样本 2016-05 I Catalog May 2016

IE3 M3BP - 低压高性能过程用途电机
IE3 M3BP - Low Voltage Process performance motors

用电力与效率
创造美好世界™

IE3 M3BP - 低压高性能过程用途电机
IE3 M3BP - Low Voltage Process performance motors

我们提供电机、发电机、各项相应服务及专门技术，帮助客户在产品的整个使用寿命周期及更长的期限内，实现节能和工艺改进。

低压高性能过程用途电机
Low Voltage Process performance motors

机座号 71-355, 0.18-355kW
Motor size 71-355, 0.18-355kW

帮助客户实现增效节能
Help customers to achieve energy saving

M3BP 系列电机

ABB 是全球领先的电机制造商，拥有先进的电机设计制造技术，市场覆盖全球 100 多个国家和地区。通过 ABB 全球统一设计平台和领先的模块化设计（ADEPT）开发的 IE3 M3BP 电机，是一款低压铸铁高性能过程用途电机，是 ABB 低压电机中的旗舰产品，具备超高能效和极高的可靠性等优点，能够满足不同行业对电机的高能效的需求，广泛应用于船舶、造纸、矿山、电厂、港机、水泥、冶金、水处理等行业；并可根据客户特殊要求提供解决方案。

IE3 M3BP

ABB is the world's leading manufacturers of motors, and with advanced motor design and manufacturing technology and companies operates in around 100 countries. ABB Shanghai Motors Co., Ltd. introduces M3BP of synchronization with the European technology the use of ABB global Automatic Data Extractor and Plotting Table（ADEPT）, the company can supply low voltage cast iron process performance motors with high efficiency and reliability etc, which can meet premium efficiency requirements for different industries, Its major customers are among the marine, paper, mines, power plant, crane, cements, metals, water, etc, providing solutions to the special requirements of customers.

产品优点

- 高可靠性
  采用 ABB 最高质量等级，适于严酷要求并连续运转场合长达 30 年的设计使用寿命
- 高效节能
  符合 IEC 国际电工委员会 IE3 超高效电机标准
- 低振动
- 适用于变频控制
- 低噪音

Advantages

- High Reliability
  ABB uses the highest quality grade, suitable for continuous operation places severe requirements and the design life of 30 years.
- High efficiency and Energy Saving
  Consistent with the International Electro technical Commission IEC IE3 efficient motor standards
- Low vibration
- Designed for VSD operation
- Low noise

技术参数

机座高度：71 ~ 355mm

- 输出功率：0.18 ~ 355 kW
- 极数：2、4、6 极
- 安装方式：B3、B5、B35 等
- 机座材料：铸铁
- 电压：≤690V
- 频率：50Hz，可变频使用
- 绝缘等级及温升：F/B
- 防护等级：IP55, IP56, IP65
- 标准：IEC、GB 等

Technical Data

Frame sizes 71 to 355mm

- Output power: 0.18 to 355kW
- Poles: 2, 4, 6
- Mounting arrangement: B3, B5, B35 etc.
- Frame material: Cast Iron
- Voltage: ≤690V
- Frequency: 50Hz, VSD application
- Insulation Class & Temperature Rise: F/B
- Degrees of protection: IP55, IP56, IP65
- Standard: IEC、GB etc.

客户获得的利益

- 低故障率，提升生产率
- 减少电能支出，降低运营成本
- 全球的售后服务网络
- 3 年的质保期
- 适用于严苛的工况要求
- 更长的使用寿命
- 减少电机维修费用

Benefits

- Low failure rate, improve productivity
- Reduce energy and operating costs
- Global service network
- 3 years warranty
- Applicable requirements in harsh conditions
- Longer life cycle
- Low maintenance cost

帮助客户实现增效节能
Help customers to achieve energy saving

节约运行成本
使用超高效 IE3 M3BP 电机，有效节约运行过程中消耗的电能。

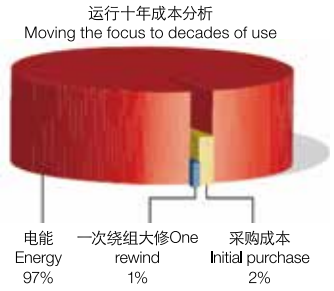
ABB IE3 M3BP 45kW 电机	效率 η = 94.2%
普通效率 45kW 电机	效率 η = 91.7%
IE3 M3BP 电机输入功率	=45/94.2*100=47.77kW
普通效率电机输入功率	=45/91.7*100=49.07kW (1.30kW 耗电差异)
年运行成本	= 输入功率 * 运行小时 * 电价
年节约电费	=(49.07-47.77)*8760*0.8=9110 RMB (运行时间按 8760 小时 ; 电费按照 0.8RMB/kWh 计算)

显著的生命周期成本优势
在电动机的生命周期里，电机采购成本只占其整个生命周期成本很小的一部分，电视使用中节能所产生的效益要远大于电机的采购成本。据测算，M3BP 电机采购成本仅约占其生命周期内总成本的 2%，具有显著的生命周期成本优势。

Save operation cost
Premium efficient IE3 M3BP motors can effectively save power consumption during the operation.

ABB IE3 M3BP 45kW motor	Efficiency η = 94.2%
IE2 45kW motor	Efficiency η = 91.7%
IE3 M3BP Input	=45/94.2*100=47.77kW
IE2 motor input	=45/91.7*100=49.07kW (1.30kW deviation)
Annual operation cost	=Input*Run time*Electricity price
Annual energy saving	=(49.07-47.77)*8760*0.8=9110 RMB (Assume run time 8760h;Electricity price 0.8RMB/kWh)

Notable cost advantage of life cycle
As shown below, the purchasing cost accounts for only a small part of the lifecycle cost. The benefits generated by energy-saving are much greater than the initial purchase. According to estimates, M3BP motor purchase cost is only about 2% of the total cost of the life cycle, with significant life-cycle cost advantages.



为您提供个性化解决方案
Provide customized solutions

工业应用

港口起重
M3BP 电机广泛应用在起重设备的主钩、变幅、平移等传动机构。其出众的起动、过载特性及快速响应性能，获得了港口起重领域客户的青睐，提高了港口设备的工作效率和可靠性。

制浆、造纸行业
制浆、造纸业是 ABB 的核心市场领域之一，ABB 从事纸机传动已有 100 多年的历史，M3BP 电机已广泛使用于国内外大型制浆、造纸行业工程项目，支持造纸行业实现节能增效、成功应对能源挑战。

船舶
船舶业一直是 ABB 的核心市场领域之一。几十年来，ABB 凭借创新的解决方案，为现代船舶设计、建造和营运的发展做出了巨大贡献。M3BP 电机同时具备的高稳定性、低能耗及出众的操作性能，能真正满足用户需求。广泛应用于船用泵、轮机泵、船舵泵、风机、侧推、压缩机、甲板起重机等。

冶金
ABB 作为电力及金属工业领域革新者及技术领导者的地位已长达 100 年多年。广泛应用于鼓风机、风扇、水泵、压缩机、卷材设备、轧钢设备、起重机、转炉等冶金设备。

电厂空冷岛
降低能耗已成为空冷技术发展的趋势，选用高效率的电机将有助于降低能耗。空冷机组运行环境恶劣，面临着高、低温、腐蚀性气体等，M3BP 电机能充分满足空冷机组对电机的绝缘、噪音等严苛的技术要求。

Industry Application

Port Crane
M3BP motors are widely used in crane equipment, such as main hoist, gantry, trolley and other transmission mechanism. The outstanding starting-up, overload characteristics and rapid response performance not only increase the work efficiency of port industry, but also access to customers from the Port Crane industry.

