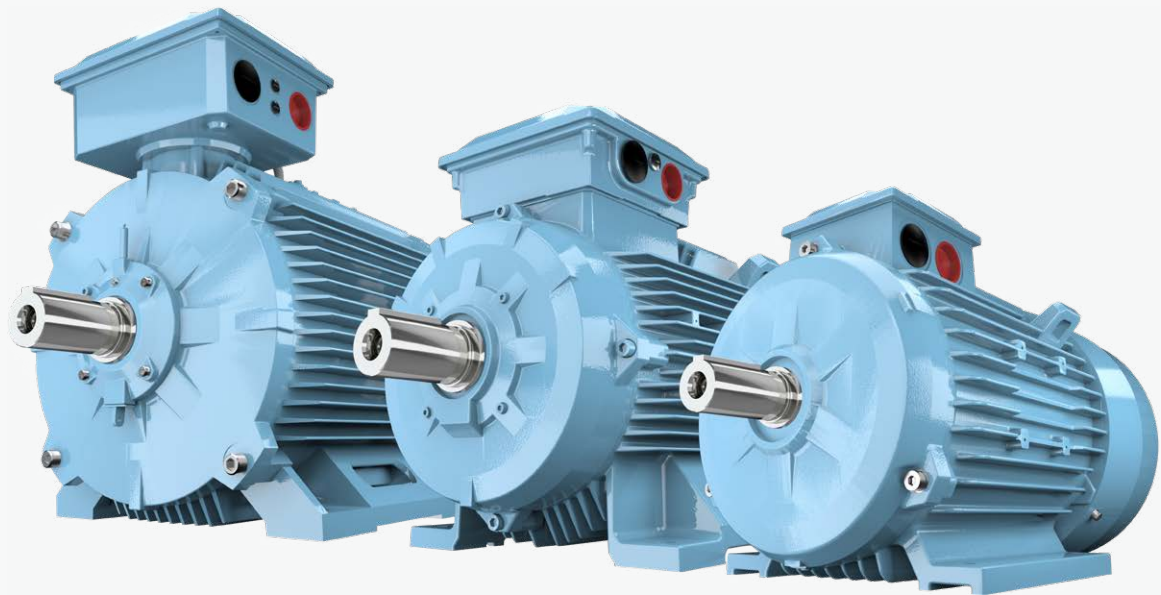


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样本

IE4 M2BAF低压一般用途电机

IE4 M2BAF - Low voltage General performance motors



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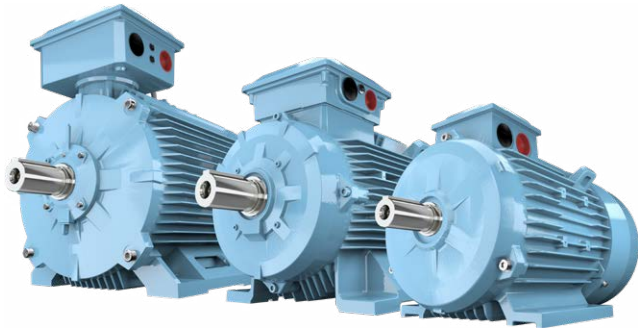
产品概述

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°C ~ 40°C
海拔不超过	1000m

产品简介

M2BAF 系列电机主要是针对风机、水泵等应用的 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 temperature	-20°C ~ 40°C
Max altitude	1000m

Brief

M2BAF series motors are mainly tailored for fans and pumps 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

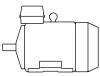
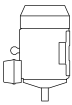
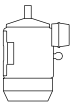
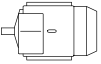
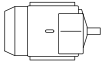
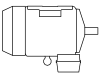
产品概述 - 安装结构形式

General information - Mounting arrangements

底脚安装型电机

Foot-mounted motor

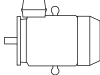
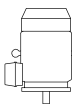
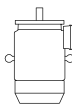

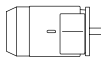
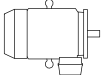
代码 I / 代码 II
Code I / code II

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

凸缘安装型电机，大凸缘

Flange-mounted motor, large flange

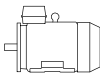
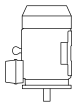
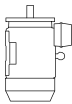


