
IE4 M2BAX 低压一般用途电机
IE4 M2BAX - Low voltage
General performance motors



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ABB 低压电机拥有了 ABB 的一流品质和雄厚支持，这些电机的性能得到大量客户和 OEM（原始设备制造商）的认可。电机达到 IE4 效率。

ABB Low voltage motors are with ABB quality and support. These motors have the features appreciated by volume customers and serial OEMs. Motors achieve IE4 efficiency.

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 和 EN 国际标准。同时，可按要求提供符合其他国家规范的电机。

所有生产厂家均通过 ISO 9001 国际质量认证及 ISO 14000 环境标准，并符合所有适用的欧盟指令。



产品简介

ABB M2BAX IE4系列产品是用于一般用途的低压高效三相异步电动机。该系列电机通过ABB全球研发平台设计，面对全球及中国市场。设计遵循IEC国际标准以及中国GB标准，效率高达IE4能效等级。符合中国2级能效标准（GB18613-2020）。

M2BAX IE4系列电机主要是针对大批量购买电机的OEM客户设计，其应用包括风机、水泵、减速机、压缩机、通用机械等，可适用于水处理、暖通空调、食品饮料、纺织、电力、机床、造纸、冶金等行业。M2BAX的优异品质及服务为客户提供了增值的空间，更高的产品灵活性可满足各类客户需求。

Standards

ABB motors are of the totally enclosed, three phase squirrel cage type, built to comply with international IEC and EN standards. Motors conforming to other national and international specifications are also available on request.

All production units are certified to ISO 9001 international quality standard as well ISO 14000 environmental standard and conform to all applicable EU Directives.

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

Brief

M2BAX IE4 - Low voltage general performance motors are ABB high efficiency products. This series of motors are designed for both the Chinese market and export. Product development is on ABB strong R&D platform. The design is in line with international IEC standards and China local GB standards. The efficiency level reaches IE4, equivalent to Grade 2(GB18613-2020).

M2BAX IE4 is specially designed for OEM customers, mainly integrated with fans, pumps, gear boxes, compressors and general machineries. Targeted industry is Water treatment, HVAC, Food & Beverage, Textile, Power, Pulp & Paper, Metal, etc. The high quality of M2BAX and the excellent service of ABB continuously make value for the customers. Higher product flexibilities lead to meet the ever-changing need from our customers.

产品概述 - 安装结构形式

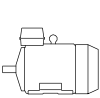


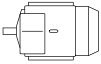
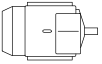
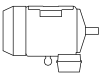
General information - Mounting arrangements

底脚安装型电机

Foot-mounted motor

代码 I / 代码 II
Code I / code II

产品代码位置 12
Product code pos. 12

						M000007
IM B3	IM V5	IM V6	IM B6	IM B7	IM B8	
IM 1001	IM 1011	IM 1031	IM 1051	IM 1061	IM 1071	

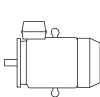




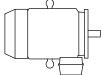
A = 底脚安装型, 接线盒在顶部
foot-mounted, term.box top

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

产品代码位置 12
Product code pos. 12

						M000008
IM B5	IM V1	IM V3	*)	*)	*)	
IM 3001	IM 3011	IM 3031	IM 3051	IM 3061	IM 3071	

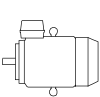


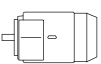
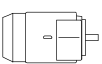
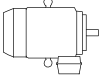
B = 凸缘安装型, 大凸缘
flange mounted, large flange

凸缘安装型电机, 小凸缘

Flange-mounted motor, small flange

代码 I / 代码 II
Code I / code II

变量代码
Variant code

						M000009
IM B14	IM V18	IM V19	*)	*)	*)	
IM 3601	IM 3611	IM 3631	IM 3651	IM 3661	IM 3671	





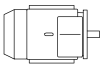
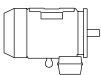
047 = B5 派生出 B14
B14 from B5

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

变量代码
Variant code

						M000010
IM B35	IM V15	IM V35	*)	*)	*)	
IM 2001	IM 2011	IM 2031	IM 2051	IM 2061	IM 2071	

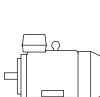




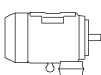
009 = B3 派生出 B35
B35 from B3

底脚和凸缘安装型电机, 小凸缘

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

代码 I / 代码 II
Code I / code II

变量代码
Variant code

						M000011
IM B34	IM V17	IM 2131	IM 2151	IM 2161	IM 2171	
IM 2101	IM 2111	IM 2131	IM 2151	IM 2161	IM 2171	

008 = B3 派生出 B34
B34 from B3

*) Not Stated in IEC 60034-7.
IEC 60034-7 无规定

产品概述 - 防护等级: IP 代码 / IK 代码

General information - Degrees of protection: IP code/IK code

按旋转电机外壳提供的防护等级分类符合

- 对于 IP 代码, 适用 IEC 60034-5 或 EN 60529
- 对于 IK 代码, 适用 EN 50102

IP 防护

防止人员接触 (或接近) 带电部件, 以及机壳内的运转部件。同时避免外界固体异物侵入机器内, 保护机器, 避免进水防止受到有害影响。

IK 代码

机壳保护电机不受外部机械冲击不利影响的程度分级。

Classification of degrees of protection provided by enclosures of rotating machines refers to:

- Standard IEC 60034-5 or EN 60529 for IP code
- Standard EN 50102 for IK code

IP protection

Protection of persons against getting in contact with (or approaching) live parts and against contact with moving parts inside the enclosure. Also protection of the machine against ingress of solid foreign objects. Protection of machines against the harmful effects due to the ingress of water.

IK code

Classification of degrees of protection provided by enclosure for motors against external mechanical impacts.

IP 代码说明

Explanation of the IP code

特征字母 Ingress protection	对人和机壳内电机部件的保护程度 Degree of protection to persons and to parts of the motors inside the enclosure	机壳防止机器进水, 遭受有害影响的防水程度 Degree of protection provided by the enclosure with respect to harmful effects due to ingress of water
IP	5	5
	1	2

位置1

Position 1

- 2: 防止大于 12mm 的固体进入机壳
Motors protected against solid objects greater than 12 mm
- 4: 防止大于 1mm 的固体进入机壳
Motors protected against solid objects greater than 1 mm
- 5: 防尘保护电机
Dust-protected motors
- 6: 隔尘电机
Dust-tight motors

位置2

Position 2

- 3: 使电机被溅水后不受损害
Motors protected against spraying water
- 4: 使电机被淋水后不受损害
Motors protected against splashing water
- 5: 使电机被喷水后不受损害
Motors protected against water jets
- 6: 使电机遭大浪后不受损害
Motors protected against heavy seas

IK 代码说明

Explanation of the IK code

国际机械保护 International mechanical protection	特征组 Characteristic group
IK	08
	1

位置1

Position 1

IK代码和冲击能量之间的关系:

Relation between IK code and impact energy:

IK代码 IK code	冲击能量焦耳 Impact energy/Joule
0:	不按照EN 50102提供保护 Not protected according to EN 50102
01:	0.15
02:	0.2
03:	0.35
04:	0.5
05:	0.7
06:	1
07:	2
08:	5 (ABB 标准) 5 (ABB Standard)
09:	10
10:	20

订购信息

Ordering information

订购时，请按照示例在订单中说明以下最小数据。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	M2BAX 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-ADNCN
附加代码 (如需)	

Example	
Motor type	M2BAX 112 MLA
Pole number	4
Mounting arrangement (IM-code)	IM B3 (IM1001)
Rated output	4 kW
Product code	3GBA 112 410-ADNCN
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
M2BAX	112MLA	3GBA 112 410 - ADNCN		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
2=4 极
3=6 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 = 凸缘安装型电机带通孔的大凸缘。

位置 13

电压和频率

D 380 VΔ, 400 VΔ, 660 VY, 690VY 50 Hz
S 220VΔ, 230VΔ, 380 VY, 400 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
2=4 poles
3=6 poles

Positions 8 to 10

Serial number

Positions 11

-(dash)

Position 12

Mounting arrangement

A = Foot-mounted motor

B = Flange-mounted motor. Large flange with clearance holes.

Position 13

Voltage and frequency

D 380 VΔ, 400 VΔ, 660 VY, 690VY 50 Hz
S 220VΔ, 230VΔ, 380 VY, 400 VY 50 Hz

Position 14

Generation code

铭牌

Rating plates



铭牌以表格形式提供六个电压的转速、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 six voltages.

IE4

机座号 80-355



铭牌示例

		ABB Shanghai Motors Co., Ltd Shanghai 200245 P.R. of China					
IE4		IEC60034-1					
3~ Motor		IE4 M2BAX 80MA 2 IMB3/IM1001				2022	
↔							
No.		Ins. cl.		F		IP 55	
V	Hz	kW	r/min	A	cos φ	Duty	
400	Y 50	0.75	2887	1.56	0.83	S1	
230	D 50	0.75	2887	2.72	0.83	S1	
380	Y 50	0.75	2872	1.59	0.86	S1	
220	D 50	0.75	2872	2.74	0.86	S1	
440	Y 60	0.75	3489	1.42	0.84	S1	
460	Y 60	0.75	3500	1.41	0.81	S1	
IE4-50Hz-83.5%(100%)							
Product code		3GBA081310-ASNCN					
		6204-2Z/C3 				6204-2Z/C3	
						19 kg	

IE4

Motor sizes 80 to 355

Rating Plate sample

		ABB Shanghai Motors Co., Ltd Shanghai 200245 P.R. of China					
IE4		IEC60034-1					
3~ Motor		IE4 M2BAX 160MLA 4 IMB3/IM1001				2022	
↔							
No.		Ins. cl.		F		IP 55	
V	Hz	kW	r/min	A	cos φ	Duty	
690	Y 50	11	1478	12.8	0.77	S1	
400	D 50	11	1478	22.0	0.77	S1	
660	Y 50	11	1475	13.0	0.80	S1	
380	D 50	11	1475	22.5	0.80	S1	
440	D 60	11	1779	19.8	0.77	S1	
460	D 60	11	1781	19.4	0.75	S1	
IE4-50Hz-93.3%(100%)							
Product code		3GBA162410-ADNCN					
		6309-2Z/C3 				6209-2Z/C3	
						181 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.

电气特性

Electrical design

额定输出

M2BAX 系列电机的额定功率是指电机运行在 S1- 连续工作制的情况下 (IEC 60034-1)，此时周围环境温度范围为 $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$ ，海拔高度不超过 1000m。

电压、频率

IEC 60034-1 定义了电压和频率的波动对温升的影响。标准将电压和频率的综合变化分为 A 和 B 两个区域。区域 A 是电压偏差 $\pm 5\%$ 和频率偏差 $\pm 2\%$ 的情况；区域 B 是电压偏差 $\pm 10\%$ 和频率偏差 $+3\%/-5\%$ 的情况。

电机均能在 A 和 B 两区域内提供额定转矩，但温升会高于在额定电压和频率情况下的值。电机只允许在区域 B 中短时间运行。

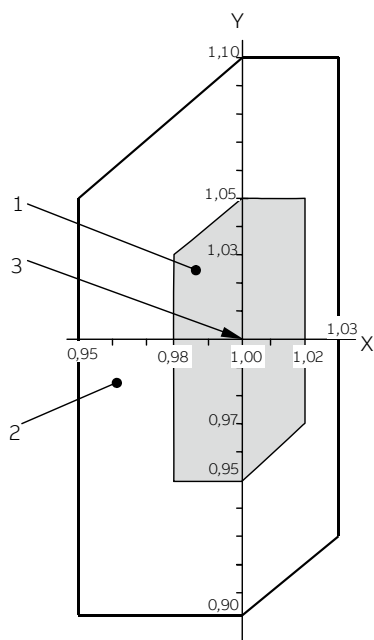
Rated Output

M2BAX motors rated outputs means that the motor runs under continuous duty S1 (IEC 60034-1) operation at ambient temperature from $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$ and at altitudes of up to 1000 m above sea level.

Voltage and Frequency

The impact on temperature rise caused by voltage and frequency fluctuation is defined in IEC 60034-1. The standard divides the combinations into two zones, zone A and B. Zone A is the combination of voltage deviation $\pm 5\%$ and frequency deviation $\pm 2\%$. Zone B is the combination of voltage deviation $\pm 10\%$ and frequency deviation $+3\%/-5\%$.

The motors are capable of supplying the rated torque in both zone A and B, but the temperature rise will be higher than at rated voltage and frequency. The motors are to be in operation only for a short period of time in zone B.



X 轴 频率标么值
Y 轴 电压标么值
1 区域 A
2 区域 B (区域 A 外)
3 额定点

X axis frequency p.u.
Y axis voltage p.u.
1 zone A
2 zone B (outside zone A)
3 rating point

电气特性

Electrical design

绝缘系统

ABB 采用 F 级绝缘材料，B 级温升，是当今业界通用的要求。

F 级绝缘系统 B 级温升的采用，使 ABB 产品可获得 25°C 的安全裕度。这使电机在短时间内过载使用，或在较高环境温度和海拔，或在高电压和频率容差下使用成为可能。这一设计同样可用于延长绝缘寿命。例如，温度降低 10K，绝缘寿命延长。

B 级绝缘 (130°C)

- 额定环境温度 40°C
- 最大允许温升 80K
- 热点温升裕度 10K

F 级绝缘 (155°C)

- 额定环境温度 40°C
- 最大允许温升 105K
- 热点温升裕度 10K

H 级绝缘 (180°C)

- 额定环境温度 40°C
- 最大允许温升 125K
- 热点温升裕度 10K

Insulation

ABB uses class F insulation, which with temperature rise B, is the common requirement among industry today. The use of class F insulation with class B temperature rise gives ABB products a 25 °C safety margin. This can be used to increase the loading for limited periods, to operate at higher ambient temperatures or altitudes, or with greater voltage and frequency tolerances. It can also be used to extend insulation life. For instance, a 10 K temperature reduction will extend the insulation life.