Pulp & Paper
P&P is one core market of ABB. ABB has over 100 years experience on P&P driving system. M3BP motors have been widely used in many domestic and international large P&P projects. M3BP can help P&P customer to realize the energy-saving and respond to energy challenge.

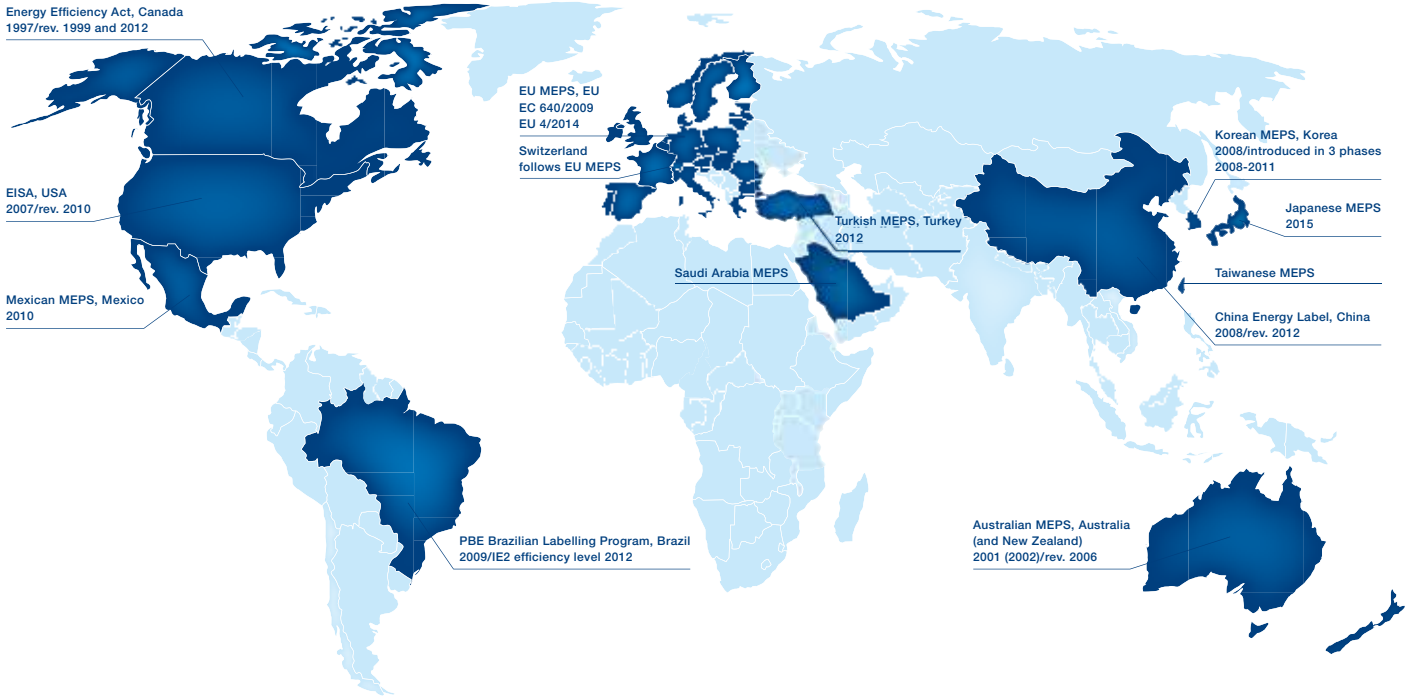
Marine
Marine industry has always been one of ABB's core markets. For decades, ABB has made great contributions to the development of modern ship design, construction and operation with innovative solutions. M3BP motor has high stability, low power consumption and superior operational performance as well, can really satisfy customer's needs. Widely used in marine pump, wheel pump, rudder pump, fan, side push, compressors, deck cranes etc.

Metals
As an innovator and technology leader in power and metal industry is over 100 years. ABB motors are widely used in blowers, fans, pumps, compressors, coil equipment, rolling equipment, cranes, converter and other metallurgical equipment.

Power Plant Dry Cooling Tower
Reducing energy consumption has become a trend for Power plant Air-cooled technology. High efficiency motors will help to reduce energy consumption. The motor will facing the high-temperature, corrosive gas, and other demand requirements, M3BP motor can fully meet the special requirement such as insulation and noise.




国际电机效率标准
International motor efficiency standards



自从标准 IEC/EN 60034-30:2008 及其修订版 IEC/EN 60034-30-1: 2014 发布以来，低压三相异步电机有了世界范围的能效分级系统。该系统提升了全球效率规范的统一水准，并涵盖了爆炸性环境中使用的电机。IEC/EN 60034-30-1: 2014 明确规定了单速三相 50Hz&60Hz 感应电机的国际能效率 (IE) 等级。该标准有助于统一电机测试步骤，以及效率和产品标签要求，使全球电机的购买商能够容易识别出高效率电机产品。IEC/EN 60034-30-1 确定的能效等级是基于 IEC/EN 60034-2-1（版本 2.0 更新于 2014-06）指定的测试方法的基础上得出的。

为提高市场透明度，IEC 60034-30 规定电机铭牌和产品文档中必须注明效率等级和效率值。由于效率测试方法的不同，产生的结果也会不同，因此文档中必须清楚注明所使用的效率测试方法。

Since the validation of IEC/EN 60034-30:2008 and its refined version IEC/EN 60034-30-1: 2014 , a worldwide energy efficiency classification system has existed for low voltage three-phase asynchronous motors. This system increases the level of harmonization in efficiency regulations around the world and also covers motors for explosive atmospheres. IEC/EN 60034-30-1: 2014 defines International Efficiency (IE) classes for single speed, three-phase, 50 and 60 Hz induction motors. The standard is part of an effort to unify motor testing procedures as well as efficiency and product labeling requirements to enable motor purchasers worldwide to easily recognize premium efficiency products. The efficiency levels defined in IEC/EN 60034-30-1 are based on test methods specified in IEC/EN 60034-2-1 which has been updated to edition 2.0, 2014-06.

To promote transparency in the market, IEC 60034-30 states that both the efficiency class and efficiency value must be shown on the motor rating plate and in product documentation. The documentation must clearly indicate the efficiency testing method used as the different methods can produce differing results.

