系列电机主要是针对风机、水泵，挤出机，搅拌机，线缆机，食品机械等应用的 OEM 客户设计，适用于水处理、暖通空调、食品饮料等诸多行业。M2BAF 的优异品质及服务为客户提供了增值的空间，并确保了订单的快速交付。

产品特点

- 高性价比：优化配置，经济适用
- 细分市场：中国定制，轻载专用
- 超短交期：大量现货，快速交付
- 超快服务：超快服务，迅速响应

Standards

ABB motors are of the totally enclosed, three phase squirrel cage type, built to comply with international IEC and China GB standards. The efficiency level reaches IE4.

Production units are certified to ISO 9001 international quality standard as well as ISO 14000 environmental standards.

IEC/EN

电气 Electrical	机械 Mechanical
IEC/EN 60034-1	IEC 60072
IEC/EN 60034-2-1	IEC/EN 60034-5
IEC/EN 60034-30	IEC/EN 60034-6
IEC/EN 60034-8	IEC/EN 60034-7
IEC/EN 60034-12	IEC/EN 60034-8
	IEC 60034-14

General Feature	
Insulation	F
Degrees of protection	IP55
Cooling	IC411
Voltage	380V
Frequency	50Hz
Y connection for 3kW and below,Δ connection for 3kW above	
Ambient temperatue	-20℃ ~ 40℃
Max altitude	1000m

Brief

M2BAF series motors are mainly tailored for fans, pumps, extruder, mixer, cable machinery and food machinery OEM customers, it is suitable for water treatment, HVAC, F&B and many other industries. The excellent quality and service of M2BAF provide customers with value-added space and ensures the fast delivery of orders.

Product Trait

- High cost-effective: optimized configuration, economical and applicable
- Market segment: customized in China, dedicated for light load
- Ultra-short delivery time: large amount of stock, fast delivery
- Excellent service: ultra-fast service, quick response

产品概述 - 安装结构形式

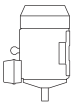
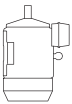
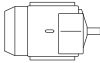
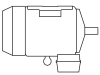
General information - Mounting arrangements

底脚安装型电机

Foot-mounted motor

代码 I / 代码 II

Code I / code II

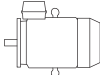
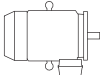
					
IM B3	IM V5	IM V6	IM B6	IM B7	IM B8
IM 1001	IM 1011	IM 1031	IM 1051	IM 1061	IM 1071

凸缘安装型电机，大凸缘

Flange-mounted motor, large flange

代码 I / 代码 II

Code I / code II

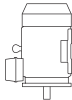
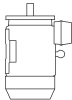
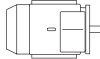
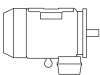
					
IM B5	IM V1	IM V3	*)	*)	*)
IM 3001	IM 3011	IM 3031	IM 3051	IM 3061	IM 3071

底脚和凸缘安装型电机，大凸缘

Foot- and flange-mounted motor with feet, large flange

代码 I / 代码 II

Code I / code II

					
IM B35	IM V15	IM V35	*)	*)	*)
IM 2001	IM 2011	IM 2031	IM 2051	IM 2061	IM 2071

*) Not Stated in IEC 60034-7.

IEC 60034-7 无规定

订购信息

Ordering information

订购时，请按照示例在订单中最少包含以下信息。电机产品代码根据以下示例编写。

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.

示例	Example
电机型号	Motor type
M2BAF 112 MLA	M2BAF 112 MLA
极数	Pole number
4	4
安装方式（IM 代码）	Mounting arrangement (IM-code)
IM B3 (IM1001)	IM B3 (IM1001)
额定输出	Rated output
4 kW	4 kW
产品代码	Product code
3GBA 112 410-ADPCN	3GBA 112 410-ADPCN
附加代码（如需）	Variant codes if needed

产品代码说明

Explanation of the product code

电机型号 Motor type	电机尺寸 Motor size	产品代码 Product code	安装方式代码，电压及频率代码，产品族代码 Mounting arrangement, voltage and frequency code, generation codes	变量代码 Variant codes
M2BAF	112MLA	3GBA 112 410 - ADPCN		002, etc
		1 2 3 4 5 6 7 8 9 10 11 12 13 14		

位置 1-4 3GBA = 全封闭铸铁机座电机	Positions 1 to 4 3GBA = Totally enclosed motor with cast iron frame
位置 5-6 IEC 机座 08 = 80 13 = 132 22 = 225 35 = 355 09 = 90 16 = 160 25 = 250 10 = 100 18 = 180 28 = 280 11 = 112 20 = 200 31 = 315	Positions 5 to 6 IEC size 08 = 80 13 = 132 22 = 225 35 = 355 09 = 90 16 = 160 25 = 250 10 = 100 18 = 180 28 = 280 11 = 112 20 = 200 31 = 315
位置 7 极对数 1=2 极 3=6 极 2=4 极	Positions 7 Speed (pole pairs) 1=2 poles 3=6 poles 2=4 poles
位置 8 -10 序列号	Positions 8 to 10 Serial number
位置 11 -(破折号)	Positions 11 -(dash)
位置 12 安装方式 A = 底脚安装型电机 B = 凸缘安装型电机	Position 12 Mounting arrangement A = Foot-mounted motor B = Flange-mounted motor. Large flange.
位置 13 电压和频率 D 380 VΔ, 660 VY 50 Hz S 220 VΔ, 380 VY 50 Hz	Position 13 Voltage and frequency D 380 VΔ, 660 VY 50 Hz S 220 VΔ, 380 VY 50 Hz
位置 14 产品族代码	Position 14 Generation code

铭牌

Rating plates

铭牌以表格形式提供两档电压的转速、电流和功率因数的数值。

The rating plates are in table form giving values for speed current and power factor for two voltages.

 ABB Shanghai Motors Co. Ltd Shanghai 200245 P.R of China						
IE4 IEC 60034-1						
3 ~ Motor IE4 M2BAF 180MLA 2 IMB3/IM1001 2022						
No.		Ins.cl. F				IP 55
V	Hz	kW	r/min	A	cos φ	Duty
660 Y	50	22	2955	23.0	0.89	S1
380 D	50	22	2955	39.9	0.89	S1
IE4-50HZ-94%(100%)						
Product code 3GBA181410-ADPCN						
6310-2Z/C3 6210-2Z/C3 237 kg						

 ABB Shanghai Motors Co. Ltd Shanghai 200245 P.R of China						
IE4 IEC 60034-1						
3 ~ Motor IE4 M2BAF 280SMB 6 IMB3/IM1001 2022						
No.		Ins.cl. F				IP 55
V	Hz	kW	r/min	A	cos φ	Duty
660 Y	50	55	988	59.8	0.85	S1
380 D	50	55	988	103	0.85	S1
IE4-50HZ-95.1%(100%)						
Product code 3GBA283220-ADPCN						
6316/C3 6316/C3 721 kg						

 ABB Shanghai Motors Co. Ltd Shanghai 200245 P.R of China						
IE4 IEC 60034-1						
3 ~ Motor IE4 M2BAF 80MA2 IMB3/IM1001 2022						
No.		Ins.cl. F				IP 55
V	Hz	kW	r/min	A	cos φ	Duty
380 Y	50	0.75	2872	1.59	0.86	S1
220 D	50	0.75	2872	2.74	0.86	S1
IE4-50HZ-83.5%(100%)						
Product code 3GBA081310-ASPCN						
6204-2Z/C3 6204-2Z/C3 20 kg						

 ABB Shanghai Motors Co. Ltd Shanghai 200245 P.R of China						
IE4 IEC 60034-1						
3 ~ Motor IE4 M2BAF 160MLA2 IMB3/IM1001 2022						
No.		Ins.cl. F				IP 55
V	Hz	kW	r/min	A	cos φ	Duty
660 Y	50	11	2930	11.5	0.91	S1
380 D	50	11	2930	19.9	0.91	S1
IE4-50HZ-92.6%(100%)						
Product code 3GBA161410-ADPCN						
6309-2Z/C3 6209-2Z/C3 149 kg						

说明:
铭牌图片仅供格式参考，最终数据以实际铭牌为准。

Remark:
The format of the rating plate is for reference only. The final figure will be subject to the actual rating plate.

机械设计

Mechanical design

轴承

电机通常安装以下单列深沟球轴承。

标准设计

机座号	极数	标准设计	
		深沟球轴承	
		D 端	N 端
80	2-6	6204-2Z/C3	6204-2Z/C3
90	2-6	6205-2Z/C3	6205-2Z/C3
100	2-6	6206-2Z/C3	6206-2Z/C3
112	2-6	6207-2Z/C3	6206-2Z/C3
132	2-6	6208-2Z/C3	6208-2Z/C3
160	2-6	6309-2Z/C3	6209-2Z/C3
180	2-6	6310-2Z/C3	6210-2Z/C3
200	2-6	6312-2Z/C3	6212-2Z/C3
225	2-6	6313-2Z/C3	6213-2Z/C3
250	2-6	6315-2Z/C3	6215-2Z/C3
280	2-6	6316/C3	6316/C3
315	2	6316/C3	6316/C3
	4-6	6319/C3	6316/C3
355	2	6316/C3	6316/C3
	4-6	6322/C3	6316/C3

说明：

电机铭牌上显示轴承型号及描述方式仅供客户更换、维修轴承作参考，不代表轴承品牌，具体的轴承品牌以公司实际使用的为准。

轴向锁定轴承

所有电机在 D 端标配轴向锁定轴承。

Bearings

General performance motors are normally fitted with single-row deep-groove ball bearings, as shown in the table below.

Standard designs

Motor size	Number of poles	Standard design	
		Deep groove ball bearings	
		D-end	N-end
80	2-6	6204-2Z/C3	6204-2Z/C3
90	2-6	6205-2Z/C3	6205-2Z/C3
100	2-6	6206-2Z/C3	6206-2Z/C3
112	2-6	6207-2Z/C3	6206-2Z/C3
132	2-6	6208-2Z/C3	6208-2Z/C3
160	2-6	6309-2Z/C3	6209-2Z/C3
180	2-6	6310-2Z/C3	6210-2Z/C3
200	2-6	6312-2Z/C3	6212-2Z/C3
225	2-6	6313-2Z/C3	6213-2Z/C3
250	2-6	6315-2Z/C3	6215-2Z/C3
280	2-6	6316/C3	6316/C3
315	2	6316/C3	6316/C3
	4-6	6319/C3	6316/C3
355	2	6316/C3	6316/C3
	4-6	6322/C3	6316/C3

Remark:

The bearing type and description on rating plate do not represent the bearing brand, instead it is a technical consideration that can help the owner to make replacement and set up a maintenance program. The brand is subject to the bearing installed.