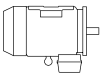
代码 I / 代码 II
Code I / code II

					
IM B5 IM 3001	IM V1 IM 3011	IM V3 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 2001	IM V15 IM 2011	IM V35 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	
电机型号	M2BAF 112 MLA
极数	4
安装方式 (IM 代码)	IM B3 (IM1001)
额定输出	4 kW
产品代码	3GBA 112 410-ADPCN
附加代码 (如需)	

Example	
Motor type	M2BAF 112 MLA
Pole number	4
Mounting arrangement (IM-code)	IM B3 (IM1001)
Rated output	4 kW
Product code	3GBA 112 410-ADPCN
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

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	

位置 7

极对数

1=2 极	3=6 极
2=4 极	

位置 8 -10

序列号

位置 11

-(破折号)

位置 12

安装方式

A = 底脚安装型电机
B = 凸缘安装型电机

位置 13

电压和频率

D 380 VΔ, 660 VY 50 Hz
S 220 VΔ, 380 VY 50 Hz

位置 14

产品族代码

Positions 1 to 4

3GBA = Totally enclosed motor with cast iron frame

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	

Positions 7

Speed (pole pairs)

1=2 poles	3=6 poles
2=4 poles	

Positions 8 to 10

Serial number

Positions 11

-(dash)

Position 12

Mounting arrangement

A = Foot-mounted motor
B = Flange-mounted motor. Large flange.

Position 13

Voltage and frequency

D 380 VΔ, 660 VY 50 Hz
S 220 VΔ, 380 VY 50 Hz

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 \pm							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 \pm							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 \pm							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 \pm							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

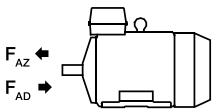
轴上允许负载

允许轴向力

表中提供了环境温度为 25°C 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	750	430	595	275
	4	40	920	600	710	390
	6	40	1060	740	815	495
90	2	50	930	370	770	210
	4	50	1160	600	930	370
	6	50	1315	755	1050	490
100	2	60	1220	560	1000	340
	4	60	1510	850	1220	560
	6	60	1745	1085	1375	715
112	2	60	1580	920	1275	615
	4	60	2025	1365	1580	920
	6	60	2320	1660	1805	1145
132	2	80	1760	880	1435	555
	4	80	2185	1305	1755	875
	6	80	2540	1660	1990	1110
160	2	110	2905	2205	2280	1580
	4	110	3815	3115	2905	2205
	6	110	4415	3715	3360	2660
180	2	110	3385	2585	2655	1855
	4	110	4365	3565	3385	2585
	6	110	5155	4355	3920	3120
200	2	110	4330	3430	3380	2480
	4	110	5590	4690	4325	3425
	6	110	6630	5730	5015	4115

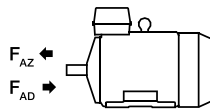
Permissible loading on the shaft

Permissible axial forces

The following table gives the permissible axial forces on shaft in Newton, assuming zero radial force, ambient temperature of 25°C, 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	4810	4060	3720	2970
	4	140	6245	5495	4805	4055
	6	140	7435	6685	5590	4840
250	2	140	5945	4785	4625	3465
	4	140	7675	6515	5935	4775
	6	140	9130	7970	6885	5725
280	2	140	6395	4395	5065	3065
	4	140	8130	6130	6385	4385
	6	140	9415	7415	7345	5345
315SM	2	140	6385	4385	5060	3060
	4	170	9450	7450	7380	5380
	6	170	10950	8950	8510	6510
315ML	2	140	6380	4380	5050	3050
	4	170	9445	7445	7375	5375
	6	170	10940	8940	8495	6495
315LK	4	170	9430	7430	7360	5360
	6	170	10925	8925	8485	6485
	2	140	6217	4505	4887	3175
355SM	4	210	12117	10405	9337	7625
	6	210	14112	12400	10852	9140
	2	140	6217	4505	4887	3175
355ML	4	210	12102	10390	9322	7610
	6	210	14097	12385	10837	9125

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。

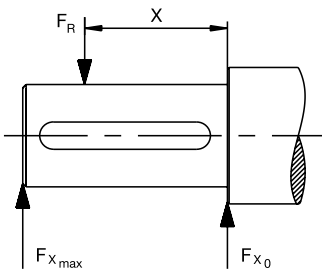
电机为底座安装型 IM B3，并且含横向力。在某些情况下，轴的强度影响允许负载力。

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



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.