最低能效标准（MEPS）

国际电工委员会 (IEC) 制定了电机测试及效率等级的指导，但该组织并不执行控制能源使用效率。全球气候变化很大程度上驱动了电机最低能效标准 (MEPS) 水平的强制性，政府的目标是减少二氧化碳排放量和不断上升的电力需求，尤其是对于发展中的国家。从制造商到终端用户的整个价值链，必须关注并符合当地的立法，以满足当地的需求，节省能源、降低碳排放量。

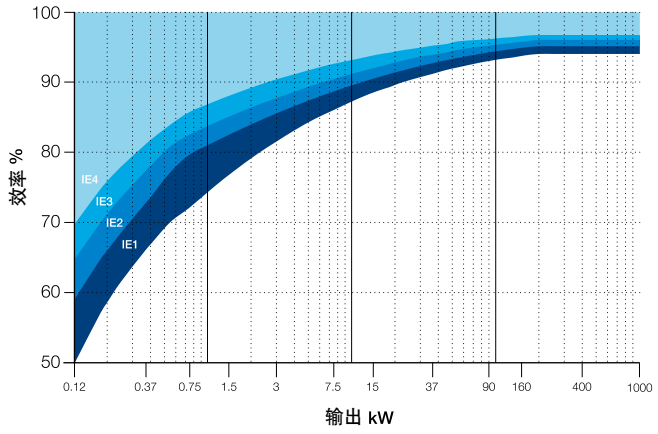
统一的标准和全球日益普及的最低能效标准 (MEPS) 对于全球气候保护是个好消息，但是需要谨记的是协调能效标准是个需要持续的过程。尽管最低能效标准在一些国家 / 地区已生效，但各地的范围和要求方面有所不同，且仍在不断进化。与此同时，一些新的国家 / 地区也正在计划采用当地的最低能效标准。获取最新信息请访问 www.abb.com/motors&generators/energyefficiency

IEC/EN 60034-30-1: 2014

IEC/EN 60034-30-1: 2014 对满足 IEC 60034-1 或 IEC 60079-0 (爆炸环境) 规范的要求以及在正弦电压下运行的单速电机，明确了四个国际效率 (IE) 等级。

- IE4 = 超超高效
- IE3 = 超高效，与美国的“NEMA Premium” (60Hz) 相同
- IE2 = 高效率，与美国的 EPAct (60Hz) 相同
- IE1 = 标准效率

IEC/EN 60034-30-1 定义的效率水平基于 IEC/EN 60034-2-1 中指定的测试方法。



IE 等级 - 四极电机

IEC/EN 60034-30-1 涵盖了 0.12kW 至 1000kW 的功率范围，以及适用于直接在线启动的所有类型电机。该标准范围包括：

- 单速、三相、50Hz 和 60Hz
- 2、4、6 或 8 极
- 额定输出 PN 范围从 0.12kW（包括）至 1000kW
- 额定电压 UN 范围从 50V（不包括）至 1000V
- 能在电机额定功率下，且温升范围在指定绝缘温度等级内可连续运行
- 标识的温度范围在 -20˚C 至 +60˚C 之间
- 标有海拔高度不高于 4000m 的标识

Minimum energy performance standards

While the IEC sets guidelines for motor testing and efficiency classes, the organization does not regulate efficiency. The biggest drivers for mandatory Minimum Energy Performance Standard (MEPS) levels for electric motors are global climate change, government targets to cut the CO_2 emissions and rising electricity demand, especially in developing countries. The whole value chain, from manufacturer up to end user, must be aware of the legislation in order to meet local requirements and additionally save energy and reduce carbon footprint.

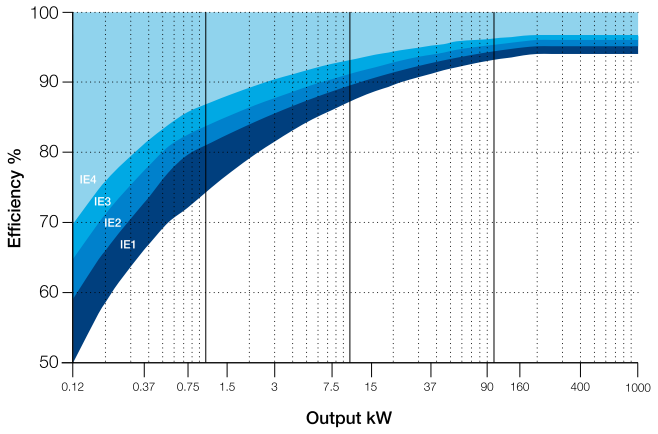
Harmonized standards and the increasing adoption of MEPS around the world are good news. However, it is important to remember that harmonization is an ongoing process. Even though MEPS are already in effect in several regions, they are evolving and they differ in terms of scope and requirements. At the same time, new countries are planning to adopt their own MEPS. To get the latest information please visit www.abb.com/ motors&generators/ energyefficiency.

IEC/EN 60034-30-1: 2014

IEC/EN 60034-30-1:2014 defines four International Efficiency (IE) classes for single speed electric motors that are rated according to IEC 60034-1 or IEC 60079-0 (explosive atmospheres) and designed for operation on sinusoidal voltage.

- IE4 = Super premium efficiency
- IE3 = Premium efficiency, identical to ‘NEMA Premium’ in the USA for 60 Hz
- IE2 = High efficiency, identical to EPAct in the USA for 60 Hz
- IE1 = Standard efficiency

Efficiency levels defined in IEC/EN 60034-30-1 are based on test methods specified in IEC 60034-2-1.



IE Classes - 4-pole motors

IEC/EN 60034-30-1 covers power range 120 W to 1000 kW. All technical constructions of electric motors are covered as long as they are rated for direct on-line operation. The coverage of the standard includes:

- Single speed electric motors (single and three-phase), 50 and 60 Hz
- 2, 4, 6 and 8 poles
- Rated output PN from 0.12 kW to 1000 kW
- Rated voltage UN above 50 V up to 1 kV
- Motors, capable of continuous operation at their rated power with a temperature rise within the specified insulation temperature class
- Motors, marked with any ambient temperature within the range of -20˚C to +60˚C
- Motors, marked with an altitude up to 4000 m above sea level

IEC/EN 60034-30-1 不涵盖以下电机：

- **10 极及以上的单速电机或多速电机**
- **与**机器完全集成一体（例如：泵、风机和压缩机）且不能脱离机器进行**单独测试的电机**
- **制动电机，当制动器不能被拆除或单独使用**

ABB 及效率标准

ABB 根据 IEC/EN 60034-2-1 的规定，采用可靠性高的方法（即间接法），确定效率值，通过测试得出附加负载损耗。

作为世界级市场领军企业，ABB 提供最大范围的的低压电机。电机效率是长期探讨的话题，多年以来，高效电机一直是行业的核心。ABB 过程用途范围的核心是基于全系列 IE2 和 IE3 电机，实现库存化。ABB 同样提供更节能的 IE4 电机。

The following motors are excluded from IEC/EN 60034-30-1:

- Single-speed motors with 10 or more poles or multi-speed motors
- Motors completely integrated into a machine (for example, pump, fan or compressor) that cannot be tested separately from machine
- Brake motors, when the brake can not be dismantled or separately fed

ABB and efficiency standards

ABB determines efficiency values according to IEC 60034-2-1 using the low uncertainty method (i.e. indirect method), with additional load losses determined by measurement.

As the world market leader, ABB offers the largest range of LV motors available. It has long advocated the need for efficiency in motors, and high efficiency products have formed the core of its portfolio for many years. The core of ABB’s Process performance range is based on full range in IE2 and IE3 motors - with many available from stock. We also supply IE4 motors for additional energy savings.