Thermal class 130 (B)

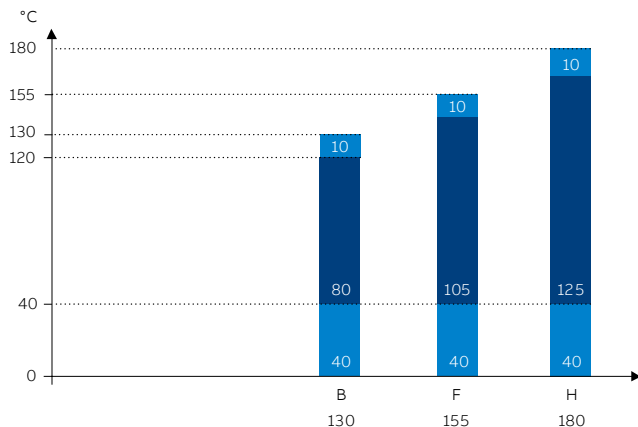
- Nominal ambient temperature 40 °C
- Max permissible temperature rise 80K
- Hot spot temperature margin 10K

Thermal class 155 (F)

- Nominal ambient temperature 40 °C
- Max permissible temperature rise 105K
- Hot spot temperature margin 10K

Thermal class 180 (H)

- Nominal ambient temperature 40 °C
- Max permissible temperature rise 125K
- Hot spot temperature margin 10K



各绝缘等级的安全裕度
Safety margins per thermal class

电气特性

Electrical design

运行环境

根据 IEC 60034-1 规定，容差是指测试值与铭牌（或样本）标称值之间的最大允许偏差。测试结果基于按照 IEC 60034-2-1, IEC 60034-9, IEC 60034-12 所规定的测试。

Environmental

In accordance with IEC 60034-1, tolerance is the maximum allowed deviation between the test result and the declared value on the rating plate (or in the catalog). Test results are based on test procedures in accordance with IEC 60034-2-1, IEC 60034-9, and IEC 60034-12.

过载倍数

根据 IEC 60034, M2BAX 系列电机能够在额定电压和频率下承受 1.5 倍的额定电流达 2 分钟。

Overload times

According to IEC 60034, M2BAX motors are designed to withstand overload capacity of 1.5 times rated current for 2 minutes at rated voltage and frequency.

电气数据容差

Tolerance for electrical data

	效率 Efficiency	功率因数 * Power factor	启动电流 Locked rotor current I_s / I_N	堵转转矩 Locked rotor torque T_l / T_N	最大转矩 Breakdown torque T_b / T_N	转动惯量 Moment of inertia	噪声等级 Noise level
PN (kW) ≤ 150	-15 % (1-η)	-1/6 (1-cos φ)	+20 % of the current	[-15 % + 25 %] of the torque	-10 % of the value	± 10 % of the value	+3 dB(A)
PN (kW) > 150	-10 % (1-η)						
	转差率 Slip						
PN (kW) < 1	± 30 %						
PN (kW) ≥ 1	± 20 %						

* 功率因数容差最小绝对值: 0.02, 最大绝对值: 0.07.

* Power factor minimum absolute value 0.02, maximum absolute value 0.07.

环境温度及海拔高度

标准电机设计的最大环境温度为 40°C，最高海拔为 1000m。如果当电机在较高的环境温度或海拔下运行，输出功率相应降低。详情请咨询 ABB。

Ambient temperatures and high altitudes

Normal motors are designed for operation at a maximum ambient temperature of 40°C and at a maximum altitude of 1000 meters above sea level. If a motor is operated at higher ambient temperatures or altitude, it should be derated. Detailed information, please contact your ABB sales office.

对于不同高度和（或）不同环境温度的功率换算系数 kHT

Factor kHT for different site altitudes and / or coolant temperature

海拔高度 Site altitude above sea level	对应海拔高度的环境温度 Site altitude above sea level coolant temperature					
	< 30°C	30 ~ 40°C	45°C	50°C	55°C	60°C
1000 m	1.07	1.00	0.96	0.92	0.87	0.82
1500 m	1.04	0.97	0.93	0.89	0.84	0.79
2000 m	1.00	0.94	0.90	0.86	0.82	0.77
2500 m	0.96	0.90	0.86	0.83	0.78	0.74
3000 m	0.92	0.86	0.82	0.79	0.75	0.70
3500 m	0.88	0.82	0.79	0.75	0.71	0.67
4000 m	0.82	0.77	0.74	0.71	0.67	0.63

机械设计

Mechanical design

表面处理

ABB 低压电机标准喷漆系统符合 ISO/ EN 12944:2 的腐蚀类别 C3M（相当于中等耐腐蚀性及耐用性）。其它耐腐蚀类别 C4M 和 C5M，可以使用变量代码 115, 754 进行订购。

ABB 的标准色为蒙赛尔蓝 8B 4.5/3.25。其它颜色，请用变量代码 114, 646 进行订购。

机械振动

ABB 标准电机满足 IEC60034-14 标准中的 A 级振动。如需 B 级振动，请使用变量代码 417。

Surface treatment

ABB's standard surface treatment is corrosivity category C3, durability range M (which equal to medium corrosivity and medium durability) based on the ISO 12944 standard. Special surface treatment is available in corrosivity categories C4 and C5, durability class M for both. See variant code 115, 754.

The standard ABB paint color for motors is Munsell blue 8B 4.5/3.25. Other colors are also available, see variant code 114, 646.

Vibration

ABB motor meets the requirements of class A vibration based on IEC60034-14 standard. For class B vibration, use variant code 417.

机械设计

Mechanical design

机座

包括底脚在内的电机机座是铸铁制成的。整体式铸铁底脚能够实现稳固的安装及降低振动。可提供底脚安装型、凸缘安装型及二者结合的电机。

排水孔

如果在非常湿润或潮湿的环境下，特别是在断续负载下操作电机，则应设置排水孔。根据电机安装方法，指定相应的 IM 标号，如 IM 3031。

机座号为 80 到 355 的电机安装了排水孔及闭合塞。孔塞在出厂时打开。安装电机时，确保排水孔朝下。

垂直安装时，上塞必须完全闭合。在灰尘过多的环境中，两个塞都应闭合。

安装方式不同于底脚安装型 IM B3 时，请在订购时使用变量代码 066。

请参阅“排水孔”标题下的变量代码 066。

Motor frame

The motor frame is made of cast iron, and the standard design includes cast iron feet. Integrated cast iron feet provide rigid mounting, and lower vibration. Motors can be supplied for foot mounting, flange mounting, and combinations of these.

Drain holes

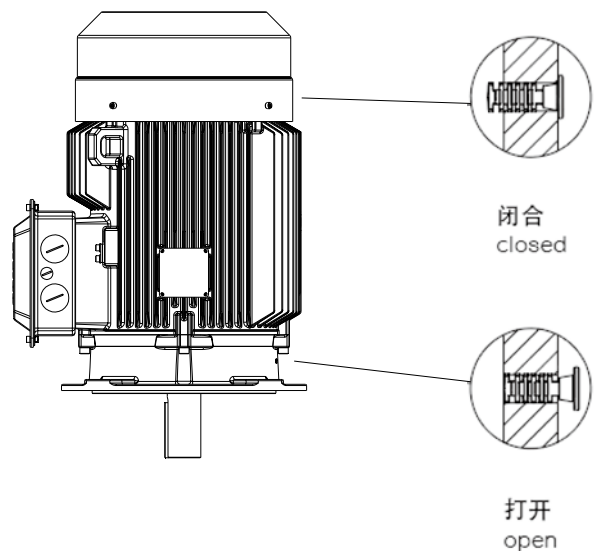
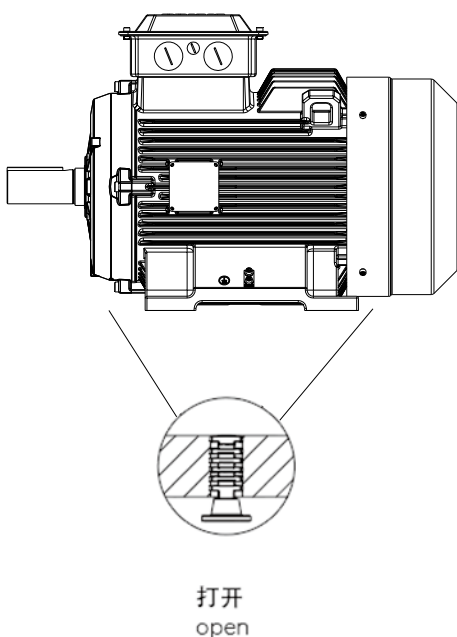
Motors that will be operated in very humid or wet environments, and especially under intermittent duty, should be provided with drain holes. The IM designation, such as IM 3031, determines the intended mounting arrangement for the motor.

Motor sizes 80 - 355 are fitted with drain holes and closable plugs. The plugs are open on delivery. When mounting the motors, ensure that the drain holes face downwards.

In the case of vertical mounting, the upper plug must be hammered home completely. In very dusty environments, both plugs should be hammered home.

When mounting arrangement differs from foot mounted IM B3, mention variant code 066 when ordering.

See variant codes 066 under the heading “Drain holes”.



机座号 80-355
标准情况下配备排水孔及闭合塞

As standard, motor sizes 80 - 355 are delivered with drain holes and closable plugs.

机械设计

Mechanical design

轴承

电机通常安装以下单列深沟球轴承。

标准及可选设计

机座号	极数	标准设计		可选设计
		深沟球轴承		圆柱滚子轴承 (VC037)
		D 端	N 端	D 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	NU309ECP/C3
180	2-6	6310-2Z/C3	6210-2Z/C3	NU310ECP/C3
200	2-6	6312-2Z/C3	6212-2Z/C3	NU312ECP/C3
225	2-6	6313-2Z/C3	6213-2Z/C3	NU313ECP/C3
250	2-6	6315-2Z/C3	6215-2Z/C3	NU315ECP/C3
280	2-6	6316/C3	6316/C3	NU316ECP/C3
315	2	6316/C3	6316/C3	NU316ECP/C3
	4-6	6319/C3	6316/C3	NU319ECP/C3
355	2	6316/C3	6316/C3	NU316ECP/C3
	4-6	6322/C3	6316/C3	NU322ECP/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 and alternative designs

Motor size	Number of poles	Standard design		Alternative design
		Deep groove ball bearings		Roller bearings (VC037)
		D-end	N-end	D-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	NU309ECP/C3
180	2-6	6310-2Z/C3	6210-2Z/C3	NU310ECP/C3
200	2-6	6312-2Z/C3	6212-2Z/C3	NU312ECP/C3
225	2-6	6313-2Z/C3	6213-2Z/C3	NU313ECP/C3
250	2-6	6315-2Z/C3	6215-2Z/C3	NU315ECP/C3
280	2-6	6316/C3	6316/C3	NU316ECP/C3
315	2	6316/C3	6316/C3	NU316ECP/C3
	4-6	6319/C3	6316/C3	NU319ECP/C3
355	2	6316/C3	6316/C3	NU316ECP/C3
	4-6	6322/C3	6316/C3	NU322ECP/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

轴密封件

机座号为 80-355 的密封件尺寸和类型符合下表：

Bearing seals

This table presents the standard sizes and types of bearing seals per motor size.

机座号 Motor size	极数 Number of Poles	标准设计 Standard design		可选设计 Optional design	
		轴向密封件 Axial seal		D 端伽玛密封 Gamma seal at D-end	D 端径向密封 Radial seal at D-end
		D 端 D-end	N 端 N-end	变量代码 784 Variant codes 784	变量代码 072 Variant codes 072
80	2-6	V-20A	V-20A	20 x 35 x 4	20 x 40 x 7
90	2-6	V-25A	V-25A	25 x 40 x 4	25 x 42 x 7
100	2-6	V-30A	V-30A	30 x 47 x 4.5	30 x 52 x 7
112	2-6	V-35A	V-30A	35 x 52 x 4.5	35 x 55 x 7
132	2-6	V-40A	V-40A	40 x 57 x 4.5	40 x 62 x 7
160	2-6	V-45A	V-45A	45 x 62 x 4.5	45 x 72 x 8
180	2-6	V-50A	V-50A	50 x 70 x 5.5	50 x 80 x 8
200	2-6	V-60A	V-60A	60 x 80 x 5.5	60 x 85 x 8
225	2-6	V-65A	V-65A	65 x 85 x 5.5	65 x 90 x 10
250	2-6	V-75A	V-75A	75 x 95 x 5.5	75 x 100 x 10
280	2	VS80	VS80	80 x 100 x 5.5	NA
	4-6	VS80	VS80	80 x 100 x 5.5	80 x 110 x 10
315	2	VS80	VS80	80 x 100 x 5.5	NA
	4-6	VS95	VS80	95 x 115 x 5.5	95 x 120 x 12
355	2	VS80	VS80	80 x 100 x 5.5	NA
	4-6	VS110	VS80	110 x 130 x 5.5	NA

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

装有封闭式轴承的电机

机座号为 80-250 的电机采用封闭式轴承。封闭式轴承中装有优质的润滑脂。铭牌上印有轴承型号。

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：2-8 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

Motors with bearings greased for life

Motors in frame sizes 80-250 are equipped with bearings greased for life. Bearings are lubricated with high-quality grease. Bearing types are stated on the rating plate.

The following values can be used as a guide for bearing lifetime, depending on application and load conditions: 2-8 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

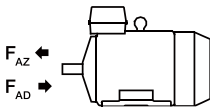
允许轴向力

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。

在 60 Hz 时，数值将相应减少 10%。

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)	轴伸长度 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	1215	555
	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

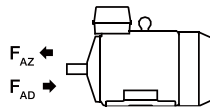
Permissible axial forces

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.

