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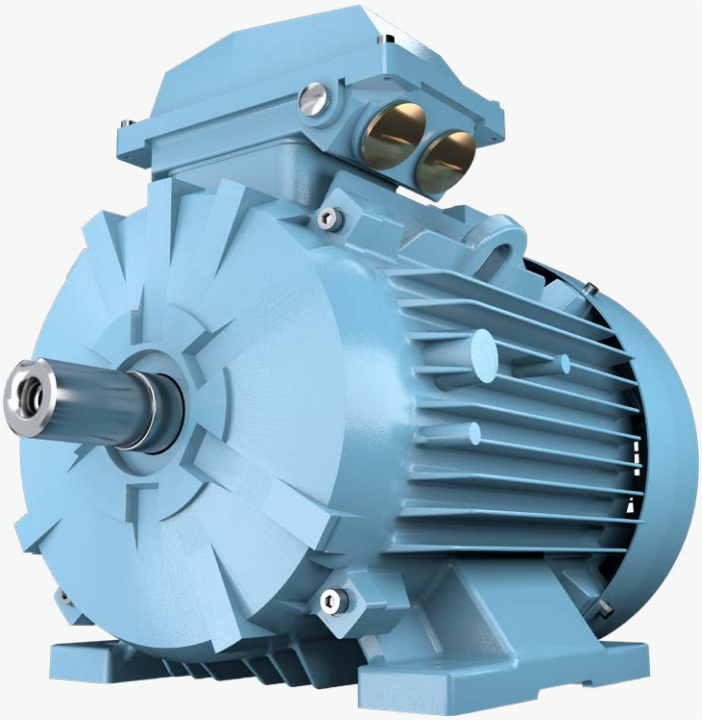
新一代 M2QA 低压通用型电机
New generation M2QA Low voltage General purpose motors



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产品概述
General information

标准
ABB 电机采用全封闭三相鼠笼型设计，其工艺符合 IEC 国际标准以及中国 GB 标准，效率达到 IE2, IE3 能效等级。

生产厂家通过 ISO9001 国际质量认证及 ISO14000 环境标准。

Standards
ABB motors are of the totally enclosed, three phase squirrel cage type, built to comply with international IEC and China GB standards. The efficiency level reaches IE2 and IE3.

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

IEC/EN

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

GB

电气 Electrical	机械 Mechanical
GB/T 755	GB/T 4772.1
GB/T 1032	GB/T 4942.1
GB 18613	GB/T 1993
GB 1971	GB/T 997
GB/T 21210	GB 1971
	GB/T 10068

产品简介
新一代 M2QA 是 ABB 在 IE1 M2QA 电机基础上进行全新升级的产品，该产品是针对中国中高端市场开发的一款通用型高效三相异步铸铁电机，经济耐用，符合中国客户使用习惯，作为一款外型美观且性能稳定可靠的电机，二十多年来深受全球客户的青睐，它拥有非常出色的机械和电气性能，并满足客户定制化设计需求。

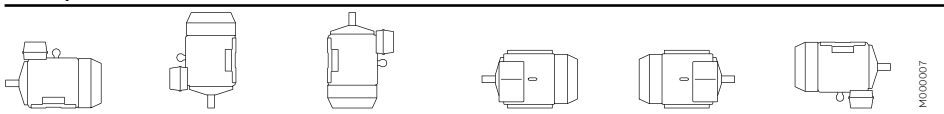
适用行业
M2QA 系列电机覆盖造纸、冶金、矿山、起 重、电力、轨交、船舶、橡塑、纺织、印刷包装、食品饮料、化工、水和污水处理、暖通等行业的配套机械设备需求。

Brief
New generation M2QA series high efficiency motors upgraded on IE1 M2QA with Performance optimize , A general-purpose high efficiency cast iron motor developed for the middle and high-end market of China , competitive product and meets the China customer’s habit.As a beautiful appearance motor with stable and reliable performance, it has been favored by customers around the world for more than 20 years. It has excellent mechanical and electrical properties, also provides customized design for customer.

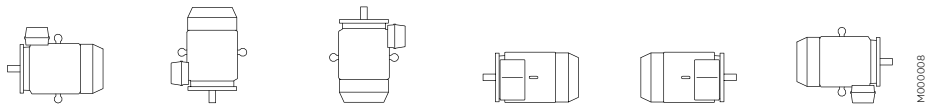
Target industry
M2QA series motors suitable for P&P, Metals, Mining, Hoisting, Power, Railway, Marine, Rubber and Plastic, textile, Printing and Packaging, Food and Beverage, Chemical, W&WW, HVAC and other industries and supporting machinery and equipment needs.

产品概述 - 安装结构形式
General information - Mounting arrangements

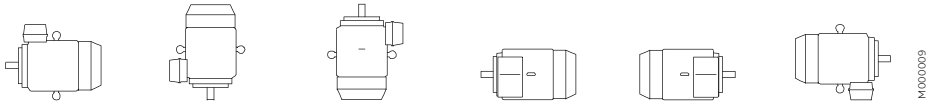
底脚安装型电机
Foot-mounted motor

代码 I/ 代码 II Code I / code II						产品代码位置 12 Product code pos. 12
						A = 底脚安装型，接线盒在顶部 foot-mounted, term.box top
IM B3	IM V5	IM V6	IM B6	IM B7	IM B8	
IM 1001	IM 1011	IM 1031	IM 1051	IM 1061	IM 1071	

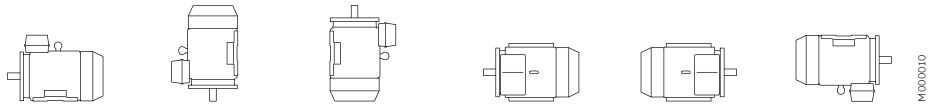
凸缘安装型电机，大凸缘
Flange-mounted motor, large flange

代码 I/ 代码 II Code I / code II						产品代码位置 12 Product code pos. 12
						B = 凸缘安装型，大凸缘 flange mounted, large flange
IM B5	IM V1	IM V3	*)	*)	*)	
IM 3001	IM 3011	IM 3031	IM 3051	IM 3061	IM 3071	

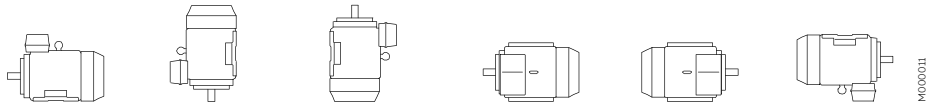
凸缘安装型电机，小凸缘
Flange-mounted motor, small flange

代码 I/ 代码 II Code I / code II						变量代码 Variant code
						047 = B5 派生出 B14 B14 from B5
IM B14	IM V18	IM V19	*)	*)	*)	
IM 3601	IM 3611	IM 3631	IM 3651	IM 3661	IM 3671	

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
						009 = B3 派生出 B35 B35 from B3
IM B35	IM V15	IM V35	*)	*)	*)	
IM 2001	IM 2011	IM 2031	IM 2051	IM 2061	IM 2071	

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
						008 = B3 派生出 B34 B34 from B3
IM B34	IM V17					
IM 2101	IM 2111	IM 2131	IM 2151	IM 2161	IM 2171	

*) 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

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
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

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最少给出以下数据。电机产品代码根据以下示例编写。

When ordering, please provide at least the following data in the order according to the example. The product code of the motor is composed in accordance with the following example.

示例	
电机型号	M2QA 180 LA4
极数	4
安装方式（IM 代码）	IM B3 (IM1001)
额定输出	22 kW
产品代码	3GQA 182 510-ADL
附加代码（如需）	

Example	
Motor type	M2QA 180 LA4
Pole number	4
Mounting arrangement (IM-code)	IM B3 (IM1001)
Rated output	22 kW
Product code	3GQA 182 510-ADL
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，产品代编码 Mounting arrangement, voltage and frequency code, generation codes	变量代码 Variant codes
M2QA	**180LA**	**3GQA 182 510- ADL**		**002, etc**
		1 2 3 4 5 6 7 8 9 10 11 12 13 14		

位置 1-4			
3GQA = 全封闭铸铁机座电机			
位置 5-6			
IEC 机座			
07 = 71	11 = 112	20 = 200	31 = 315
08 = 80	13 = 132	22 = 225	35 = 355
09 = 90	16 = 160	25 = 250	
10 = 100	18 = 180	28 = 280	
位置 7 极对数			
1=2 极 2=4 极 3=6 极 4=8 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 50 Hz S 220 VΔ, 380 VY, 400 VY 50 Hz			
位置 14 产品代编码			

Positions 1 to 4			
3GQA = Totally enclosed motor with cast iron frame			
Positions 5 to 6			
IEC size			
07 = 71	11 = 112	20 = 200	31 = 315
08 = 80	13 = 132	22 = 225	35 = 355
09 = 90	16 = 160	25 = 250	
10 = 100	18 = 180	28 = 280	
Positions 7 Speed (pole pairs)			
1=2 poles 2=4 poles 3=6 poles 4=8poles			
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 50 Hz S 220 VΔ, 380 VY, 400 VY 50 Hz			
Position 14 Generation code			

铭牌
Rating plates

铭牌以表格形式提供两个电压的转速、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 two voltages.

铭牌示例

ABB	ABB Motors				IE3
3~Mot.	M2QA112MA4		S1		IEC60034-1
3GQA111310-ADL			Cl. F		IP 55
6207-2Z/C3		6206-2Z/C3	Date 2021.02		
V	Hz	r/min	kW	cosø	A
380 Δ	50	2879	4	0.88	7.84
660Y	50	2879	4	0.88	4.51
				B3	15 kg
No. 3G1C21060799452001			IE3-50Hz-88.1%(100%)		

Rating plate sample

ABB	ABB Motors		IE3				
3~motor	M2QA180MA2				B3		
IEC							
S	S1		No.3G1C21060799452001				
Cert.no.			Ins.cl. F		IP 55		
V	Hz	kW	r/min	A	cosø	IA/IN	tE/s
380Δ	50	22	2939	40.0	0.90		
660Y	50	22	2939	23.1	0.90		
IE3-50Hz-92.7%(100%)							
Prod.code 3GQA181310-ADL							
6310-2Z/C3		6210-2Z/C3			55 kg		
Date 2021.02				IEC 60034-1			

变频铭牌示例

ABB	ABB Motors				IE3
3~Mot.	M2QA112MA4		S1		IEC60034-1
3GQA111310-ADL			Cl. F		IP 55
6207-2Z/C3		6206-2Z/C3	Date 2021.02		
V	Hz	r/min	kW	cosø	A
380 Δ	50	2879	4	0.88	7.84
QUADRATIC TORQUE: 5-50Hz					
				B3	15 kg
No. 3G1C21060799452001			IE3-50Hz-88.1%(100%)		

VSD Rating Plate sample

ABB	ABB Motors		IE3				
3~motor	M2QA180MA2				B3		
IEC							
S	S1		No.3G1C21060799452001				
Cert.no.			Ins.cl. F		IP 55		
V	Hz	kW	r/min	A	cosø	IA/IN	tE/s
380Δ	50	22	2939	40.0	0.90		
IE3-50Hz-92.7%(100%)							
Prod.code 3GQA181310-ADL							
CONVERTER SUPPLY		QUADRATIC TORQUE: 5-50Hz					
6310-2Z/C3		6210-2Z/C3			55 kg		
Date 2021.02				IEC 60034-1			

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

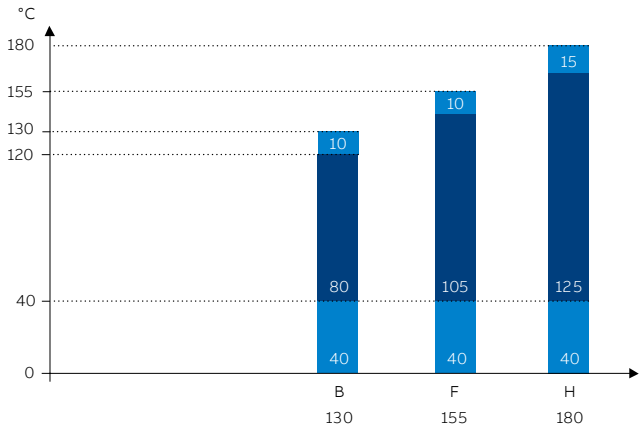
绝缘系统
ABB 采用 F 级绝缘材料，B 级温升，是当今业界通用的要求。

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 15K



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

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 15K

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，M2QA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, M2QA motors are designed to withstand overload capacity of 1.5 times rated current for 2 minutes at rated voltage and frequency.