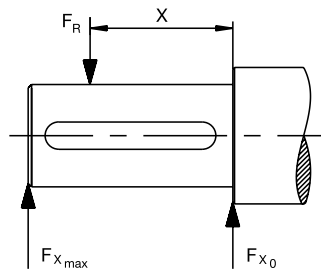
These calculated values further assume mounting position IM B3 (foot-mounted), with force directed sideways. In some cases, the strength of the shaft affects permissible forces.

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)
80	2	40	740	620	585	490
	4	40	950	825	755	655
	6	40	1090	945	865	750
90S	2	50	805	655	600	470
90SL	2	50	820	695	650	550
	4	50	1035	875	820	695
	6	50	1185	1000	940	795
100	2	60	1145	965	875	740
	4	60	1445	1220	1145	965
	6	60	1655	1395	1315	1105
112	2	60	1580	1340	1255	1065
	4	60	1990	1690	1580	1340
	6	60	2280	1935	1810	1535
132S	2	80	1680	1330	1330	1055
	4	80	2115	1675	1675	1325
	6	80	2425	1920	1920	1520
132SM	2	80	1710	1395	1355	1105
	4	80	2150	1755	1705	1390
	6	80	2465	2010	1955	1595
160	2	110	3295	2615	2615	2075
	4	110	4195	3410	3325	2705
	6	110	4795	3900	3800	3090
180	2	110	3840	3150	3045	2495
	4	110	4840	3970	3835	3145
	6	110	5540	4545	4395	3600

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	5045	4220	3995	3345
	4	110	6355	5315	5035	4215
	6	110	7275	6085	5760	4820
225	2	110	5805	4920	4600	3900
	4	140	7315	5950	5795	4715
	6	140	8370	6810	6630	5395
250	2	140	7100	5790	5625	4585
	4	140	8940	7290	7080	5775
	6	140	10225	8340	8100	6610
280	2	140	7225	6165	5720	4885
	4	140	9095	7760	7195	6145
	6	140	10420	8895	8250	7040
315SM	2	140	7150	6090	5660	4820
	4	170	10755	8880	8515	7030
	6	170	12295	10150	9725	8030
315ML	2	140	7220	6265	5710	4950
	4	170	10870	9170	8600	7255
	6	170	12425	10480	9825	8285
315LK	4	170	10940	9375	8650	7410
	6	170	12505	10715	9880	8465
355SM	2	140	7115	6235	5615	4920
	4	210	14925	12325	11800	9745
	6	210	17080	14100	13500	11150
355ML	2	140	7120	6240	5620	4925
	4	210	15050	12655	11890	10000
	6	210	17220	14480	13605	11440

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 mm ² /phase	端子螺栓尺寸 6x terminal bolt size 6x
80-90	2-6	2xM25x1.5	2xØ11-16	4	M4
100-132	2-6	2xM32x1.5	2xØ14-21	10	M5
160-180	2-6	2xM40x1.5, M16x1.5	2xØ19-27, Ø5-9	35	M6
200-250	2-6	2xM63x1.5, M16x1.5	2xØ37-44, Ø5-9	70	M10
280	2-6	2xM63x1.5, 2xM20x1.5	2xØ37-44, 2xØ8-14	2x150	M10
315	2-6	2xM63x1.5, 2xM20x1.5	2xØ37-44, 2xØ8-14	2x240	M12
355	2-6	2xM75x1.5, 2xM20x1.5	2xØ48-60, 2xØ8-14	4x240	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 dimensioning low-voltage motors used with a frequency converter.