At 60 Hz, the values must be reduced by 10 percent.

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)	轴伸长度 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
	355SM	2	140	6217	4505	4887
355ML	4	210	12117	10405	9337	7625
	6	210	14112	12400	10852	9140
	355ML	2	140	6217	4505	4887
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。

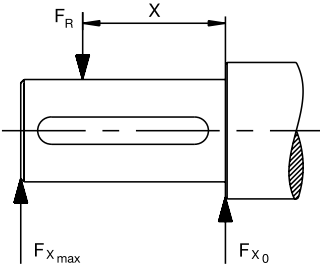
电机为底座安装型 IM B3，并且含横向力。在某些情况下，轴的强度影响允许负载力。在 60Hz 时，数值将相应减少 10%。对于双速电机，数值应以较高的速度为准。

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	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
200	2	110	5045	4220	3995	3345
	4	110	6355	5315	5035	4215
	6	110	7275	6085	5760	4820

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.

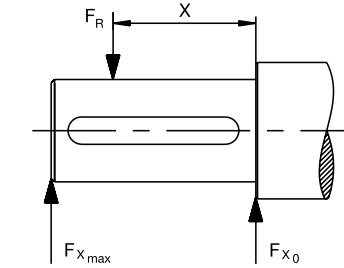
These calculated values further assume mounting position IM B3 (foot-mounted), with force directed sideways. In some cases, the strength of the shaft affects permissible forces.

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)
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，如需实现接线盒电缆入口 2x180° 转向，可使用变量代码 (VC022)。

如果未另行规定，则采用标准交付。

注意：对于 500V 及 / 或侧面安装的电机，请联系 ABB！

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, but 2x180° turning is available as an option (variant code 022).

Standard delivery if no other information is provided.

Note: For other network voltages and/or side-mounted motors, contact your ABB sales office.

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	M12
315	2-6	2xM63x1.5, 2xM20x1.5	2xØ37-44, 2xØ8-14	2x240	M12
355	2-6	2xM75x1.5, 2xM20x1.5	2xØ48-60, 2xØ8-14	2x240	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

鼠笼式感应电机具有很好的的可用性、可靠性与效率。通过变频器—一种变速驱动器（VSD），该电机的性能将更优异。电机不是一直处于全速运转状态，相反，变速驱动器能够根据实际需要调节速度。这样，就能够准确地控制工艺过程，在某些情况下，甚至可以达到比标称速度更快的运转速度，从而提高产能。

与传统的全压启动（DOL）不同，变速驱动器（VSD）能够平滑地进行启动。这样就大大地减少了电机及驱动应用中的压力。平滑启动还意味着供电网络不受高启动电流的影响。在电网设计时，应将该因素纳入考虑。

由于在速度和工艺用电方面的优化，ABB 低压一般用途电机以及变频器的使用，尤其是 ABB 变频器的使用，通常能够在很大程度上实现节能。节能不仅能够产生环境效益，还能够带来经济效益。ABB 低压一般用途电机适用于 DOL 运行，也适用于变速运行。选择面广，电机能够适应严苛的应用要求。

在为变速驱动器选择低压一般用途电机时，应考虑以下方面：

1. 确定规格

变频器所馈送的电压（或电流）并非完全是正弦的。这可能会增加电机的损耗、振动以及噪音等级。此外，这些损耗分布的变化可能影响电机的温升。因此，在任何情况下，需要根据特定的变频器说明书正确选择电机规格。

使用 ABB 变频器时，请使用 ABB 的 DriveSize 程序来确定电机规格。该工具利用的是基本综合性组合型式试验的规格确定规则。

当手动确定规格时，请注意，此目录中以及相关手册中给出的负载率（负载能力）曲线仅供参考。可根据要求提供针对各个电机和变频器的精确数值。除确定热容量外，必须保持一个转矩裕度，以保持稳定。电机的最大转矩在整个工作周期内应至少高于负载转矩 30%。

尤其是在使用较长的供电电缆时，还必须考虑供电电缆的压降。

Squirrel cage induction motors offer excellent availability, reliability and efficiency. With a variable speed drive (VSD) – a frequency converter – the motor performance can be further improved. Instead of running the motor continuously at full speed, the VSD enables speed adjustment according to actual need. The VSD makes it possible to control the process accurately and in some cases even to improve the capacity of the process by operating at higher than nominal speeds.

In contrast with conventional applications operating with a direct-on-line (DOL) supply, a VSD makes smooth starting possible. This significantly reduces the stress on the motor and driven application. Smooth starting also means that the supply network will not be affected by high starting current transients, a fact that can be taken into account in the design of the network.

The use of ABB industrial drives together with General performance motors usually provides substantial energy savings as the speed and therefore the power required by the process can be optimized. General performance motors are designed for both DOL and variable speed operation. A wide range of options is available, so motors can be adapted to the demanding applications.

When selecting general performance motors for VSDs, the following points must be taken into consideration.

1. Dimensioning

The voltage (or current) fed by the VSD is not purely sinusoidal. This may increase motor losses, vibration, and noise level. Further, a change in the distribution of losses may affect the motor's temperature rise. In each case, the motor must be correctly sized according to the instructions supplied for the frequency converter.

ABB's DriveSize program utilizes dimensioning rules that are based on comprehensive motor and drive type tests. Please use DriveSize for selecting the correct motor and drive combination for a desired load profile.

In case of manual dimensioning, note that the loadability (or load capacity) curves provided in this catalog and in the respective manuals are indicative only. Values for a specific motor and drive are available on request. In addition to thermal dimensioning, an adequate torque margin must be maintained for stability. The maximum torque of the motor must be at least 30 % higher than the load torque over the whole duty range.

Voltage drop in the supply cable must also be taken into consideration, especially in cases where long supply cables are needed.

变频器驱动

Variable speed drives

2. 工作转速、振动及轴密封

低压一般用途电机设计可以在宽转速范围下工作，在大多数情况下，也可以显著高于额定转速（即铭牌上印制的转速）的较高转速运行。可以通过铭牌或 DriveSize 工具获知最大转速。除电机转速范围外，请确保不超出整个应用的最大或临界转速。

下表 1 给出了低压一般用途电机的最大规定转速值。

表 1 低压一般用途电机的最大规定转速值

机座号	转速 r/min	
	2 极	4 极
80	6000	4500
90-100	6000	6000
112-200	4500	4500
225-250	3600	3600
280	3600	2600
315	3600	2300
355	3600	2000

3. 通风

电机低速运行时，风扇的冷却能力下降，进而降低电机的负载能力。可以另外使用一个独立的恒速风扇（变量代码 183）来提升冷却能力。

高速运行时，应考虑使用金属风扇在（变量代码 068），而不是塑料风扇。

4. 润滑

在变速应用场合中，轴承温度的变化是由于速度和电机负载变化的结果。这时，在正常工作条件下，通过测量轴承温度，可以得到精确的润滑间隔时间。如果测量温度高于 +80°C，则需要缩短在润滑铭牌或电机手册中规定的润滑间隔时间，或使用适用于高温工况的润滑脂。请参见 ABB 低压电机手册。

在非常低的速度和温度（低于 20°C）下连续工作时，标准润滑脂的润滑能力可能不足，而需要使用含添加剂的特定润滑脂。更多详情，请联系 ABB。

2. Operating speed, vibrations and shaft seals

General performance motors are designed to work over a wide speed range and also at significantly higher than nominal speeds. 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.

Table 1. Guideline maximum speed values for general performance cast iron motors.

Motor size	Maximum speed, r/min	
	2-pole motors	4-pole motors
80	6000	4500
90-100	6000	6000
112-200	4500	4500
225-250	3600	3600
280	3600	2600
315	3600	2300
355	3600	2000

3. Ventilation

When the motor is operated at low speeds, the cooling capacity of the fan decreases, which again reduces the motor's load capacity. A separate constant speed fan (variant codes 183) can be used to increase cooling capacity.

At high speeds, the use of metal fans (variant code 068) instead of plastic ones should be considered.

4. Lubrication

In variable speed applications, bearing temperature varies as a function of speed and motor load. In such cases, the accurate relubrication intervals can be obtained by measuring the bearing temperature under normal operating conditions. If the measured temperature is higher than +80°C, the relubrication intervals specified on the lubrication plate or in the maintenance manual must be shortened, or lubricants suitable for high operating temperatures must be used. See ABB Low voltage motor manual.

In case of continuous operation at very low speeds and at very low temperatures (below -20°C), the lubrication properties of standard greases may not be sufficient, and special greases with additives are needed.

变频器驱动

Variable speed drives

如果电机配备密封轴承，即一次性润滑轴承，则务必注意，当工作温度与设计温度不同时，轴承的工作寿命也会与设计值不同。有关轴承工作寿命的详细信息，请参见本目录及相关手册中与产品相关的章节。

我们不建议使用所谓的导电润滑脂来消除轴承电流，因为此类产品的润滑性能不良，因此导电性很弱。

5. 绕组绝缘

为确保电机的可靠性，当为电机选择正确的绝缘系统和为变频器选择正确的输出滤波器时，必须考虑变频器的非正弦输出电压的影响。

当使用具有非受控直流电压的变频器时，应根据表 2 选择绝缘和滤波器。

表 2 变频器（其具有非受控直流电压）电机的绕组绝缘及变频器输出滤波器选择

所要求的绕组绝缘和滤波器	
$500V < U_N \leq 600V$	ABB 变频绝缘 +dU/dt 滤波器或 ABB 变频加强绝缘（变量代码 405）
$600V < U_N \leq 690V$	ABB 变频加强绝缘（变量代码 405） 及变频器输出端的 dU/dt 滤波器

dU/dt 滤波器的详细信息，请参见相关的 ABB 驱动目录。

如果表 2 中的内容不适用，以及对于其它类型的变频器，则应根据电机端子电压进行选择。

电机端子处允许的相对地电压峰值为：

- ABB 变频绝缘 1300V
- ABB 变频加强绝缘（变量代码 405）1800V

受脉冲上升时间的影响，电机端子处允许的最大相对地电压峰值见图 1。最高的曲线（即“ABB 变频加强绝缘”）适用于变频器电源采用特殊绕组绝缘的电机，变量代码为 405。“ABB 变频绝缘”适用于具有标准设计的电机。

Operating temperatures also affect bearing life. When motors are equipped with sealed bearings, that is, bearings greased for life, it must be noted that if the operating temperature differs from the design temperature, the bearing life will also be different. More information on bearing lifetimes can be found in section Mechanical design of this catalog and in the relevant manuals.

The use of so-called conductive greases for elimination of bearing currents is not recommended because of their poor lubrication characteristics and low conductivity.

5. Winding insulation

To ensure that motors operate reliably, the effects of non-sinusoidal output voltages from the converter must be taken into consideration when selecting the correct insulation system for the motor and output filters for the converter.

Insulation and filters must be selected according to Table 2.

Table 2. Selection of motor winding insulation and converter output filters

Winding insulation and filters required	
$500V < U_N \leq 600V$	VSD insulation + dU/dt filters OR VSD reinforced insulation (variant code 405)
$600V < U_N \leq 690V$	VSD reinforced insulation (variant code 405) AND dU/dt filters at converter output

For more information on dU/dt filters, see the relevant ABB Drives catalogs.

For other converters and cases where the guidelines shown in Table 2 cannot be applied, selection must be based on the voltages present at motor terminals.

The allowed phase-to-ground voltage peaks at motor terminals:

- 1300 V peak: VSD insulation
- 1800 V peak: VSD reinforced insulation, variant code 405

The maximum allowed phase-to-phase voltage peaks at the motor terminals as a function of pulse rise time are shown in Figure 1. The higher curve, VSD reinforced insulation, applies to motors with special winding insulation for frequency converter supply, variant code 405. VSD insulation applies to motors with standard design.

变频器驱动

Variable speed drives

图 1 受脉冲上升时间的影响，电机端子处允许的最大相对地电压峰值

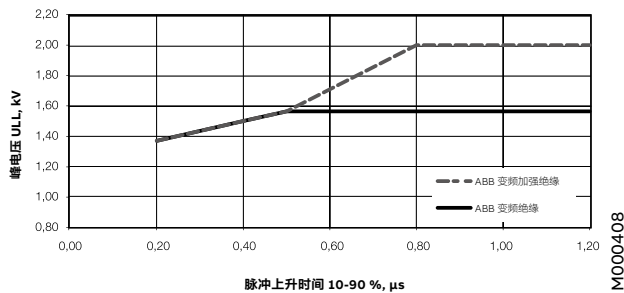
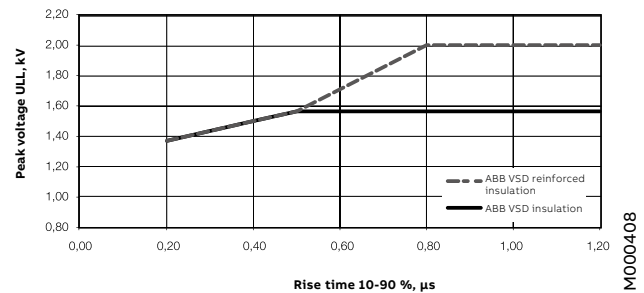


Figure 1. Maximum allowed phase-to-phase voltage peaks at motor terminals, as a function pulse rise time.