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 see level	对应海拔高度的环境温度 Site altitude above see 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

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
71	2-8	6203-2ZC3	6202-2ZC3	
80	2-8	6204-2ZC3	6204-2ZC3	
90	2-8	6205-2ZC3	6205-2ZC3	
100	2-8	6206-2ZC3	6206-2ZC3	
112	2-8	6207-2ZC3	6206-2ZC3	
132	2-8	6208-2ZC3	6207-2ZC3	NU208
160	2-8	6309-2ZC3	6209-2ZC3	NU309
180	2-8	6310-2ZC3	6210-2ZC3	NU310
200	2-8	6312-2ZC3	6212-2ZC3	NU312
225	2-8	6313-2ZC3	6213-2ZC3	NU313
250	2-8	6314/C3	6214/C3	NU314
280	2	6316/C4	6316/C4	NU316
	4-8	6316/C3	6316/C3	NU316
315	2	6316/C4	6316/C4	NU316
	4-8	6319/C3	6319/C3	NU319
355	2	6319M/C4	6319M/C4	NU319
	4-8	6322/C3	6319/C3	NU322

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ABB实际使用的为准。

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
71	2-8	6203-2ZC3	6202-2ZC3	
80	2-8	6204-2ZC3	6204-2ZC3	
90	2-8	6205-2ZC3	6205-2ZC3	
100	2-8	6206-2ZC3	6206-2ZC3	
112	2-8	6207-2ZC3	6206-2ZC3	
132	2-8	6208-2ZC3	6207-2ZC3	NU208
160	2-8	6309-2ZC3	6209-2ZC3	NU309
180	2-8	6310-2ZC3	6210-2ZC3	NU310
200	2-8	6312-2ZC3	6212-2ZC3	NU312
225	2-8	6313-2ZC3	6213-2ZC3	NU313
250	2-8	6314/C3	6214/C3	NU314
280	2	6316/C4	6316/C4	NU316
	4-8	6316/C3	6316/C3	NU316
315	2	6316/C4	6316/C4	NU316
	4-8	6319/C3	6319/C3	NU319
355	2	6319M/C4	6319M/C4	NU319
	4-8	6322/C3	6319/C3	NU322

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.

轴向锁定轴承
所有电机在 D 端标配轴向锁定轴承。

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 71-355 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		
		轴向密封件 Axial seal	径向密封件 Radial seal	
		D 端 D-end	D 端 D-end	N 端 N-end
71	2-6	RB17*32*4		
80	2-8	RB20*35*4		
90	2-8	RB25*40*4		
100	2-8	RB30*47*4.5		
112	2-8	RB35*52*4.5		
132	2-8	RB40*57*4.5		
160	2-8	RB45*62*4.5		
180	2-8	RB50*70*5.5		
200	2-8	RB60*80*5.5		
225	2-8	RB65*85*5.5		
250	2-8		TC70*85*10	TC70*85*10
280	2		TC80*100*10	TC80*100*10
	4-8		TC80*100*10	TC80*100*10
315	2		TC80*100*10	TC80*100*10
	4-8		TC95*120*12	TC95*120*12
355	2		TC95*120*12	TC95*120*12
	4-8		TC110*130*12	TC95*120*12

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 71-250 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 71-250 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。

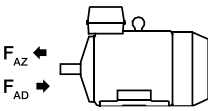
给定轴向力 F_{AD}，假设 D 端轴承由锁环锁定。

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.

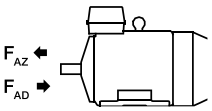
At 60 Hz, the values must be reduced by 10 percent.

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.



安装方式 IM B3



Mounting arrangement IM B3

机座号 Motor size	极数 No. of poles	轴伸长度 Length of shaft extension E (mm)	深沟球轴承 Basic design with deep groove ball bearings 20,000 小时 20,000 h F_{AD} (N)	F_{AZ}(N)	40,000 小时 40,000 h F_{AD} (N)	F_{AZ}(N)
71	2	30	590	310	480	200
	4	30	735	455	590	310
	6	30	845	565	670	390
80	2	40	795	395	645	245
	4	40	985	585	790	390
	6	40	1125	725	895	495
	8	40	1245	845	985	585
90	2	50	850	430	690	270
	4	50	1060	640	845	425
	6	50	1210	790	960	540
	8	50	1335	915	1055	635
100	2	60	1130	610	915	395
	4	60	1415	895	1125	605
	6	60	1625	1105	1285	765
	8	60	1795	1275	1415	895
112	2	60	1415	895	1125	605
	4	60	1795	1275	1410	890
	6	60	2070	1550	1620	1100
	8	60	2295	1775	1790	1270
132	2	80	1595	975	1270	650
	4	80	2010	1390	1585	965
	6	80	2315	1695	1810	1190
	8	80	2580	1960	2015	1395
160	2	110	2750	1970	2155	1375
	4	110	3535	2755	2745	1965
	6	110	4085	3305	3160	2380
	8	110	4555	3775	3515	2735
180	2	110	3165	2325	2470	1630
	4	110	4060	3220	3140	2300
	6	110	4715	3875	3640	2800
	8	110	5255	4415	4050	3210

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 F_{AD} (N)	F_{AZ}(N)	40,000 小时 40,000 h F_{AD} (N)	F_{AZ}(N)
200	2	110	4025	3085	3120	2180
	4	110	5210	4270	4015	3075
	6	110	6065	5125	4660	3720
	8	110	6780	5840	5205	4265
225	2	110	4485	3525	3465	2505
	4	140	5800	4840	4445	3485
	6	140	6775	5815	5190	4230
	8	140	7575	6615	5800	4840
250	2	140	5345	4385	4105	3145
	4	140	6925	5965	5285	4325
	6	140	8090	7130	6170	5210
	8	140	9095	8135	6935	5975
280	2	140	6925	5455	5425	3955
	4	140	7480	6010	5735	4265
	6	140	8735	7265	6680	5210
	8	140	9775	8305	7470	6000
315S	2	140	6850	5380	5355	3885
	4	170	9570	6170	7530	4130
	6	170	11040	7640	8625	5225
	8	170	12290	8890	9580	6180
315ML	2	140	6715	5245	5225	3755
	4	170	9395	5995	7360	3960
	6	170	10810	7410	8410	5010
	8	170	11995	8595	9295	5895
355ML	2	140	8495	5095	6795	3395
	4	210	11375	7975	8795	5395
	6	210	13080	9680	10025	6625
	8	210	14530	11130	11090	7690
355L	2	140	8400	5000	6700	3300
	4	210	11340	7940	8760	5360
	6	210	12810	9410	9770	6370
	8	210	14230	10830	10805	7405

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。

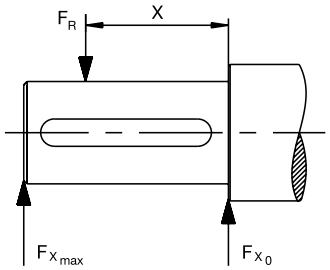
电机为底座安装型 IM B3，并且含横向力。在某些情况下，轴的强度影响允许负载力。在 60Hz 时，数值将相应减少 10%。对于双速电机，数值应以较高的速度为准。

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 F_{X0} (N)	F_{Xmax}(N)	40,000 小时 40,000 h F_{X0} (N)	F_{Xmax}(N)
71	2	30	550	480	435	380
	4	30	695	600	550	475
	6	30	795	690	625	545
80	2	40	725	600	575	475
	4	40	910	755	720	600
	6	40	1045	865	825	685
	8	40	1155	960	915	760
90S	2	50	805	650	635	515
	4	50	1015	820	800	650
	6	50	1160	940	915	740
	8	50	1280	1035	1010	820
90L	2	50	815	680	645	535
	4	50	1025	855	810	675
	6	50	1170	975	920	765
	8	50	1295	1075	1020	850
100	2	60	1125	930	885	730
	4	60	1415	1170	1115	920
	6	60	1620	1340	1275	1055
	8	60	1795	1480	1415	1165
112	2	60	1480	1240	1165	975
	4	60	1865	1560	1470	1230
	6	60	2140	1790	1690	1410
	8	60	2360	1970	1860	1555
132	2	80	1655	1330	1300	1045
	4	80	2075	1665	1625	1305
	6	80	2370	1905	1860	1490
	8	80	2645	2120	2080	1670
160M	2	110	2945	2290	2310	1795
	4	110	3730	2895	2930	2280
	6	110	4255	3305	3345	2600
	8	110	4710	3660	3705	2880
160L	2	110	2965	2355	2325	1850
	4	110	3750	2985	2945	2340
	6	110	4275	3400	3350	2665
	8	110	4735	3765	3715	2955

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.

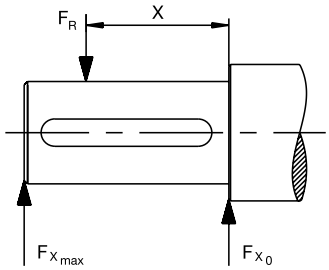
These calculated values further assume mounting position IM B3 (foot-mounted), with force directed sideways. In some cases, the strength of the shaft affects permissible forces.

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



Motor size 机座号	No. of poles 极数	Length of shaft extension E (mm) 轴伸长度	Basic design with deep groove ball bearings 深沟球轴承 20,000 h 20,000 小时 F_{X0} (N)	F_{Xmax}(N)	40,000 h 40,000 小时 F_{X0} (N)	F_{Xmax}(N)
180	2	110	3395	2700	2665	2115
	4	110	4285	3405	3360	2670
	6	110	4950	4000	3880	3135
	8	110	5470	4420	4290	3470
200	2	110	4590	3790	3585	2960
	4	110	5820	4805	4560	3765
	6	110	6670	5510	5225	4315
	8	110	7400	6110	5810	4800
225	2	110	5155	4280	4020	3335
	4	140	6490	5150	5065	4015
	6	140	7485	5940	5850	4645
	8	140	8285	6575	6490	5150
250	2	140	6105	4980	4760	3885
	4	140	7660	6250	5970	4870
	6	140	8805	7185	6865	5600
	8	140	9825	8015	7690	6275
280	2	140	6700	5600	5200	4340
	4	140	8180	6830	6315	5275
	6	140	9450	7895	7320	6115
	8	140	10510	8780	8165	6820
315S	2	140	6565	5590	5055	4305
	4	170	9725	8030	7495	6190
	6	170	11235	9275	8685	7170
	8	170	12555	10365	9750	8050
315ML	2	140	6345	5500	4815	4175
	4	170	9440	7960	7180	6055
	6	170	10860	9155	8275	6975
	8	170	12060	10170	9215	7770
355ML	2	140	7250	6435	5435	4825
	4	210	12030	10110	9060	7615
	6	210	13655	11475	10250	8620
	8	210	15085	12680	11340	9535
355L	2	140	7105	6425	5265	4760
	4	210	12100	10435	9090	7840
	6	210	13190	11375	9745	8405
	8	210	14580	12575	10790	9305

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71-355 的电机，采用分体式接线盒。

机座号为71-132的电机接线盒可4x90°转动，机座号为160-355的电机接线盒可2x180°转动。因此电机的两侧都可以接入电缆。

如果未另行规定，则采用标准交付。

注意：对于其他电压及/ 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 addition, terminal boxes can also be mounted on the left or right, please refer to the ordering information.In motor sizes 71-355, the terminal box is separate from motor frame.

The terminal boxes of motor sizes 71-132 can be turned 4x90°. For motor sizes 160-355, the terminal boxes can be turned 2x180°, to allow cable entry from either side of motor.

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**	**端子螺栓尺寸 6x** **terminal bolt size 6x**
71	2-6	2-M16*1.5,2-M16*1.5	2-Ø4-8,2-Ø4-8	M4
80-90	2-8	2-M25*1.5,2-M16*1.5	2-Ø12-16,2-Ø4-8	M4
100-132	2-8	2-M32*1.5,2-M16*1.5	2-Ø16-22,2-Ø4-8	M5
160-180	2-8	2-M40*1.5,2-M16*1.5	2-Ø21-28,2-Ø4-8	M6
200-225	2-8	2-M50*1.5,2-M16*1.5	2-Ø28-36,2-Ø4-8	M8
250-280	2-8	2-M63*1.5,2-M20*1.5	2-Ø37-44,2-Ø6-12	M10
315-355	2-8	2-M63*1.5,2-M20*1.5	2-Ø37-44,2-Ø6-12	M12

机座号 Motor size	**机座接地** Eathing on frame	**主接线盒接地** Earthing in main terminal box
71-80	M5	M5
90	M5	M5
100-112	M5	M5
132	M5	M5
160-180	M8	M6
200-225	M10	M8
250-280	M12	M8
315-355	M12	M10

变频器驱动
Variable speed drives

1. 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 ≤ 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 ≤ 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。

1. 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 ≤ 600V	VSD insulation + dU/dt filters OR VSD reinforced insulation (variant code 405)
600V < U_N ≤ 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-toground 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

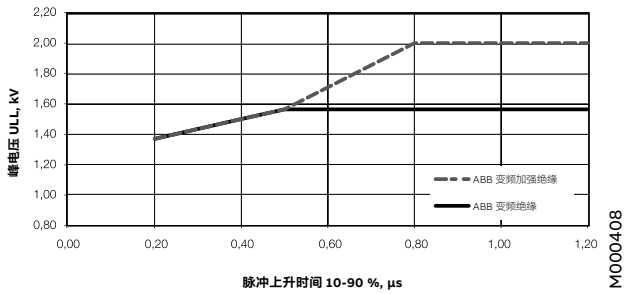
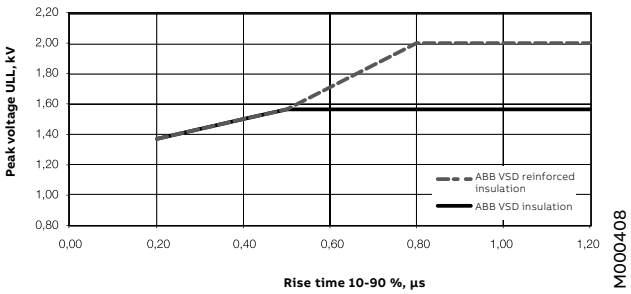


Figure 1. Maximum allowed phase-to-phase voltage peaks at motor terminals, as a function pulse rise time.