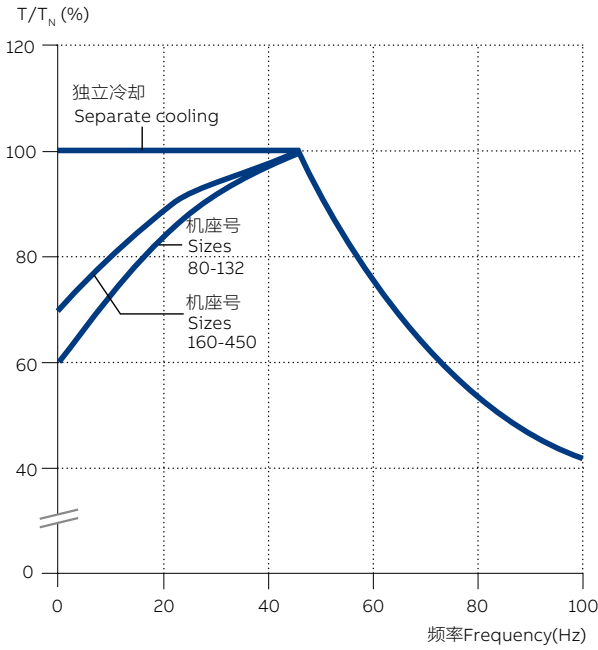
变频器驱动 Variable speed drives

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

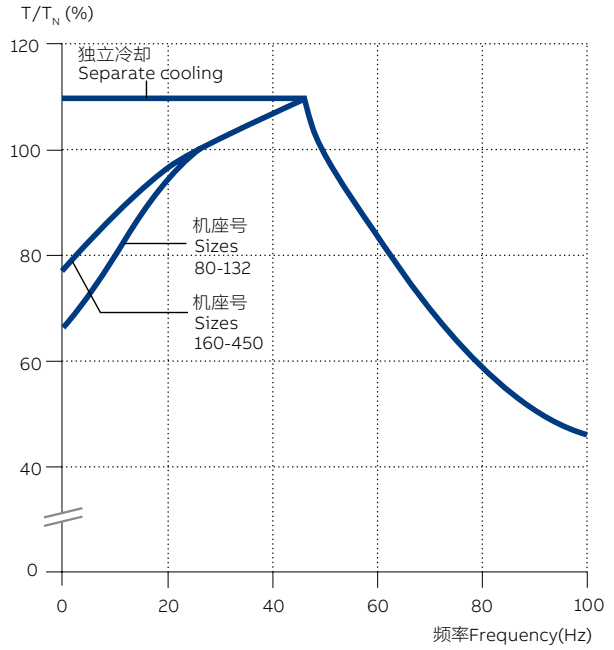
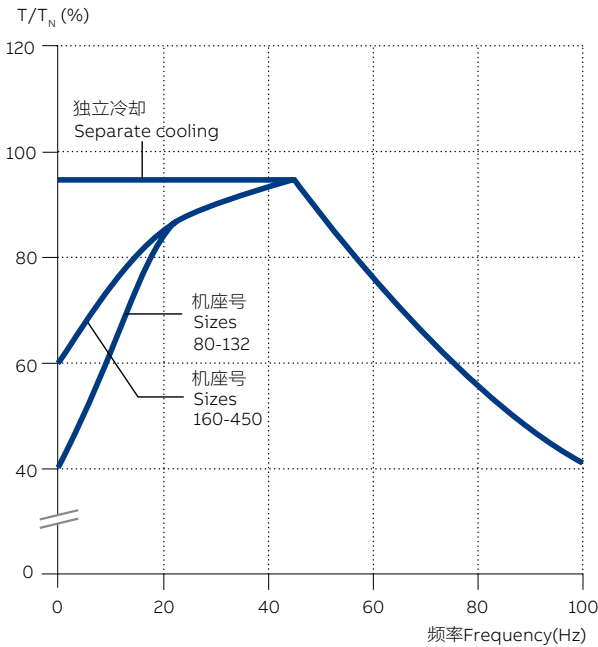