6. 轴承电流

必须在所有电机中消除轴承电压和电流,确保整项工作的可靠开展。如果使用具有非受控直流电压的 ABB ACS800 or ACS550 驱动器,则必须按照下表 3 所示,使用绝缘轴承(变量代码 701)和/或在变频器输出上加上适当规格的滤波器。有关其它代替产品和变频器类型,请联系 ABB。订购时,请明确注明将使用的代替产品。

有关轴承电流和电压的详细资料,请参见“AC 驱动系统中的轴承电流”工厂文件或联系 ABB。

表 3 与变频器(其具有非受控直流电压)配合使用的电机中的轴承电流防护。

标称功率 (P_N) 及 / 或机座号 (IEC)	防护措施
$P_N \leq 100$ kW	无需采取措施
$P_N \geq 100$ kW 或 IEC 315 \leq 机座号 \leq IEC 355	非驱动端绝缘轴承
$P_N \geq 350$ kW	非驱动端绝缘轴承, 关在变频器中设置共模滤波器

共模滤波器

共模滤波器减少了共模电流,从而减少了出现轴承电流的风险。共模滤波器不会严重影响电机接线端子的相电压或电源电压。更多详情,请参见 ABB 驱动器目录。

6. Bearing currents

Bearing voltages and currents must be avoided in all motors to ensure reliable operation of the entire application. With ACS800 or ACS550 drives and uncontrolled DC voltage, insulated bearings (variant code 701) and/or properly dimensioned filters at the converter must be used, as indicated in Table 3.

For information on other converter types, contact ABB Sales. When ordering, clearly state which alternative will be used.

Table 3. Precautionary measures to avoid bearing currents in variable speed drives.

Nominal Output (P_N) AND / OR Motor size (IEC)	Precautionary measures
$P_N \leq 100$ kW	No action needed
$P_N \geq 100$ kW OR IEC 315 \leq Frame size \leq IEC 355	Insulated non-drive end bearing
$P_N \geq 350$ kW	Insulated non-drive end bearing AND Common mode filter at the converter

Common mode filters

Common mode filters reduce common mode currents and so decrease the risk of bearing currents. Common mode filters do not significantly affect the phase of main voltages on motor terminals. For more information, see ABB drives catalogs.

变频器驱动

Variable speed drives

绝缘轴承

ABB 使用带绝缘内圈或外圈的轴承。所谓混合轴承，也就是带非导电性陶瓷滚动元件的轴承，也可用于特定用途。

Insulated bearings

ABB uses bearings with insulated inner or outer races. Hybrid bearings, that is, bearings with non-conductive ceramic rolling elements, can also be used in special applications.

7. 电缆敷设、接地及 EMC

变频器对驱动系统的电缆铺设和接地提出了更高的要求。应使用屏蔽对称电缆和提供 360°接头的电缆接头（也称为 EMC 接头，变量代码 704）来连接电机。对于输出功率不高于 30kW 的电机，可使用非对称电缆，但始终建议使用屏蔽电缆，尤其在驱动应用中存在敏感部件时。

7. Cabling, grounding, and EMC

The use of a variable speed drive sets higher demands on the cabling and grounding of the drive system. The motor must be cabled using shielded symmetrical cables and cable glands providing 360° bonding (EMC glands, variant code 704). For motors up to 30 kW, asymmetrical cables can be used, but shielded cables are always recommended, especially if there are sensitive components in the driven application.

对于机座号为 IEC 280 及以上的电机，除非在一个公共的金属底座上安装电机和驱动机器，否则需要在电机机座和机器之间另外进行电位均衡处理。当使用一个金属底座来实现电位均衡时，应检查此连接的高频导电性。有关变频驱动器的接地和电缆敷设的更多信息，请参见手册“驱动系统的接地和电缆敷设”（编号：3AFY 61201998 R0125 REV B）。

For motor sizes IEC 280 and above, additional potential equalization is needed between the motor frame and the machinery, unless the motor and the driven machine are installed on a common steel base. When a steel base is used for potential equalization, high frequency conductivity of the connection must be checked.

为满足 EMC 的要求，除安装正确的电缆接头外，还必须使用专用的 EMC 电缆（另外具有专用接地件）。请参见变频器手册。

To meet EMC requirements, special EMC cables must be used in addition to appropriate cable gland mounting with special earthing pieces. Refer to ABB drives manuals for more information.

8. 变频器的电机负载能力

图 2、图 3 所示的负载能力曲线具有指导意义。欲知精确数值，请联系 ABB。这些负载能力曲线还可以用于其它变频器的初步规格确定，但必须注意的是，不同变频器的谐波分量和控制算法互不相同，因此电机的温升也会不同。

8. Motor loadability with frequency converter drives

The loadability curves shown in Figures 2 and 3 are indicative guidelines and do not present exact values. These loadability curves can also be used for preliminary dimensioning of motors used at frequency converter duty, but it must be noted that the harmonic content and control algorithms vary between frequency converters, so the motor temperature rise will also be different.

变频器驱动

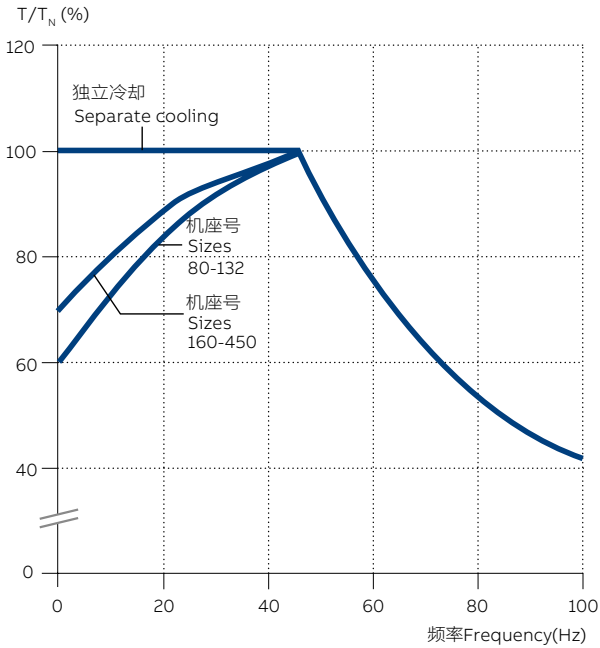
Variable speed drives

图 2 具有 DTC 控制的变频器负载曲线

Figure 2. Loadability curves for frequency converters with DTC control

B 级温升

Temperature rise B



F 级温升

Temperature rise F

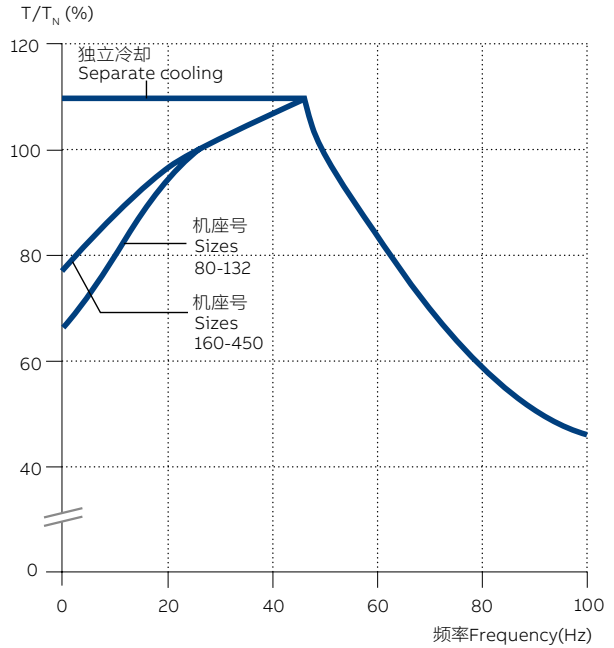
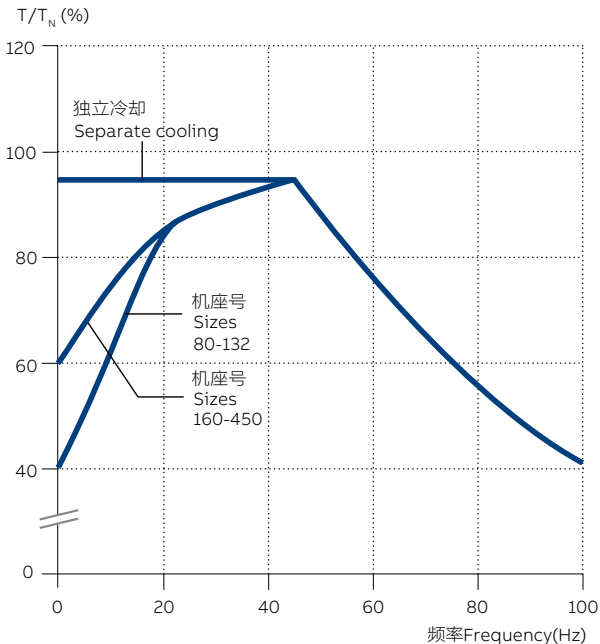


图 3 其它控制类型的变频器负载曲线

Figure 3. Loadability curves for other frequency converters

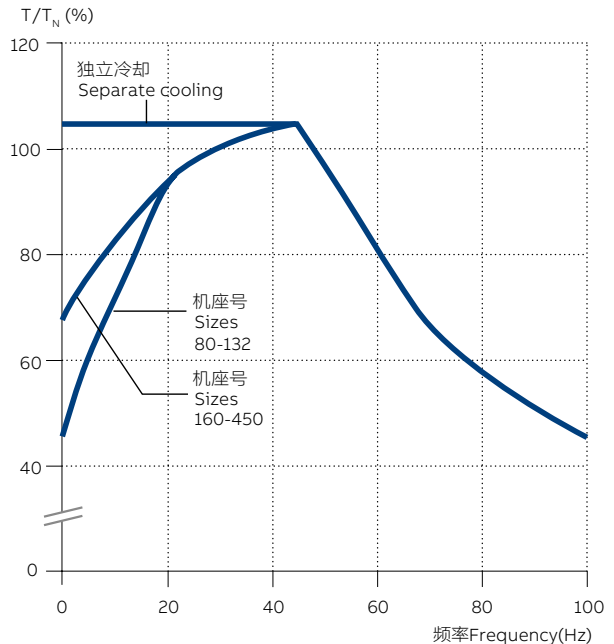
B 级温升

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 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												
3000 r/min = 2 极 / 2 poles			380 V 50Hz			CENELEC- 设计 design									
0.75	M2BAX 80MA 2	3GBA081310---NCN	2872	83.5	84.5	83.3	0.86	1.59	7.2	2.5	3.3	3.5	0.0011	18	59
1.1	M2BAX 80MLA 2	3GBA081410---NCN	2866	85.2	86.6	86.4	0.86	2.28	7.5	3.7	3.4	3.6	0.0014	19	59
1.5	M2BAX 90SA 2	3GBA091110---NCN	2903	86.5	87.8	87.6	0.89	2.96	7.8	4.9	2.9	3.6	0.0027	28	59
2.2	M2BAX 90SLA 2	3GBA091010---NCN	2915	88.0	89.1	89.1	0.89	4.27	8.7	7.2	3.1	4.1	0.0038	34	60
3	M2BAX 100LKA 2	3GBA101810---NCN	2875	89.1	90.9	91.7	0.90	5.68	7.5	10.1	2.7	3.4	0.0064	50	58
4	M2BAX 112MLA 2	3GBA111410---NCN	2893	90.0	88.7	89.3	0.89	7.59	7.4	13.2	2.7	3.4	0.0083	56	62
5.5	M2BAX 132SA 2	3GBA131110---NCN	2905	90.9	91.6	91.7	0.88	10.4	7.7	18.1	2.2	3.3	0.014	76	64
7.5	M2BAX 132SMA 2	3GBA131210---NCN	2900	91.7	92.6	92.9	0.90	13.8	7.6	24.7	2.2	3.2	0.017	88	64
11	M2BAX 160MLA 2	3GBA161410---NCN	2930	92.6	93.1	92.9	0.91	19.9	8.3	35.9	2.8	3.5	0.051	143	70
15	M2BAX 160MLB 2	3GBA161420---NCN	2941	93.3	93.6	93.3	0.90	27.2	9.8	48.7	3.4	4.0	0.063	162	70
18.5	M2BAX 160MLC 2	3GBA161430---NCN	2930	93.7	94.3	94.4	0.91	33.1	9.1	60.3	3.3	3.7	0.076	175	70
22	M2BAX 180MLA 2	3GBA181410---NCN	2955	94.0	94.5	94.2	0.89	39.9	8.1	71.1	3.1	3.7	0.13	231	74
30	M2BAX 200MLA 2	3GBA201410---NCN	2955	94.5	95.1	94.9	0.89	54.2	8.0	96.9	3.2	3.3	0.20	283	79
37	M2BAX 200MLB 2	3GBA201420---NCN	2955	94.8	95.2	95.2	0.89	66.6	7.9	120	2.9	3.5	0.22	288	78
45	M2BAX 225SMA 2	3GBA221210---NCN	2972	95.0	95.2	94.7	0.89	80.8	8.7	145	3.7	3.1	0.30	372	81
55	M2BAX 250SMA 2	3GBA251210---NCN	2974	95.3	95.6	95.3	0.90	97.1	7.7	177	3.0	3.2	0.55	459	79
75	M2BAX 280SMA 2	3GBA281210---NCN	2977	95.6	95.5	94.8	0.88	135	7.2	241	1.9	3.0	0.9	700	74
90	M2BAX 280SMB 2	3GBA281220---NCN	2972	95.8	95.9	95.5	0.90	159	6.6	289	1.8	2.6	1.1	757	74
110	M2BAX 315SMA 2	3GBA311210---NCN	2980	96.0	96.0	95.4	0.88	198	6.0	352	1.7	2.3	1.4	1028	77
132	M2BAX 315SMB 2	3GBA311220---NCN	2983	96.2	96.3	95.8	0.88	237	7.3	422	2.2	2.7	1.7	1096	77
160	M2BAX 315MLA 2	3GBA311410---NCN	2980	96.3	96.5	96.3	0.89	284	6.5	512	2.0	2.4	2.1	1319	77
200	M2BAX 315MLB 2	3GBA311420---NCN	2980	96.5	96.9	96.9	0.89	354	6.1	640	1.7	2.3	2.2	1358	77
250	M2BAX 355SMA 2	3GBA351210---NCN	2981	96.5	96.6	96.1	0.89	442	6.9	800	2.0	2.7	3.4	1590	83
315	M2BAX 355SMB 2	3GBA351220---NCN	2982	96.5	96.5	96.0	0.89	557	7.1	1008	2.1	2.5	3.6	1668	83
355	M2BAX 355MLA 2	3GBA351410---NCN	2980	96.5	96.6	96.2	0.89	628	6.7	1137	2.1	2.3	4.1	1845	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