2. 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 ≤ 100 kW	无需采取措施
P_N ≥ 100 kW 或 IEC 315 ≤ 机座号 ≤ IEC 355	非驱动端绝缘轴承/镀陶轴
P_N ≥ 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。

2. 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 ≤ 100 kW	No action needed
P_N ≥ 100 kW OR IEC 315 ≤ Frame size ≤ IEC 355	Insulated non-drive end bearing/ Ceramic shaft
P_N ≥ 350 kW	Insulated non-drive end bearing AND Common mode fi lter 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。

3. 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，但使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。

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。有关变速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）。

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。

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.

3. 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.

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.

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.

技术数据
Technical data

IE2
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
符合IEC 60034-30-1:2014 的IE2 效率等级
IP55 - IC411 Insulation class F, temperature class B
IE2 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1:2014			功率因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L_{PA}
kW			r/min	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	T_I/T_N	T_B/T_N	J=1/4 GD^2kgm^2	kg	dB
3000 r/min = 2 极 / 2 poles			**380 V 50Hz**					**CENELEC- 设计 design**							
0.75	M2QA 80MA 2	3GQA081310-···G	2848	77.4	79.7	79.4	0.86	1.7	6.1	2.50	2.3	2.4	0.00096	16	58
1.1	M2QA 80MB 2	3GQA081320-···G	2847	79.6	81.9	81.8	0.87	2.4	6.1	3.69	2.2	2.3	0.00123	18	58
1.5	M2QA 90SA 2	3GQA091110-···G	2833	81.3	83.7	84.0	0.87	3.2	6.7	5.02	2.2	2.3	0.00152	22	61
2.2	M2QA 90LA 2	3GQA091510-···G	2868	83.2	85.2	85.4	0.87	4.6	6.7	7.29	2.2	2.3	0.00193	27	61
3	M2QA 100LA 2	3GQA101510-···G	2860	84.6	86.4	86.6	0.89	6.1	6.7	10.1	2.1	2.3	0.00502	37	65
4	M2QA 112MA 2	3GQA111310-···G	2881	85.8	87.7	88.3	0.89	8.0	7.4	13.0	2.3	2.4	0.00735	49	67
5.5	M2QA 132SMA 2	3GQA131210-···G	2908	87.0	88.6	88.8	0.89	10.8	7.4	18.0	2.1	2.4	0.0121	60	70
7.5	M2QA 132SMB 2	3GQA131220-···G	2894	88.1	89.2	89.1	0.89	14.5	7.4	24.7	2.1	2.4	0.0146	65	70
11	M2QA 160MA 2	3GQA161310-···G	2940	89.4	90.2	89.8	0.89	21.0	7.4	35.9	2.1	2.6	0.0457	114	72
15	M2QA 160MB 2	3GQA161320-···G	2935	90.3	90.9	90.9	0.90	27.9	7.4	48.7	2.2	2.6	0.0583	124	72
18.5	M2QA 160LA 2	3GQA161510-···G	2935	90.9	92.1	92.4	0.91	34.2	7.4	60.0	2.2	2.6	0.0639	146	72
22	M2QA 180MA 2	3GQA181310-···G	2945	91.3	91.8	91.2	0.91	40.2	7.1	71.3	2.5	2.7	0.0857	169	75
30	M2QA 200LA 2	3GQA201510-···G	2954	92.0	92.1	91.1	0.90	54.7	7.1	97.0	2.1	2.5	0.153	228	82
37	M2QA 200LB 2	3GQA201520-···G	2958	92.5	92.5	91.5	0.90	67.2	7.1	119	2.1	2.5	0.173	259	81
45	M2QA 225MA 2	3GQA221310-···G	2974	92.9	92.8	91.6	0.90	81.8	7.1	144	2.2	2.5	0.292	327	82
55	M2QA 250MA 2	3GQA251310-···G	2970	93.2	93.3	92.5	0.91	99.1	7.4	177	2.0	2.7	0.414	410	84
75	M2QA 280SMA 2	3GQA281210-···G	2980	93.8	93.6	92.5	0.91	133	7.4	241	2.2	2.7	0.690	536	85
90	M2QA 280SMB 2	3GQA281220-···G	2979	94.1	94.0	93.0	0.91	160	7.4	289	2.4	2.7	0.800	597	85
110	M2QA 315SA 2	3GQA311110-···G	2978	94.3	94.1	93.0	0.91	196	6.8	354	1.7	2.1	1.54	924	88
132	M2QA 315MLA 2	3GQA311410-···G	2976	94.6	94.6	93.9	0.90	236	6.8	424	1.7	2.1	1.73	1031	88
160	M2QA 315MLB 2	3GQA311420-···G	2975	94.8	95.0	94.5	0.90	285	7.1	514	1.7	2.1	1.99	1111	88
185	M2QA 315MLC 2	3GQA311430-···G	2982	95.0	94.8	93.9	0.90	329	8.6	592	1.8	2.9	2.25	1092	88
200	M2QA 315MLD 2	3GQA311440-···G	2980	95.0	95.0	94.4	0.91	351	7.0	641	2.1	2.1	2.35	1114	88
220	M2QA 355MLA 2	3GQA351410-···G	2981	95.0	94.9	94.1	0.88	401	7.9	705	2.1	2.5	3.01	1522	89
250	M2QA 355MLB 2	3GQA351420-···G	2975	95.0	95.1	94.7	0.90	444	6.7	803	1.8	2.1	3.22	1570	89
280	M2QA 355MLC 2	3GQA351430-···G	2981	95.0	95.1	94.4	0.89	505	8.5	897	2.3	2.6	3.57	1664	89
315	M2QA 355MLD 2	3GQA351440-···G	2975	95.0	95.3	95.0	0.90	560	6.7	1009	1.8	2.2	3.81	1727	89

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

IE2
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
符合IEC 60034-30-1:2014 的IE2 效率等级
IP55 - IC411 Insulation class F, temperature class B
IE2 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1:2014			功率因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L_{PA}
				满载 load 100%	3/4 负载 load 75%	1/2 负载 load 50%		I_N	I_S/I_N	T_N	T_I/T_N	T_B/T_N			
kW			r/min				cosϕ	A		Nm			J=1/4 GD^2kgm^2	kg	dB
1500 r/min = 4 极 / 4 poles			380 V 50Hz					CENELEC- 设计 design							
0.55	M2QA 80MA 4	3GQA082310-···G	1423	77.1	78.3	76.2	0.77	1.4	5.2	3.67	2.2	2.4	0.00167	17	46
0.75	M2QA 80MB 4	3GQA082320-···G	1418	79.6	81.2	80.1	0.77	1.9	5.7	5.09	2.2	2.4	0.00212	18	46
1.1	M2QA 90SA 4	3GQA092110-···G	1433	81.4	82.4	80.8	0.76	2.7	5.7	7.31	2.2	2.5	0.0027	22	52
1.5	M2QA 90LA 4	3GQA092510-···G	1430	82.8	84.3	83.4	0.76	3.6	5.7	10.0	2.2	2.5	0.00333	27	52
2.2	M2QA 100LA 4	3GQA102510-···G	1440	84.3	85.6	84.9	0.82	4.8	6.2	14.6	2.1	2.5	0.00784	36	53
3	M2QA 100LB 4	3GQA102520-···G	1438	85.5	87.0	86.8	0.83	6.4	6.2	19.8	2.1	2.5	0.00913	39	53
4	M2QA 112MA 4	3GQA112310-···G	1444	86.6	87.6	87.0	0.84	8.4	7.1	26.3	2.1	2.5	0.0128	51	56
5.5	M2QA 132SMA 4	3GQA132210-···G	1430	87.7	89.3	89.7	0.83	11.5	7.1	36.5	2.3	2.5	0.0289	64	59
7.5	M2QA 132SMB 4	3GQA132220-···G	1445	88.7	90.0	90.2	0.86	14.9	7.4	49.6	2.5	2.5	0.0392	76	59
11	M2QA 160MA 4	3GQA162310-···G	1470	89.8	90.6	90.3	0.85	21.9	7.4	71.3	2.5	2.5	0.0873	124	66
15	M2QA 160LA 4	3GQA162510-···G	1470	90.6	91.6	91.7	0.87	28.7	7.4	97.3	2.1	2.6	0.108	141	66
18.5	M2QA 180MA 4	3GQA182310-···G	1471	91.2	91.8	91.5	0.88	35.0	7.1	120	2.2	2.6	0.159	171	66
22	M2QA 180LA 4	3GQA182510-···G	1470	91.6	92.4	92.2	0.88	41.5	7.1	143	2.2	2.6	0.179	187	66
30	M2QA 200LA 4	3GQA202510-···G	1478	92.3	92.7	92.1	0.88	56.1	7.1	194	2.1	2.5	0.275	253	71
37	M2QA 225SA 4	3GQA222110-···G	1483	92.7	93.0	92.3	0.88	68.9	7.1	238	2.2	2.7	0.510	321	73
45	M2QA 225MA 4	3GQA222310-···G	1484	93.1	93.4	92.7	0.88	83.5	7.1	290	2.2	2.7	0.591	352	73
55	M2QA 250MA 4	3GQA252310-···G	1484	93.5	94.1	93.9	0.88	102	7.1	354	2.2	2.5	0.758	451	75
75	M2QA 280SA 4	3GQA282110-···G	1483	94.0	94.4	94.1	0.89	138	6.7	484	2.1	2.2	1.53	586	78
90	M2QA 280SMA 4	3GQA282210-···G	1483	94.2	94.7	94.5	0.88	165	6.7	581	2.1	2.2	1.82	646	78
110	M2QA 315SA 4	3GQA312110-···G	1480	94.5	94.4	93.5	0.88	201	6.3	707	2.1	2.3	3.26	948	85
132	M2QA 315MLA 4	3GQA312410-···G	1486	94.7	94.8	94.2	0.89	239	6.7	848	2.3	2.3	3.67	1058	85
160	M2QA 315MLB 4	3GQA312420-···G	1480	94.9	95.0	94.3	0.88	291	6.0	1028	2.1	2.3	4.22	1063	85
185	M2QA 315MLC 4	3GQA312430-···G	1485	95.1	95.2	94.6	0.88	336	6.8	1190	2.3	2.3	4.42	1032	85
200	M2QA 315MLD 4	3GQA312440-···G	1480	95.1	95.2	94.7	0.88	363	6.2	1286	2.1	2.3	4.87	1093	85
220	M2QA 355MLA 4	3GQA352410-···G	1489	95.1	95.2	94.6	0.89	399	7.2	1411	2.0	2.4	7.03	1429	87
250	M2QA 355MLB 4	3GQA352420-···G	1488	95.1	95.2	94.7	0.89	449	7.1	1602	2.0	2.3	7.91	1528	87
280	M2QA 355MLC 4	3GQA352430-···G	1489	95.1	95.3	94.9	0.89	500	7.3	1796	2.1	2.3	8.80	1633	87
315	M2QA 355MLD 4	3GQA352440-···G	1485	95.1	95.7	95.8	0.89	565	7.1	2026	2.0	2.2	9.83	1804	87