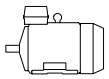
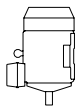
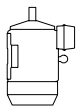
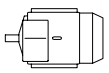
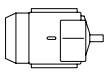
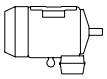
产品概述 - 安装结构形式
General information - Mounting arrangements

底脚安装型电机
Foot-mounted motor

代码 I / 代码 II
Code I / code II

产品代码12
Product code pos. 12

A = 底脚安装型，接线盒在顶部
foot-mounted, term.box top
R = 底脚安装型，接线盒在右侧
foot-mounted, term.box RHS
L = 底脚安装型，接线盒在左侧
foot-mounted, term.box LHS

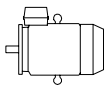
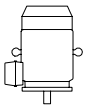
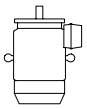
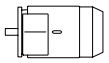
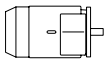
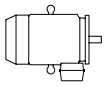
					
IM B3	IM V5	IM V6	IM B6	IM B7	IM B8
IM 1001	IM 1011	IM 1031	IM 1051	IM 1061	IM 1071

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

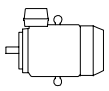
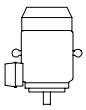
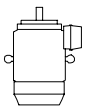
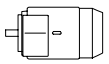
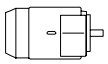
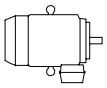
					
IM B5	IM V1	IM V3	*)	*)	*)
IM 3001	IM 3011	IM 3031	IM 3051	IM 3061	IM 3071

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

产品代码12
Product code pos. 12

C = 凸缘安装型，小凸缘
flange mounted, small flange

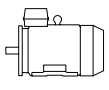
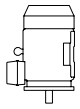
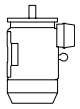
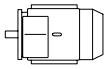
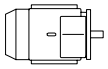
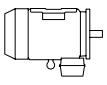
					
IM B14	IM V18	IM V19	*)	*)	*)
IM 3601	IM 3611	IM 3631	IM 3651	IM 3661	IM 3671

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

产品代码12
Product code pos. 12

H = 底脚和凸缘安装型，接线盒在顶部
foot/flange-mounted, term. box top
S = 底脚和凸缘安装型，接线盒在右侧
foot/flange-mounted, term. box RHS
T = 底脚和凸缘安装型，接线盒在左侧
foot/flange-mounted, term. box LHS

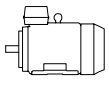
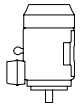
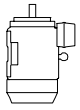
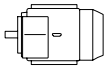
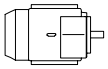
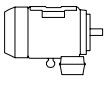
					
IM B35	IM V15	IM V35	*)	*)	*)
IM 2001	IM 2011	IM 2031	IM 2051	IM 2061	IM 2071

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

产品代码12
Product code pos. 12

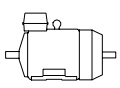
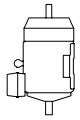
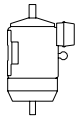
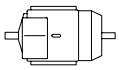
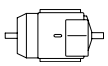
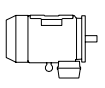
J = 底脚和凸缘安装型，小凸型
foot/flange-mounted, small flange

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

底肢安装型电机，可自由选择轴伸
Foot-mounted motor, shaft with free extensions

代码 I / 代码 II
Code I / code II

产品代码12
Product code pos. 12

					
IM 1002	IM 1012	IM 1032	IM 1052	IM 1062	IM 1072

*) IEC 60034-7中未规定
Not stated in IEC 60034-7.
注意：当轴朝上安装电机时，水或液体可能会沿轴流下，用户必须考虑采取措施，防止出现此类情况。
Note: If the motor is mounted shaft upwards, take measures to prevent water or any other liquid from running down the shaft into the motor.

产品概述 - 冷却
General information - Cooling

电机冷却方式的命名规范根据IEC60034-6标准。
Designation system concerning methods of cooling refers to standard IEC 60034-6.

代码说明
Explanation of the product code

冷却方式代号 International Cooling	回路方式 Circuit arrangement	主冷却介质 Primary coolant	主冷却介质的运行方式 Method of movement of primary coolant	次冷却介质 Secondary coolant	次冷却介质的运行方式 Method of movement of secondary coolant
IC	4	(A)	1	(A)	6
	1	2	3	4	5

Position 1

0:	自由循环（开路） Free circulation (open circuit)
4:	机座表面冷却 Free circulatio (open circuit)

Position 2

A:	表示空气（为简化指示而省略） For air (omitted for simplifi ed designation)

Position 3

0:	自由对流 Free convection
1:	自循环 Self-circulation
6:	在机器上安装独立组件 Machine-mounted independent component

Position 4

A:	表示空气（为简化指示而省略） For air (omitted for simplifi ed designation)
W:	表示水 For water

Position 5

0:	自由对流 Free convection
1:	自循环 Self-circulation
6:	在机器上安装独立组件 Machine-mounted independent component
8:	相对位移 Relative displacement

产品概述 - 机械振动
General information - Mechanical vibration

根据 IEC60034-14 标准，机械振动分为 A 级、B 级振动，ABB 标准电机满足 A 级振动要求。

In accordance with IEC 60034-14, mechanical vibration magnitude is divided into grade A and grade B. The mechanical vibration for ABB standard motor satisfy the requirement of grade A.

不同轴中心离 H (mm) 用位移、速度和加速度表示的振动强度限值（方均根值）
Limits of maximum vibration magnitude in displacement, velocity and acceleration (r.m.s.) for shaft height H

振动等级 Vibration grade	轴中心高 /mm	56 ≤ H ≤ 132			132 < H ≤ 280			H > 280		
	安装方式 Mounting	位移 Displac. μm	加速 Vel. mm/s	加速度 Acc. m/s^2	位移 Displac. μm	加速 Vel. mm/s	加速度 Acc. m/s^2	位移 Displac. μm	加速 Vel. mm/s	加速度 Acc. m/s^2
A	自由悬置 Free suspension	25	1.6	2.5	35	2.2	3.5	45	3.6	4.4
	刚性安装 Rigid mounting	21	1.3	2.0	29	1.8	2.8	37	2.3	3.6
B	自由悬置 Free suspension	11	0.7	1.1	18	1.1	1.7	29	1.8	2.8
	刚性安装 Rigid mounting	-	-	-	14	0.9	1.4	24	1.5	2.4

等级“A”适用于对振动无特殊要求的电机
等级“B”适用于对振动有特殊要求的电机。轴中心高小于 132mm 的电机，不考虑刚性安装
位移与速度，速度与加速度的接口频率分别为 10Hz 和 250Hz

Grade "A" applies to machines with no special vibration requirements.
Grade "B" applies to machines with special vibration requirements. Rigid mounting is not considered acceptable for machines with shaft heights less than 132 mm.
The interface frequencies for displacement/velocity and velocity/acceleration are 10 Hz and 250 Hz respectively.

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

产品概述 - 绝缘
General information - Insulation

ABB 采用 F 级绝缘材料，B 级温升，是当今业界最通用的要求。

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。

ABB uses class F insulation, which with temperature rise B, is the most 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.