图 2 其它控制类型的变频器负载曲线

Figure 2. Loadability curves for other frequency converters

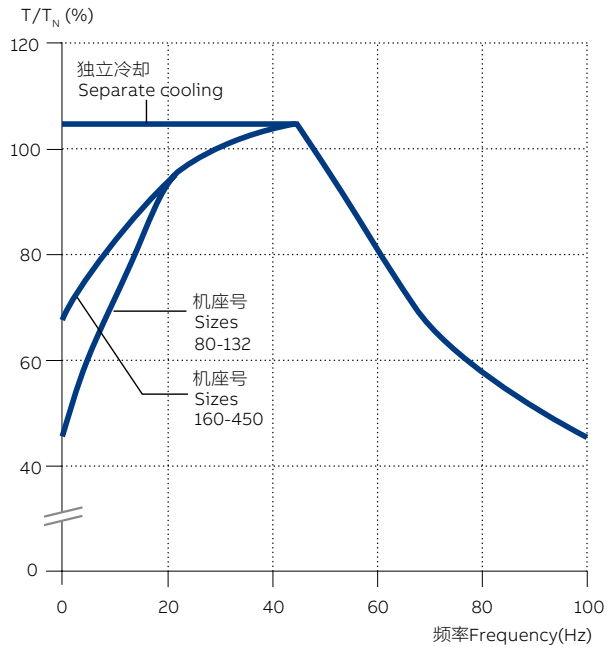
B 级温升

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 cosφ	电流 Current		转矩 / Torque			转动惯量 Moment of inertia J=1/4 GD²kgm²	重量 Weight kg	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												
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	20	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	22	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	27	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	34	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	51	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	57	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	77	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	89	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	149	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	168	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	181	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	237	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	288	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	293	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	380	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	467	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	693	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	750	74
110	M2BAF 315SMA 2	3GBA311210...PCN	2980	96.0	96.0	95.4	0.88	198	6.0	352	1.7	2.3	1.4	1029	77
132	M2BAF 315SMB 2	3GBA311220...PCN	2983	96.2	96.3	95.8	0.88	237	7.3	422	2.2	2.7	1.7	1097	77
160	M2BAF 315MLA 2	3GBA311410...PCN	2980	96.3	96.5	96.3	0.89	284	6.5	512	2.0	2.4	2.1	1320	77
185	M2BAF 315MLC 2	3GBA311430...PCN	2982	96.5	96.7	96.5	0.90	322	6.8	593	1.7	2.7	2.2	1337	76
200	M2BAF 315MLB 2	3GBA311420...PCN	2980	96.5	96.9	96.9	0.89	354	6.1	640	1.7	2.3	2.2	1359	77
220	M2BAF 355SMC 2	3GBA351230...PCN	2982	96.5	96.5	96.0	0.90	386	8.1	705	1.9	3.7	3.4	1565	79
250	M2BAF 355SMA 2	3GBA351210...PCN	2981	96.5	96.6	96.1	0.89	442	6.9	800	2.0	2.7	3.4	1593	83
280	M2BAF 355SMD 2	3GBA351240...PCN	2977	96.5	96.7	96.5	0.90	488	6.4	898	1.5	2.9	3.4	1598	79
315	M2BAF 355SMB 2	3GBA351220...PCN	2982	96.5	96.5	96.0	0.89	557	7.1	1008	2.1	2.5	3.6	1671	83
355	M2BAF 355MLA 2	3GBA351410...PCN	2980	96.5	96.6	96.2	0.89	628	6.7	1137	2.1	2.3	4.1	1848	83