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

IE2
6P 380V 50Hz

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符合IEC 60034-30-1:2014 的IE2 效率等级
IP55 - IC411 Insulation class F, temperature class B
IE2 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1:2014			功率因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L_{PA}
kW			r/min	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	T_I/T_N	T_B/T_N	J=1/4 GD^2kgm^2	kg	dB
1000 r/min = 6 极 / 6 poles			380 V 50Hz					CENELEC- 设计 design							
0.37	M2QA 80MA 6	3GQA083310-···G	930	67.6	68.1	63.5	0.73	1.1	4.3	3.85	1.9	2.1	0.00211	16	45
0.55	M2QA 80MB 6	3GQA083320-···G	927	73.1	74.0	71.0	0.73	1.6	4.3	5.72	1.9	2.1	0.00289	18	45
0.75	M2QA 90SA 6	3GQA093110-···G	936	75.9	76.4	73.2	0.72	2.1	4.8	7.68	2.1	2.2	0.00402	22	50
1.1	M2QA 90LA 6	3GQA093510-···G	933	78.1	78.7	76.0	0.73	2.9	4.8	11.3	2.1	2.2	0.00539	26	50
1.5	M2QA 100LA 6	3GQA103510-···G	949	79.8	81.3	80.1	0.74	3.9	5.2	15.1	2.4	2.6	0.0144	39	51
2.2	M2QA 112MA 6	3GQA113310-···G	950	81.8	83.5	83.0	0.74	5.5	5.7	22.1	1.8	2.2	0.0161	45	54
3	M2QA 132SMA 6	3GQA133210-···G	964	83.3	84.1	82.7	0.76	7.2	6.2	29.8	1.9	2.2	0.0332	59	56
4	M2QA 132SMB 6	3GQA133220-···G	954	84.6	85.9	85.3	0.76	9.5	6.7	39.8	2.2	2.2	0.0393	63	56
5.5	M2QA 132SMC 6	3GQA133230-···G	960	86.0	87.3	87.1	0.77	12.6	6.7	54.4	2.4	2.4	0.0576	77	56
7.5	M2QA 160MA 6	3GQA163310-···G	975	87.2	88.6	88.5	0.79	16.4	6.8	73.8	2.0	2.4	0.110	121	62
11	M2QA 160LA 6	3GQA163510-···G	971	88.7	90.0	90.0	0.80	23.4	6.8	108	2.0	2.4	0.145	143	62
15	M2QA 180LA 6	3GQA183510-···G	974	89.7	90.7	90.5	0.84	30.2	6.2	147	2.0	2.5	0.225	171	63
18.5	M2QA 200LA 6	3GQA203510-···G	979	90.4	91.3	91.2	0.84	37.0	6.7	181	2.0	2.5	0.325	230	64
22	M2QA 200LB 6	3GQA203520-···G	978	90.9	92.0	92.1	0.84	43.8	6.7	215	2.0	2.4	0.371	252	64
30	M2QA 225MA 6	3GQA223310-···G	985	91.7	92.1	91.5	0.84	59.2	7.1	291	2.1	2.5	0.671	309	66
37	M2QA 250MA 6	3GQA253310-···G	980	92.2	92.8	92.5	0.87	70.1	6.5	359	2.0	2.5	0.986	401	66
45	M2QA 280SA 6	3GQA283110-···G	987	92.7	93.0	92.3	0.86	85.5	7.1	436	2.1	2.4	1.73	482	70
55	M2QA 280SMA 6	3GQA283210-···G	987	93.1	93.4	92.9	0.87	104	7.1	533	2.1	2.4	2.07	574	70
75	M2QA 315SA 6	3GQA313110-···G	990	93.7	93.9	93.1	0.86	141	6.6	722	1.9	2.1	3.69	946	70
90	M2QA 315MLA 6	3GQA313410-···G	990	94.0	94.3	93.8	0.86	169	6.3	866	1.9	2.1	4.15	1019	70
110	M2QA 315MLB 6	3GQA313420-···G	990	94.3	94.6	94.1	0.86	206	6.4	1061	1.9	2.1	5.05	1070	70
132	M2QA 315MLC 6	3GQA313430-···G	990	94.6	94.8	94.4	0.87	244	6.5	1271	1.9	2.1	6.01	1159	70
160	M2QA 355MLA 6	3GQA353410-···G	990	94.8	94.9	94.2	0.86	298	6.7	1543	1.9	2.0	9.43	1342	75
185	M2QA 355MLB 6	3GQA353420-···G	992	94.9	94.7	93.7	0.84	354	7.0	1781	2.1	2.1	10.9	1467	75
200	M2QA 355MLC 6	3GQA353430-···G	991	95.0	95.1	94.5	0.86	372	6.7	1929	1.9	2.0	11.5	1522	75
220	M2QA 355MLD 6	3GQA353440-···G	991	95.0	94.9	94.0	0.84	421	7.0	2120	2.1	2.0	13.6	1577	75
250	M2QA 355MLE 6	3GQA353450-···G	989	95.0	95.5	95.3	0.87	460	6.7	2412	1.7	2.0	13.6	1979	75

产品代码中的两个圆点表示可选的安装方式、电压及频率代码（见订购信息一页）。

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I_s / I_N = 启动电流
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
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技术数据
Technical data

IE3
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
符合 GB 18613-2020 的 3 级能效 , 符合 IEC 60034-30-1:2014 的 IE3 效率等级
IP55 - IC411 Insulation class F, temperature class B
Grade 3 according to GB 18613-2020; IE3 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1:2014			功率因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L_{PA}
				满载 load 100%	3/4 负载 load 75%	1/2 负载 load 50%		I_N	I_S/I_N	T_N	T_I/T_N	T_B/T_N			
kW			r/min				cosΦ	A		Nm			$J=1/4\ GD^2 kgm^2$	kg	dB
3000 r/min = 2 极 / 2 poles			380 V 50Hz					CENELEC- 设计 design							
0.37	M2QA 71MA 2	3GQA071310-···L	2791	76.5	76.9	75.7	0.83	0.88	6.1	1.26	2.4	2.9	0.00035	10	50
0.55	M2QA 71MB 2	3GQA071320-···L	2779	78.4	79.2	78.6	0.84	1.29	5.7	1.88	2.4	2.8	0.0004	11	49
0.75	M2QA 80MA 2	3GQA081310-···L	2858	80.7	83.0	83.1	0.86	1.6	6.3	2.52	2.1	2.6	0.00096	17	56
1.1	M2QA 80MB 2	3GQA081320-···L	2845	82.7	85.0	85.5	0.88	2.3	6.5	3.71	2.2	2.6	0.00123	19	56
1.5	M2QA 90SA 2	3GQA091110-···L	2875	84.2	86.0	86.1	0.84	3.2	7.2	4.99	2.3	2.7	0.00156	24	60
2.2	M2QA 90LA 2	3GQA091510-···L	2885	85.9	87.6	87.9	0.85	4.6	7.7	7.29	2.5	3.0	0.00193	29	60
3	M2QA 100LA 2	3GQA101510-···L	2856	87.1	88.7	89.1	0.90	5.8	8.1	9.94	2.4	3.7	0.00519	40	60
4	M2QA 112MA 2	3GQA111310-···L	2879	88.1	89.4	89.7	0.88	7.8	8.0	13.1	3.1	2.8	0.00869	54	64
5.5	M2QA 132SMA 2	3GQA131210-···L	2905	89.2	90.5	90.8	0.88	10.6	8.4	18.1	2.1	3.4	0.0126	63	65
7.5	M2QA 132SMB 2	3GQA131220-···L	2905	90.1	91.6	92.1	0.90	14.4	8.4	24.5	2.4	3.6	0.0181	75	67
11	M2QA 160MA 2	3GQA161310-···L	2950	91.2	91.4	90.8	0.90	20.4	8.2	35.6	2.3	3.0	0.0585	128	75
15	M2QA 160MB 2	3GQA161320-···L	2950	91.9	92.5	92.6	0.90	27.6	8.4	48.5	2.5	3.0	0.0664	133	75
18.5	M2QA 160LA 2	3GQA161510-···L	2948	92.4	93.1	93.2	0.91	33.4	8.1	59.9	2.4	2.9	0.0730	156	75
22	M2QA 180MA 2	3GQA181310-···L	2939	92.7	92.7	92.8	0.90	40.0	6.6	71.4	2.3	2.9	0.0917	177	75
30	M2QA 200LA 2	3GQA201510-···L	2954	93.3	93.6	93.1	0.91	53.7	6.4	97.0	2.4	2.6	0.173	246	75
37	M2QA 200LB 2	3GQA201520-···L	2960	93.7	93.9	93.4	0.90	66.7	7.7	119	2.5	3.1	0.187	273	75
45	M2QA 225MA 2	3GQA221310-···L	2971	94.0	94.4	94.1	0.90	80.8	7.6	145	2.4	2.6	0.327	350	77
55	M2QA 250MA 2	3GQA251310-···L	2967	94.3	94.5	93.9	0.92	96.3	6.5	177	2.2	2.6	0.454	433	83
75	M2QA 280SMA 2	3GQA281210-···L	2978	94.7	94.6	93.8	0.90	134	7.0	240	2.4	2.5	0.694	539	85
90	M2QA 280SMB 2	3GQA281220-···L	2979	95.0	95.0	94.3	0.90	160	7.5	288	2.7	2.6	0.781	605	85
110	M2QA 315SA 2	3GQA311110-···L	2980	95.2	95.0	94.1	0.88	199	6.4	352	1.6	2.4	1.30	955	78
132	M2QA 315MLA 2	3GQA311410-···L	2979	95.4	95.4	94.6	0.89	236	6.2	422	1.8	2.5	1.50	1056	78
160	M2QA 315MLB 2	3GQA311420-···L	2980	95.6	95.6	95.0	0.88	289	6.7	512	2.0	2.5	1.70	1097	78
185	M2QA 315MLC 2	3GQA311430-···L	2982	95.7	95.7	95.2	0.90	326	7.9	592	2.0	2.6	2.10	1060	81
200	M2QA 315MLD 2	3GQA311440-···L	2980	95.8	96.0	95.7	0.89	356	6.8	641	2.1	2.8	2.10	1074	81
220	M2QA 355MLA 2	3GQA351410-···L	2978	95.8	95.8	95.2	0.90	388	7.0	706	1.9	2.7	3.19	1585	83
250	M2QA 355MLB 2	3GQA351420-···L	2972	95.8	96.0	95.6	0.90	441	7.0	803	1.9	2.7	3.47	1659	83
280	M2QA 355MLC 2	3GQA351430-···L	2978	95.8	95.8	95.3	0.90	493	7.0	898	1.8	2.7	3.82	1752	83
315	M2QA 355MLD 2	3GQA351440-···L	2973	95.8	96.0	95.7	0.89	561	7.0	1012	1.8	2.3	3.96	1784	83
355	M2QA 355LA 2	3GQA351510-···L	2981	95.8	95.9	95.5	0.91	616	8.0	1137	1.8	3.5	4.24	2049	83