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

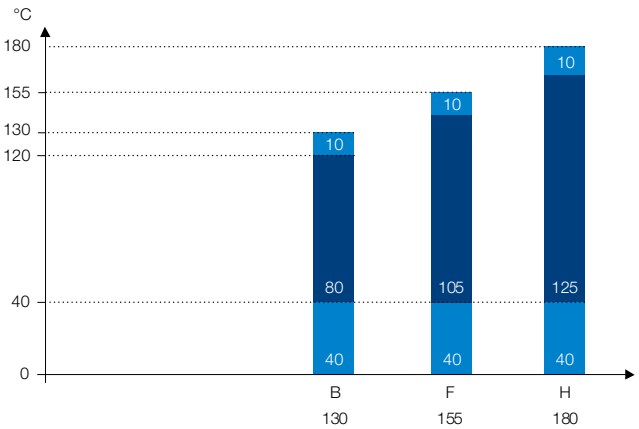
F 级绝缘（155˚C）
- 额定环境温度 40˚C
- 最大允许温升 105K
- 热点温升裕度 10K

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

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

产品概述 - 表面处理
General information - Surface treatment

ABB 低压高性能过程用途电机标准喷漆系统符合 ISO/EN 12944:2 的腐蚀类别 C3M。ISO/EN 12944 将耐用性分为 3 个范 围: 低 (L)、中 (M) 和高 (H)。低耐用性 (L) 相当于可 使用 2-5 年，中耐用性 (M) 相当于可使用 5-15 年，高耐用性 (H) 相当于可使用 15 年以上。

所述耐用性不是保证一定能够达到的时限。相反，它只是一 项技术因素，有助于用户制定维护方案。由于褪色、粉化、污染，磨损或其它原因，通常需要更加频繁地进行周期性维护。

ABB 的标准耐腐蚀表面处理的等级为 C3M （相当于中等耐腐蚀性及耐用性）。其它腐蚀类别（C4M 和 C5M) 作为可选项。此外，根据 Norsok 要求（774), 为适应近海环境而进行的表面处理也作为可选项。具体使用，请参见变量代码部分。

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

The surface treatment categorization of ABB motors is based on the ISO 12944 standard. ISO 12994-5 divides paint system durability into three categories: low (L), medium (M), and high (H). Low durability corresponds to a lifetime of 2 - 5 years, medium to 5 – 15 years, and high durability to over 15 years.

The durability range is not a guaranteed lifetime. Its purpose is to help the owner of the motor plan for appropriate maintenance intervals. More frequent maintenance may be required because of fading, chalking, contamination, wear and tear, or for other reasons.

ABB's standard surface treatment is corrosivity category C3, durability range M (which equal to medium corrosivity and medium durability). Special surface treatment is available in corrosivity categories C4 and C5-M, durability class M for both. In addition, surface treatment according to the NORSOK standard for offshore environments is available as an option.

The standard ABB paint color for motors is Munsell blue 8B 4.5/3.25.

腐蚀类别 Corrosivity category	室外空气 Outdoor atmospheres	室内空气 Indoor atmospheres	ABB Use in ABB motors
C1 - 很低 very low	- Not used	空气清洁且供暖的建筑，如办公室、商店、学校、酒店。 Heated buildings with clean atmospheres.	不可用 Not available
C2 - 低 low	空气污染度低。大多数为农村地区。 Atmospheres with low level pollution, mostly rural areas.	不供暖、可能发生冷凝现象的建筑，如仓库、体育馆。 Unheated buildings where condensation may occur, such as depots and sports halls.	不可用 Not available
C3 - 中等 medium	城市及工业区空气，中等程度的二 氧化硫污染。盐度较低的沿海地区。 Urban and industrial atmospheres, moderate sulfur dioxide pollution. Coastal areas withlow salinity.	湿度高且空气受到一定程度污染的生产厂房，如食品加工厂、洗衣房、 酿酒厂、乳制品厂。 Production rooms with high humidity andsome air pollution; food processing plants, laundries, breweries, dairies.	标准表面处理 Standard treatment
C4 - 高 high	工业区以及盐度为中等的沿海地区。 Industrial areas and coastal areas with moderate salinity.	化工厂、游泳池、沿海造船厂。 Chemical plants, swimming pools, coastal ship- and boatyards.	可选的表面处理，变量代码为115 Optional treatment for cast iron motors, variant code 115
C5-I - 很高 very high (industrial)	湿度大且气体腐蚀性强的工业区。 Industrial areas and coastal areas with high humidity and aggressive atmosphere.	几乎完全处于冷凝状态且受污染程度大的建筑或区域。 Buildings or areas with nearly permanent condensation and high pollution.	不可用 Not available
C5-M - 很高 very high (marine)	盐度高的沿海及近海区域。 Coastal and offshore areas with high salinity.	几乎完全处于冷凝状态且受污染程度大的建筑或区域。 Buildings or areas with nearly permanent condensation and high pollution.	可选的表面处理，变量代码为754、711 Optional treatment for cast iron motors, variant code 754, 711

大气腐蚀类别和推荐的环境。
Atmospheric corrosivity categories and recommended environments.

产品概述 - 电压及频率
General information - Voltage and Frequency

额定输出
M3BP 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˚C ~ 40˚C，海拔高度不超过 1000m。

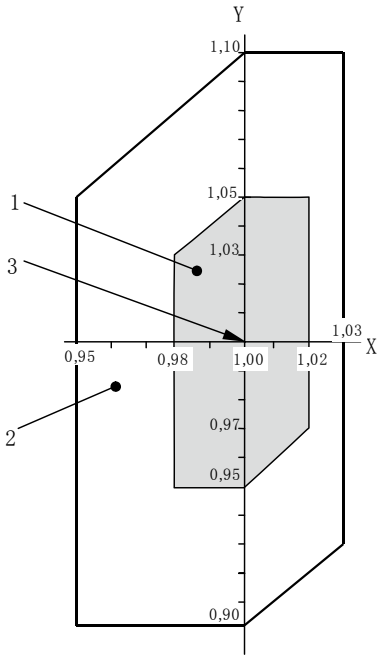
电压、频率
IEC 60034-1 定义了电压和频率的波动对温升的影响。标准将电压和频率的综合变化分为 A 和 B 两个区域。区域 A 是电压偏差 ±5% 和频率偏差 ±2% 的情况；区域 B 是电压偏差 ±10% 和频率偏差 +3%/-5% 的情况。

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
M3BP motors rated outputs means that the motor runs under continuous duty S1 (IEC 60034-1) operation at ambient temperature from -20˚C ~ 40˚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 ±5% and frequency deviation ±2%. Zone B is the combination of voltage deviation ±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　频率标幺值
Y 轴　电压标幺值
1　区域 A
2　区域 B（区域 A 外）
3　定额点

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

产品概述 - 运行环境及容差
General information - Environmental and Tolerance

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，M3BP 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, M3BP 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 electricel 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-cosφ)	+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 40ºC，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

低压高性能过程用途电机的变频器驱动
Variable speed drives with Process performance motors

鼠笼式感应电机具有无与伦比的可用性、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。

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.

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。

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.

由于在速度和工艺用电方面的优化，ABB 低压高性能过程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。

The use of ABB industrial drives together with Process performance motors provide substantial energy savings as the speed and therefore the power required by the process can be optimised. By choosing an ABB motor-drive package end-users can be confident that the motor and drive combination is optimised for their application; It is a working package with known performance as combination have been tested and verified.

ABB 低压高性能过程用途电机适用于 DOL 运行，也适用于变速运行。选择面广，电机能够适应甚至是最苛刻的应用要求。

Process 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 most demanding applications.

在为变速驱动器选择低压高性能过程用途电机时，应考虑以下方面：

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

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。

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.

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。

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.

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%。

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.