2P 400V 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 _i / T _N	T _b / T _N			
kW			r/min												
3000 r/min = 2 极 / 2 poles			400 V 50Hz			CENELEC- 设计 design									
0.75	M2BAX 80MA 2	3GBA081310---NCN	2887	83.5	83.9	82.3	0.83	1.56	7.8	2.5	3.6	3.9	0.0011	18	59
1.1	M2BAX 80MLA 2	3GBA081410---NCN	2884	85.2	86.1	85.2	0.84	2.22	8.0	3.6	3.8	4.0	0.0014	19	59
1.5	M2BAX 90SA 2	3GBA091110---NCN	2915	86.5	87.4	86.6	0.87	2.88	8.6	4.9	3.3	4.1	0.0027	28	59
2.2	M2BAX 90SLA 2	3GBA091010---NCN	2925	88.0	88.8	88.2	0.88	4.10	9.6	7.2	3.6	4.7	0.0038	34	60
3	M2BAX 100LKA 2	3GBA101810---NCN	2892	89.1	90.7	91.1	0.89	5.46	8.2	10.1	3.0	3.8	0.0064	50	59
4	M2BAX 112MLA 2	3GBA111410---NCN	2893	90.0	88.2	88.6	0.88	7.29	8.3	13.2	2.8	3.6	0.0083	56	62
5.5	M2BAX 132SA 2	3GBA131110---NCN	2910	90.9	91.4	91.2	0.86	10.1	8.3	18.0	2.4	3.6	0.014	76	64
7.5	M2BAX 132SMA 2	3GBA131210---NCN	2910	91.7	92.4	92.6	0.89	13.3	8.2	24.6	2.4	3.5	0.017	88	64
11	M2BAX 160MLA 2	3GBA161410---NCN	2941	92.6	92.9	92.6	0.90	19.2	8.8	35.7	3.1	3.9	0.051	143	70
15	M2BAX 160MLB 2	3GBA161420---NCN	2951	93.3	93.5	92.9	0.89	26.2	10.2	48.5	3.9	4.5	0.063	162	70
18.5	M2BAX 160MLC 2	3GBA161430---NCN	2942	93.7	94.2	94.0	0.90	31.8	9.6	60.1	3.7	4.1	0.076	175	70
22	M2BAX 180MLA 2	3GBA181410---NCN	2959	94.0	94.3	93.9	0.88	38.3	8.9	71.0	3.5	4.1	0.13	231	74
30	M2BAX 200MLA 2	3GBA201410---NCN	2961	94.5	94.7	94.4	0.88	52.1	8.8	96.8	3.6	3.7	0.20	283	79
37	M2BAX 200MLB 2	3GBA201420---NCN	2960	94.8	95.2	94.9	0.87	64.7	8.7	119	3.2	3.9	0.22	288	78
45	M2BAX 225SMA 2	3GBA221210---NCN	2976	95.0	95.1	94.5	0.88	78.1	9.5	144	4.1	3.5	0.30	372	81
55	M2BAX 250SMA 2	3GBA251210---NCN	2974	95.3	95.5	95.0	0.90	93.0	8.4	177	3.3	3.6	0.55	459	79
75	M2BAX 280SMA 2	3GBA281210---NCN	2975	95.6	95.4	94.6	0.87	130	7.7	241	2.1	3.3	0.9	700	74
90	M2BAX 280SMB 2	3GBA281220---NCN	2971	95.8	95.8	95.3	0.90	151	7.1	289	2.0	2.9	1.1	757	74
110	M2BAX 315SMA 2	3GBA311210---NCN	2982	96.0	96.0	95.3	0.87	190	6.7	352	1.9	2.6	1.4	1028	77
132	M2BAX 315SMB 2	3GBA311220---NCN	2986	96.2	96.3	95.9	0.87	228	7.9	422	2.4	3.0	1.7	1096	77
160	M2BAX 315MLA 2	3GBA311410---NCN	2983	96.3	96.5	96.3	0.89	269	7.3	512	2.2	2.7	2.1	1319	77
200	M2BAX 315MLB 2	3GBA311420---NCN	2983	96.5	96.9	96.8	0.89	336	6.8	640	1.9	2.6	2.2	1358	77
250	M2BAX 355SMA 2	3GBA351210---NCN	2983	96.5	96.6	96.2	0.89	420	7.6	800	2.2	2.0	3.4	1590	83
315	M2BAX 355SMB 2	3GBA351220---NCN	2984	96.5	96.5	95.9	0.88	535	7.8	1008	2.3	2.8	3.6	1668	83
355	M2BAX 355MLA 2	3GBA351410---NCN	2981	96.5	96.8	96.4	0.89	597	7.5	1137	2.3	2.6	4.1	1845	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_i / T_N = 转子堵转转矩
T_b / T_N = 最大转矩

I_s / I_N = Starting current
T_i / 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				
1500 r/min = 4 极 / 4 poles			380 V 50Hz			CENELEC- 设计 design										
0.55	M2BAX 80MLA 4	3GBA082410---NCN	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	M2BAX 80MLB 4	3GBA082420---NCN	1455	85.7	85.7	83.6	0.76	1.75	7.4	4.9	3.6	4.2	0.0033	22	47	
1.1	M2BAX 90SLA 4	3GBA092010---NCN	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	M2BAX 90SLB 4	3GBA092020---NCN	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	M2BAX 100LKA 4	3GBA102810---NCN	1465	89.5	90.0	89.6	0.81	4.61	7.8	14.4	2.0	3.1	0.015	46	53	
3	M2BAX 100LKB 4	3GBA102820---NCN	1464	90.4	91.5	91.6	0.82	6.15	7.7	19.8	2.3	3.2	0.021	52	53	
4	M2BAX 112MLA 4	3GBA112410---NCN	1461	91.1	91.9	91.8	0.81	8.2	7.9	26.4	2.3	3.4	0.019	62	56	
5.5	M2BAX 132SA 4	3GBA132110---NCN	1469	91.9	92.2	91.6	0.79	11.5	7.6	35.8	2.2	3.4	0.041	82	64	
7.5	M2BAX 132SMA 4	3GBA132210---NCN	1467	92.6	93.0	92.8	0.81	15.2	7.5	48.8	2.2	3.3	0.052	97	64	
11	M2BAX 160MLA 4	3GBA162410---NCN	1475	93.3	93.8	93.5	0.80	22.5	7.6	71.2	2.6	3.5	0.12	181	59	
15	M2BAX 160MLB 4	3GBA162420---NCN	1473	93.9	94.5	94.3	0.82	29.6	7.8	97.3	2.6	3.2	0.13	178	59	
18.5	M2BAX 180MLA 4	3GBA182410---NCN	1483	94.2	94.4	94.0	0.84	35.5	8.5	119	3.1	3.7	0.19	205	65	
22	M2BAX 180MLB 4	3GBA182420---NCN	1483	94.5	94.7	94.3	0.85	41.6	8.5	142	3.2	3.6	0.22	220	65	
30	M2BAX 200MLA 4	3GBA202410---NCN	1481	94.9	95.3	95.3	0.82	58.5	7.5	193	3.1	3.1	0.37	268	64	
37	M2BAX 225SMA 4	3GBA222210---NCN	1480	95.2	95.6	95.6	0.85	69.7	8.2	240	3.4	3.2	0.54	380	63	
45	M2BAX 225SMB 4	3GBA222220---NCN	1478	95.4	95.8	96.0	0.85	84.6	8.0	291	3.4	3.1	0.54	380	63	
55	M2BAX 250SMA 4	3GBA252210---NCN	1484	95.7	95.9	95.5	0.87	101	9.0	354	4.1	3.4	0.94	483	69	
75	M2BAX 280SMA 4	3GBA282210---NCN	1484	96.0	96.1	95.8	0.85	140	6.7	483	2.5	2.8	1.8	758	63	
90	M2BAX 280SMB 4	3GBA282220---NCN	1484	96.1	96.3	96.0	0.85	167	6.9	579	2.6	2.8	2.1	811	62	
110	M2BAX 315SMA 4	3GBA312210---NCN	1489	96.3	96.4	96.0	0.86	202	7.2	705	2.2	2.8	2.6	905	66	
132	M2BAX 315SMB 4	3GBA312220---NCN	1489	96.4	96.5	96.2	0.86	242	7.6	846	2.4	3.1	3.0	961	68	
160	M2BAX 315MLA 4	3GBA312410---NCN	1488	96.6	96.8	96.6	0.87	289	7.5	1026	2.5	3.1	3.6	1106	68	
200	M2BAX 315LKA 4	3GBA312810---NCN	1488	96.7	97.0	97.0	0.88	357	7.1	1280	2.2	3.2	4.7	1332	66	
250	M2BAX 355SMA 4	3GBA352210---NCN	1490	96.7	96.9	96.7	0.86	456	7.2	1602	2.4	2.6	6.5	1646	74	
315	M2BAX 355SMB 4	3GBA352220---NCN	1490	96.7	96.9	96.8	0.85	582	7.1	2018	2.5	2.6	7.2	1738	74	
355	M2BAX 355MLA 4	3GBA352410---NCN	1491	96.7	97.0	97.0	0.87	641	6.8	2271	2.4	3.7	8.4	2001	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