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Grade 3 according to GB 18613-2020; IE3 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1:2014			功率因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L_{PA}
				满载 load 100%	3/4 负载 load 75%	1/2 负载 load 50%		I_N	I_S/I_N	T_N	T_I/T_N	T_B/T_N			
kW			r/min				cosΦ	A		Nm			J=1/4 GD^2kgm^2	kg	dB
1500 r/min = 4 极 / 4 poles			**380 V**					**CENELEC- 设计 design**							
0.25	M2QA 71MA 4	3GQA072310-···L	1432	73.5	71.6	66.2	0.69	0.75	5.8	1.67	2.5	3.1	0.00075	10	41
0.37	M2QA 71MB 4	3GQA072320-···L	1433	77.3	75.6	71.4	0.71	1.02	6.4	2.47	2.45	3.4	0.00098	12	50
0.55	M2QA 80MA 4	3GQA082310-···L	1435	80.8	81.1	78.7	0.75	1.4	6.2	3.67	2.5	2.6	0.00178	19	46
0.75	M2QA 80MB 4	3GQA082320-···L	1435	82.5	83.9	83.2	0.75	1.8	6.1	5.02	2.2	2.4	0.00257	22	46
1.1	M2QA 90SA 4	3GQA092110-···L	1425	84.1	85.8	85.6	0.76	2.6	6.0	7.37	1.9	2.5	0.00294	26	53
1.5	M2QA 90LA 4	3GQA092510-···L	1435	85.3	86.8	86.6	0.77	3.5	6.4	10.0	2.1	2.6	0.00369	31	53
2.2	M2QA 100LA 4	3GQA102510-···L	1447	86.7	87.3	86.2	0.81	4.7	8.3	14.5	2.9	3.3	0.00871	40	53
3	M2QA 100LB 4	3GQA102520-···L	1439	87.7	88.4	87.6	0.82	6.3	8.3	19.8	3.0	3.4	0.0102	44	53
4	M2QA 112MA 4	3GQA112310-···L	1460	88.6	88.9	87.7	0.80	8.6	8.5	26.2	2.7	3.3	0.0152	60	59
5.5	M2QA 132SMA 4	3GQA132210-···L	1460	89.6	90.7	90.6	0.83	11.2	7.5	36.0	3.0	3.1	0.0424	73	68
7.5	M2QA 132SMB 4	3GQA132220-···L	1460	90.4	91.5	91.6	0.84	15.0	8.8	49.0	2.4	3.1	0.0424	83	68
11	M2QA 160MA 4	3GQA162310-···L	1467	91.4	92.2	91.9	0.86	21.3	7.4	71.4	1.9	2.8	0.0892	126	68
15	M2QA 160LA 4	3GQA162510-···L	1467	92.1	93.0	93.0	0.87	28.7	7.4	97.4	1.9	2.8	0.110	142	68
18.5	M2QA 180MA 4	3GQA182310-···L	1464	92.6	93.5	93.7	0.88	34.5	5.9	120	1.8	2.6	0.148	163	65
22	M2QA 180LA 4	3GQA182510-···L	1465	93.0	93.9	94.0	0.88	40.8	6.2	143	1.9	2.7	0.172	182	65
30	M2QA 200LA 4	3GQA202510-···L	1473	93.6	94.2	94.1	0.88	55.3	6.1	194	1.8	2.6	0.253	243	72
37	M2QA 225SA 4	3GQA222110-···L	1483	93.9	94.4	94.0	0.89	67.3	7.4	238	2.2	2.5	0.510	321	74
45	M2QA 225MA 4	3GQA222310-···L	1480	94.2	94.6	94.4	0.88	82.5	7.1	290	2.1	2.5	0.534	336	74
55	M2QA 250MA 4	3GQA252310-···L	1484	94.6	95.0	94.6	0.88	100	6.8	354	2.2	2.4	0.872	485	75
75	M2QA 280SA 4	3GQA282110-···L	1486	95.0	95.3	95.1	0.89	135	6.8	482	2.6	2.5	1.51	581	69
90	M2QA 280SMA 4	3GQA282210-···L	1485	95.2	95.6	95.5	0.90	160	6.9	579	2.7	2.5	1.82	646	69
110	M2QA 315SA 4	3GQA312110-···L	1487	95.4	95.7	95.5	0.87	201	6.3	706	1.9	2.7	2.30	909	71
132	M2QA 315MLA 4	3GQA312410-···L	1487	95.6	95.9	95.7	0.87	241	6.1	848	1.9	2.6	2.53	1018	71
160	M2QA 315MLB 4	3GQA312420-···L	1487	95.8	96.1	96.0	0.86	295	6.3	1028	2.0	2.7	2.79	1020	71
185	M2QA 315MLC 4	3GQA312430-···L	1486	95.9	96.3	96.3	0.87	337	6.2	1189	2.1	2.6	3.05	1032	73
200	M2QA 315MLD 4	3GQA312440-···L	1486	96.0	96.4	96.4	0.87	364	6.1	1285	2.1	2.7	3.37	1056	74
220	M2QA 355MLA 4	3GQA352410-···L	1488	96.0	96.0	95.5	0.88	396	6.0	1412	1.9	2.2	7.91	1520	78
250	M2QA 355MLB 4	3GQA352420-···L	1486	96.0	96.2	95.9	0.88	450	5.9	1606	1.7	2.6	7.91	1531	78
280	M2QA 355MLC 4	3GQA352430-···L	1488	96.0	96.1	95.8	0.88	504	6.5	1796	2.0	2.8	9.20	1645	78
315	M2QA 355MLD 4	3GQA352440-···L	1486	96.0	96.3	96.2	0.88	567	6.6	2025	2.1	3.0	9.84	1809	78
355	M2QA 355LA 4	3GQA352510-···L	1489	96.0	96.3	96.1	0.88	638	6.6	2276	2.2	2.2	9.88	1937	78

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Grade 3 according to GB 18613-2020; IE3 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1:2014			功率因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L_{PA}
				满载 load 100%	3/4 负载 load 75%	1/2 负载 load 50%		I_N	I_S/I_N	T_N	T_I/T_N	T_B/T_N			
kW			r/min				cosΦ	A		Nm			J=1/4 GD^2kgm^2	kg	dB
1000 r/min = 6 极 / 6 poles			380 V					CENELEC- 设计 design							
0.18	M2QA 71MA 6	3GQA073310-···L	922	63.9	60.8	54.9	0.73	0.59	3.8	1.87	1.9	2.3	0.00103	10	39
0.25	M2QA 71MB 6	3GQA073320-···L	915	68.6	67.3	63.0	0.71	0.80	3.8	2.58	2.4	2.6	0.0014	13	46
0.37	M2QA 80MA 6	3GQA083310-···L	928	73.5	74.4	71.3	0.73	1.1	4.2	3.85	1.7	2.1	0.00212	17	42
0.55	M2QA 80MB 6	3GQA083320-···L	935	77.2	78.0	75.5	0.72	1.5	4.7	5.62	2.3	2.6	0.00338	21	42
0.75	M2QA 90SA 6	3GQA093110-···L	943	78.9	79.7	77.6	0.71	2.0	5.3	7.65	2.3	2.7	0.00457	25	53
1.1	M2QA 90LA 6	3GQA093510-···L	942	81.0	81.4	79.1	0.73	2.8	5.5	11.2	2.4	2.8	0.00635	32	53
1.5	M2QA 100LA 6	3GQA103510-···L	956	82.5	83.6	82.5	0.75	3.7	6.3	15.0	2.7	2.9	0.0144	41	48
2.2	M2QA 112MA 6	3GQA113310-···L	943	84.3	86.0	86.0	0.76	5.2	5.7	22.0	2.1	2.4	0.0185	53	48
3	M2QA 132SMA 6	3GQA133210-···L	970	85.6	86.2	84.9	0.72	7.4	7.0	29.4	2.1	2.4	0.0384	67	50
4	M2QA 132SMB 6	3GQA133220-···L	970	86.8	87.4	86.4	0.72	9.7	6.4	39.3	3.0	3.2	0.0613	75	50
5.5	M2QA 132SMC 6	3GQA133230-···L	969	88.0	88.7	88.0	0.75	12.7	8.1	54.0	2.9	3.2	0.0613	84	50
7.5	M2QA 160MA 6	3GQA163310-···L	975	89.1	90.0	89.6	0.80	16.0	7.1	73.6	2.2	2.8	0.131	132	60
11	M2QA 160LA 6	3GQA163510-···L	976	90.3	91.0	90.7	0.80	23.1	7.4	108	2.3	2.9	0.166	153	60
15	M2QA 180LA 6	3GQA183510-···L	974	91.2	92.0	91.8	0.83	30.1	5.9	147	2.1	2.5	0.236	176	60
18.5	M2QA 200LA 6	3GQA203510-···L	982	91.7	92.0	91.1	0.82	37.4	6.9	180	2.4	2.9	0.335	233	62
22	M2QA 200LB 6	3GQA203520-···L	981	92.2	92.7	92.2	0.84	43.2	6.6	214	2.2	2.7	0.390	259	62
30	M2QA 225MA 6	3GQA223310-···L	986	92.9	93.3	92.8	0.83	59.1	6.8	291	2.2	2.3	0.671	316	67
37	M2QA 250MA 6	3GQA253310-···L	987	93.3	93.6	93.0	0.86	70.1	6.8	358	2.6	2.7	1.16	432	65
45	M2QA 280SA 6	3GQA283110-···L	991	93.7	93.9	93.2	0.86	84.8	6.9	434	2.3	2.5	1.93	536	69
55	M2QA 280SMA 6	3GQA283210-···L	991	94.1	94.3	93.6	0.86	103	7.3	530	2.6	2.6	2.22	612	69
75	M2QA 315SA 6	3GQA313110-···L	993	94.6	94.9	94.4	0.85	143	6.1	721	1.6	2.3	3.72	954	75
90	M2QA 315MLA 6	3GQA313410-···L	993	94.9	95.3	95.0	0.85	170	6.5	866	1.8	2.7	4.32	1058	76
110	M2QA 315MLB 6	3GQA313420-···L	992	95.1	95.5	95.3	0.84	209	6.6	1058	1.9	2.8	4.98	1092	75
132	M2QA 315MLC 6	3GQA313430-···L	993	95.4	95.8	95.5	0.84	250	6.5	1269	2.0	2.7	5.89	1141	72
160	M2QA 355MLA 6	3GQA353410-···L	991	95.6	95.8	95.6	0.86	296	6.1	1542	1.9	2.7	9.86	1365	75
185	M2QA 355MLB 6	3GQA353420-L	991	95.7	95.9	95.6	0.87	338	6.0	1783	1.8	2.6	10.9	1460	75
200	M2QA 355MLC 6	3GQA353430-···L	991	95.8	96.0	95.7	0.87	365	6.2	1926	1.9	2.6	11.9	1549	75
220	M2QA 355MLD 6	3GQA353440-L	988	95.8	96.2	96.4	0.87	401	5.2	2125	1.6	2.2	12.8	1634	75
250	M2QA 355MLE 6	3GQA353450-···L	989	95.8	96.2	96.3	0.87	456	5.6	2413	1.8	2.4	13.6	1970	75
280	M2QA 355LA 6	3GQA353510-···L	989	95.8	96.2	96.2	0.86	518	6.3	2703	1.8	2.7	14.0	2092	75
315	M2QA 355LB 6	3GQA353520-···L	990	95.8	96.1	96.1	0.86	582	6.7	3038	2.0	2.9	16.0	2270	75

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IE3
8P 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
符合 GB 18613-2020 的 3 级能效 , 符合 IEC 60034-30-1:2014 的 IE3 效率等级
IP55 - IC411 Insulation class F, temperature class B
Grade 3 according to GB 18613-2020; IE3 according to IEC 60034-30-1:2014

输出 Output	电机型号 Motor type	产品代码 Product code	转速 Speed	效率 / Efficiency IEC 60034-30-1:2014			功率因数 Power factor	电流 Current		转矩 / Torque			转动惯量 Moment of inertia	重量 Weight	声压等级 Sound pressure level, L_{PA}
				满载 load 100%	3/4 负载 load 75%	1/2 负载 load 50%		I_N	I_S/I_N	T_N	T_I/T_N	T_B/T_N			
kW			r/min				cosΦ	A		Nm			J=1/4 GD^2kgm^2	kg	dB
750 r/min = 8 极 / 8 poles			**380 V**					**CENELEC- 设计 design**							
0.18	M2QA 80 MA 8	3GQA084310-L	694	58.7	56.6	49.2	0.63	0.75	3.1	2.48	1.4	2.1	0.00207	17	42
0.25	M2QA 80 MB 8	3GQA084320-L	696	64.1	62.2	55.6	0.60	0.98	3.3	3.43	1.6	2.3	0.00267	19	42
0.37	M2QA 90 SA 8	3GQA094110-L	708	69.3	67.1	60.6	0.60	1.34	3.5	5.00	1.6	2.5	0.00403	24	53
0.55	M2QA 90 LA 8	3GQA094510-L	705	73.0	71.6	66.6	0.61	1.86	3.5	7.45	1.5	2.4	0.00529	30	53
0.75	M2QA 100 LA 8	3GQA104510-L	710	75.0	75.0	71.6	0.65	2.33	4.4	10.1	2.0	2.5	0.0093	34	51
1.1	M2QA 100 LB8	3GQA104520-L	707	77.7	78.4	76.2	0.67	3.23	4.5	14.9	2.1	2.5	0.0133	40	51
1.5	M2QA 112 MA 8	3GQA114310-L	717	79.7	79.6	76.8	0.62	4.60	4.8	20.0	2.0	2.5	0.0205	55	60
2.2	M2QA 132 SMA 8	3GQA134210-L	717	81.9	82.7	81.1	0.75	5.46	5.4	29.3	2.3	2.9	0.0373	66	52
3	M2QA 132 SMB 8	3GQA134220-L	717	83.5	84.4	83.3	0.75	7.29	5.5	40.0	2.4	2.9	0.0447	69	52
4	M2QA 160 MA 8	3GQA164310-L	727	84.8	85.2	83.7	0.73	9.87	5.4	52.5	2.2	2.9	0.0837	110	62
5.5	M2QA 160 MB 8	3GQA164320-L	725	86.2	86.9	86.0	0.74	13.1	6.2	72.4	2.2	2.9	0.120	127	62
7.5	M2QA 160 LA 8	3GQA164510-L	727	87.3	87.8	86.8	0.73	17.8	6.5	98.6	2.3	3.1	0.156	149	62
11	M2QA 180 LA 8	3GQA184510-L	734	88.6	88.8	87.3	0.76	24.8	6.9	143	2.2	3.1	0.229	179	61
15	M2QA 200 LA 8	3GQA204510-L	726	89.6	90.8	91.1	0.80	32.1	5.4	197	1.7	2.2	0.337	234	62
18.5	M2QA 225 SA 8	3GQA224110-L	733	90.1	90.5	89.5	0.78	40.0	5.4	241	2.0	2.2	0.541	280	71
22	M2QA 225 MA 8	3GQA224310-L	734	90.6	91.3	91.0	0.79	46.7	5.3	286	1.9	2.1	0.631	307	72
30	M2QA 250 MA 8	3GQA254310-L	734	91.3	91.7	91.0	0.82	60.9	6.0	391	2.1	2.6	0.873	389	67
37	M2QA 280 SA 8	3GQA284110-L	735	91.8	92.4	92.0	0.82	76.5	5.5	481	1.8	2.1	1.70	529	64
45	M2QA 280 SMA 8	3GQA284210-L	737	92.2	92.6	92.0	0.83	89.4	6.3	583	2.2	2.4	1.98	598	65
55	M2QA 315 SA 8	3GQA314110-L	738	92.5	93.3	93.3	0.83	109	5.3	711	1.6	1.8	3.67	831	65
75	M2QA 315 MLA 8	3GQA314410-L	739	93.1	93.8	93.8	0.83	147	5.5	969	1.8	1.9	4.90	998	65
90	M2QA 315 MLB 8	3GQA314420-L	739	93.4	93.9	93.6	0.82	179	6.2	1163	2.1	2.2	5.76	1081	65
110	M2QA 315 MLC 8	3GQA314430-L	738	93.7	94.5	94.7	0.83	215	5.5	1422	1.9	1.9	6.69	1170	65
132	M2QA 355 MLA 8	3GQA354410-L	741	94.0	93.9	92.8	0.81	263	5.7	1700	1.6	1.9	10.9	1524	73
160	M2QA 355 MLB 8	3GQA354420-L	741	94.3	94.3	93.5	0.82	314	5.4	2062	1.5	1.8	12.5	1653	73
185	M2QA 355 MLC 8	3GQA354430-L	741	94.5	94.6	93.8	0.82	362	5.5	2384	1.6	1.8	14.4	1787	73
200	M2QA 355 MLD 8	3GQA354440-L	741	94.6	94.6	93.8	0.82	392	5.7	2577	1.6	1.9	15.3	1855	73
220	M2QA 355 LA 8	3GQA354510-L	741	94.6	94.6	93.9	0.82	430	5.7	2834	1.6	1.8	16.7	2086	73
250	M2QA 355 LB 8	3GQA354520-L	741	94.6	94.8	94.1	0.83	483	5.5	3223	1.5	1.7	19.0	2252	73