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。

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

2. 工作转速、振动及轴密封

低压高性能过程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。

如果要求的振动级别极低，则应使用有改进平衡功能（变量代码 417）的电机。

在高速应用场合，应考虑使用迷宫式密封（变量代码 783），而不是 V 型圈。

下表 1 给出了低压高性能过程用途电机的最大规定转速值

表 1 低压高性能过程用途铸铁电机的最大规定转速

机座号	转速 r/min	
	2 电极	4 电极
71-80	6000	4000
90-100	6000	6000
112-200	4500	4500
225-250	3600	3600
280	3600	2000
315	3600	2200
355 SM, ML, LKA	3600	2200
355 LKB	3000	2200

3. 通风

电机低速运行时，风扇的冷却能力下降，进面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, 422, 514）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。如果要求达到较低的噪音级别，则建议使用单向低噪音风扇（变量代码 044 及 045）。

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，可以得到最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。

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。

2. Operating speed, vibrations and shaft seals

Process 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.

If a particularly low level of vibration is required, motors with improved balancing (variant code 417) should be used.

In high speed applications, the use of labyrinth seals (variant code 783) instead of V rings should be considered.

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

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

Motor size	Maximum speed, r/min	
	2-pole motors	4-pole motors
71-80	6000	4000
90-100	6000	6000
112-200	4500	4500
225-250	3600	3600
280	3600	2000
315	3600	2200
355 SM, ML, LKA	3600	2200
355 LKB	3000	2200

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, 422, 514) 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. If a low noise level is required, unidirectional low-noise fans (variant codes 044 and 045) are recommended.

4. Lubrication

In variable speed applications, bearing temperature varies as a function of speed and motor load. In such cases, the most 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.

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.

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 ≤ 600V	ABB 标准绝缘 +dU/dt 滤波器 或 ABB 特殊绝缘（变量代码 405）
600V < U_N ≤ 690V	ABB 特殊绝缘（变量代码 405） 及 变频器输出端的 dU/dt 滤波器

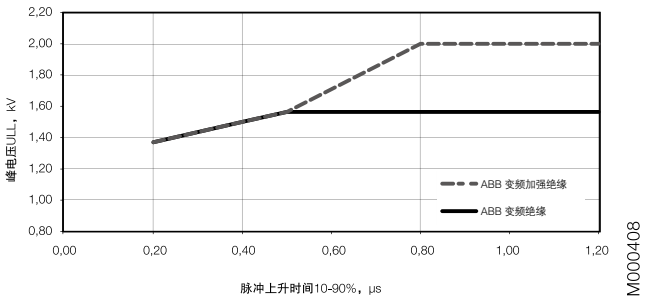
dU/dt 滤波器的详细信息，请参见相关的 ABB 驱动目录。

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 标准绝缘 1300V
- ABB 特殊绝缘（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 特殊绝缘”）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 标准绝缘”适用于具有标准设计的电机。

图 1 受脉冲上升时间的影响，电机端子处允许的最大相对相电压峰值



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。

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 ≤ 600V	Standard insulation + dU/dt filters OR Special insulation (variant code 405)
600V < U_N ≤ 690V	Special insulation (variant code 405) AND dU/dt filters at converter output

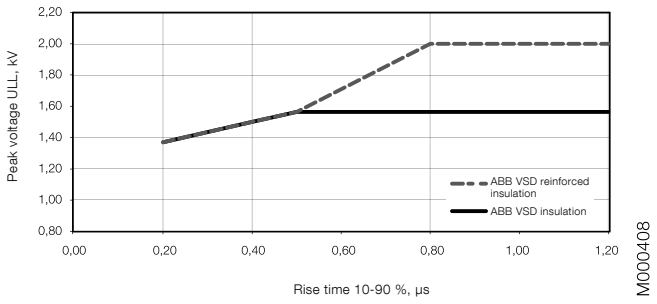
For more information on dU/dt filters, see the relevant ABB Drives catalogs.

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: Standard insulation
- 1800 V peak: Special 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, Special insulation, applies to motors with special winding insulation for frequency converter supply, variant code 405. Standard insulation applies to motors with standard design.

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



6. Bearing currents

Bearing voltages and currents must be avoided in all motors to ensure reliable operation of the entire application. With 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.

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 ≤ 机座号 ≤ 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

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 ≤ Frame size ≤ IEC 355	Insulated non-drive end bearing
$P_N \geq 350$ kW	Insulated non-drive end bearing AND Common mode fi lter at the converter

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。

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。

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。

8. 变频器的电机负载能力

图 2、图 3 所示的负载能力曲线为通用曲线，对于初步确定用于变频器标准低压电机的尺寸具有指导意义。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，电机的温升裕度及电气性能也会不同。所有这些情况会导致每台电机与变频器的组合会有略微不同的载荷能力。

这些指导曲线显示了在频率（速度）影响下的最大连续负载转矩，其中，采用额定正弦电源时，在额定频率和满额定负载条件下，所述频率（速度）能够实现相同的温升。

在大多数情况下，ABB 低压高性能过程用途电机运行时采用 B 级温 升。对于这些电机来说，可根据 B 级温升的负载能力曲线来确定规格，或电机可以稍稍过载，即根据 F 级温升的负载能力曲线来确 定规格。

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.

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. 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.

8. Motor loadability with frequency converter drives

The loadability curves shown in Figures 2 and 3 are generic and give indicative guide lines to make preliminary dimensioning of standard low voltage motors used with a frequency converter. It must be noted that the harmonic content and control algorithms vary between frequency converters, as well as the thermal margin and electrical properties of different motors. All this resulting in a slightly different loadability for each motor and converter combination.

The curves show the maximum continuous load torque as a function of frequency (speed), which results in the same temperature rise as operation with the rated sinusoidal supply at nominal frequency and full rated load.

Normally, Process performance motors operate according to class B temperature rise. For these motors, dimensioning should be done according to temperature rise B curve, or the motor can be slightly overloaded. In other words, it can be dimensioned according to temperature rise F curve.

然而，如果 ABB 目录指出，F 级温升时使用正弦电源，则应根据 B 级温升负载能力曲线来确定规格。

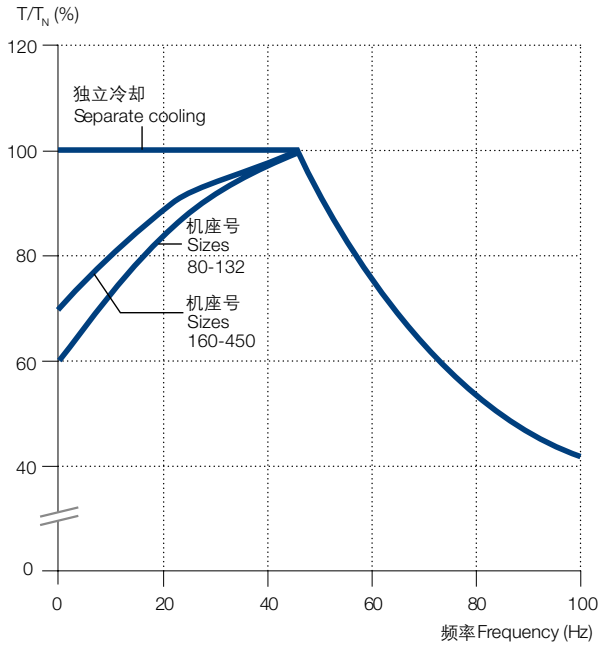
However, if only class F temperature rise with a sinusoidal supply is indicated for the motor in the technical data section, dimensioning must be done according to the temperature rise curve B.