Axially-locked bearings

All motors are equipped as standard with an axially locked bearing. General at D-end.

机械设计

Mechanical design

轴承寿命

根据 ISO 281，轴承的正常寿命 L_{10h} 定义为在特定条件下 90% 的相同轴承在一系列测试中所达到或超过的运行小时数。50% 的轴承至少达到这一数字的五倍。

润滑

电机交货时，已经使用优质的润滑脂对电机进行润滑。
机座号80-250电机采用永久性润滑轴承。
机座号280-355电机采用再润滑轴承。

以下数值可作为轴承使用寿命指导值，具体寿命取决于应用和负载情况：2-6 极电机约为 40,000 小时。

皮带轮直径

所需轴承寿命确定后，最小允许皮带轮直径可使用 F_R 计算，如下所示：

$$D = \frac{1.9 \cdot 10^7 \cdot K \cdot P}{n \cdot F_R}$$

其中:	
D：	带轮直径, 单位 (mm)
P：	功率要求, kW
n：	电机转速, r/min
K：	皮带张力因数, 取决于皮带类型和负载类型。 V 形皮带通用值为 2.5。
F_R ：	允许径向力

Bearing life

The nominal life L_{10h} of a bearing is defined according to ISO 281 as the number of operating hours achieved or exceeded by 90% of identical bearings in a large test series under specified conditions. 50% of bearings achieve at least five times this lifetime.

Lubrication

On delivery, the motor are ready lubricated with high quality grease. In motor sizes 80-250, Motors are equipped with permanently greased bearings. In motor sizes 280-355, Motors are equipped with regreasable bearings.

The following values can be used as a guide for bearing lifetime, depending on application and load conditions: 2-6 pole motors about 40,000h.

Pulley diameter

When the desired bearing life has been determined, the minimum permissible pulley diameter can be calculated with F_R as follows:

$$D = \frac{1.9 \cdot 10^7 \cdot K \cdot P}{n \cdot F_R}$$

Where:	
D：	Pulley diameter, mm
P：	Power requirement, kW
n：	Motor speed, r/min
K：	Belt tension factor, dependent on belt type and type of duty A common value of V-belts is 2.5
F_R ：	Permissible radial force

机械设计

Mechanical design

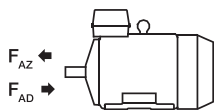
轴上允许负载

允许轴向力

表中提供了环境温度为 25℃ 时，50Hz 的正常条件下，径向力为零时的轴伸允许轴向力（N）。分别对轴承寿命满足 20000 和 40000 小时进行计算。

需提供同时存在径向力和轴向力的允许负载值，请联系 ABB。

给定轴向力 F_{AD} ，假设 D 端轴承由锁环锁定。



安装方式 IM B3

机座号 Motor size	极数 No. of poles	轴伸长度 Length of shaft extension E (mm)	深沟球轴承 Basic design with deep groove ball bearings			
			20,000小时 20,000 h		40,000小时 40,000 h	
			F_{AD} (N)	F_{AZ} (N)	F_{AD} (N)	F_{AZ} (N)
80	2	40	790	390	645	245
	4	40	980	580	790	390
	6	40	1125	725	895	495
90	2	50	915	355	755	195
	4	50	1125	565	915	355
	6	50	1275	715	1030	470
100	2	60	1200	540	980	320
	4	60	1480	820	1190	530
	6	60	1695	1035	1355	695
112	2	60	1485	825	1195	535
	4	60	1860	1200	1480	820
	6	60	2140	1480	1690	1030
132	2	80	1725	845	1400	520
	4	80	2135	1255	1705	825
	6	80	2440	1560	1935	1055
160	2	110	2705	2005	2110	1410
	4	110	3475	2775	2685	1985
	6	110	4020	3320	3095	2395
180	2	110	3150	2350	2455	1655
	4	110	4050	3250	3130	2330
	6	110	4705	3905	3630	2830
200	2	110	4030	3130	3125	2225
	4	110	5195	4295	4000	3100
	6	110	6035	5135	4630	3730

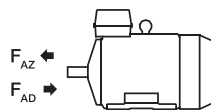
Permissible loading on the shaft

Permissible axial forces

The following table gives the permissible axial forces on shaft in Newton, assuming zero radial force, ambient temperature of 25℃, and normal conditions at 50Hz. The values are given for calculated bearing life of 20000 and 40000 hours per motor size.

Permissible loads of simultaneous radial and axial forces can be supplied on request.

For axial force F_{AD} , it is assumed that the D-bearing is locked with a locking ring.



Mounting arrangement IM B3

机座号 Motor size	极数 No. of poles	轴伸长度 Length of shaft extension E (mm)	深沟球轴承 Basic design with deep groove ball bearings			
			20,000小时 20,000 h		40,000小时 40,000 h	
			F_{AD} (N)	F_{AZ} (N)	F_{AD} (N)	F_{AZ} (N)
225	2	110	4415	3665	3390	2640
	4	140	5730	4980	4375	3625
	6	140	6670	5920	5085	4335
250	2	140	5480	4320	4240	3080
	4	140	7065	5905	5420	4260
	6	140	8195	7035	6270	5110
280	2	140	6105	4105	4795	2795
	4	140	7765	5765	6020	4020
	6	140	8990	6990	6935	4935
315SM	2	140	6025	4025	4720	2720
	4	170	8880	6880	6840	4840
	6	170	10225	8225	7815	5815
315ML	2	140	5955	3955	4655	2655
	4	170	8800	6800	6760	4760
	6	170	10115	8115	7710	5710
315LK	2	/	/	/	/	/
	4	170	8680	6680	6650	4650
	6	170	10145	8145	7745	5745
355SM	2	140	5630	3915	4340	2630
	4	210	10650	8940	8065	6350
	6	210	12365	10655	9305	7590
355ML	2	140	5755	4040	4460	2745
	4	210	10740	9025	8145	6435
	6	210	12160	10450	9110	7400

允许径向力

表中提供了环境温度为 25°C 时, 50Hz 的正常条件下, 轴向力为零时的轴伸允许径向力 (N)。分别对轴承寿命满足 20,000 小时和 40,000 小时进行计算。

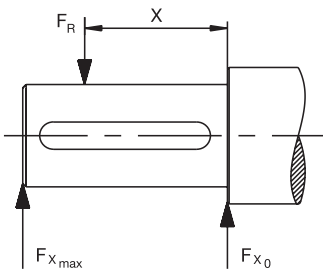
电机为底座安装型 IM B3, 并且含横向力。在某些情况下, 轴的强度影响允许负载力。

需提供同时存在径向力和轴向力的允许负载值, 请联系 ABB。

如果径向力作用于点 X_0 和 $X_{\max}$ 之间, 则允许负载力 F_R 可以通过以下公式计算:

$$F_R = F_{X_0} - \frac{X}{E} (F_{X_0} - F_{X_{\max}})$$

E : 基本型号中的轴伸长度



机座号 Motor size	极数 No. of poles	轴伸长度 Length of shaft extension E (mm)	深沟球轴承 Basic design with deep groove ball bearings			
			20,000小时 20,000 h	40,000小时 40,000 h	F_{X_0} (N)	$F_{X_{\max}}$ (N)
80	2	40	725	610	575	480
	4	40	925	790	730	625
	6	40	1060	905	835	715
90S	2	50	785	640	490	400
90SL	2	50	800	675	495	420
	4	50	1005	850	790	670
	6	50	1155	975	910	770
100	2	60	1115	940	840	710
	4	60	1390	1175	1090	920
	6	60	1610	1360	1270	1070
112	2	60	1470	1250	1160	985
	4	60	1845	1565	1450	1230
	6	60	2115	1795	1670	1415
132S	2	80	1635	1295	1290	1020
	4	80	2040	1615	1600	1270
	6	80	2350	1865	1850	1465
132SM	2	80	1655	1350	1300	1060
	4	80	2055	1675	1605	1310
	6	80	2350	1920	1840	1500
160	2	110	3045	2420	2385	1900
	4	110	3835	3120	3000	2440
	6	110	4360	3545	3405	2770
180	2	110	3535	2900	2775	2275
	4	110	4450	3650	3490	2865
	6	110	5095	4180	4000	3280

Permissible radial forces

The following table gives the permissible radial forces on shaft in Newton, assuming zero axial force, ambient temperature of 25°C, and normal conditions at 50Hz. The values are given for calculated bearing life of 20,000 and 40,000 hours per motor size.

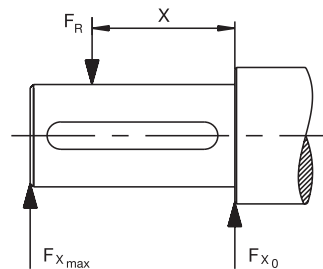
These calculated values further assume mounting position IM B3 (foot-mounted), with force directed sideways. In some cases, the strength of the shaft affects permissible forces.

Permissible loads of simultaneous radial and axial forces can be supplied on request.