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）。

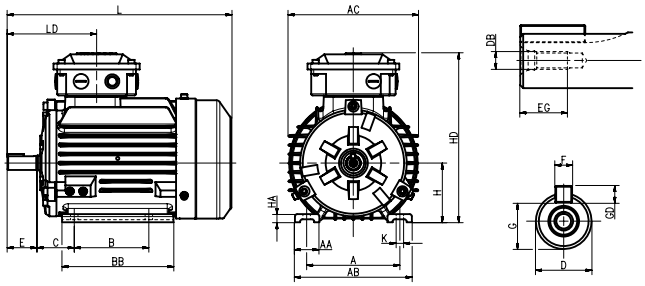
I_s / I_N = 启动电流
T_l / T_N = 转子堵转转矩
T_b / T_N = 最大转矩

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

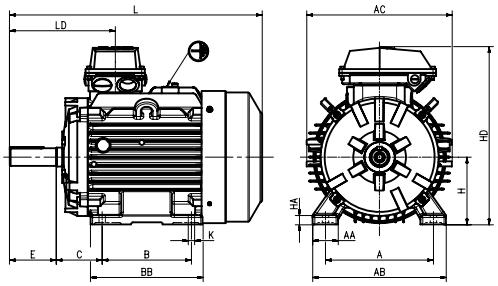
I_s / I_N = Starting current
T_l / T_N = Locked rotor torque
T_b / T_N = Breakdown torque

外形图及外形尺寸
Dimension drawings

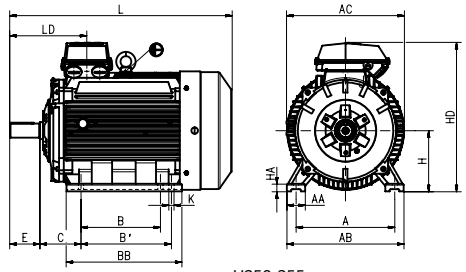
底脚安装型电机 IM1001, B3
Foot-mounted motor IM1001, B3



H80-132



H160-225



H250-355

电机尺寸 Motor size		极数 Poles	A	AA	AB	AC	B	B'	BB	C	D-tol.	DB	E	EG	F(h9)	G
M2QA	71M	2-6	112	30	136	147	90	-	135	45	14-j6	M5	30	13	5	11
	80M	2-8	125	35	158	180	100	-	150	50	19-j6	M6	40	16	6	15.5
	90S	2-8	140	35	173	185	100	-	165	56	24-j6	M8	50	19	8	20
	90L	2-8	140	35	173	185	125	-	200	56	24-j6	M8	50	19	8	20
	100L	2-8	160	40	198	205	140	-	220	63	28-j6	M10	60	22	8	24
	112M	2-8	190	50	235	225	140	-	240	70	28-j6	M10	60	22	8	24
	132SM	2-8	216	55	268	265	140	178	240	89	38-k6	M12	80	28	10	33
	160M	2-8	254	60	314	345	210	-	265	108	42k6	M16	110	36	12	37
	160L	2-8	254	60	314	345	254	-	310	108	42k6	M16	110	36	12	37
	180M	2-4	279	70	349	365	241	-	315	121	48k6	M16	110	36	14	42.5
	180L	4-8	279	70	349	365	279	-	350	121	48k6	M16	110	36	14	42.5
	200L	2-8	318	70	388	400	305	-	380	133	55m6	M20	110	39	16	49
	225S	4-8	356	75	432	450	286	-	375	149	60m6	M20	140	39	18	53
	225M	2	356	75	432	450	311	-	400	149	55m6	M20	110	39	16	49
	225M	4-8	356	75	432	450	311	-	400	149	60m6	M20	140	39	18	53
	250M	2	406	80	484	495	349	-	450	168	60m6	M20	140	39	18	53
	250M	4-8	406	80	490	495	349	-	450	168	65m6	M20	140	39	18	58
	280S	4-8	457	85	542	550	368	-	490	190	75m6	M20	140	39	20	67.5
	280SM	2	457	85	542	550	368	419	540	190	65m6	M20	140	39	18	58
	280SM	4-8	457	85	542	550	368	419	540	190	75m6	M20	140	39	20	67.5
	315S	2	508	120	628	635	406	-	575	216	65m6	M20	140	39	18	58
	315S	4-8	508	120	628	635	406	-	575	216	80m6	M20	170	39	22	71
	315ML	2	508	120	628	635	457	508	685	216	65m6	M20	140	39	18	58
	315ML	4-8	508	120	628	635	457	508	685	216	80m6	M20	170	39	22	71
	355ML	2	610	120	726	725	560	630	755	254	70m6	M20	140	39	20	62.5
	355ML	4-8	610	120	726	725	560	630	755	254	100m6	M24	210	47	28	90
	355L	2	610	116	726	720	630	-	960	254	70m6	M20	140	39	20	62.5
	355L	4-8	610	116	726	720	630	-	960	254	100m6	M24	210	47	28	90

上表给出了主要尺寸（单位：mm）
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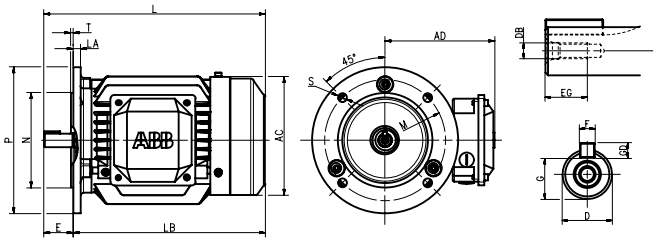
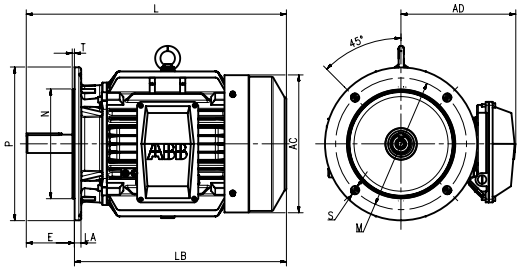
外形图及外形尺寸
Dimension drawings

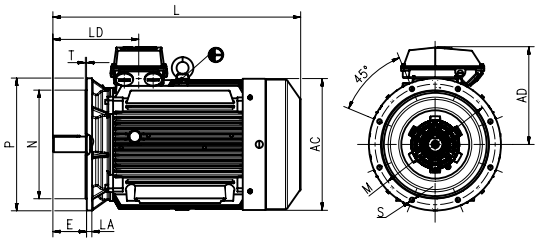
凸缘安装型电机 IM3001, B5
Flange-mounted motor IM3001, B5



H71-132



H160-225



H250-355

电机尺寸 Motor size		极数 Poles	GD	H	HA	HD	K	L	LA	LD	AD	M	N	P	S	T
M2QA	71M	2-6	5	71	9	208	7	287	9	112	139	130	110	160	4-Ø10	3.5
	80M	2-8	6	80	11	228	10	302	10	120	150	165	130	200	4-Ø12	3.5
	90S	2-8	7	90	12	241	10	332	10	128	155	165	130	200	4-Ø12	3.5
	90L	2-8	7	90	12	241	10	366	10	128	155	165	130	200	4-Ø12	3.5
	100L	2-8	7	100	12	269	12	416	11	143	175	215	180	250	4-Ø15	4
	112M	2-8	7	112	15	292	12	447	11	149	185	215	180	250	4-Ø15	4
	132SM	2-8	8	132	18	331	12	497	12	176	205	265	230	300	4-Ø15	4
	160M	2-8	8	160	22	422	15	594	15	249	265	300	250	350	4-Ø19	5
	160L	2-8	8	160	22	422	15	638	15	249	265	300	250	350	4-Ø19	5
	180M	2-8	9	180	22	452	15	668	18	267	275	300	250	350	4-Ø19	5
	180L	2-8	9	180	22	452	15	706	18	267	275	300	250	350	4-Ø19	5
	200L	2-8	10	200	25	525	19	763	20	283	325	350	300	400	4-Ø19	5
	225S	4-8	11	225	28	575	19	812	20	333	350	400	350	450	8-Ø19	5
	225M	2	10	225	28	575	19	807	20	303	350	400	350	450	8-Ø19	5
	225M	4-8	11	225	28	575	24	837	20	333	350	400	350	450	8-Ø19	5
	250M	2	11	250	30	624	24	928	22	347	380	500	450	550	8-Ø19	5
	250M	4-8	11	250	30	630	24	928	22	347	380	500	450	550	8-Ø19	5
	280S	4-8	12	280	35	685	24	980	22	357	410	500	450	550	8-Ø19	5
	280SM	2	11	280	35	685	24	1030	22	357	410	500	450	550	8-Ø19	5
	280SM	4-8	12	280	35	685	24	1030	22	357	410	500	450	550	8-Ø19	5
	315S	2	11	315	45	843	28	1182.5	22	397	535	600	550	660	8-Ø24	6
	315S	4-8	14	315	45	843	28	1212.5	22	427	535	600	550	660	8-Ø24	6
	315ML	2	11	315	45	854	28	1292.5	22	397	545	600	550	660	8-Ø24	6
	315ML	4-8	14	315	45	854	28	1322.5	22	427	545	600	550	660	8-Ø24	6
	355ML	2	12	355	52	932	35	1486	25	403	585	740	680	800	8-Ø24	6
	355ML	4-8	16	355	52	932	35	1556	25	473	585	740	680	800	8-Ø24	6
	355L	2	12	355	52	1018	35	1696	25	424	663	740	680	800	8-Ø24	6
	355L	4-8	16	355	52	1018	35	1766	25	494	663	740	680	800	8-Ø24	6

上表给出了主要尺寸（单位：mm）
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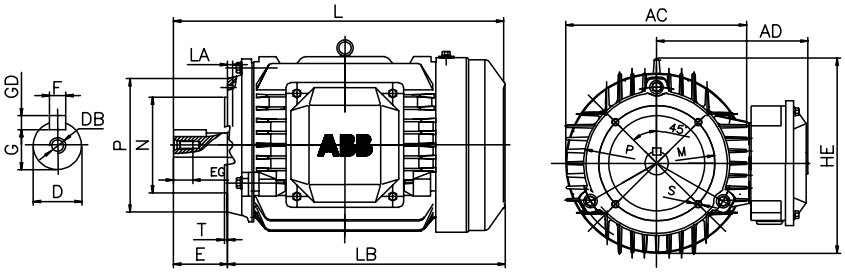
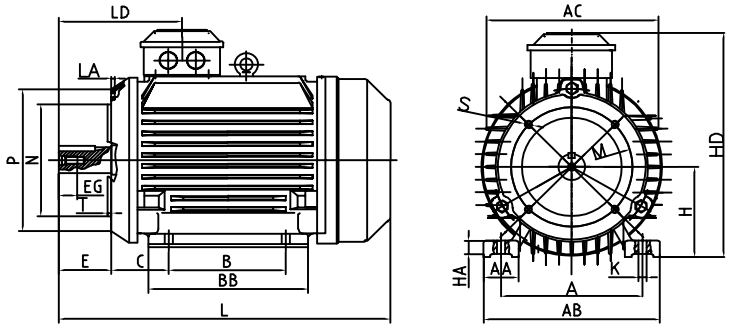
外形图及外形尺寸
Dimension drawings