如果根据 F 级温升负载能力曲线使用电机，则必须检查电机其它部 件的温升，并确保润滑间隔时间和润滑油类型均正确。

If the motor is loaded according the temperature rise F curve, it will be necessary to check the temperature rise in other parts of the motor and ensure that the lubrication intervals and grease type are still appropriate.

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

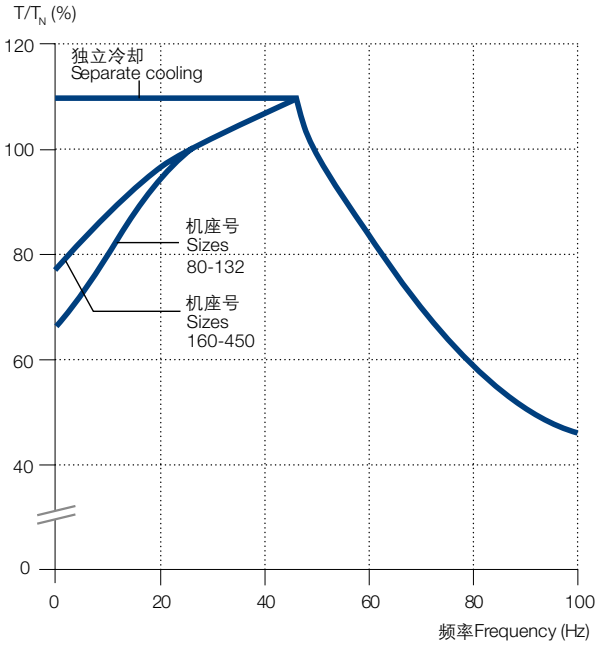
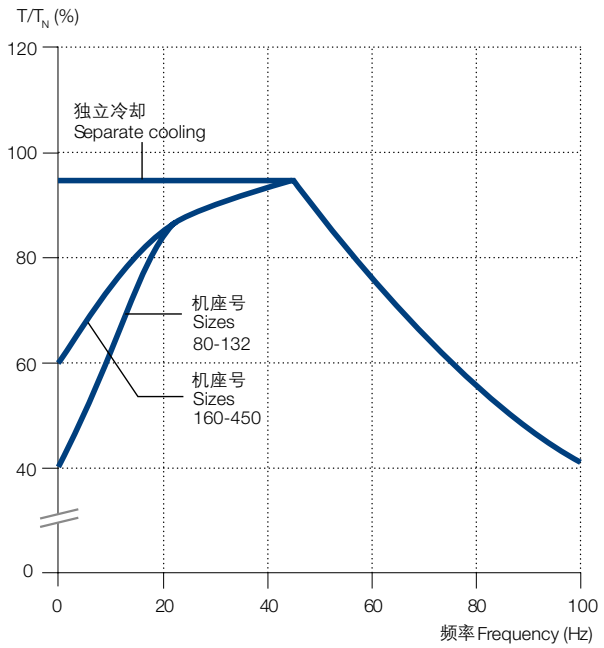
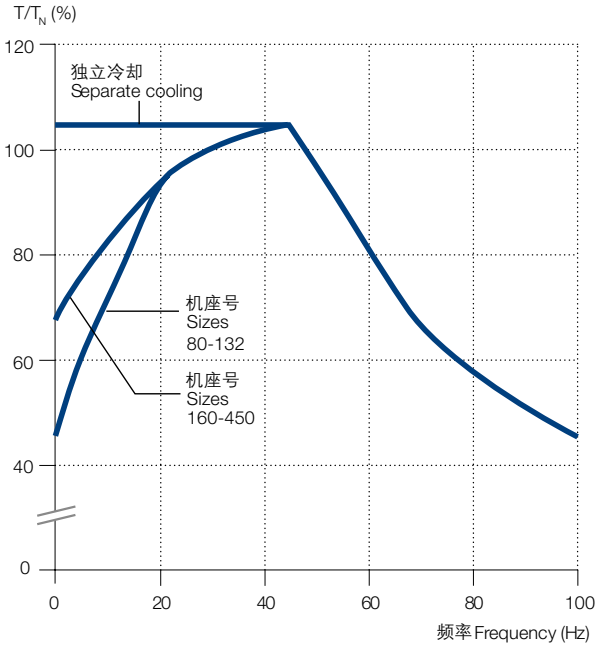