If the radial force is applied between points X_0 and $X_{\max}$, the permissible force F_R can be calculated with the following formula:

$$F_R = F_{X_0} - \frac{X}{E} (F_{X_0} - F_{X_{\max}})$$

E : Length of the shaft extension in the standard version



机座号 Motor size	极数 No. of poles	轴伸长度 Length of shaft extension E (mm)	深沟球轴承 Basic design with deep groove ball bearings			
			20,000小时 20,000 h	40,000小时 40,000 h	F_{X_0} (N)	$F_{X_{\max}}$ (N)
200	2	110	4655	3895	3650	3055
	4	110	5840	4885	4575	3830
	6	110	6660	5570	5215	4360
225	2	110	5290	4480	4145	3510
	4	140	6635	5400	5195	4225
	6	140	7560	6150	5910	4805
250	2	140	6500	5305	5100	4160
	4	140	8125	6630	6365	5190
	6	140	9230	7530	7215	5885
280	2	140	6650	5525	5170	4295
	4	140	8365	7140	6470	5525
	6	140	9525	7910	7390	6140
315SM	2	140	6430	5480	4940	4210
	4	170	9810	8100	7570	6250
	6	170	11035	9110	8470	6995
315ML	2	140	6340	5500	4825	4190
	4	170	9735	8215	7470	6300
	6	170	10920	9215	8325	7020
315LK	2	/	/	/	/	/
	4	170	9540	8175	7250	6210
	6	170	11105	9515	8485	7270
355SM	2	140	5850	5130	4350	3815
	4	210	12130	10015	9205	7600
	6	210	13740	11345	10395	8580
355ML	2	140	6220	5520	4705	4175
	4	210	12465	10480	9510	8000
	6	210	13400	11270	10020	8420

机械设计

Mechanical design

标准接线盒交付

标准接线盒的防护等级为 IP55。标准情况下，接线盒安装在电机 D 端顶部。此外，还可以将接线盒安装在左侧或右侧，请参考订购信息。机座号 80-132 的电机，采用一体式接线盒。机座号 160-355 的电机，采用分体式接线盒。

机座号为 160-355 的电机接线盒可 4x90°转动。因此电机的两侧都可以接入电缆。但对于机座号为 80-132 的标准电机，接线盒无法转动。

如果未另行规定，则采用标准交付。

Standard terminal box

The degree of protection for the standard terminal box is IP 55. By default, terminal boxes are mounted on top of the motor at D-end. In motor sizes 80-132, the terminal box is integrated in motor frame. In motor sizes 160-355, the terminal box is separate from motor frame.

The terminal boxes of motor sizes 160-355 can be turned 4x90°, to allow cable entry from either side of motor. For motor sizes 80-132, turning is not possible in the standard motor.

Standard delivery if no other information is provided.

机座号 Motor size	极数 Pole number	螺纹孔 Threaded holes	电缆外径 mm Cable outer diameter mm	单芯横截面 平方毫米/相 Single core cross-section mm²/phase	端子螺栓尺寸 6x terminal bolt size 6x
80-90	2-6	2xM25x1.5	2×Ø11-16	4	M4
100-132	2-6	2xM32x1.5	2×Ø14-21	10	M5
160-180	2-6	2xM40x1.5, M16x1.5	2×Ø19-27, Ø5-9	35	M6
200-250	2-6	2xM63x1.5, M16x1.5	2×Ø37-44, Ø5-9	70	M10
280	2-6	2xM63x1.5, 2xM20x1.5	2×Ø37-44, 2×Ø8-14	2×150	M10
315	2-6	2xM63x1.5, 2xM20x1.5	2×Ø37-44, 2×Ø8-14	2×240	M12
355	2-6	2xM75x1.5, 2xM20x1.5	2×Ø48-60, 2×Ø8-14	4×240	M12

电机接地 Earthing	机座接地 Earthing on frame	主接线盒接地 Earthing in main terminal box
80-132	M5	M5
160-250	M6	M6
280-355	M10	M10

变频器驱动

Variable speed drives

轴承电流

功率大于等于 100kW 的电机应该采用消除轴承电流和电压的防护措施,使用镀陶轴(变量代码 692)或绝缘轴承(变量代码 701)。

运行速度

低压一般用途电机设计为可在较宽的转速范围内工作, 并且转速也大大高于标称值。最高速度可以在电机铭牌或 DriveSize 中找到。除此之外, 请确保不超过整个应用的最大或临界速度。

表 1 中显示了低压一般用途电机的最大转速限值

机座号	转速限值 r/min	
	2 极电机	4~6 极电机
80-112	6000	6000
132-200	4500	4500
225-250	4200	4200
280	3600	2500
315 SM	3600	2000
315 ML,LK	3600	2000
355	3600	1800

变频器驱动的电动机负载能力

变频器驱动和直接启动的电动机的运行温升存在差异, 其受到诸如以下因素的影响: 取决于电动机的轴流风扇的冷却效果, 变频器谐波导致损耗增加, 和在弱磁点上磁通量的降低。所有这些因素的影响都体现在负载曲线中。

图 1-2 中所示的负载能力曲线是通用的, 可以为以变频器驱动的低压电机提供指导。

Bearing current

$P \geq 100\text{kW}$ motors should adopt protect measures to eliminate bearing current and voltage, ether by ceramic coated shaft (variant code 692) or by insulated bearing (variant code 701).

Operating speed

General performance motors are designed to work over a wide speed range and also at speeds significantly higher than nominal. The maximum speeds can be found on motor rating plates or in DriveSize. In addition to motor speed, make sure that the maximum or critical speed of the entire application is not exceeded.

Guideline maximum speed values for general performance motors are shown in Table 1.

Motor size	Maximum speed, r/min	
	2 pole motors	4~6pole motors
80-112	6000	6000
132-200	4500	4500
225-250	4200	4200
280	3600	2500
315 SM	3600	2000
315 ML,LK	3600	2000
355	3600	1800

Motor loadability with frequency converter drives

The difference in the temperature rise of a motor run direct on line compared to the same motor run with a converter is influenced by factors such as the cooling effect of a shaft-mounted fan depending on the speed of the motor, increased losses due to harmonics generated by the converter and reduced flux above the field weakening point. The effects of all these factors are combined in the loadability curves.

The loadability curves shown in Figures 1-2 are generic and give indicative guidelines for dimen-sioning low-voltage motors used with a frequency converter.

变频器驱动

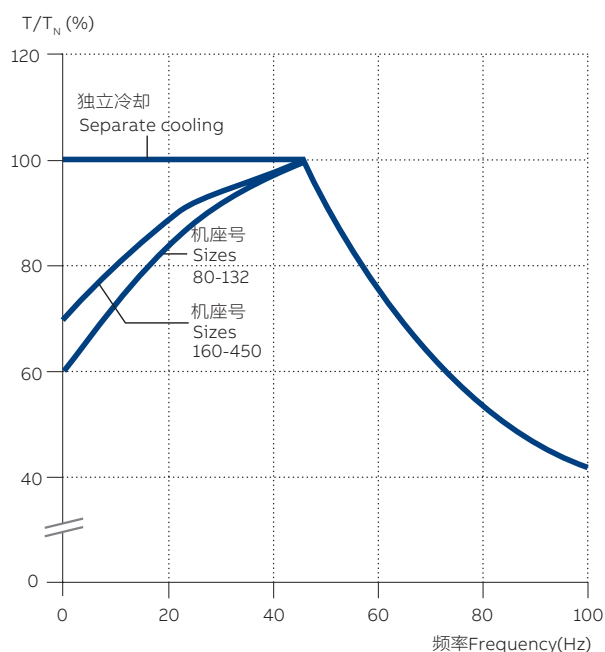
Variable speed drives

图 1 具有 DTC 控制的 ABB 变频器负载曲线

Figure 1. Loadability curves for ABB frequency converters with DTC control

B 级温升

Temperature rise B



F 级温升

Temperature rise F

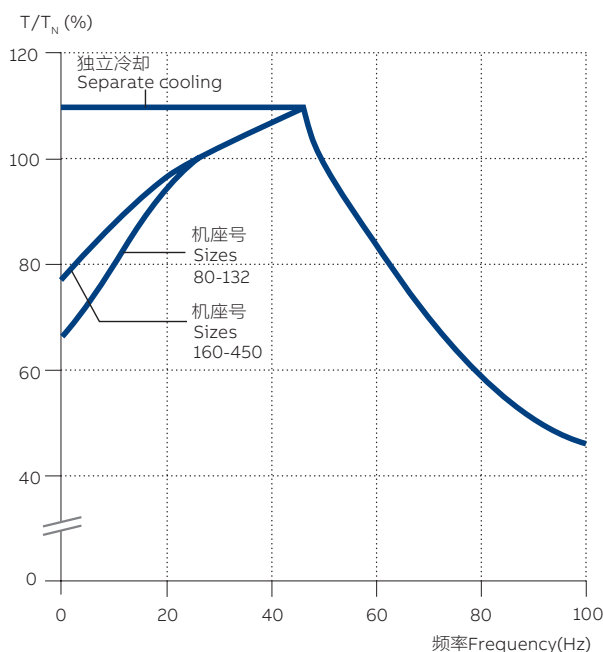
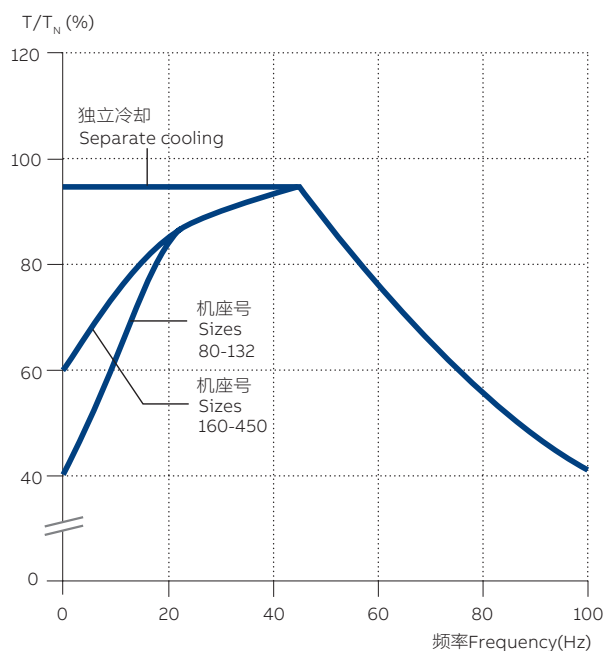