4P 400V 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			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}
				IEC 60034-30-1:2014	满载 load 100%	3/4 负载 load 75%		1/2 负载 load 50%	cosφ	I _N A	I _s /I _N	T _N Nm			
kW			r/min									J=1/4 GD ² kgm ²	kg	dB	
1500 r/min = 4 极 / 4 poles			400 V 50Hz			CENELEC- 设计 design									
0.55	M2BAX 80MLA 4	3GBA082410---NCN	1449	83.9	84.3	82.6	0.81	1.17	7.0	3.6	3.2	3.8	0.0028	20	47
0.75	M2BAX 80MLB 4	3GBA082420---NCN	1458	85.7	85.2	82.6	0.74	1.71	7.8	4.9	4.0	4.7	0.0033	22	47
1.1	M2BAX 90SLA 4	3GBA092010---NCN	1445	87.2	87.2	85.5	0.78	2.33	7.9	7.3	4.1	4.6	0.0062	33	51
1.5	M2BAX 90SLB 4	3GBA092020---NCN	1443	88.2	88.4	87.1	0.79	3.11	7.9	9.9	4.1	4.6	0.0072	35	52
2.2	M2BAX 100LKA 4	3GBA102810---NCN	1465	89.5	90.9	89.5	0.80	4.43	8.2	14.4	2.2	3.2	0.015	46	53
3	M2BAX 100LKB 4	3GBA102820---NCN	1464	90.4	91.1	90.8	0.81	5.91	8.3	19.8	2.5	3.5	0.021	52	54
4	M2BAX 112MLA 4	3GBA112410---NCN	1461	91.1	91.7	91.3	0.79	8.0	8.5	26.4	2.6	3.8	0.019	62	56
5.5	M2BAX 132SA 4	3GBA132110---NCN	1473	91.9	91.9	91.0	0.76	11.3	8.2	35.7	2.4	3.7	0.041	82	64
7.5	M2BAX 132SMA 4	3GBA132210---NCN	1470	92.6	92.9	92.2	0.79	14.8	8.1	48.7	2.4	3.7	0.052	97	64
11	M2BAX 160MLA 4	3GBA162410---NCN	1478	93.3	93.6	93.0	0.77	22.0	8.2	71.1	3.0	3.9	0.12	181	59
15	M2BAX 160MLB 4	3GBA162420---NCN	1476	93.9	94.1	93.8	0.79	29.2	8.2	97.1	3.5	3.6	0.13	178	59
18.5	M2BAX 180MLA 4	3GBA182410---NCN	1484	94.2	94.3	93.5	0.81	35.0	9.2	119	3.5	4.2	0.19	205	65
22	M2BAX 180MLB 4	3GBA182420---NCN	1484	94.5	94.6	94.0	0.82	41.0	9.2	142	3.5	4.1	0.22	220	65
30	M2BAX 200MLA 4	3GBA202410---NCN	1483	94.9	95.2	94.9	0.81	55.6	8.1	193	3.5	3.5	0.37	268	64
37	M2BAX 225SMA 4	3GBA222210---NCN	1483	95.2	95.5	95.3	0.83	67.3	9.0	239	3.8	3.6	0.54	380	64
45	M2BAX 225SMB 4	3GBA222220---NCN	1481	95.4	95.7	95.6	0.82	82.7	8.7	290	3.8	3.5	0.54	380	64
55	M2BAX 250SMA 4	3GBA252210---NCN	1485	95.7	95.8	95.3	0.85	97	9.9	354	4.7	3.8	0.94	483	69
75	M2BAX 280SMA 4	3GBA282210---NCN	1485	96.0	95.9	95.4	0.83	135	7.3	482	2.8	3.1	1.8	758	63
90	M2BAX 280SMB 4	3GBA282220---NCN	1484	96.1	96.1	95.7	0.84	161	7.5	579	2.9	3.1	2.1	811	63
110	M2BAX 315SMA 4	3GBA312210---NCN	1491	96.3	96.4	96.0	0.85	194	7.9	705	2.4	3.1	2.6	905	66
132	M2BAX 315SMB 4	3GBA312220---NCN	1489	96.4	96.6	96.1	0.84	235	7.9	846	2.6	3.2	3.0	961	68
160	M2BAX 315MLA 4	3GBA312410---NCN	1490	96.6	96.8	96.5	0.86	278	7.9	1026	2.7	3.1	3.6	1106	68
200	M2BAX 315LKA 4	3GBA312810---NCN	1490	96.7	96.9	96.7	0.86	347	7.8	1282	2.4	3.6	4.7	1332	66
250	M2BAX 355SMA 4	3GBA352210---NCN	1490	96.7	97.0	96.7	0.85	439	7.8	1601	2.5	2.9	6.5	1646	74
315	M2BAX 355SMB 4	3GBA352220---NCN	1490	96.7	96.9	96.8	0.83	566	7.4	2018	2.8	2.9	7.2	1738	74
355	M2BAX 355MLA 4	3GBA352410---NCN	1491	96.7	96.9	96.6	0.86	623	7.4	2271	2.7	4.1	8.4	2001	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				
1000 r/min = 6 极 / 6 poles			380 V 50Hz			CENELEC- 设计 design										
0.37	M2BAX 80MLA 6	3GBA083410---NCN	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	M2BAX 80MLB 6	3GBA083420---NCN	952	80.9	81.1	78.7	0.72	1.43	4.9	5.5	2.4	3.0	0.0044	22	47	
0.75	M2BAX 90SLA 6	3GBA093010---NCN	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	M2BAX 90SLB 6	3GBA093020---NCN	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	M2BAX 100LKA 6	3GBA103810---NCN	969	85.9	86.1	85.0	0.76	3.35	6.9	14.9	2.3	3.3	0.012	46	47	
2.2	M2BAX 112MLA 6	3GBA113410---NCN	975	87.4	88.3	87.4	0.72	5.32	6.8	21.7	2.2	3.1	0.021	56	45	
3	M2BAX 132SA 6	3GBA133110---NCN	981	88.6	89.4	88.4	0.72	7.20	6.7	29.2	2.0	3.0	0.042	73	57	
4	M2BAX 132SMA 6	3GBA133210---NCN	981	89.5	90.3	89.6	0.72	9.40	7.0	38.9	2.1	3.1	0.053	86	57	
5.5	M2BAX 132SMB 6	3GBA133220---NCN	979	90.5	91.5	91.2	0.74	12.5	6.9	53.7	2.1	3.0	0.068	99	57	
7.5	M2BAX 160MLA 6	3GBA163410---NCN	983	91.3	91.3	90.1	0.76	16.3	8.5	72.9	1.8	3.7	0.17	170	66	
11	M2BAX 160MLB 6	3GBA163420---NCN	984	92.3	92.1	90.8	0.73	23.6	9.4	107	2.1	4.3	0.22	190	66	
15	M2BAX 180MLA 6	3GBA183410---NCN	986	92.9	93.1	92.5	0.78	30.0	7.9	145	2.6	3.7	0.25	227	64	
18.5	M2BAX 200MLA 6	3GBA203410---NCN	989	93.4	94.2	94.1	0.80	37.6	7.0	179	2.6	3.3	0.45	264	62	
22	M2BAX 200MLB 6	3GBA203420---NCN	988	93.7	94.3	94.2	0.81	44.0	7.2	213	2.7	3.4	0.53	291	62	
30	M2BAX 225SMA 6	3GBA223210---NCN	987	94.2	94.7	94.6	0.82	59.3	7.4	290	3.2	3.3	0.81	372	62	
37	M2BAX 250SMA 6	3GBA253210---NCN	990	94.5	95.0	95.0	0.83	72.1	7.5	357	3.1	3.0	1.5	478	61	
45	M2BAX 280SMA 6	3GBA283210---NCN	989	94.8	95.1	94.9	0.85	84.6	7.5	435	2.7	2.6	2.0	634	63	
55	M2BAX 280SMB 6	3GBA283220---NCN	988	95.1	95.5	95.4	0.85	103	6.5	531	2.6	2.5	2.6	728	63	
75	M2BAX 315SMA 6	3GBA313210---NCN	993	95.4	95.6	95.2	0.83	144	7.2	721	2.5	2.9	4.8	926	67	
90	M2BAX 315SMB 6	3GBA313220---NCN	993	95.6	95.8	95.4	0.82	174	7.3	865	2.5	2.8	5.2	933	67	
110	M2BAX 315MLA 6	3GBA313410---NCN	993	95.8	96.1	95.9	0.83	210	7.0	1058	2.2	2.6	6.2	1106	68	
132	M2BAX 315LKA 6	3GBA313810---NCN	992	96.0	96.4	96.3	0.84	249	6.3	1267	2.3	2.8	7.2	1288	68	
160	M2BAX 355SMA 6	3GBA353210---NCN	994	96.2	96.3	96.0	0.83	304	7.0	1537	2.3	2.9	9.5	1587	70	
200	M2BAX 355SMB 6	3GBA353220---NCN	994	96.3	96.4	96.0	0.82	384	7.5	1921	2.3	2.8	11.3	1734	70	
250	M2BAX 355MLA 6	3GBA353410---NCN	994	96.5	96.8	96.8	0.84	469	5.8	2403	1.8	3.1	13.2	1984	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）。

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 400V 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			
1000 r/min = 6 极 / 6 poles			400 V 50Hz			CENELEC- 设计 design									
0.37	M2BAX 80MLA 6	3GBA083410...NCN	956	78.0	77.8	74.4	0.72	0.95	4.8	3.7	2.3	3.0	0.0038	20	46
0.55	M2BAX 80MLB 6	3GBA083420...NCN	957	80.9	80.5	77.3	0.69	1.42	5.1	5.5	2.7	3.4	0.0044	22	47
0.75	M2BAX 90SLA 6	3GBA093010...NCN	948	82.7	82.7	81.3	0.72	1.82	4.9	7.5	2.7	3.1	0.0061	32	55
1.1	M2BAX 90SLB 6	3GBA093020...NCN	953	84.5	84.0	82.3	0.68	2.76	5.3	11.0	3.2	3.6	0.0073	35	56
1.5	M2BAX 100LKA 6	3GBA103810...NCN	969	85.9	85.8	84.2	0.73	3.45	7.3	14.9	2.5	3.6	0.012	46	47
2.2	M2BAX 112MLA 6	3GBA113410...NCN	975	87.4	87.8	86.4	0.68	5.34	7.2	21.7	2.6	3.6	0.021	56	46
3	M2BAX 132SA 6	3GBA133110...NCN	983	88.6	88.9	87.4	0.68	7.20	7.1	29.1	2.2	3.4	0.042	73	57
4	M2BAX 132SMA 6	3GBA133210...NCN	983	89.5	89.9	88.6	0.68	9.50	7.4	38.9	2.4	3.5	0.053	86	57
5.5	M2BAX 132SMB 6	3GBA133220...NCN	981	90.5	91.1	90.5	0.71	12.4	7.3	53.5	2.3	3.3	0.068	99	57
7.5	M2BAX 160MLA 6	3GBA163410...NCN	984	91.3	91.1	89.6	0.73	16.2	9.0	72.8	2.0	4.1	0.17	170	66
11	M2BAX 160MLB 6	3GBA163420...NCN	986	92.3	91.9	90.3	0.70	24.5	10.1	107	2.4	4.8	0.22	190	66
15	M2BAX 180MLA 6	3GBA183410...NCN	988	92.9	92.7	91.6	0.73	32.0	8.6	145	3.0	4.3	0.25	227	64
18.5	M2BAX 200MLA 6	3GBA203410...NCN	990	93.4	93.9	93.5	0.78	36.6	7.6	178	2.9	3.7	0.45	264	62
22	M2BAX 200MLB 6	3GBA203420...NCN	989	93.7	94.1	93.6	0.79	42.9	7.8	212	3.0	3.8	0.53	291	63
30	M2BAX 225SMA 6	3GBA223210...NCN	988	94.2	94.6	94.2	0.80	57.6	8.0	290	3.6	3.7	0.81	372	63
37	M2BAX 250SMA 6	3GBA253210...NCN	991	94.5	94.9	94.6	0.81	69.6	8.1	356	3.4	3.3	1.5	478	62
45	M2BAX 280SMA 6	3GBA283210...NCN	990	94.8	95.1	94.7	0.84	81.3	8.2	434	3.1	2.8	2.0	634	63
55	M2BAX 280SMB 6	3GBA283220...NCN	990	95.1	95.4	95.1	0.84	100	7.1	530	2.9	2.7	2.6	728	63
75	M2BAX 315SMA 6	3GBA313210...NCN	994	95.4	95.7	95.0	0.82	138	7.8	721	2.7	3.2	4.8	926	67
90	M2BAX 315SMB 6	3GBA313220...NCN	993	95.6	95.8	95.3	0.80	170	7.9	865	2.6	3.1	5.2	933	67
110	M2BAX 315MLA 6	3GBA313410...NCN	993	95.8	96.1	95.8	0.82	202	7.7	1058	2.3	2.7	6.2	1106	68
132	M2BAX 315LKA 6	3GBA313810...NCN	993	96.0	96.3	96.1	0.83	239	6.8	1270	2.5	3.2	7.2	1288	68
160	M2BAX 355SMA 6	3GBA353210...NCN	994	96.2	96.2	96.1	0.82	292	7.3	1537	2.5	3.1	9.5	1587	70
200	M2BAX 355SMB 6	3GBA353220...NCN	994	96.3	96.5	96.0	0.81	370	8.1	1921	2.6	3.2	11.3	1734	70
250	M2BAX 355MLA 6	3GBA353410...NCN	994	96.5	96.8	96.7	0.83	451	6.2	2403	2.0	3.5	13.2	1984	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）。

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

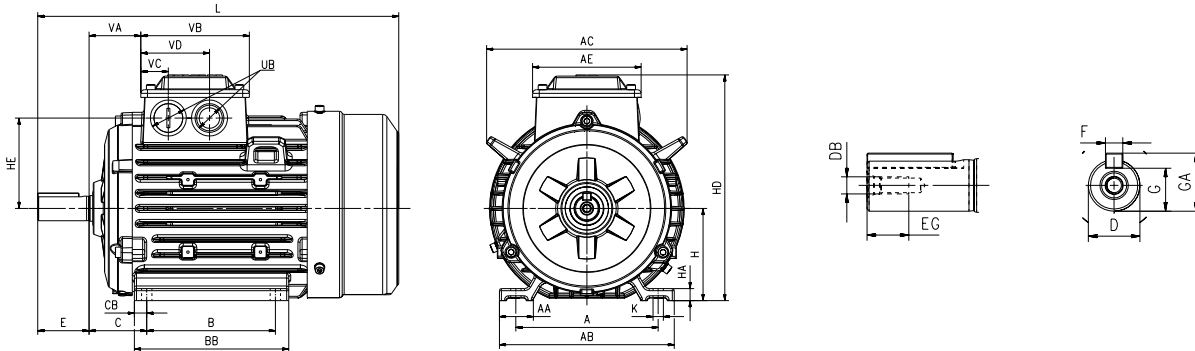
I_s / I_N = 启动电流
T_l / T_N = 转子堵转转矩
T_b / T_N = 最大转矩

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

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
M2BAX 80M	125	33	154	164	106	100	-	125	50	12.5	19-j6	M6	40	16
80ML ¹⁾	125	33	154	164	106	100	112	150	50	12.5	19-j6	M6	40	16
80ML ²⁾	125	33	154	164	106	100	112	180	50	12.5	19-j6	M6	40	16
90S	140	33	170	195	106	100	-	124	56	12	24-j6	M8	50	19
90SL	140	33	170	195	106	100	125	185	56	12	24-j6	M8	50	19
100LK	160	38	200	233	122	140	160	205	63	15	28-j6	M10	60	22
112ML	190	48	230	236	122	140	159	215	70	15	28-j6	M10	60	22
132S	216	53	262	279	122	140	-	196	89	16	38-k6	M12	80	28
132SM	216	53	262	279	122	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
M2BAX 80M	6	15.5	21.5	80	12	69.5	192	10	312	M25x1.5	43	106	27	67
80ML ¹⁾	6	15.5	21.5	80	12	69.5	192	10	337	M25x1.5	43	106	27	67
80ML ²⁾	6	15.5	21.5	80	12	69.5	192	10	367	M25x1.5	43	106	27	67
90S	8	20	27	90	12	88	217	10	339	M25x1.5	50	106	27	67
90SL	8	20	27	90	12	88	217	10	390	M25x1.5	50	106	27	67
100LK	8	24	31	100	15	103	243	12	463	M32x1.5	55	122	32	79
112ML	8	24	31	112	15	112	264	12	480	M32x1.5	66	122	32	79
132S	10	33	41	132	18	134	307	12	510	M32x1.5	65	122	32	79
132SM	10	33	41	132	18	134	307	12	560	M32x1.5	65	122	32	79

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)
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.