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 cosφ	电流 Current		转矩 / Torque			转动惯量 Moment of inertia J=1/4 GD ² kgm ²	重量 Weight kg	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												
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	22	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	25	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	33	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	35	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	47	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	53	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	63	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	83	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	98	62
11	M2BAF 160MLA 4	3GBA162410...PCN	1475	93.3	93.8	93.5	0.80	22.5	7.6	71.2	2.6	3.5	0.12	187	59
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	184	59
18.5	M2BAF 180MLA 4	3GBA182410...PCN	1483	94.2	94.4	94.0	0.84	35.5	8.5	119	3.1	3.7	0.19	211	65
22	M2BAF 180MLB 4	3GBA182420...PCN	1483	94.5	94.7	94.3	0.85	41.6	8.5	142	3.2	3.6	0.22	226	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	273	64
37	M2BAF 225SMA 4	3GBA222210...PCN	1480	95.2	95.6	95.6	0.85	69.7	8.2	240	3.4	3.2	0.54	388	63
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	388	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	491	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	751	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	804	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	906	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	962	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	1107	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	1337	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	1333	66
220	M2BAF 355SMC 4	3GBA352230...PCN	1491	96.7	96.7	96.3	0.85	407	7.1	1409	2.4	4.0	5.9	1584	77
250	M2BAF 355SMA 4	3GBA352210...PCN	1490	96.7	96.9	96.7	0.86	456	7.2	1602	2.4	2.6	6.5	1649	74
280	M2BAF 355SMD 4	3GBA352240...PCN	1490	96.7	96.8	96.5	0.86	510	6.8	1794	2.3	3.7	7.0	1741	77
315	M2BAF 355SMB 4	3GBA352220...PCN	1490	96.7	96.9	96.8	0.85	582	7.1	2018	2.5	2.6	7.2	1741	74
355	M2BAF 355MLA 4	3GBA352410...PCN	1491	96.7	97.0	97.0	0.87	641	6.8	2271	2.4	3.7	8.4	2004	77

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 cosφ	电流 Current		转矩 / Torque			转动惯量 Moment of inertia J=1/4 GD ² kgm ²	重量 Weight kg	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												
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	22	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	25	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	32	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	35	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	47	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	57	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	74	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	87	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	100	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	176	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	196	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	233	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	269	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	296	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	380	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	486	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	627	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	721	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	927	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	934	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	1107	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	1289	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	1590	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	1662	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	1737	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	1889	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	1987	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	2031	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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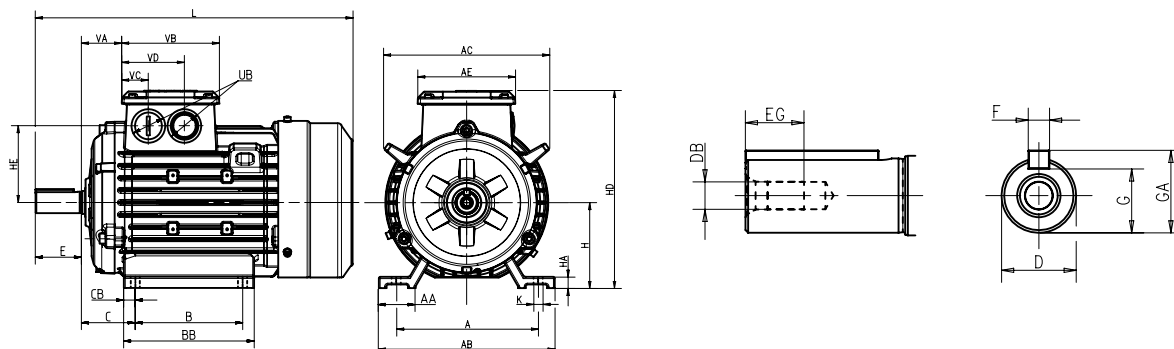
I_s / I_N = 启动电流
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T_B / T_N = 最大转矩

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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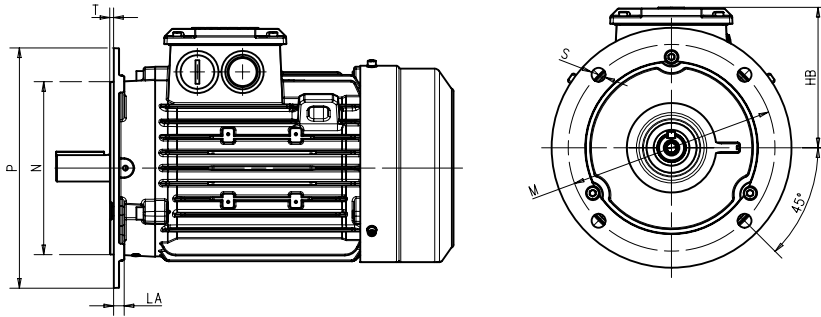
外形图及外形尺寸