图 2 其它控制类型的变频器负载曲线

Figure 2. Loadability curves for other frequency converters

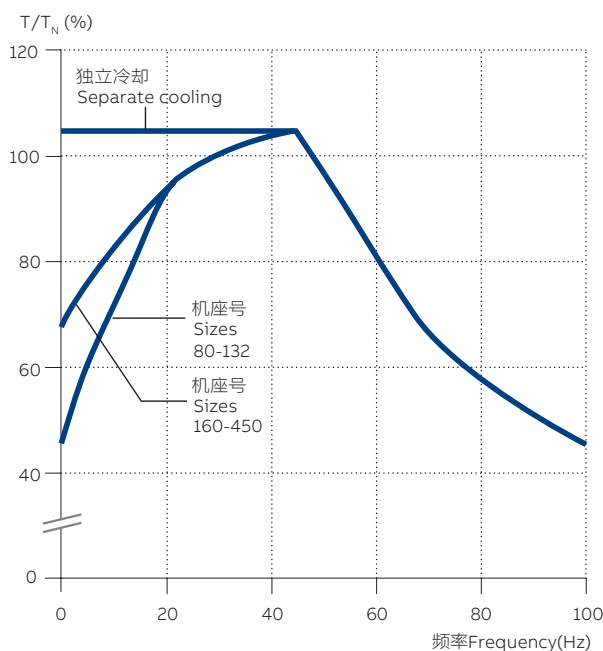
B 级温升

Temperature rise B



F 级温升

Temperature rise F



技术数据

Technical data

IE4

2P 380V 50Hz

三相全封闭鼠笼式电机的技术数据

Technical data for totally enclosed squirrel cage three phase motors

IP55 - IC411 绝缘等级 F，温升等级 B
0.37-355kW，符合 GB 18613-2020 的 2 级能效，符合 IEC 60034-30-1:2014 的 IE4 效率等级
IP55 - IC411 Insulation class F, temperature class B
0.37-355kW, Grade 2 according to GB 18613-2020, IE4 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1;2014			功率 因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L _{PA} dB
				满载 load 100%	3/4 负载 load 75%	1/2 负载 load 50%		I _N A	I _s /I _N	T _N Nm	T _l / T _N	T _b / T _N			
kW			r/min				cosφ						J=1/4 GD²kgm²	kg	
3000 r/min = 2 极 / 2 poles			380 V	CENELEC- 设计 design											
0.75	M2BAF 80MA 2	3GBA081310---PCN	2872	83.5	84.5	83.3	0.86	1.59	7.2	2.5	3.3	3.5	0.0011	17	59
1.1	M2BAF 80MLA 2	3GBA081410---PCN	2866	85.2	86.6	86.4	0.86	2.28	7.5	3.7	3.4	3.6	0.0014	20	59
1.5	M2BAF 90SA 2	3GBA091110---PCN	2903	86.5	87.8	87.6	0.89	2.96	7.8	5.0	2.9	3.6	0.0027	24	59
2.2	M2BAF 90SLA 2	3GBA091010---PCN	2915	88.0	89.1	89.1	0.89	4.27	8.7	7.2	3.1	4.1	0.0038	31	60
3	M2BAF 100LKA 2	3GBA101810---PCN	2875	89.1	90.9	91.7	0.90	5.68	7.5	10.1	2.7	3.4	0.0064	45	58
4	M2BAF 112MLA 2	3GBA111410---PCN	2893	90.0	88.7	89.3	0.89	7.59	7.4	13.2	2.7	3.4	0.0083	49	62
5.5	M2BAF 132SA 2	3GBA131110---PCN	2900	90.9	91.6	91.7	0.88	10.4	7.7	18.1	2.2	3.3	0.014	69	65
7.5	M2BAF 132SMA 2	3GBA131210---PCN	2900	91.7	92.8	93.0	0.90	13.8	7.6	24.7	2.2	3.2	0.017	81	65
11	M2BAF 160MLA 2	3GBA161410---PCN	2930	92.6	93.1	92.9	0.91	19.9	8.3	35.9	2.8	3.5	0.051	130	70
15	M2BAF 160MLB 2	3GBA161420---PCN	2941	93.3	93.6	93.3	0.90	27.2	9.8	48.7	3.4	4.0	0.063	149	70
18.5	M2BAF 160MLC 2	3GBA161430---PCN	2930	93.7	94.3	94.4	0.91	33.1	9.1	60.3	3.3	3.7	0.076	162	70
22	M2BAF 180MLA 2	3GBA181410---PCN	2955	94.0	94.5	94.2	0.89	39.9	8.1	71.1	3.1	3.7	0.13	216	74
30	M2BAF 200MLA 2	3GBA201410---PCN	2955	94.5	95.1	94.9	0.89	54.2	8.0	96.9	3.2	3.3	0.20	263	79
37	M2BAF 200MLB 2	3GBA201420---PCN	2955	94.8	95.2	95.2	0.89	66.6	7.9	120	2.9	3.5	0.22	268	78
45	M2BAF 225SMA 2	3GBA221210---PCN	2972	95.0	95.2	94.7	0.89	80.8	8.7	145	3.7	3.1	0.30	347	81
55	M2BAF 250SMA 2	3GBA251210---PCN	2974	95.3	95.6	95.3	0.90	97.1	7.7	177	3.0	3.2	0.55	425	79
75	M2BAF 280SMA 2	3GBA281210---PCN	2977	95.6	95.5	94.8	0.88	135	7.2	241	1.9	3.0	0.9	571	74
90	M2BAF 280SMB 2	3GBA281220---PCN	2974	95.8	95.8	95.1	0.89	160	8.4	289	1.8	2.6	1.1	676	74
110	M2BAF 315SMA 2	3GBA311210---PCN	2980	96.0	96.0	95.3	0.87	200	6.2	352	1.6	3.0	1.15	797	76
132	M2BAF 315SMB 2	3GBA311220---PCN	2982	96.2	96.1	95.5	0.88	237	7.5	423	2.1	3.4	1.36	868	77
160	M2BAF 315MLA 2	3GBA311410---PCN	2980	96.3	96.2	96.5	0.89	284	6.9	512	2.0	3.1	1.56	998	77
185	M2BAF 315MLC 2	3GBA311430---PCN	2983	96.5	96.6	96.1	0.89	328	6.8	592	2.1	3.3	1.65	1017	77
200	M2BAF 315MLB 2	3GBA311420---PCN	2980	96.5	96.6	96.3	0.89	354	6.3	641	1.9	3.0	1.73	1055	77
220	M2BAF 355SMC 2	3GBA351230---PCN	2985	96.5	96.4	95.6	0.89	389	8.1	704	2.1	4.1	2.94	1435	79
250	M2BAF 355SMA 2	3GBA351210---PCN	2983	96.5	96.4	95.8	0.90	437	7.6	800	2.0	3.8	2.94	1435	79
280	M2BAF 355SMD 2	3GBA351240---PCN	2983	96.5	96.4	95.7	0.89	495	7.7	896	2.3	3.8	3.2	1492	82
315	M2BAF 355SMB 2	3GBA351220---PCN	2982	96.5	96.5	95.9	0.89	557	7.1	1009	2.2	3.3	3.39	1566	82
355	M2BAF 355MLA 2	3GBA351410---PCN	2982	96.5	96.5	96.0	0.89	628	7.1	1137	2.2	3.2	3.41	1644	82

产品代码中的两个圆点表示可选的安装方式、电压及频率代码（见订购信息一页）。

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

I_s / I_N = 启动电流

T_l / T_N = 转子堵转转矩

T_b / T_N = 最大转矩

I_s / I_N = Starting current

T_l / T_N = Locked rotor torque

T_b / T_N = Breakdown torque

技术数据

Technical data

IE4

4P 380V 50Hz

三相全封闭鼠笼式电机的技术数据

Technical data for totally enclosed squirrel cage three phase motors

IP55 - IC411 绝缘等级 F, 温升等级 B
0.37-355kW, 符合 GB 18613-2020 的 2 级能效, 符合 IEC 60034-30-1:2014 的 IE4 效率等级
IP55 - IC411 Insulation class F, temperature class B
0.37-355kW, Grade 2 according to GB 18613-2020, IE4 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1;2014			功率 因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L _{PA} dB
				满载 load 100%	3/4 负载 load 75%	1/2 负载 load 50%		I _N A	I _s /I _N	T _N Nm	T _l / T _N	T _b / T _N			
kW			r/min				cosφ						J=1/4 GD²kgm²	kg	
1500 r/min = 4 极 / 4 poles			380 V	CENELEC- 设计 design											
0.55	M2BAF 80MLA 4	3GBA082410---PCN	1443	83.9	84.8	83.7	0.84	1.19	7.0	3.6	2.8	3.4	0.0028	20	47
0.75	M2BAF 80MLB 4	3GBA082420---PCN	1455	85.7	85.7	83.6	0.76	1.75	7.4	4.9	3.6	4.2	0.0033	23	47
1.1	M2BAF 90SLA 4	3GBA092010---PCN	1439	87.2	87.5	86.1	0.81	2.37	7.4	7.3	3.6	4.1	0.0062	30	51
1.5	M2BAF 90SLB 4	3GBA092020---PCN	1436	88.2	88.8	88.0	0.82	3.23	7.5	10.0	3.7	4.1	0.0072	33	52
2.2	M2BAF 100LKA 4	3GBA102810---PCN	1467	89.5	90.4	90.1	0.78	4.81	7.6	14.3	2.1	3.3	0.01	41	56
3	M2BAF 100LKB 4	3GBA102820---PCN	1465	90.4	91.2	91.0	0.80	6.30	7.6	19.6	2.1	3.2	0.02	47	56
4	M2BAF 112MLA 4	3GBA112410---PCN	1468	91.1	91.6	91.0	0.80	8.3	7.7	26.0	2.3	3.6	0.020	56	59
5.5	M2BAF 132SA 4	3GBA132110---PCN	1475	91.9	92.4	92.0	0.81	11.2	7.9	35.6	2.7	3.4	0.042	75	62
7.5	M2BAF 132SMA 4	3GBA132210---PCN	1471	92.6	93.3	93.1	0.83	14.8	7.9	48.7	3.4	3.7	0.055	91	62
11	M2BAF 160MLA 4	3GBA162410---PCN	1475	93.3	93.6	93.3	0.79	22.7	8.2	71.2	2.8	3.4	0.105	148	56
15	M2BAF 160MLB 4	3GBA162420---PCN	1473	93.9	94.5	94.3	0.82	29.6	7.8	97.3	2.6	3.2	0.13	165	59
18.5	M2BAF 180MLA 4	3GBA182410---PCN	1476	94.2	94.4	94.0	0.84	35.5	8.5	119	3.1	3.7	0.19	189	65
22	M2BAF 180MLB 4	3GBA182420---PCN	1476	94.5	94.7	94.3	0.85	41.6	8.5	142	3.2	3.6	0.22	205	65
30	M2BAF 200MLA 4	3GBA202410---PCN	1481	94.9	95.3	95.3	0.82	58.5	7.5	193	3.1	3.1	0.37	275	64
37	M2BAF 225SMA 4	3GBA222210---PCN	1481	95.2	95.6	95.5	0.85	69.5	8.2	239	3.1	3.2	0.54	332	65
45	M2BAF 225SMB 4	3GBA222220---PCN	1478	95.4	95.8	96.0	0.85	84.6	8.0	291	3.4	3.1	0.54	354	63
55	M2BAF 250SMA 4	3GBA252210---PCN	1484	95.7	95.9	95.5	0.87	101	9.0	354	4.1	3.4	0.94	450	69
75	M2BAF 280SMA 4	3GBA282210---PCN	1484	96.0	96.1	95.8	0.85	140	6.7	483	2.5	2.8	1.8	654	63
90	M2BAF 280SMB 4	3GBA282220---PCN	1484	96.1	96.4	96.3	0.85	167	7.7	581	2.9	3.1	1.9	701	63
110	M2BAF 315SMA 4	3GBA312210---PCN	1489	96.3	96.4	96.0	0.86	202	7.2	705	2.2	2.8	2.6	856	66
132	M2BAF 315SMB 4	3GBA312220---PCN	1489	96.4	96.5	96.2	0.86	242	7.6	846	2.4	3.1	3.0	911	68
160	M2BAF 315MLA 4	3GBA312410---PCN	1488	96.6	96.8	96.6	0.87	289	7.5	1026	2.5	3.1	3.6	1056	68
185	M2BAF 315LKB 4	3GBA312820---PCN	1489	96.7	96.9	96.7	0.87	335	7.6	1186	2.3	3.5	4.7	1281	67
200	M2BAF 315LKA 4	3GBA312810---PCN	1488	96.7	97.0	97.0	0.88	357	7.1	1280	2.2	3.2	4.7	1282	66
220	M2BAF 355SMC 4	3GBA352230---PCN	1492	96.7	96.8	96.5	0.85	407	7.3	1408	2.6	3.7	5.57	1483	74
250	M2BAF 355SMA 4	3GBA352210---PCN	1489	96.7	97.0	96.9	0.87	452	6.3	1603	2.2	3.0	5.92	1548	74
280	M2BAF 355SMD 4	3GBA352240---PCN	1491	96.7	96.9	96.6	0.86	512	6.9	1793	2.5	3.5	6.56	1640	76
315	M2BAF 355SMB 4	3GBA352220---PCN	1489	96.7	96.9	96.8	0.87	569	6.3	2020	2.3	3.0	6.56	1642	76
355	M2BAF 355MLA 4	3GBA352410---PCN	1490	96.7	96.9	96.7	0.87	641	6.8	2275	2.6	3.4	7.78	1903	76