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



底脚和小凸缘安装型电机 IM2101, B34
Foot- and small flange-mounted motor IM2101, B34



电机尺寸 Motor size		极数 Poles	法兰尺寸 Size	LA	M	N	P	S	T
M2QA	71M	2-6	C105	8	85	70	105	4-M6	2.5
	80M	2-8	C120	8	100	80	120	4-M6	3.0
	80M	2-8	C160	10	130	110	160	4-M8	3.5
	90S	2-8	C140	10	115	95	140	4-M8	3.0
	90S	2-8	C160	10	130	110	160	4-M8	3.5
	90L	2-8	C140	10	115	95	140	4-M8	3.0
	90L	2-8	C160	10	130	110	160	4-M8	3.5
	100L	2-8	C160	10	130	110	160	4-M8	3.5
	100L	2-8	C200	12	165	130	200	4-M10	3.5
	112M	2-8	C160	10	130	110	160	4-M8	3.5
	112M	2-8	C200	12	165	130	200	4-M10	3.5
	132SM	2-8	C200	15	165	130	200	4-M10	3.5
	160M	2-8	C250	18	215	180	250	4-M12	4.0
	160L	2-8	C250	18	215	180	250	4-M12	4.0

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外形图及外形尺寸
Dimension drawings

制动器参数
Brake parameters

机座号 Frame size	工作气隙 working air gap	静制动力矩 static braking torque	空载制动时间 no-load braking time	励磁功率 excitation power
	A 类 /B 类 category A/category B	A 类 /B 类 category A/category B	A 类 /B 类 category A/category B	A 类 /B 类 category A/category B
71	0.15/0.2	4/4	18/28	24/20
80	0.2/0.2	8/8	20/31	26/25
90	0.2/0.2	16/16	30/47	38/30
100	0.2/0.3	32/32	50/53	45/40
112	0.25/0.3	60/60	55/42	69/50
132	0.3/0.3	100/80	68/57	81/55
160	0.4/0.4	150/150	78/78	85/85
180	0.4/0.4	260/260	165/165	100/100
200	0.5/0.5	400/400	230/230	110/110
225	0.5/0.5	400/400	230/230	110/110

A 类制动器——进口品牌制动器，防护等级为 IP55
B 类制动器——国产品牌制动器，防护等级为 IP55
注：
1. 空载制动时间是指直流开关在正常间隙和正产线圈温度下制动器响应时间。该时间很大程度上取决于工作间隙的值和调整方法。交流开关的吸合时间约比直流开关高 10 倍。
2. 制动器默认为力矩不可调，力矩可调型须特殊订货。
3. 制动器制动电压默认为 220VAC-205VDC，特殊要求须订单备注。

Category A brake-imported brand brake, protection grade is IP55
Category B brake-domestic brand brake, protection grade is IP55
Note:
1. No-load braking time refers to the braking response time of the DC switch under normal clearance and normal coil temperature. This time largely depends on the value of the working gap and the adjustment method. cross The pull-in time of the current switch is approximately 10 times higher than that of the DC switch.
2. The brake defaults to non-adjustable torque, and the torque adjustable type requires special order.
3. The braking voltage of the brake is 220VAC-205VDC by default, and order notes are required for special requirements.

制动器列表
Brake list

制动器型号 Brake Type	适用中心高 Applicable Frame size	防护等级 Protection grade	
UHT B	H71-225	IP55	推荐 recommendation
INTORQ BFK458	H71-225	IP55	推荐 recommendation
REACH REB04	H71-132	IP55	可选 optional
PRECIMA FDB	H71-225	IP55	可选 optional

出线端标志
Leading-out terminal mark

电动机定子绕组六个出线端和励磁线圈的二个出线端在接线板的接线位置的标志如下表：

The markings of the wiring positions of the six outlet ends of the motor stator winding and the two outlet ends of the excitation coil on the wiring board are as follows:

绕组名称 Winding name		出线端标志 Leading-out terminal mark	
		始端 Beginning terminal	末端 End
定子绕组 Winding	第一组 Group I	U1	U2
	第二组 Group II	V1	V2
	第三组 Group III	W1	W2
励磁线圈 magnet exciting coil		+	-

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	M2QA 71	80	90	100	112	132	160	180	200	225	250	280	315	355
管理 Administration															
865	正常质保期延长 1 年 One-year extension on standard warranty	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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	●	●	●	●	●	●	●	●	●	●	●	●	●	●
平衡 Balancing															
423	无键平衡 Balanced without key	●	●	●	●	●	●	●	●	●	●	●	●	●	●
424	全键平衡 Full-key balancing	●	●	●	●	●	●	●	●	●	●	●	●	●	●
轴承与润滑 Bearings and Lubrication															
036	轴承装运锁 Transport lock for bearings.	-	-	-	-	-	-	●	●	●	●	●	●	●	●
037	D 端圆柱滚子轴承 Roller bearing at D-end.	-	-	-	-	-	●	●	●	●	●	●	●	●	●
039	耐低温油脂 Cold-resistant grease	●	●	●	●	●	●	●	●	●	●	●	●	●	●
040	耐高温油脂 Heat-resistant grease	●	●	●	●	●	●	●	●	●	●	●	●	●	●
041	通过注油孔对轴承加油 Bearings regreasable via grease nipples.	-	-	-	-	●	●	●	●	●	●	○	○	○	○
043	SPM 振动测量接头 SPM compatible nipples for vibration measurement	-	-	-	-	●	●	●	●	●	●	●	●	●	●
058	D 端角接触球轴承 , 轴向力远离轴承 Angular contact bearing at D-end, shaft force away from bearing.	-	-	-	-	-	-	●	●	●	●	●	●	●	●
059	N 端角接触球轴承 , 轴向力指向轴承 Angular contact bearing at N-end, shaft force towards bearing.	-	-	-	-	-	-	●	●	●	●	●	●	●	●
060	D 端角接触球轴承 , 轴向力指向轴承 Angular contact bearing at D-end, shaft force towards bearing.	-	-	-	-	-	-	●	●	●	●	●	●	●	●
061	N 端角接触球轴承 , 轴向力远离轴承 Angular contact bearing at N-end, shaft force away from bearing.	-	-	-	-	-	-	●	●	●	●	●	●	●	●
107	轴承安装 Pt100(2 线) Pt100 2-wire in bearings.	-	-	-	-	●	●	●	●	●	●	●	●	●	●
130	轴承 Pt100(3 线) Pt100 3-wire in bearings.	-	-	-	-	●	●	●	●	●	●	●	●	●	●
195	全封闭轴承 Bearings greased for life.	○	○	○	○	○	○	○	○	○	○	-	-	-	-
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"	-	-	-	-	●	●	●	●	●	●	●	●	●	●
379	SKF 轴承 SKF bearing	●	●	●	●	●	●	●	●	●	●	●	●	●	●
部门标准设计 Branch standard designs															
168	仅涂底漆 Primer paint only.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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).	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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Variant codes

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变量代码 Variant code	描 述 Description	M2QA 71	80	90	100	112	132	160	180	200	225	250	280	315	355
396	用于环境温度 -20°C ~ -40°C的电机，带空间加热带 (代码 450/451 必须另选) Motor designed for minimum ambient temperature -20°C to -40°C , with space heaters (code 450/451 must be added)	●	●	●	●	●	●	●	●	●	●	●	●	●	●
425	防腐蚀定子和转子 Corrosion protected stator and rotor core.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
872	ADB210（C5 油漆表面处理） Design for port applications	●	●	●	●	●	●	●	●	●	●	●	●	●	●
冷却系统 Cooling system															
068	轻金属风扇 (合金) Light alloy metal fan	●	●	●	●	●	●	●	●	●	●	●	●	-	-
075	冷却方式 IC418(无风扇) Cooling method IC418 (without fan).	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999F801	纺织风罩，带网孔 Textile industry design.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
419	纺织风罩，不带网孔 Textile industry design. Without mesh	●	●	●	●	●	●	●	●	●	●	●	●	●	●
文件材料 Documentation															
141	配外形图 Binding 2D main dimension drawing.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
排水孔 Drain holes															
065	塞紧现有排水孔 Plugged existing drain holes.	○	○	○	○	○	○	○	○	○	○	●	●	●	●
接地螺栓 Earthing Bolt															
067	外部接地螺栓 External earthing bolt.	○	○	○	○	○	○	○	○	○	○	○	○	○	○
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	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
安装方式 Mounting arrangements															
008	IM2101 底脚 / 法兰安装，IEC 法兰，由 IM1001 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(30010、 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)	●	●	●	●	●	●	●	●	●	●	●	●	●	●
584	加强型铸件 Cast iron material with increased tensile strenght	●	●	●	●	●	●	●	●	●	●	●	●	●	●
623	大法兰 (C***) Big flange (China)	●	●	●	●	●	-	-	-	-	-	-	-	-	-

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变量代码	描 述	M2QA												
Variant code	**Description**	**71**	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**
999D004	圆形法兰（不缺边法兰） Circular flange	●	●	●	●	●	●	●	○	○	○	○	○	○	○
涂装 Painting															
114	特殊油漆颜色，标准等级 Special paint color, standard grade	●	●	●	●	●	●	●	●	●	●	●	●	●	●
179	特殊油漆 Special paint specification.	●	●	●	●	-	-	-	-	-	-	-	-	-	-
646	特殊油漆颜色 (ADB194-2012 之外） Special paint colour (China)	●	●	●	●	●	●	●	●	●	●	●	●	●	●
防护 Protection															
005	金属防雨罩，立式电机，轴伸向下 Protective roof	●	●	●	●	●	●	●	●	●	●	●	●	●	●
072	D 端径向密封 Radial seal at D-end. Not possible for 2-pole , 280 and 315 frames	●	●	●	●	●	●	●	●	●	●	○	○	○	○
158	防护等级 IP65 Degree of protection IP65.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
403	防护等级 IP56 Degree of protection IP56.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
784	D 端伽马密封 Gamma-seal at D-end.	○	○	○	○	○	○	○	○	○	○	-	-	-	-
372	骨架油封主唇口（有弹簧端）朝里（弹簧不可见） Reverse radial seal at D-end, not possible for 2-pole, 280 and 315 frames	●	●	●	●	●	●	●	●	●	●	●	●	●	●
373	接线盒防护等级 IP56 Terminal box degree of protection IP56	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999F002	三防电机 (TH) TH design	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999F006	户外电机 Outdoor design motor	●	●	●	●	●	●	●	●	●	●	●	●	●	●
383	WF1 户外防中等腐蚀 Outdoor medium anti-corrosion WF1	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999F010	ADB150B 铭牌敲 IP55 ADB150B ,IP55	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999F011	ADB150B 铭牌敲 IP56 ADB150B IP56	●	●	●	●	●	●	●	●	●	●	●	●	●	●
867	陆上风电液压冷却（ADB 196.2） Onshore wind power hydraulic cooling (ADB 196.2)	●	●	●	●	●	●	●	●	●	●	-	-	-	-
868	海上风电液压冷却（ADB 196.3） Offshore wind power hydraulic cooling (ADB 196.3)	●	●	●	●	●	●	●	●	●	●	-	-	-	-
999F014	陆上风电偏航 -20°C（ADB 196.4） Onshore wind power yaw -20°C（ADB 196.4）	●	●	●	●	●	●	●	-	-	-	-	-	-	-
999F015	陆上风电偏航 -40°C（ADB 196.5） Onshore wind power yaw -40°C（ADB 196.5）	●	●	●	●	●	●	●	-	-	-	-	-	-	-
999F016	海上风电偏航（ADB 196.6） Offshore wind power yaw	●	●	●	●	●	●	●	-	-	-	-	-	-	-
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	重刻输出功率（相同电压、频率下），间歇工作制 Restamping output (maintained voltage, frequency), intermittent duty.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
135	安装额外不锈钢指示牌 Mounting of additional identification plate, stainless.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
轴和转子 Shaft & rotor															
069	标准双出轴 Two shaft extensions according to catalog drawings.	●	●	●	●	●	●	●	●	●	●	●	●	●	-