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	

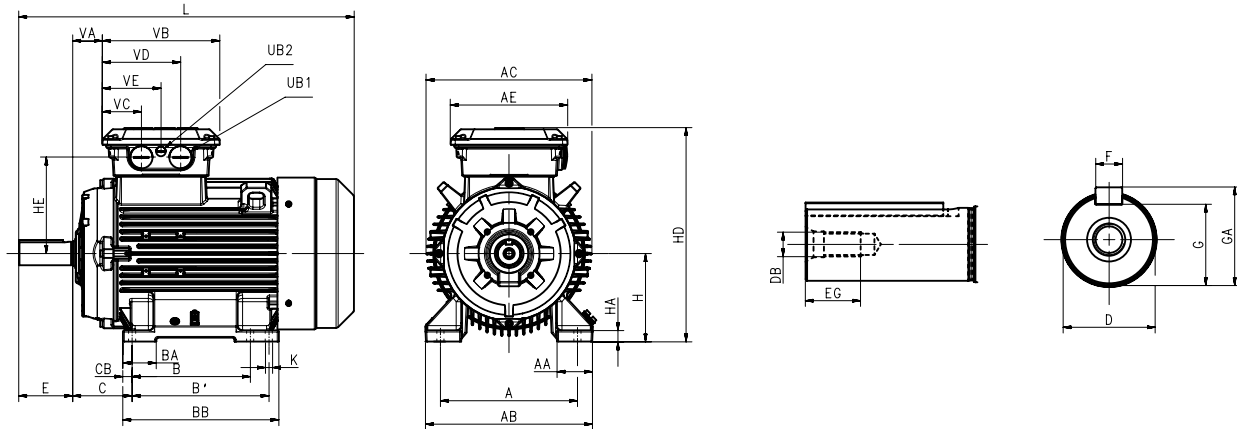
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外形图及外形尺寸 Dimension drawings

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,
C ±0.8	MLB 4, MLB 6, MLC 2

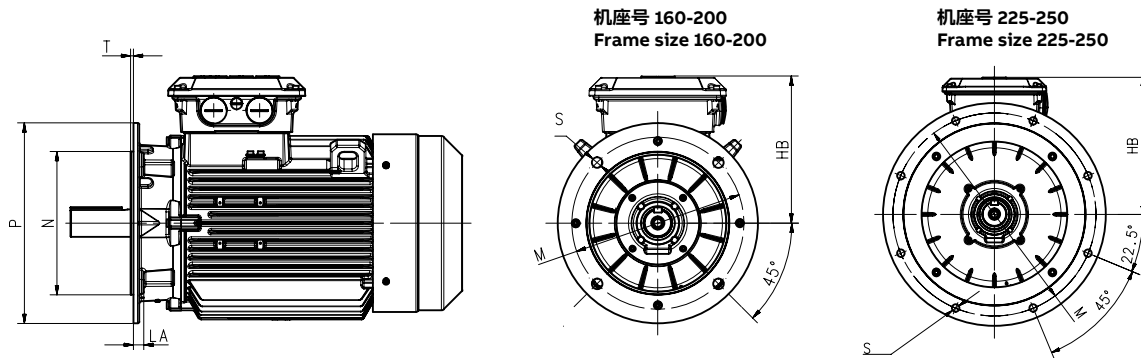
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外形图及外形尺寸 Dimension drawings

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	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,
C ±0.8	MLB 4, MLB 6, MLC 2

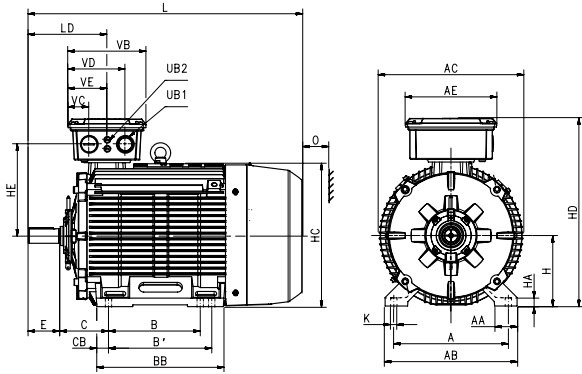
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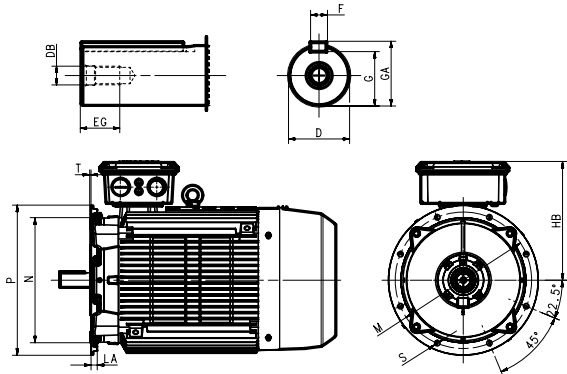
外形图及外形尺寸 Dimension drawings