产品代码中的两个圆点表示可选的安装方式、电压及频率代码（见订购信息一页）。

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

I_s / I_N = 启动电流
T_l / T_N = 转子堵转转矩
T_b / T_N = 最大转矩

I_s / I_N = Starting current
T_l / T_N = Locked rotor torque
T_b / T_N = Breakdown torque

技术数据

Technical data

IE4

6P 380V 50Hz

三相全封闭鼠笼式电机的技术数据
 Technical data for totally enclosed squirrel cage three phase motors

IP55 - IC411 绝缘等级 F，温升等级 B
 0.37-355kW，符合 GB 18613-2020 的 2 级能效，符合 IEC 60034-30-1:2014 的 IE4 效率等级
 IP55 - IC411 Insulation class F, temperature class B
 0.37-355kW, Grade 2 according to GB 18613-2020, IE4 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1:2014			功率 因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level,	
				满载 load 100%	3/4 负载 load 75%	1/2 负载 load 50%		I _N A	I _s /I _N	T _N Nm	T _l / T _N	T _b / T _N				
kW			r/min				cosφ							J=1/4 GD²kgm²	kg	L _{PA} dB
1000 r/min = 6 极 / 6 poles			380 V			CENELEC- 设计 design										
0.37	M2BAF 80MLA 6	3GBA083410-...PCN	950	78.0	78.4	76.0	0.75	0.96	4.5	3.7	2.0	2.7	0.0038	20	46	
0.55	M2BAF 80MLB 6	3GBA083420-...PCN	952	80.9	81.1	78.7	0.72	1.43	4.9	5.5	2.4	3.0	0.0044	23	47	
0.75	M2BAF 90SLA 6	3GBA093010-...PCN	941	82.7	83.2	82.6	0.75	1.84	4.6	7.6	2.4	2.8	0.0061	29	55	
1.1	M2BAF 90SLB 6	3GBA093020-...PCN	947	84.5	85.0	83.4	0.71	2.79	5.3	11.1	2.8	3.2	0.0073	32	56	
1.5	M2BAF 100LKA 6	3GBA103810-...PCN	969	85.9	86.1	85.0	0.76	3.35	6.9	14.9	2.3	3.3	0.012	40	47	
2.2	M2BAF 112MLA 6	3GBA113410-...PCN	975	87.4	88.3	87.4	0.72	5.32	6.8	21.7	2.2	3.1	0.021	50	45	
3	M2BAF 132SA 6	3GBA133110-...PCN	981	88.6	89.4	88.4	0.72	7.20	6.7	29.2	2.0	3.0	0.042	66	57	
4	M2BAF 132SMA 6	3GBA133210-...PCN	981	89.5	90.3	89.6	0.72	9.40	7.0	38.9	2.1	3.1	0.053	79	57	
5.5	M2BAF 132SMB 6	3GBA133220-...PCN	979	90.5	91.5	91.2	0.74	12.5	6.9	53.7	2.1	3.0	0.068	92	57	
7.5	M2BAF 160MLA 6	3GBA163410-...PCN	983	91.3	91.3	90.1	0.76	16.3	8.5	72.9	1.8	3.7	0.17	157	66	
11	M2BAF 160MLB 6	3GBA163420-...PCN	982	92.3	92.3	91.4	0.76	23.8	8.7	107	1.9	3.8	0.22	178	66	
15	M2BAF 180MLA 6	3GBA183410-...PCN	985	92.9	93.2	92.7	0.79	31.1	7.3	145	2.3	3.3	0.25	211	64	
18.5	M2BAF 200MLA 6	3GBA203410-...PCN	989	93.4	94.2	94.1	0.80	37.6	7.0	179	2.6	3.3	0.45	244	62	
22	M2BAF 200MLB 6	3GBA203420-...PCN	988	93.7	94.3	94.2	0.81	44.0	7.2	213	2.7	3.4	0.53	272	62	
30	M2BAF 225SMA 6	3GBA223210-...PCN	987	94.2	94.7	94.6	0.82	59.3	7.4	290	3.2	3.3	0.81	346	62	
37	M2BAF 250SMA 6	3GBA253210-...PCN	990	94.5	95.0	95.0	0.82	72.1	7.5	357	3.1	3.0	1.5	440	61	
45	M2BAF 280SMA 6	3GBA283210-...PCN	989	94.8	95.1	94.9	0.85	84.6	7.5	435	2.7	2.6	2.0	573	63	
55	M2BAF 280SMB 6	3GBA283220-...PCN	988	95.1	95.5	95.4	0.85	103	6.5	531	2.6	2.5	2.6	666	63	
75	M2BAF 315SMA 6	3GBA313210-...PCN	993	95.4	95.6	95.2	0.83	144	7.2	721	2.5	2.9	4.8	873	67	
90	M2BAF 315SMB 6	3GBA313220-...PCN	993	95.6	95.8	95.4	0.82	174	7.3	865	2.5	2.8	5.2	913	67	
110	M2BAF 315MLA 6	3GBA313410-...PCN	993	95.8	96.1	95.9	0.83	210	7.0	1058	2.2	2.6	6.2	1053	68	
132	M2BAF 315LKA 6	3GBA313810-...PCN	992	96.0	96.4	96.3	0.84	249	6.3	1267	2.3	2.8	7.2	1236	62	
160	M2BAF 355SMA 6	3GBA353210-...PCN	994	96.2	96.3	96.0	0.83	304	7.0	1537	2.3	2.9	9.5	1476	73	
185	M2BAF 355SMC 6	3GBA353230-...PCN	993	96.3	96.5	96.3	0.84	349	5.7	1780	1.7	3.1	10.4	1562	70	
200	M2BAF 355SMB 6	3GBA353220-...PCN	994	96.3	96.4	96.0	0.82	384	7.5	1921	2.3	2.8	11.3	1637	73	
220	M2BAF 355MLB 6	3GBA353420-...PCN	992	96.5	96.8	96.7	0.84	411	5.4	2117	1.7	2.9	12.1	1786	70	
250	M2BAF 355MLA 6	3GBA353410-...PCN	994	96.5	96.8	96.8	0.84	469	5.8	2403	1.8	3.1	13.2	1884	70	
280	M2BAF 355MLC 6	3GBA353430-...PCN	993	96.6	96.8	96.7	0.83	527	5.8	2694	1.9	3.1	13.7	1928	70	

产品代码中的两个圆点表示可选的安装方式、电压及频率代码（见订购信息一页）。
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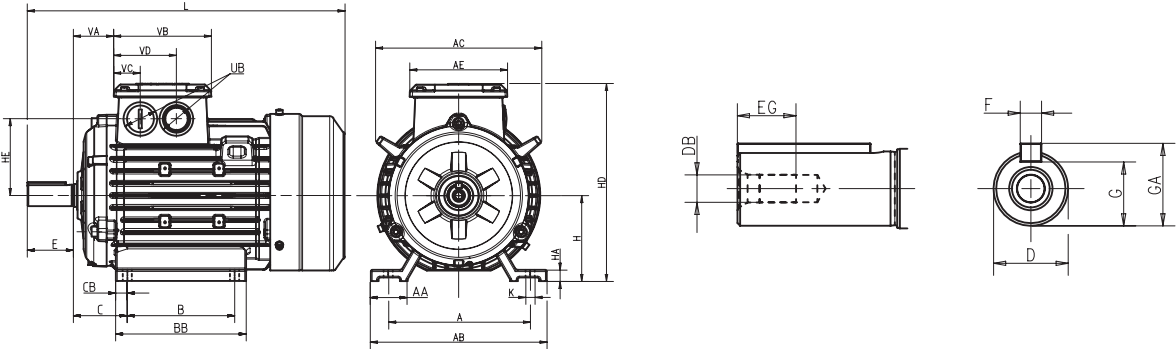
I_s / I_N = 启动电流
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 T_b / T_N = 最大转矩
 I_s / I_N = Starting current
 T_l / T_N = Locked rotor torque
 T_b / T_N = Breakdown torque