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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	●	●	●	●	●	●	●	●	●	●	●	●	●	●
165	开口键槽轴伸 Shaft extension with open keyway	○	○	○	○	○	○	○	○	○	○	○	○	○	○
079	转子鼠笼采用硅铝合金，标明转矩 Silumin-alloy rotor cage.	●	●	●	●	●	●	●	●	●	●	●	-	-	-
410	不锈钢轴（仅限 SUS304、SUS316） Shaft material stainless steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●
600	N 端特轴 Special shaft extension at N-end, standard shaft material.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
631	转轴调质 Quenched and tempered shaft material	●	●	●	●	●	●	●	●	●	●	●	●	●	●
标准和规范 **Standards and Regulations**															
115	符合 ISO 12944-2:1998 的喷漆系统 C4M Painting system C4M acc. to ISO 12944-2: 1998.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
754	C5M 涂漆系统，根据 ISO 12944-2:1998 Painting system C5M acc. to ISO 12944-2:1998	●	●	●	●	●	●	●	●	●	●	●	●	●	●
定子绕组温度传感器 **Stator winding temperature sensors**															
120	定子绕组安装 KTY 84-130（每相 1 个） KTY 84-130 (1 per phase) in stator winding.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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	●	●	●	●	●	●	●	●	●	●	●	●	●	●
123	定子绕组安装双金属温度开关 (NCC,3 个串联 ,170°C) Bimetal detectors, break type (NCC), (3 in series), 170°C , in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●	●
124	定子绕组安装双金属温度开关 (NCC,3 个串联 ,140°C) Bimetal detectors, break type (NCC), (3 in series), 140°C , in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●	●
125	定子绕组安装双金属温度开关 (NCC,2x3 个串联 ,150°C) Bimetal detectors, break type (NCC), (2x3 in series), 150°C , in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●	●
127	定子绕组安装双金属温度开关 (NCC,3 个串联 ,130°C 以及 3 个串联 , 150°C) Bimetal detectors, break type (NCC), (3 in series, 130°C & 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	●	●	●	●	●	●	●	●	●	●	●	●	●	●
437	定子绕组安装 PTC- 热敏电阻 (3 个串联), 170°C PTC - thermistors (3 in series), 170°C , in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●	●
439	定子绕组安装 PTC- 热敏电阻 (2×3 个串联),150°C PTC - thermistors (2x3 in series), 150°C , in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●	●
440	定子绕组安装 PTC- 热敏电阻 (3 个串联 ,110°C 以及 3 个串联 ,130°C) PTC - thermistors (3 in series, 110°C & 3 in series, 130°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	●	●	●	●	●	●	●	●	●	●	●	●	●	●
442	定子绕组安装 PTC- 热敏电阻 (3 个串联 ,150°C 以及 3 个串联 ,170°C) PTC - thermistors (3 in series, 150°C & 3 in series, 170°C), in stator winding	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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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	-	-	-	-	-	-	-	-	●	●	●	●	●	●
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).	-	●	●	●	●	●	●	●	●	●	●	●	●	●
400	4 x 90 度可转动的接线盒 4 x 90 degr turnable terminal box.	O	O	O	O	O	O	●	●	●	●	●	●	●	●
413	延长型电缆连接，散线引出 (无接线板)，压板式 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	电缆进线孔朝 D 端 Cable entry from D-end.	-	●	●	●	●	●	●	●	●	●	●	●	●	●
469	电缆进线孔朝 N 端 Cable entry from N-end.	-	-	-	-	-	-	●	●	●	●	●	●	●	●
142	马尼拉接线 Manilla connection.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
230	标准金属电缆密封管 Standard metal cable gland.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
731	2 个标准金属电缆密封管 Two standard metal cable glands.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999K016	金属电缆密封管，定制规格数量（注明规格与数量） Metal cable gland. Specified type and quantity	●	●	●	●	●	●	●	●	●	●	●	●	●	●
376	两个标准塑料葛兰 Two standard plastic cable glands	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999K017	塑料葛兰，定制规格数量（注明规格与数量） Plastic cable glands, Specified type and quantity	●	●	●	●	●	●	●	●	●	●	●	●	●	●
704	EMC 电缆密封管 EMC cable entry.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999K018	EMC 电缆密封管，定制规格数量（注明规格与数量） EMC cable entry. Specified type and quantity	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999K009	预留非标出线孔 Reserve non-standard cable entry	●	●	●	●	●	●	●	●	●	●	●	●	●	●
378	不锈钢葛兰 Stainess cable gland	●	●	●	●	●	●	●	●	●	●	●	●	●	●
试验 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及报告 Type test with report for one motor from specific delivery batch.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
148	出厂试验报告 Routine test report.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
221	指定交货批次的电机型式试验和多点负载测试 , 并提交报告 Type test and multi-point load test with report for one motor from specific delivery batch.	●	●	●	●	●	●	●	●	●	●	●	●	●	●

O 标配 | ● 可选 | - 不适用
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变量代码
Variant codes

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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	描 述	M2QA													
Variant code	**Description**	**71**	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**	**315**	**355**
222	指定交货批次的一台电机转矩转速曲线、型式试验 和多点负载测试 , 并提交报告 Torque/speed test, type test and multi-point load test with report for one motor from specific delivery batch.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
760	振动等级检测 Vibration level test	●	●	●	●	●	●	●	●	●	●	●	●	●	●
762	对指定交货批次内的一台电机进行噪声等级测试 Noise level test for one motor from specific delivery batch.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
变速驱动 Variable speed drives															
181	标准变频铭牌 Rating plate with ABB standard loadability values for VSD operation. Other auxiliaries for VSD operation to be selected as necessary.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
692	镀陶轴 Ceramic shaft	-	-	-	-	-	-	-	-	-	-	-	●	●	●
701	N 端绝缘轴承 Insulated bearing at N-end.	-	-	-	-	-	-	-	-	-	-	-	●	●	●
制动器 Brake															
357	安装指定制动器 ,1 类价格 specified brake, category 1	●	●	●	●	●	●	●	●	●	●	-	-	-	-
358	安装指定制动器 ,2 类价格 specified brake, category 2	●	●	●	●	●	●	●	●	●	●	-	-	-	-
412	安装制动器 Assembly of built-in brake.	●	●	●	●	●	●	●	●	●	●	-	-	-	-
999C005	永恒泰制动器微动开关 UHT Brake microswitch	-	-	-	-	●	●	●	●	●	●	-	-	-	-
999C007	瑞迪制动器微动开关 Brake microswitch	-	-	-	●	●	●	-	-	-	-	-	-	-	-
999C012	INTORQ 制动器微动开关 INTORQ Brake microswitch	-	-	-	-	●	●	●	●	●	●	-	-	-	-
999C009	PRECIMA 制动器微动开关 PRECIMA Brake microswitch	●	●	●	●	●	●	●	●	●	●	-	-	-	-
999C013	INTORQ 制动器加热带 INTORQ Brake heating element	-	-	-	-	-	●	●	●	●	-	-	-	-	-
999C010	PRECIMA 制动器加热带 PRECIMA Brake heating element	●	●	●	●	●	●	●	●	●	●	-	-	-	-
999C018	制动器内走线 brake run cable within motor frame	-	●	●	●	●	●	●	●	●	●	●	●	●	●
999C019	制动器非标电压 Non-standard voltage brake	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999C020	制动器非标扭矩 Non-standard torque brake	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999C021	调整制动手柄方向 Adjust the direction of the brake handle	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999C022	配 6 极整流器 Equipped with 6-pole rectifier	●	●	●	●	●	●	●	●	●	●	●	●	●	●
999C023	配 6 极整流器 Equipped with 6-pole rectifier	●	●	●	●	●	●	-	-	-	-	●	●	●	●
999C032	配 6 极整流器 Equipped with 6-pole rectifier	●	●	●	●	●	●	O	O	O	O	-	-	-	-
999C024	制动器力矩可调型 Torque adjustable brake	●	●	●	●	●	●	●	●	●	●	●	●	●	●
智能电机 Smart motor															
683	Smart Sensor 预留安装 Prepared for ABB Ability Smart Sensor	-	-	-	-	-	-	●	●	●	●	●	●	●	●

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变量代码
Variant codes

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变量代码	描 述	M2QA												
Variant code	Description	71	80	90	100	112	132	160	180	200	225	250	280	315	355
船用 Marine															
629	针对中国市场的基本船用电机设计 Marine features for the Chinese market	●	●	●	●	●	●	●	●	●	●	●	●	●	●
024	符合法国 BV 船级社要求，需要 BV 船检证书 Fulfilling Bureau Veritas (BV) requirements, with certificate.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
027	符合美国 ABS 船级社要求，需要 ABS 船检证书 Fulfilling American Bureau of Shipping (ABS) requirements, with certificate.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
483	符合中国 CCS 船级社要求，需要 CCS 船检证书 Fulfilling China Classification Societies (CCS) requirements (Beijing), with certificate.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
493	符合中国 CCS 要求，不需要证书 Fulfilling China Classification Societies (CCS) requirements (Beijing), without certificate.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
496	符合法国 BV 要求，不需要证书 Fulfilling Bureau Veritas (BV) requirements, without certificate(non-essential duty only)	●	●	●	●	●	●	●	●	●	●	●	●	●	●
675	符合美国 ABS 要求，不需要证书 Fulfilling American Bureau of Shipping (ABS) requirements, without certificate (non-essential duty only)	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

低压通用型电机简介 General purpose motor in brief

机座号 71-132 Frame size 71-132

电机尺寸 Motor size		71	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	6203-2ZC3	6204-2Z/C3	6205-2Z/C3	6206-2Z/C3	6207-2Z/C3	6208-2Z/C3
	N 端 N-end	6202-2ZC3	6204-2Z/C3	6205-2Z/C3	6206-2Z/C3	6206-2Z/C3	6207-2Z/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 D-end	伽马圈 Gammaring					
	N 端 N-end	无 NA					
润滑 Lubrication		封闭式轴承 Bearings greased for life					
铭牌 Rating plate	材料 Material	不锈钢 Stainless steel					
接线盒 Terminal box	接线盒材料 Frame material	铸铁 Cast iron					
	接线盒盖材料 Cover material	铸铁 Cast iron					
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)					
	螺钉 Screws	电镀锌钢 Zinc-electroplated steel					
	螺纹孔 Threaded openings	2-M16*1.5, 2-M16*1.5	2-M25*1.5,2-M16*1.5		2-M32*1.5,2-M16*1.5		
连接件 Connections	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		IP55					
冷却方式 Cooling method		IC 411					
吊环 Lifting lug		无 NA			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		

低压通用型电机简介 General purpose motor in brief

机座号 160-225 Frame size 160-225

电机尺寸 Motor size		160	180	200	225
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
	N 端 N-end	6209-2Z/C3	6210-2Z/C3	6212-2Z/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 D-end	伽马圈 Gammaring			
	N 端 N-end	无 NA			
润滑 Lubrication		封闭式轴承 Bearings greased for life			
铭牌 Rating plate	材料 Material	不锈钢 Stainless steel			
接线盒 Terminal box	接线盒材料 Frame material	铸铁 Cast iron			
	接线盒盖材料 Cover material	铸铁 Cast iron			
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)			
	螺钉 Screws	电镀锌钢 Zinc-electroplated steel			
	螺纹孔 Threaded openings	2-M40*1.5,2-M16*1.5		2-M50*1.5,2-M16*1.5	
连接件 Connections	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		IP55			
冷却方式 Cooling method		IC 411			
吊环 Lifting lug		B3: 一体式铸铁吊环 ;B5: 分体式钢制吊环，通过吊环螺纹连接到机座 B3:Integrated cast iron lifting lug;B5:Separate steel lifting lug, bolted to the stator			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

低压通用型电机简介 General purpose motor in brief

机座号 250-355 Frame size 250-355

电机尺寸 Motor size		250	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	6314/C3	6316/C4(2P) 6316/C3(4-8P)	6316/C4(2P) 6319/C3(4-8P)	63169M/C4(2P) 6322/C3(4-8P)
	N 端 N-end	6214/C3	6316/C4(2P) 6316/C3(4-8P)	6316/C4(2P) 6319/C3(4-8P)	6319M/C4(2P) 6319/C3(4-8P)
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 D-end	径向密封 Radial seal			
	N 端 N-end	径向密封 Radial seal			
润滑 Lubrication		可润滑轴承 Regreasable bearings			
铭牌 Rating plate	材料 Material	不锈钢 Stainless steel			
接线盒 Terminal box	接线盒材料 Frame material	铸铁 Cast iron			
	接线盒盖材料 Cover material	铸铁 Cast iron			
	防腐蚀等级 Corrosion class	C3 (中等) C3 (medium)			
	螺钉 Screws	电镀锌钢 Zinc-electroplated steel			
	螺纹孔 Threaded openings	2-M63*1.5,2-M20*1.5		2-M63*1.5,2-M20*1.5	
连接件 Connections	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或铝 Glass-fiber reinforced polypropylene or aluminum			
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		IP55			
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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