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	571	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	571	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	739	466	500	560	698	254	72	70-m6	M20	140	42	20	62.5
355SM	4-6	610	120	700	739	466	500	560	698	254	72	100-m6	M24	210	50	28	90
355ML	2	610	120	700	749	466	560	630	782	254	79	70-m6	M20	140	42	20	62.5
355ML	4-6	610	120	700	749	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

多数变量代码同时适用于 IE2 和 IE3 电机，详情请咨询所在的销售区域中心。

Most of the variant codes apply to IE2 and IE3 motors. For details please contact you ABB sales office before making an order.

变量代码 Variant code	描述 Description	M2BAF												
		80	90	100	112	132	160	180	200	225	250	280	315	355
530	正常质保期延长 2 年 Two-year extension on standard warranty	●	●	●	●	●	●	●	●	●	●	●	●	●
865	延长一年质保 One-year extension on standard warranty	●	●	●	●	●	●	●	●	●	●	●	●	●
451	加热带, 200-240V Heating element, 200 - 240V	●	●	●	●	●	●	●	●	●	●	●	●	●
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)	●	●	●	●	●	●	●	●	●	●	●	●	●
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	●	●	●	●	●	●	●	●	●	●	●	●	●
701	N 端绝缘轴承 Insulated bearing at N-end	-	-	-	-	-	-	-	-	-	-	●	●	●
692	镀陶轴 Ceramic coated shaft	-	-	-	-	-	-	-	-	-	-	●	●	●
114	特殊油漆颜色, 标准等级 Special paint color, standard grade	●	●	●	●	●	●	●	●	●	●	●	●	●
005	防护罩, 立式电机, 轴伸向下 Protective roof	●	●	●	●	●	●	●	●	●	●	●	●	●
002	重敲铭牌电压、频率、输出、连续工作制 Restamping voltage, frequency and output, continuous duty	●	●	●	●	●	●	●	●	●	●	●	●	●
181	变频铭牌 Frequency converter rating plate	●	●	●	●	●	●	●	●	●	●	●	●	●
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	-	-	-	-	-	●	●	●	●	●	●	●	●
502	定子绕组安装 Pt100(3 线), 每相 1 个 Pt100 3-wire in stator winding, 1 per phase	-	-	-	-	-	●	●	●	●	●	●	●	●
130	轴承安装 Pt100 (3 线) Pt100 3-wire in bearings	-	-	-	-	-	●	●	●	●	●	●	●	●
148	出厂试验报告 Routine test report.	●	●	●	●	●	●	●	●	●	●	●	●	●
021	左侧接线盒 (从 D 端看) Terminal box LHS (seen from D-end)	●	●	●	●	●	●	●	●	●	●	●	●	●
180	右侧接线盒 (从 D 端看) Terminal box RHS (seen from D-end)	●	●	●	●	●	●	●	●	●	●	●	●	●
183	独立电机冷却 (轴流风扇, N 端) Separate motor cooling (fan axial, N-end)	●	●	●	●	●	●	●	●	●	●	●	●	●

○ 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 (mm ²) Max Cu-area mm ²	6		10		
	接线 Terminals	电缆接头, 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		一体式铸铁底脚 Integrated cast iron 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 (mm ²) Max Cu-area mm ²	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				

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 (mm ²) Max Cu-area mm ²	2x150	2x240	4x240
	接线 Terminals	电缆接头, 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		



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