外形图及外形尺寸
Dimension drawings

机座号 80-132
Frame size 80-132

底脚安装型电机 IM1001, B3
Foot-mounted motor IM1001, B3



电机尺寸 Motor size		A	AA	AB	AC	AE	B	B'	BB	C	CB	D-tol.	DB	E	EG
M2BAF	80M	125	33	154	164	111	100	-	125	50	12.5	19-j6	M6	40	16
	80ML ¹⁾	125	33	154	164	111	100	112	150	50	12.5	19-j6	M6	40	16
	80ML ²⁾	125	33	154	164	111	100	112	180	50	12.5	19-j6	M6	40	16
	90S	140	33	170	195	111	100	-	124	56	12	24-j6	M8	50	19
	90SL	140	33	170	195	111	100	125	185	56	12	24-j6	M8	50	19
	100LK	160	38	200	233	127	140	160	205	63	15	28-j6	M10	60	22
	112ML	190	48	230	236	127	140	159	215	70	15	28-j6	M10	60	22
	132S	216	53	262	279	127	140	-	196	89	16	38-k6	M12	80	28
	132SM	216	53	262	279	127	140	178	246	89	16	38-k6	M12	80	28

电机尺寸 Motor size		F(h9)	G	GA	H	HA	HE	HD	K	L	UB	VA	VB	VC	VD
M2BAF	80M	6	15.5	21.5	80	12	69.5	197	10	312	M25x1.5	40	111	30	70
	80ML ¹⁾	6	15.5	21.5	80	12	69.5	197	10	337	M25x1.5	40	111	30	70
	80ML ²⁾	6	15.5	21.5	80	12	69.5	197	10	367	M25x1.5	40	111	30	70
	90S	8	20	27	90	12	88	222	10	339	M25x1.5	47	111	30	70
	90SL	8	20	27	90	12	88	222	10	390	M25x1.5	47	111	30	70
	100LK	8	24	31	100	15	103	249	12	463	M32x1.5	52	127	35	82
	112ML	8	24	31	112	15	112	270	12	480	M32x1.5	63	127	35	82
	132S	10	33	41	132	18	134	312	12	510	M32x1.5	62	127	35	82
	132SM	10	33	41	132	18	134	312	12	560	M32x1.5	62	127	35	82

公差 Tolerance	附注 Footnotes
A, B ±0.8	¹⁾ MLA 2, MLA 4, MLA 6
H +0, -0.5	²⁾ MLB 4, MLB 6
C ±0.8	

上表给出了主要尺寸（单位：mm）
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Above table gives the main dimensions in mm.
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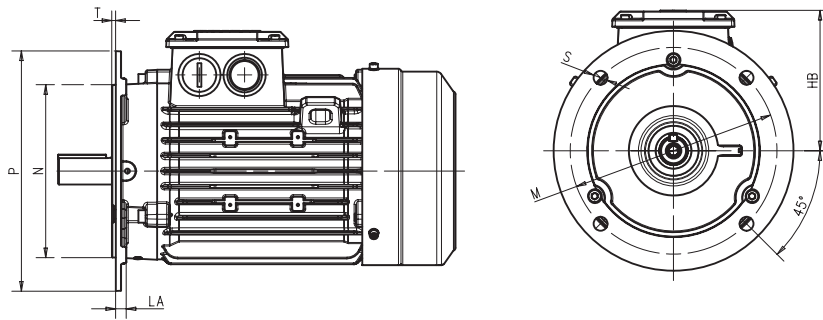
外形图及外形尺寸

Dimension drawings

机座号 80-132

Frame size 80-132

凸缘安装型电机 IM3001, B5
Flange-mounted motor IM3001, B5



电机尺寸 Motor size		HB	LA	M	N	P	S	T
M2BAF	80M	117	10	165	130	200	12	3.5
	80ML ¹⁾	117	10	165	130	200	12	3.5
	80ML ²⁾	117	10	165	130	200	12	3.5
	90S	132	10	165	130	200	12	3.5
	90SL	132	10	165	130	200	12	3.5
	100LK	149	11	215	180	250	14.5	4
	112ML	158	11	215	180	250	14.5	4
	132S	180	12	265	230	300	14.5	4
	132SM	180	12	265	230	300	14.5	4

公差 Tolerance	附注 Footnotes
A, B ±0.8	¹⁾ MLA 2, MLA 4, MLA 6
H +0, -0.5	²⁾ MLB 4, MLB 6
C ±0.8	

上表给出了主要尺寸 (单位: mm)
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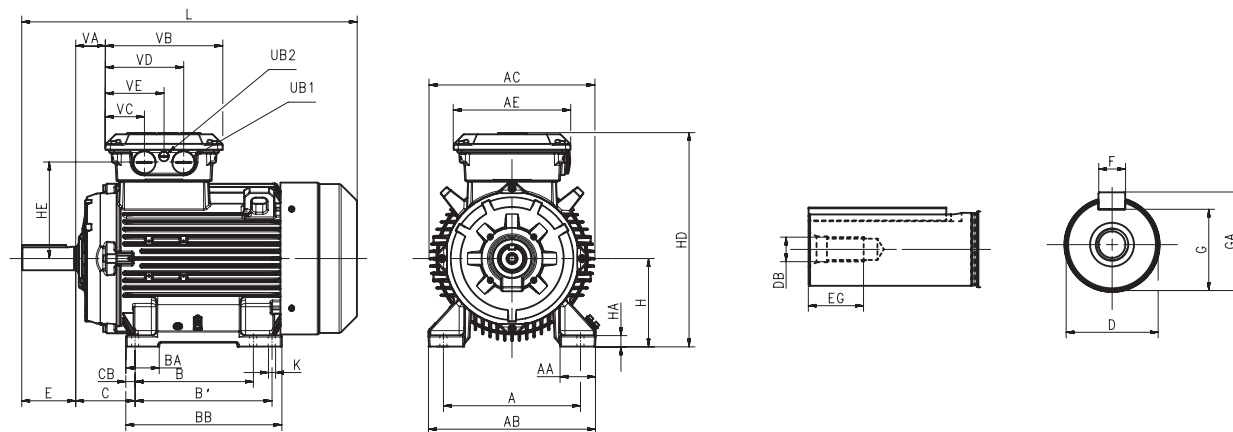
外形图及外形尺寸

Dimension drawings

机座号 160-250

Frame size 160-250

底脚安装型电机 IM1001, B3
Foot-mounted motor IM1001, B3



电机尺寸 Motor size	极数 Poles	A	AA	AB	AC	AE	B	B'	BA	BB	C	CB	D-tol.	DB	E	EG
M2BAF 160ML ¹⁾	2-6	254	67	310	338	239	210	254	71	294	108	20	42-k6	M16	110	36
160ML ²⁾	2-6	254	67	310	338	239	210	254	69	294	108	20	42-k6	M16	110	36
180ML	2-6	279	65	340	364	239	241	279	68	318	121	19	48-k6	M16	110	36
200ML	2-6	318	69	378	400	257	267	305	80	345	133	19.5	55-m6	M20	110	42
225SM	2	356	87	434	450	257	286	311	68	404	149	20	55-m6	M20	110	42
225SM	4-6	356	87	434	450	257	286	311	68	404	149	20	60-m6	M20	140	42
250SM	2	406	92	480	494	257	311	349	75	452	168	22	60-m6	M20	140	42
250SM	4-6	406	92	480	494	257	311	349	75	452	168	22	65-m6	M20	140	42

电机尺寸 Motor size	极数 Poles	F(h9)	G	GA	H	HA	HD	HE	K	L	UB1	UB2	VA	VB	VC	VD	VE
M2BAF 160ML ¹⁾	2-6	12	37	45	160	23	417	197	14.5	626.5	M40x1.5	M16x1.5	60	239	80	160	120
160ML ²⁾	2-6	12	37	45	160	23	417	197	14.5	683.5	M40x1.5	M16x1.5	60	239	80	160	120
180ML	2-6	14	42.5	51.5	180	23	456	217	14.5	729	M40x1.5	M16x1.5	68	239	80	160	120
200ML	2-6	16	49	59	200	23	518	245	18.5	810	M63x1.5	M16x1.5	82	257	81	177	129
225SM	2	16	49	59	225	23	563	265	18.5	864	M63x1.5	M16x1.5	75	257	81	177	129
225SM	4-6	18	53	64	225	23	563	265	18.5	894	M63x1.5	M16x1.5	75	257	81	177	129
250SM	2	18	53	64	250	23	616	293	24	913	M63x1.5	M16x1.5	75	257	81	177	129
250SM	4-6	18	58	69	250	23	616	293	24	913	M63x1.5	M16x1.5	75	257	81	177	129

公差 Tolerance	附注 Footnotes
A, B ±0.8	¹⁾ MLA 2
H +0, -0.5	²⁾ MLA 4, MLA 6, MLB 2, MLB 4, MLB 6, MLC 2
C ±0.8	

上表给出了主要尺寸 (单位: mm)
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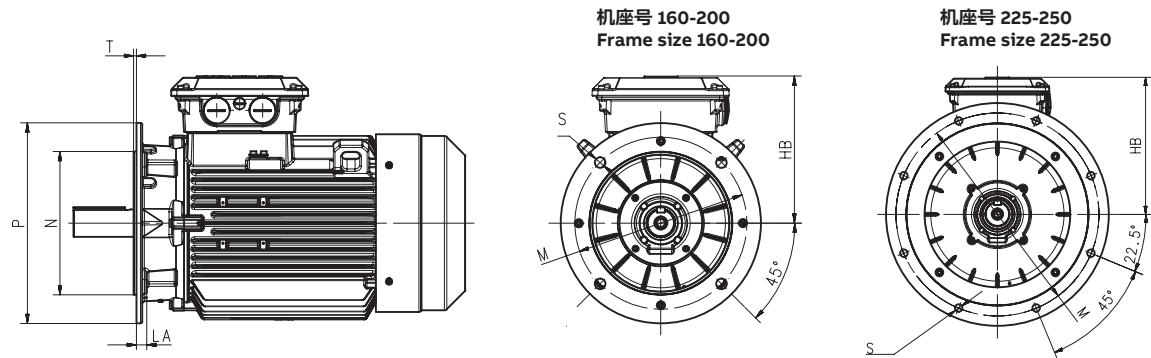
外形图及外形尺寸