外形图及外形尺寸

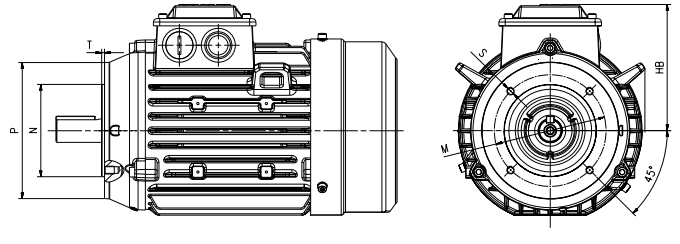
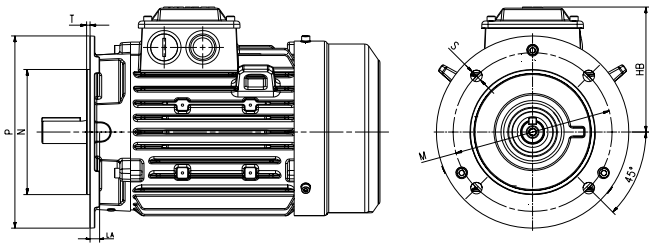
Dimension drawings

机座号 80-132

Frame size 80-132

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

小凸缘安装型电机 IM3601, B14
Small flange-mounted motor IM3601, B14



电机尺寸 Motor size	HB	LA	M	N	P	S	T
M2BAX 80M	112	10	165	130	200	12	3.5
80ML ¹⁾	112	10	165	130	200	12	3.5
80ML ²⁾	112	10	165	130	200	12	3.5
90S	127	10	165	130	200	12	3.5
90SL	127	10	165	130	200	12	3.5
100LK	144	11	215	180	250	14.5	4
112ML	152	11	215	180	250	14.5	4
132S	175	12	265	230	300	14.5	4
132SM	175	12	265	230	300	14.5	4

电机尺寸 Motor size	HB	M	N(j6)	P	S	T
M2BAX 80M	112	100	80	120	M6	3
80ML ¹⁾	112	100	80	120	M6	3
80ML ²⁾	112	100	80	120	M6	3
90S	127	115	95	140	M8	3
90SL	127	115	95	140	M8	3
100LK	144	130	110	160	M8	3.5
112ML	152	130	110	160	M8	3.5
132S	175	165	130	200	M10	3.5
132SM	175	165	130	200	M10	3.5

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	

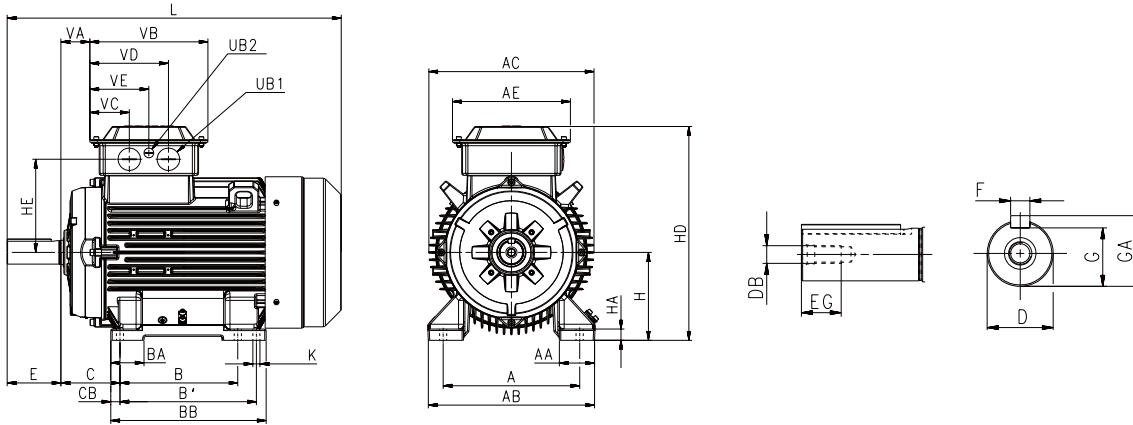
上表给出了主要尺寸 (单位: mm)
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Above table gives the main dimensions in mm.
For detailed drawings please see our web-pages
www.abb.com/motors&generators or contact ABB.

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
M2BAX 160ML ¹⁾	2-6	254	67	310	338	241	210	254	71	294	108	20	42-k6	M16	110	36
160ML ²⁾	2-6	254	67	310	338	241	210	254	69	294	108	20	42-k6	M16	110	36
180ML	2-6	279	65	340	364	241	241	279	68	318	121	19	48-k6	M16	110	36
200ML	2-6	318	69	378	400	262	267	305	80	345	133	19.5	55-m6	M20	110	42
225SM	2	356	87	434	450	262	286	311	68	404	149	20	55-m6	M20	110	42
225SM	4-6	356	87	434	450	262	286	311	68	404	149	20	60-m6	M20	140	42
250SM	2	406	92	480	494	262	311	349	75	452	168	22	60-m6	M20	140	42
250SM	4-6	406	92	480	494	262	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
M2BAX 160ML ¹⁾	2-6	12	37	45	160	23	413	188	14.5	626.5	M40x1.5	M16x1.5	59	241	81	161	121
160ML ²⁾	2-6	12	37	45	160	23	413	188	14.5	683.5	M40x1.5	M16x1.5	59	241	81	161	121
180ML	2-6	14	42.5	51.5	180	23	453	208	14.5	729	M40x1.5	M16x1.5	67	241	81	161	121
200ML	2-6	16	49	59	200	23	514	228	18.5	810	M40x1.5	M16x1.5	79	262	83	179	131
225SM	2	16	49	59	225	23	557	246	18.5	864	M63x1.5	M16x1.5	72	262	83	179	131
225SM	4-6	18	53	64	225	23	557	246	18.5	894	M63x1.5	M16x1.5	72	262	83	179	131
250SM	2	18	53	64	250	23	616	279	24	913	M63x1.5	M16x1.5	72	262	83	179	131
250SM	4-6	18	58	69	250	23	616	279	24	913	M63x1.5	M16x1.5	72	262	83	179	131

公差 Tolerance	附注 Footnotes
A, B ± 0.8	¹⁾ MLA2
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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Above table gives the main dimensions in mm.
For detailed drawings please see our web-pages
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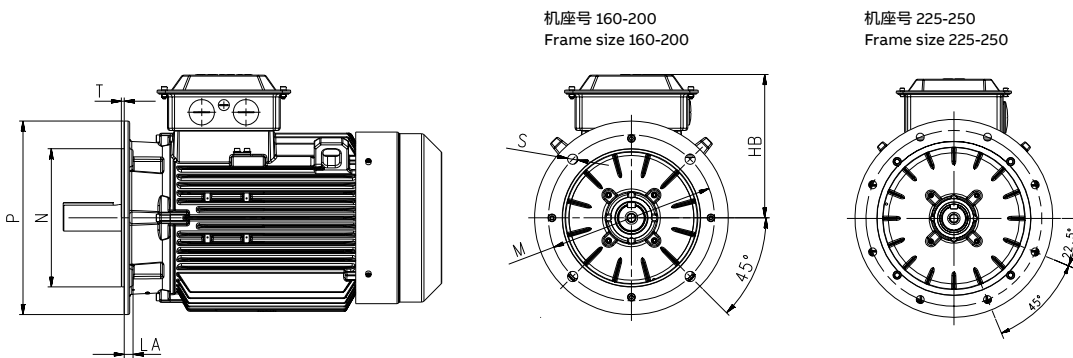
外形图及外形尺寸

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	
M2BAX	160ML ¹⁾	2-6	253	18	300	250	350	18.5	5
	160ML ²⁾	2-6	253	18	300	250	350	18.5	5
	180ML	2-6	273	16	300	250	350	18.5	5
	200ML	2-6	314	20	350	300	400	18.5	5
	225SM	2	333	20	400	350	450	18.5	5
	225SM	4-6	333	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⁾ MLA2
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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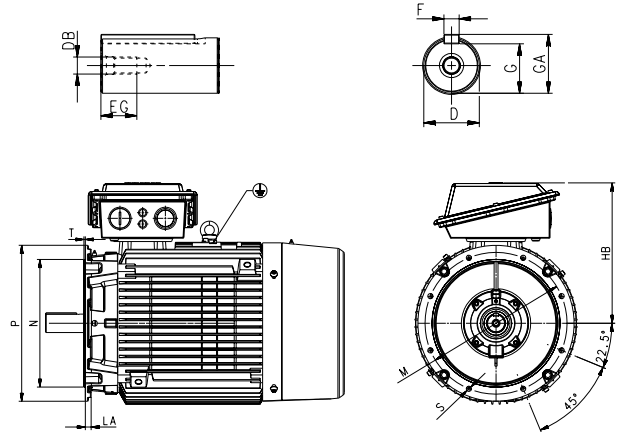
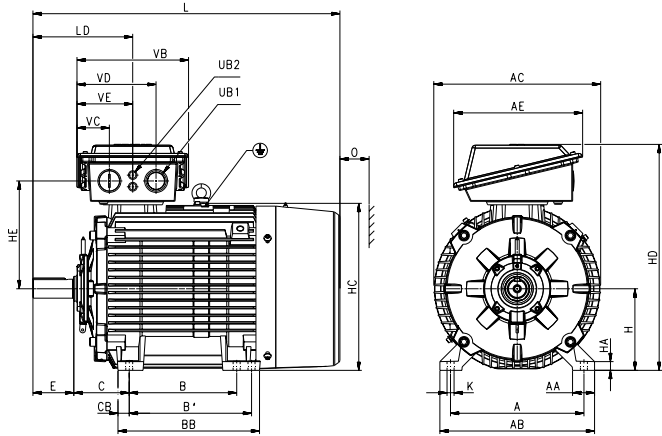
Above table gives the main dimensions in mm.
For detailed drawings please see our web-pages
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外形图及外形尺寸 Dimension drawings

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	
M2BAX	280SM ¹⁾	2	457	75	530	590	354	368	419	596	190	47	65-m6	M20	140	42	18	58
	280SM ²⁾	2	457	75	530	571	354	368	419	485	190	38	65-m6	M20	140	42	18	58
	280SM ¹⁾	4-6	457	75	530	590	354	368	419	596	190	47	75-m6	M20	140	42	20	67.5
	280SM ²⁾	6	457	75	530	571	354	368	419	485	190	38	75-m6	M20	140	42	20	67.5
	315SM	2	508	100	590	644	442	406	457	563	216	52	65-m6	M20	140	42	18	58
	315SM	4-6	508	100	590	644	442	406	457	563	216	52	80-m6	M20	170	42	22	71
	315ML	2	508	100	590	644	442	457	508	664	216	52	65-m6	M20	140	42	18	58
	315ML	4-6	508	100	590	644	442	457	508	664	216	52	90-m6	M24	170	50	25	81
	315LK	4-6	508	100	590	660	442	508	560	771	216	59	90-m6	M24	170	50	25	81
	355SM	2	610	120	700	739	493	500	560	698	254	72	70-m6	M20	140	42	20	62.5
	355SM	4-6	610	120	700	739	493	500	560	698	254	72	100-m6	M24	210	50	28	90
	355ML	2	610	120	700	749	493	560	630	782	254	79	70-m6	M20	140	42	20	62.5
	355ML	4-6	610	120	700	749	493	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	
M2BAX	280SM ¹⁾	2	69	280	30	573	747	354	24	1182	342	100	M63x1.5	M20x1.5	307	91	215	153
	280SM ²⁾	2	69	280	30	573	747	354	24	1052	342	100	M63x1.5	M20x1.5	307	91	215	153
	280SM ¹⁾	4-6	79.5	280	30	573	747	354	24	1182	342	100	M63x1.5	M20x1.5	307	91	215	153
	280SM ²⁾	6	79.5	280	30	573	747	354	24	1052	342	100	M63x1.5	M20x1.5	307	91	215	153
	315SM	2	69	315	38	638	849	409	28	1216	348	115	M63x1.5	M20x1.5	383	111	271	191
	315SM	4-6	85	315	38	638	849	409	28	1246	378	115	M63x1.5	M20x1.5	383	111	271	191
	315ML	2	69	315	38	638	849	409	28	1326	348	115	M63x1.5	M20x1.5	383	111	271	191
	315ML	4-6	95	315	38	638	849	409	28	1356	378	115	M63x1.5	M20x1.5	383	111	271	191
	315LK	4-6	95	315	38	638	849	409	28	1458	378	115	M63x1.5	M20x1.5	383	111	271	191
	355SM	2	74.5	355	41	725	933	462	35	1399	399	130	M75x1.5	M20x1.5	382	111	271	191
	355SM	4-6	106	355	41	725	933	462	35	1469	469	130	M75x1.5	M20x1.5	382	111	271	191
	355ML	2	74.5	355	41	725	933	462	35	1514	399	130	M75x1.5	M20x1.5	382	111	271	191
	355ML	4-6	106	355	41	725	933	462	35	1584	469	130	M75x1.5	M20x1.5	382	111	271	191

电机尺寸 Motor size	极数 Poles	HB	LA	M	N	P	S	T	
M2BAX	280	2-6	467	21	500	450j6	550	18.5	5
	315	2-6	534	27	600	550j6	660	24	6
	355	2-6	578	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)
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变量代码