Dimension drawings

机座号 160-250

Frame size 160-250

凸缘安装型电机 IM3001, B5
Flange-mounted motor IM3001, B5



电机尺寸 Motor size		极数 Poles	HB	LA	M	N(j6)	P	S	T
M2BAF	160ML ¹⁾	2-6	257	18	300	250	350	18.5	5
	160ML ²⁾	2-6	257	18	300	250	350	18.5	5
	180ML	2-6	276	16	300	250	350	18.5	5
	200ML	2-6	318	20	350	300	400	18.5	5
	225SM	2	338	20	400	350	450	18.5	5
	225SM	4-6	338	20	400	350	450	18.5	5
	250SM	2	366	24	500	450	550	18.5	5
	250SM	4-6	366	24	500	450	550	18.5	5

公差 Tolerance	附注 Footnotes
A, B ±0.8	¹⁾ MLA 2
H +0, -0.5	²⁾ MLA 4, MLA 6, MLB 2, MLB 4, MLB 6, MLC 2
C ±0.8	

上表给出了主要尺寸 (单位: mm)
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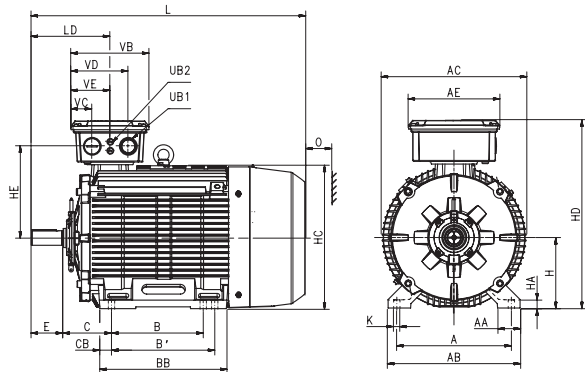
外形图及外形尺寸

Dimension drawings

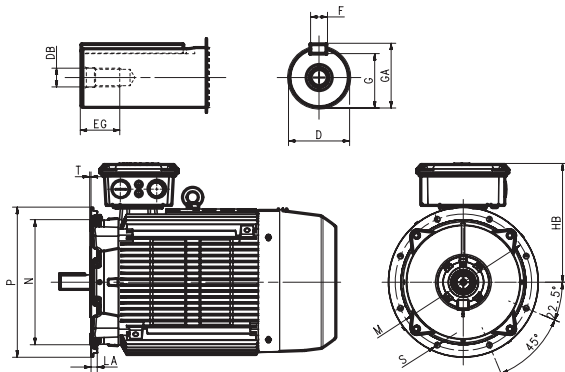
机座号 280-355

Frame size 280-355

底脚安装型电机 IM1001, B3
Foot-mounted motor IM1001, B3



凸缘安装型电机 IM3001, B5
Flange-mounted motor IM3001, B5



电机尺寸 Motor size	极数 Poles	A	AA	AB	AC	AE	B	B'	BB	C	CB	D-tol.	DB	E	EG	F(h9)	G
M2BAF 280SM ¹⁾	2	457	75	530	590	347	368	419	596	190	47	65-m6	M20	140	42	18	58
280SM ²⁾	2	457	75	530	590	347	368	419	485	190	38	65-m6	M20	140	42	18	58
280SM ¹⁾	4-6	457	75	530	590	347	368	419	596	190	47	75-m6	M20	140	42	20	67.5
280SM ²⁾	6	457	75	530	590	347	368	419	485	190	38	75-m6	M20	140	42	20	67.5
315SM	2	508	100	590	644	406	406	457	563	216	52	65-m6	M20	140	42	18	58
315SM	4-6	508	100	590	644	406	406	457	563	216	52	80-m6	M20	170	42	22	71
315ML	2	508	100	590	644	406	457	508	664	216	52	65-m6	M20	140	42	18	58
315ML	4-6	508	100	590	644	406	457	508	664	216	52	90-m6	M24	170	50	25	81
315LK	4-6	508	100	590	660	406	508	560	771	216	59	90-m6	M24	170	50	25	81
355SM	2	610	120	700	744	466	500	560	698	254	72	70-m6	M20	140	42	20	62.5
355SM	4-6	610	120	700	744	466	500	560	698	254	72	100-m6	M24	210	50	28	90
355ML	2	610	120	700	754	466	560	630	782	254	79	70-m6	M20	140	42	20	62.5
355ML	4-6	610	120	700	754	466	560	630	782	254	79	100-m6	M24	210	50	28	90

电机尺寸 Motor size	极数 Poles	GA	H	HA	HC	HD	HE	K	L	LD	O	UB1	UB2	VB	VC	VD	VE
M2BAF 280SM ¹⁾	2	69	280	30	573	747	354	24	1182	342	100	M63x1.5	M20x1.5	285	81	205	143
280SM ²⁾	2	69	280	30	573	747	354	24	1052	342	100	M63x1.5	M20x1.5	285	81	205	143
280SM ¹⁾	4-6	79.5	280	30	573	747	354	24	1182	342	100	M63x1.5	M20x1.5	285	81	205	143
280SM ²⁾	6	79.5	280	30	573	747	354	24	1052	342	100	M63x1.5	M20x1.5	285	81	205	143
315SM	2	69	315	38	638	837	409	28	1216	348	115	M63x1.5	M20x1.5	346	93	253	173
315SM	4-6	85	315	38	638	837	409	28	1246	378	115	M63x1.5	M20x1.5	346	93	253	173
315ML	2	69	315	38	638	837	409	28	1326	348	115	M63x1.5	M20x1.5	346	93	253	173
315ML	4-6	95	315	38	638	837	409	28	1356	378	115	M63x1.5	M20x1.5	346	93	253	173
315LK	4-6	95	315	38	638	837	409	28	1458	378	115	M63x1.5	M20x1.5	346	93	253	173
355SM	2	74.5	355	41	725	935	462	35	1399	399	130	M75x1.5	M20x1.5	356	98	258	178
355SM	4-6	106	355	41	725	935	462	35	1469	469	130	M75x1.5	M20x1.5	356	98	258	178
355ML	2	74.5	355	41	725	935	462	35	1514	399	130	M75x1.5	M20x1.5	356	98	258	178
355ML	4-6	106	355	41	725	935	462	35	1584	469	130	M75x1.5	M20x1.5	356	98	258	178

电机尺寸 Motor size	极数 Poles	HB	LA	M	N	P	S	T
M2BAF 280	2-6	467	21	500	450j6	550	18.5	5
315	2-6	522	27	600	550j6	660	24	6
355	2-6	580	22	740	680js6	800	24	6

公差 Tolerance	附注 Footnotes
A, B ±0.8	¹⁾ SMB2/SMA4/ SMB4/SMB6
H +0, -1	²⁾ SMA2/SMA6
C ±0.8	

上表给出了主要尺寸 (单位: mm)
如需图纸详情, 请访问我们的网页
www.abb.com/motors&generators 或联系 ABB。

Above table gives the main dimensions in mm.
For detailed drawings please see our web-pages
www.abb.com/motors&generators or contact ABB.

变量代码

Variant codes

变量代码 Variant code	描述 Description	M2BAF													
		80	90	100	112	132	160	180	200	225	250	280	315	355	
002	重敲铭牌电压、频率、输出、连续工作制 Restamping voltage, frequency and output, continuous duty	●	●	●	●	●	●	●	●	●	●	●	●	●	
005	防护罩, 立式电机, 轴伸向下 Protective roof	●	●	●	●	●	●	●	●	●	●	●	●	●	
008	IM 2101 底脚 / 法兰安装, IEC 法兰, 由 IM 1001 派生 (B3 派生出 B34) IM 2101 foot/flange mounted, IEC flange, from IM 1001 (B34 from B3)	●	●	●	●	●	-	-	-	-	-	-	-	-	
009	IM 2001 底脚 / 法兰安装, IEC 法兰, 由 IM 1001 派生 (B3 派生出 B35) IM 2001 foot/flange mounted, IEC flange, from IM 1001 (B35 from B3)	●	●	●	●	●	●	●	●	●	●	●	●	●	
021	左侧接线盒 (从 D 端看) Terminal box LHS (seen from D-end)	●	●	●	●	●	●	●	●	●	●	●	●	●	
047	IM 3601 法兰安装, IEC 法兰, 由 IM 3001 派生 (B5 派生出 B14) IM 3601 flange mounted, IEC flange, from IM 3001 (B14 from B5)	●	●	●	●	●	-	-	-	-	-	-	-	-	
066	除 IM B3(1001)、IM B5(3001) 外的其它安装方式 (仅支持 V1 方式) IM V1 mounting	●	●	●	●	●	●	●	●	●	●	●	●	●	
114	特殊油漆颜色, 标准等级 Special paint color, standard grade	●	●	●	●	●	●	●	●	●	●	●	●	●	
130	轴承安装 Pt100 (3 线) Pt100 3-wire in bearings	-	-	-	-	-	●	●	●	●	●	●	●	●	
148	出厂试验报告 Routine test report	●	●	●	●	●	●	●	●	●	●	●	●	●	
180	右侧接线盒 (从 D 端看) Terminal box RHS (seen from D-end)	●	●	●	●	●	●	●	●	●	●	●	●	●	
181	变频铭牌 Frequency converter rating plate	●	●	●	●	●	●	●	●	●	●	●	●	●	
183	独立电机冷却 (轴流风扇, N 端) Separate motor cooling (fan axial, N-end)	●	●	●	●	●	●	●	●	●	●	●	●	●	
375	标准塑料葛兰 Standard plastic cable gland	●	●	●	●	●	●	●	●	●	●	●	●	-	
379	SKF 轴承 SKF bearings	●	●	●	●	●	●	●	●	●	●	●	●	●	
403	防护等级 IP56 Degree of protection IP56	●	●	●	●	●	●	●	●	●	●	●	●	●	
436	定子绕组安装 PTC- 热敏电阻 (3 个串联), 150 ° C PTC - thermistors (3 in series), 150 ° C, in stator winding	●	●	●	●	●	●	●	●	●	●	○	○	○	
446	定子绕组安装 Pt100(2 线), 每相 2 个 Pt100 2-wire in stator winding, 2 per phase	-	-	-	-	-	●	●	●	●	●	●	●	●	
451	加热带, 200-240V Heating element, 200 - 240V	●	●	●	●	●	●	●	●	●	●	●	●	●	
502	定子绕组安装 Pt100(3 线), 每相 1 个 Pt100 3-wire in stator winding, 1 per phase	-	-	-	-	-	●	●	●	●	●	●	●	●	
530	正常质保期延长 2 年 Two-year extension on standard warranty	●	●	●	●	●	●	●	●	●	●	●	●	●	
622	铸铁轴承内盖 (低窜动) Inner bearing cover of cast iron	●	●	●	●	●	●	●	●	●	●	○	○	○	
692	镀陶轴 Ceramic coated shaft	-	-	-	-	-	-	-	-	-	-	●	●	●	
701	N 端绝缘轴承 Insulated bearing at N-end	-	-	-	-	-	-	-	-	-	-	●	●	●	
865	延长一年质保 One-year extension on standard warranty	●	●	●	●	●	●	●	●	●	●	●	●	●	
880	锂电行业专用 (电机表面锌, 铜含量 <0.5%) Lithium battery industry (motor surface zinc/copper content less than 0.5%)	●	●	●	●	●	●	●	●	●	●	●	●	●	

○ 标配 | ● 可选 | - 不适用

○ = Included as standard | ● = Available as option | - = Not applicable

一般用途电机简介

General performance motors in brief

机座号 80-132

Frame size 80-132

电机尺寸 Motor size		80	90	100	112	132
机座与端盖 Stator and end shields	材料 Material	铸铁 Cast iron				
	油漆颜色 Paint color shade	Munsell 蓝 8B 4.5/3.25 Munsell blue 8B 4.5/3.25				
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)				
底脚 Feet		一体式铸铁底脚 Integrated cast iron feet				
轴承 Bearings	D 端 D-end	6204-2Z/C3	6205-2Z/C3	6206-2Z/C3	6207-2Z/C3	6208-2Z/C3
	N 端 N-end	6204-2Z/C3	6205-2Z/C3	6206-2Z/C3	6206-2Z/C3	6208-2Z/C3
轴向锁定轴承 Axially locked bearings		D 端锁定 Locked at D-end				
轴承密封 Bearing seals	D 端 , N 端 D-end, N-end	V 形圈 V-ring				
润滑 Lubrication		封闭式轴承 Bearings greased for life				
铭牌 Rating plate	材料 Material	不锈钢 Stainless steel				
接线盒 Terminal box	接线盒材料 Frame material	铸铁 Cast iron				
	接线盒盖材料 Cover material	铸铁 Cast iron				
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)				
	螺钉 Screws	电镀锌钢 Zinc-electroplated steel				
	螺纹孔 Threaded openings	2xM25		2xM32		
连接件 Connections	最大铜线 (Cu) 截面积 (mm²) Max Cu-area mm²	6		10		
	接线 Terminals	电缆接线头, 6 个端子 Cable lugs, 6 terminals				
风扇 Fan	材料 Material	玻璃纤维增强聚丙烯 Glass-fiber reinforced polypropylene				
风罩 Fan cover	材料 Material	钢板 Steel				
	油漆颜色 Paint color shade	Munsell 蓝 8B 4.5/3.25 Munsell blue 8B 4.5/3.25				
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)				
定子绕组 Stator winding	材料 Material	铜 Copper				
	绝缘 Insulation	F 级绝缘, B 级温升, 除非另有规定 Insulation class F. Temperature rise class B unless otherwise stated				
	绕组保护 Winding protection	可选 As option				
转子绕组 Rotor winding	材料 Material	压铸铝 Pressure die-cast aluminum				
平衡方法 Balancing method		半键平衡 Half-key balancing as standard				
排水孔 Drain holes		排水孔具有可闭合塞, 交付时为打开状态 Drain holes with closable plastic plugs, open on delivery				
键槽 Keyway		开口槽 Open keyway				
防护等级 Enclosure		IP 55				
冷却方式 Cooling method		IC 411				
吊环 Lifting lug		一体式铸铁吊环 Integrated cast iron lifting lug				

一般用途电机简介

General performance motors in brief

机座号 160-250

Frame size 160-250

电机尺寸 Motor size		160	180	200	225	250
机座与端盖 Stator and end shields	材料 Material	铸铁 Cast iron				
	油漆颜色 Paint color shade	Munsell 蓝 8B 4.5/3.25 Munsell blue 8B 4.5/3.25				
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)				
		底脚 Feet				
轴承 Bearings	D 端 D-end	6309-2Z/C3	6310-2Z/C3	6312-2Z/C3	6313-2Z/C3	6315-2Z/C3
	N 端 N-end	6209-2Z/C3	6210-2Z/C3	6212-2Z/C3	6213-2Z/C3	6215-2Z/C3
轴向锁定轴承 Axially locked bearings		D 端锁定 Locked at D-end				
轴承密封 Bearing seals	D 端 , N 端 D-end, N-end	V 形圈 V-ring				
润滑 Lubrication		封闭式轴承 Bearings greased for life				
铭牌 Rating plate	材料 Material	不锈钢 Stainless steel				
接线盒 Terminal box	接线盒材料 Frame material	铸铁 Cast iron				
	接线盒盖材料 Cover material	铸铁 Cast iron				
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)				
	螺钉 Screws	电镀锌钢 Zinc-electroplated steel				
	螺纹孔 Threaded openings	2xM40+M16		2xM63+M16		
连接件 Connections	最大铜线 (Cu) 截面积 (mm²) Max Cu-area mm²	35		70		
	接线 Terminals	电缆接线头, 6 个端子 Cable lugs, 6 terminals				
风扇 Fan	材料 Material	玻璃纤维增强聚丙烯 Glass-fiber reinforced polypropylene				
风罩 Fan cover	材料 Material	钢板 Steel				
	油漆颜色 Paint color shade	Munsell 蓝 8B 4.5/3.25 Munsell blue 8B 4.5/3.25				
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)				
定子绕组 Stator winding	材料 Material	铜 Copper				
	绝缘 Insulation	F 级绝缘, B 级温升, 除非另有规定 Insulation class F. Temperature rise class B unless otherwise stated				
	绕组保护 Winding protection	可选 As option				
转子绕组 Rotor winding	材料 Material	压铸铝 Pressure die-cast aluminum				
平衡方法 Balancing method		半键平衡 Half-key balancing as standard				
排水孔 Drain holes		排水孔具有可闭合塞, 交付时为打开状态 Drain holes with closable plastic plugs, open on delivery				
键槽 Keyway		开口槽 Open keyway				
防护等级 Enclosure		IP 55				
冷却方式 Cooling method		IC 411				
吊环 Lifting lug		一体式铸铁吊环 Integrated cast iron lifting lug				

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一般用途电机简介
General performance
motors in brief

机座号 280-355
Frame size 280-355

电机尺寸 Motor size		280	315	355
机座与端盖 Stator and end shields	材料 Material	铸铁 Cast iron		
	油漆颜色 Paint color shade	Munsell 蓝 8B 4.5/3.25 Munsell blue 8B 4.5/3.25		
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)		
底脚 Feet		一体式铸铁底脚 Integrated cast iron feet		
轴承 Bearings	D 端 D-end	6316/C3	6316/C3(2P) 6319/C3(4-6P)	6316/C3(2P) 6322/C3(4-6P)
	N 端 N-end	6316/C3	6316/C3	6316/C3
轴向锁定轴承 Axially locked bearings		D 端锁定 Locked at D-end		
轴承密封 Bearing seals	D 端 , N 端 D-end, N-end	V 形圈 V-ring		
润滑 Lubrication		可润滑轴承 Regreasable bearings		
铭牌 Rating plate	材料 Material	不锈钢 Stainless steel		
接线盒 Terminal box	接线盒材料 Frame material	铸铁 Cast iron		
	接线盒盖材料 Cover material	铸铁 Cast iron		
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)		
	螺钉 Screws	电镀锌钢 Zinc-electroplated steel		
	螺纹孔 Threaded openings	2xM63+2xM20	2xM63+2xM20	2xM75+2xM20
连接件 Connections	最大铜线 (Cu) 截面积 (mm²) Max Cu-area mm²	2x150	2x240	4x240
	接线 Terminals	电缆接线头, 6 个端子 Cable lugs, 6 terminals		
风扇 Fan	材料 Material	玻璃纤维增强聚丙烯/金属 Glass-fiber reinforced polypropylene/Metal		
风罩 Fan cover	材料 Material	钢板 Steel		
	油漆颜色 Paint color shade	Munsell 蓝 8B 4.5/3.25 Munsell blue 8B 4.5/3.25		
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)		
定子绕组 Stator winding	材料 Material	铜 Copper		
	绝缘 Insulation	F 级绝缘, B 级温升, 除非另有规定 Insulation class F. Temperature rise class B unless otherwise stated		
	绕组保护 Winding protection	定子绕组安装 PTC 热敏电阻 (3 个串联), 150°C PTC - thermistors (3 in series), 150 °C, in stator winding.		
转子绕组 Rotor winding	材料 Material	压铸铝 Pressure die-cast aluminum		
平衡方法 Balancing method		半键平衡 Half-key balancing as standard		
排水孔 Drain holes		排水孔具有可闭合塞, 交付时为打开状态 Drain holes with closable plastic plugs, open on delivery		
键槽 Keyway		开口槽 Open keyway		
防护等级 Enclosure		IP 55		
冷却方式 Cooling method		IC 411		
吊环 Lifting lug		分体式钢制吊环, 通过吊环螺纹连接到机座 Separate steel lifting lug, bolted to the stator		



ABB中国电机与发电机业务单元区域中心

北方区域中心（北京、天津、河北、河南、山西及内蒙古）
北京市朝阳区酒仙桥路甲10号D区1号 401楼
邮编: 100015
电话: +86 18101197623

南方区域中心（广东、广西、福建及海南）
广东省广州市珠江新城珠江西路15号珠江城大厦29楼
邮编: 510623
电话: +86 18116179306

华东区域中心（上海、浙江、江苏、安徽及山东）
上海市闵行区天星路380号
邮编: 200245
电话: +86 18116176178

西北区域中心（陕西、宁夏、青海、甘肃及新疆）
西安市经济技术开发区文景路中段158号3层
邮编: 710075
电话: +86 18112997797

西南区域中心（四川、云南、贵州、西藏及重庆）
成都市人民南路4段三号来福士广场塔T1楼
803-805室
邮编: 610042
电话: +86 18108199063

华中区域中心（湖北、湖南及江西）
湖北省武汉市武昌区临江大道96号武汉万达中心21楼
邮编: 430060
电话: +86 18116177129

东北区域中心（辽宁、吉林及黑龙江）
辽宁省沈阳市沈河区青年大街1-1号
市府恒隆广场办公楼1座3610-3612单元
邮编: 110063
电话: +86 18040066506

<http://new.abb.com/motors-generators/zh>