Variant codes

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变量代码 Variant code	描述 Description	80	90	100	112	132	160	180	200	225	250	280	315	355
管理 Administration														
530	正常质保期延长 2 年 Two-year extension on standard warranty	●	●	●	●	●	●	●	●	●	●	●	●	●
531	海运包装 Sea freight packing	●	●	●	●	●	●	●	●	●	●	●	●	●
533	木制海运包装 Wooden sea freight packing	●	●	●	●	●	●	●	●	●	●	●	●	●
683	ABB Smart Sensor 支架 Prepared for ABB Ability Smart Sensor	-	-	-	-	-	-	●	●	●	●	●	●	●
684	安装 ABB Smart Sensor 硬件 (不含许可码) ABB Ability Smart sensor mounted	-	-	-	-	-	-	●	●	●	●	●	●	●
865	延长一年质保 One-year extension on standard warranty	●	●	●	●	●	●	●	●	●	●	●	●	●
部门标准设计 Branch standard designs														
178	不锈钢 / 耐酸螺栓 Stainless steel / acid proof bolts.	●	●	●	●	●	●	●	●	●	●	●	●	●
209	非标电压或频率 (特殊绕组) Non-standard voltage or frequency, (special winding).	●	●	●	●	●	●	●	●	●	●	●	●	●
396	用于环温 -20 °C ~ -40 °C 的电机, 有加热带 (必须添加代码 450/451) Motor designed for minimum ambient temperature -20 °C to -40 °C, with space heaters (code 450/451 must be added)	●	●	●	●	●	●	●	●	●	●	●	●	●
419	纺织风罩, 风叶不带工艺孔 Textile industry design.	●	●	●	●	●	-	-	-	-	-	-	-	-
425	防腐蚀定子和转子 Corrosion protected stator and rotor core.	●	●	●	●	●	●	●	●	●	●	●	●	●
584	加强型铸件, 牌号升一档 Cast iron material with increased tensile strength	●	●	●	●	●	●	●	●	●	●	●	●	●
平衡校验 Balancing														
417	B 级振动 (IEC 60034-14) Vibration acc. to Grade B (IEC 60034-14).	●	●	●	●	●	●	●	●	●	●	●	●	●
尺寸图纸 Documentation														
141	配二维主要尺寸图 Binding 2D main dimension drawing.	●	●	●	●	●	●	●	●	●	●	●	●	●
加热元件 Heating elements														
450	加热带, 100-120V Heating element, 100-120 V	●	●	●	●	●	●	●	●	●	●	●	●	●
451	加热带, 200-240V Heating element, 200 - 240 V	●	●	●	●	●	●	●	●	●	●	●	●	●
安装方式 Mounting arrangements														
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).	●	●	●	●	●	●	●	●	●	●	●	●	●
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	非标安装方式 (请指定 IM xxxx) (除 B3(1001), B5(3001), B14 (3601), IM B35 (2001) & IM B34 (2101) 外的其它安装型式须在定单中注明) Modified for specified mounting position differing from IM B3 (1001), IM B5 (3001), B14 (3601), IM B35 (2001), IM B34 (2101)	●	●	●	●	●	●	●	●	●	●	●	●	●

○ 标配 | ● 可选 | - 不适用

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

变量代码

Variant codes

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变量代码 Variant code	描述 Description	80	90	100	112	132	160	180	200	225	250	280	315	355
320	IM2001 底脚 / 缺边法兰安装, 由 IM1001 派生 (B3 派生出 B35) IM2001 foot/flat bottom flange mounted, from IM1001 (B35 flat bottom flange from B3)	●	●	●	●	●	●	-	-	-	-	-	-	-
622	铸铁轴承内盖 (低窜动) Inner bearing cover of cast iron	●	●	●	●	●	●	●	●	●	●	○	○	○
接地螺栓 Earthing Bolt														
067	外部接地螺栓 External earthing bolt.	○	○	○	○	○	○	○	○	○	○	○	○	○
变速驱动器 Variable speed drives														
692	镀陶轴 Ceramic coated shaft	-	-	-	-	-	●	●	●	●	●	●	●	●
701	N 端绝缘轴承 Insulated bearing at N-end.	-	-	-	-	-	-	-	-	-	-	●	●	●
704	EMC 电缆密封管 EMC cable entry.	●	●	●	●	●	●	●	●	●	●	●	●	●
绝缘系统 Insulation system														
014	H 级绝缘绕组 Winding insulation class H.	●	●	●	●	●	●	●	●	●	●	●	●	●
405	用于变频电源的特殊绕组绝缘 Special winding insulation for frequency converter supply.	●	●	●	●	●	●	●	●	●	●	●	●	●
喷漆 Painting														
114	特殊油漆颜色, 标准等级 Special paint color, standard grade	●	●	●	●	●	●	●	●	●	●	●	●	●
115	C4M 喷漆系统, 根据 ISO 12944-5:2007 Painting system C4M acc. to ISO 12944-2: 2007.	●	●	●	●	●	●	●	●	●	●	●	●	●
383	WF1 户外防中等腐蚀 Outdoor medium anti-corrosion WF1	●	●	●	●	●	●	●	●	●	●	●	●	●
646	除 VC114 外的特殊油漆颜色 Special paint colour (China)	●	●	●	●	●	●	●	●	●	●	●	●	●
754	C5M 喷漆系统, 根据 ISO 12944-5:2007 Painting system C5M acc. to ISO 12944-2:1998	●	●	●	●	●	●	●	●	●	●	●	●	●
防护 Protection														
005	防护罩, 立式电机, 轴伸向下 Protective roof	●	●	●	●	●	●	●	●	●	●	●	●	●
072	D 端径向密封, 不适用于 280,315 的 2 极电机 Radial seal at D-end. Not possible for 2-pole, 280 and 315 frames	●	●	●	●	●	●	●	●	●	●	●	●	●
158	防护等级 IP65 Degree of protection IP65.	●	●	●	●	●	●	●	●	●	●	●	●	●
250	防护等级 IP66 Degree of protection IP66	●	●	●	●	●	●	●	●	●	●	●	●	●
403	防护等级 IP56 Degree of protection IP56.	●	●	●	●	●	●	●	●	●	●	●	●	●
784	D 端伽马密封 Gamma-seal at D-end.	●	●	●	●	●	●	●	●	●	●	●	●	●
铭牌和指示牌 Rating & instruction plates														
002	重敲铭牌电压、频率、输出、连续工作制 Restamping voltage, frequency and output, continuous duty.	●	●	●	●	●	●	●	●	●	●	●	●	●
095	重敲输出 (持续电压、频率)、间歇工作制 Restamping output (maintained voltage, frequency), intermittent duty.	●	●	●	●	●	●	●	●	●	●	●	●	●

○ 标配 | ● 可选 | - 不适用

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Variant codes

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变量代码 Variant code	描述 Description	80	90	100	112	132	160	180	200	225	250	280	315	355
135	安装额外不锈钢指示牌 Mounting of additional identification plate, stainless.	●	●	●	●	●	●	●	●	●	●	●	●	●
159	额外带铭牌 "Made in..." Additional plate with text "Made in" 变频铭牌. 铭牌数据根据报价单 Frequency converter rating plate. Rating data according to quotation.	●	●	●	●	●	●	●	●	●	●	●	●	●
163	ABB 标准负载参数, VSD 驱动铭牌. 配变速驱动用附件 Rating plate with ABB standard loadability values for VSD operation. Other auxiliaries for VSD operation to be selected as necessary.	●	●	●	●	●	●	●	●	●	●	●	●	●
181	轴和转子 Shaft & rotor													
069	根据基本目录的双伸轴 Two shaft extensions according to catalog drawings.	●	●	●	●	●	●	●	●	●	●	●	●	●
070	D 端特殊轴伸, 标准材料 Special shaft extension at D-End, standard shaft material	●	●	●	●	●	●	●	●	●	●	●	●	●
164	闭口键槽轴伸 Shaft extension with closed keyway	●	●	●	●	●	●	●	●	●	●	●	●	●
410	不锈钢轴 (标准或非标设计) Shaft material stainless steel	●	●	●	●	●	●	●	●	●	●	●	●	●
600	N 端特殊轴伸, 标准材料 Special shaft extension at N-end, standard shaft material.	●	●	●	●	●	●	●	●	●	●	●	●	●
631	调质 Quenched and tempered shaft material	●	●	●	●	●	●	●	●	●	●	●	●	●
标准和规范 Standards and Regulations														
540	中国能效标识 China energy label	○	○	○	○	○	○	○	○	○	○	○	○	○
定子绕组温度传感器 Stator winding temperature sensors														
121	定子绕组安装双金属温度开关 (NCC, 3 个串联, 130 °C) Bimetal detectors, break type (NCC), (3 in series), 130 °C, in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●
122	定子绕组安装双金属温度开关 (NCC, 3 个串联, 150 °C) Bimetal detectors, break type (NCC), (3 in series), 150 °C, in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●
435	定子绕组安装 PTC- 热敏电阻 (3 个串联), 130 °C PTC - thermistors (3 in series), 130 °C, in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●
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	●	●	●	●	●	●	●	●	●	●	○	○	○
439	定子绕组安装 PTC- 热敏电阻 (2x3 个串联), 150 °C PTC - thermistors (2x3 in series), 150 °C, in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●
441	定子绕组安装 PTC- 热敏电阻 (3 个串联, 130 °C 以及 3 个串联, 150 °C) PTC - thermistors (3 in series, 130 °C & 3 in series, 150 °C), in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●
445	定子绕组安装 Pt100(2 线), 每相 1 个 Pt100 2-wire in stator winding, 1 per phase	●	●	●	●	●	●	●	●	●	●	●	●	●
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	●	●	●	●	●	●	●	●	●	●	●	●	●
503	定子绕组安装 Pt100(3 线), 每相 2 个 Pt100 3-wire in stator winding, 2 per phase	●	●	●	●	●	●	●	●	●	●	●	●	●

○ 标配 | ● 可选 | - 不适用

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

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	80	90	100	112	132	160	180	200	225	250	280	315	355
轴承与润滑 Bearings and Lubrication														
037	D 端圆柱滚子轴承 Roller bearing at D-end.	-	-	-	-	-	●	●	●	●	●	●	●	●
040	耐高温油脂 Heat-resistant grease	●	●	●	●	●	●	●	●	●	●	●	●	●
041	通过注油嘴对轴承加油 Bearings regreasable via grease nipples.	●	●	●	●	●	●	●	●	●	●	○	○	○
043	SPM 振动测量接头 SPM compatible nipples for vibration measurement	●	●	●	●	●	●	●	●	●	●	●	●	●
130	轴承安装 Pt100(3 线) Pt100 3-wire in bearings.	-	-	-	-	-	●	●	●	●	●	●	●	●
188	D 端 63 系列轴承 63-series bearing in D-end	●	●	●	●	●	○	○	○	○	○	○	○	○
379	SKF 轴承 SKF bearings	●	●	●	●	●	●	●	●	●	●	●	●	●
798	不锈钢注油嘴 Stainless steel grease nipples	●	●	●	●	●	●	●	●	●	●	●	●	●
866	不锈钢 PT1/4 挂钩式注油嘴 Stainless steel grease nipples, PT1/4"	●	●	●	●	●	●	●	●	●	●	●	●	●
测试 Testing														
145	目录电机的型式试验报告, 400V 50Hz Type test report from a catalogue motor, 400V 50Hz.	●	●	●	●	●	●	●	●	●	●	●	●	●
146	指定交货批次内的某一电机的型式试验报告 Type test with report for one motor from specific delivery batch.	●	●	●	●	●	●	●	●	●	●	●	●	●
148	出厂试验报告 Routine test report.	●	●	●	●	●	●	●	●	●	●	●	●	●
接线盒 Terminal box														
020	分离式接线盒 Detached terminal box.	●	●	●	●	●	●	●	●	●	●	●	●	●
021	左侧接线盒 (从 D 端看) Terminal box LHS (seen from D-end).	●	●	●	●	●	●	●	●	●	●	●	●	●
022	电缆进线孔在左侧 (从 D 端看) Cable entry LHS (seen from D-end).	●	●	●	●	●	●	●	●	●	●	●	●	●
180	右侧接线盒 (从 D 端看) Terminal box RHS (seen from D-end).	●	●	●	●	●	●	●	●	●	●	●	●	●
230	标准金属电缆密封管 Standard metal cable gland.	●	●	●	●	●	●	●	●	●	●	●	●	●
373	接线盒防护等级 IP56 Terminal box degree of protection IP56	●	●	●	●	●	●	●	●	●	●	●	●	●
375	标准塑料葛兰 Standard plastic cable gland	●	●	●	●	●	●	●	●	●	●	●	●	-
376	2 个标准塑料葛兰 Two standard plastic cable glands	●	●	●	●	●	●	●	●	●	●	●	●	-
400	4 x 90 度可转动的接线盒 4 x 90 degr turnable terminal box.	●	●	●	●	●	○	○	○	○	○	○	○	○
413	延长电缆连接, 无接线盒 Extended cable connection, no terminal box.	●	●	●	●	●	●	●	●	●	●	●	●	●
418	独立的辅助接线盒, 标准材料 Separate terminal box for auxiliaries, standard material.	●	●	●	●	●	●	●	●	●	●	●	●	●
468	电缆进口从 D 端 Cable entry from D-end.	●	●	●	●	●	●	●	●	●	●	●	●	●
469	电缆进口从 N 端 Cable entry from N-end.	●	●	●	●	●	●	●	●	●	●	●	●	●

○ 标配 | ● 可选 | - 不适用
 ○ = Included as standard | ● = Available as option | - = Not applicable

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	80	90	100	112	132	160	180	200	225	250	280	315	355
624	为英制葛兰预留 Prepared for inch cable glands according to BSPP standard.	●	●	●	●	●	●	●	●	●	●	●	●	●
730	为 NPT 葛兰预留 Prepared for NPT cable glands.	●	●	●	●	●	●	●	●	●	●	●	●	●
731	2 个标准金属电缆密封管 Two standard metal cable glands.	●	●	●	●	●	●	●	●	●	●	●	●	●
738	为米制葛兰预留 Prepared for metric cable glands.	●	●	●	●	●	●	●	●	●	●	●	●	●
740	为 PG 葛兰预留 Prepared for PG cable glands.	●	●	●	●	●	●	●	●	●	●	●	●	●
753	铸铁接线盒 Cast iron terminal box	●	●	●	●	●	●	●	●	●	●	○	○	○
冷却系统 Cooling system														
068	轻合金金属风扇 Light alloy metal fan	●	●	●	●	●	●	●	●	●	●	●	●	●
075	冷却方式 IC418(无叶无罩) Cooling method IC418 (without fan).	●	●	●	●	●	●	●	●	●	●	●	●	●
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	钢板 Steel				
	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	6213-2Z/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	钢板 Cast iron				
	接线盒盖材料 Cover material	钢板 Steel				
	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 (4-8P)	6316/C3 (2P) 6322/C3 (4-8P)
	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		
连接件 Connections	螺纹孔 Threaded openings	2xM63+2xM20	2xM63+2xM20	2xM75+2xM20
	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或铝合金 Glass-fiber reinforced polypropylene or Aluminium		
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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