图 3 其它控制类型的变频器负载曲线
Figure 3. Loadability curves for other frequency converters

B 级温升
Temperature rise B



F 级温升
Temperature rise F

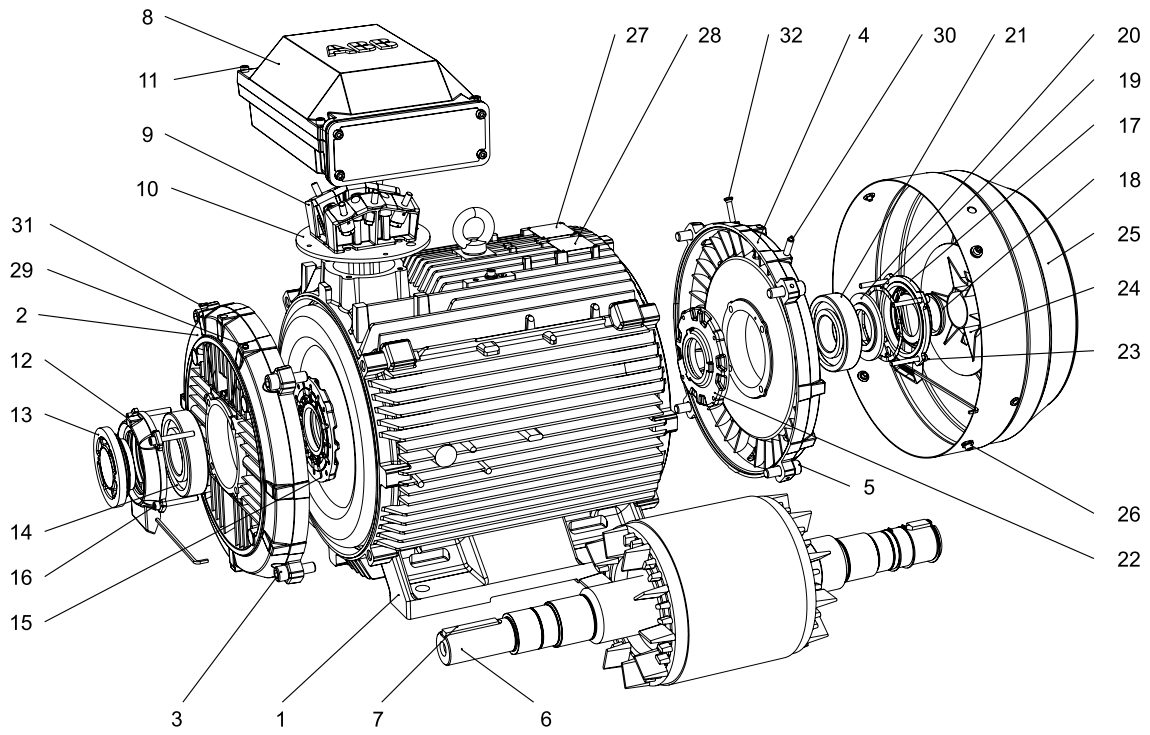


低压高性能过程用途铸铁电机
Low voltage Process performance cast iron motors

机座号 71-355, 0.18-355kW
Motor size 71-355, 0.18-355kW

结构
Motor construction

铸铁电机典型分解图，机座号315
Exploded view, frame size 315



1 定子机座
2 端盖（D端）
3 端盖螺钉（D端）
4 端盖（N端）
5 端盖螺钉（N端）
6 带轴转子
7 键（D端）
8 接线盒
9 接线板
10 中间法兰
11 接线盒盖螺钉
12 轴承外盖（D端）
13 带迷宫式密封件的
D端阀盘；2 极电机
标准（4-8极V型圈）
14 轴承（D端）
15 内轴承盖（D端）
16 轴承盖螺钉（D端）
17 轴承外盖（N端）
18 密封件（N端）
19 波形弹簧
20 阀盘（N端）
21 轴承（N端）
22 轴承内盖（N端）
23 轴承盖螺钉（N端）
24 风扇
25 风罩
26 风罩螺钉
27 铭牌
28 润滑铭牌
29 注油嘴（D端）
30 注油嘴（N端）
31 SPM注油嘴（D端）
32 SPM注油嘴（N端）

1 Stator frame
2 End shield, D-end
3 Screws for end shield, D-end
4 End shield, N-end
5 Screws for end shield, N-end
6 Rotor with shaft
7 Key, D-end
8 Terminal box
9 Terminal board
10 Intermediate flange
11 Screws for terminal box cover
12 Outer bearing cover, D-end
13 Valve disc with labyrinth seal,
D-end; standard in 2-pole motors,
V-ring in 4-8 pole motors
14 Bearing, D-end
15 Inner bearing cover, D-end
16 Screws for bearing cover
17 Outer bearing cover, N-end
18 Seal, N-end
19 Wave spring
20 Valve disc, N-end
21 Bearing, N-end
22 Inner bearing cover, N-end
23 Screws for bearing cover
24 Fan
25 Fan cover
26 Screws for fan cover
27 Rating plate
28 Lubrication plate
29 Grease nipple, D-end
30 Grease nipple, N-end
31 SPM nipple, D-end
32 SPM nipple, N-end

轴承
Bearings

过程用途电机通常安装以下单列深沟球轴承。

如果 D 端轴承更换为圆柱滚子轴承（NU- 或 NJ-），可承受更大的径向力。圆柱滚子轴承适合皮带传动应用，可使用变量代码 037 订购。

轴向力大时，应使用角接触球轴承。订购角接触球轴承电机时，必须指定安装方法以及轴向力的方向和大小。角接触球轴承可使用变量代码 058 和 059 订购。

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

If the bearing at the D-end is replaced with a roller bearing (NU- or NJ-), higher radial forces can be handled. Roller bearings are suitable for belt-drive applications and can be ordered with variant code 037.

When high axial forces are involved, angular-contact ball bearings should be used. When ordering a motor with an angular-contact ball bearing, specify also the method of mounting and the direction and magnitude of axial force. The variant codes for ordering angular-contact ball bearings are 058 and 059.

标准及可选设计
Standard and alternative designs

		标准设计 Standard design		可选设计 Alternative designs		
		深沟球轴承 Deep groove ball bearings		圆柱滚子轴承 Roller bearings (037)	角接触球轴承 Ang. contact ball bearings (058, 059)	
机座号 Motor size	极数 Number of poles	D-端/end	N-端/end	D-端/end	D-端/end	N-端/end
71	2 - 6	6203-2Z/C3	6202-2Z/C3	NU 203 ECP/C3	7203 B	7202 B
80	2 - 6	6204-2Z/C3	6203-2Z/C3	NU 204 ECP/C3	7204 B	7203 B
90	2 - 6	6205-2Z/C3	6204-2Z/C3	NU 205 ECP/C3	7205 B	7204 B
100	2 - 6	6206-2Z/C3	6205-2Z/C3	NU 206 ECP/C3	7206 B	7205 B
112	2 - 6	6206-2Z/C3	6205-2Z/C3	NU 206 ECP/C3	7206 B	7205 B
132	2 - 6	6208-2Z/C3	6208-2Z/C3	NU 208 ECP/C3	7208 B	7208 B
160	2 - 6	6309/C3	6209/C3	NU 309 ECP/C3	7309 B	7209 B
180	2 - 6	6310/C3	6209/C3	NU 310 ECP/C3	7310 B	7209 B
200	2 - 6	6312/C3	6210/C3	NU 312 ECP/C3	7312 B	7210 B
225	2 - 6	6313/C3	6212/C3	NU 313 ECP/C3	7313 B	7212 B
250	2 - 6	6315/C3	6213/C3	NU 315 ECP/C3	7315 B	7213 B
280	2	6316/C3	6316/C3	[1]	7316 B	7616 B
	4 - 6	6316/C3	6316/C3	NU 316 ECP/C3	7316 B	7316 B
315	2	6316/C3	6316/C3	[1]	7316 B	7316 B
	4 - 6	6319/C3	6316/C3	NU 319 ECP/C3	7319 B	7316 B
355	2	6316M/C3	6316M/C3	[1]	7316 B	7316 B
	4 - 6	6322/C3	6316/C3	NU 322 ECP/C3	7322 B	7316 B

[1] 根据要求
On request

M3BP 全系列采用 SKF 轴承作为标配，可以承受更大的轴向和径向负载。
M3BP series motors are equiped with SKF bearings as standard, so higher axial and radial load can be handled.

接线盒
Terminal box

防护等级及安装选项
标准接线盒防护等级为IP55。在标准情况下，接线盒安装在D端顶部。机座号71-132的电机，采用一体式接线盒。根据需求，可将接线盒安装在左侧或右侧，请参考订购信息。

接线盒旋转
机座号为 71-132 的标准电机，采用一体式接线盒，不具备旋转条件，如需实现接线盒4x90˚旋转，使用变量代码400订购。机座号为 160-355 的标准电机，接线盒可实现4x90˚转动。

标准接线盒交付
如未另行规定，则采用标准接线盒交付。
注意：对于500V及/或侧面安装的电机，请联系ABB!

Degree of protection and mounting options
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 71 - 132, the terminal box is integrated in motor frame. On request, the terminal box can also be mounted on the left or right side regardless of motor size (see Mounting options).

Turnability
In frame sizes 71 to 132 the terminal box is integrated into the frame and can therefore not be turned. Please use the variant code 400 if there is a need to have 4*90° turnability. The standard terminal boxes for motor sizes 160 to 355 can be turned 4*90°.

Standard delivery
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	接线盒型号 Terminal box type	电缆束法兰开口尺寸 Size of gland plate opening on terminal box	45°适配器 45° angle adapter	螺纹孔或电缆密封元件的数量和尺寸 Amount and size of threaded plugged holes or cable end sealing unit	最大单芯截面积 mm²/相 Max. connect-able core cross-section mm²/phase	接线端子数量和尺寸 Number and size of terminal bolts
71	2-6	-	-	-	2xM16x1.5	1x2.5	6xM4
80	2-6	-	-	-	2xM25x1.5	1x4	6xM4
90	2-6	-	-	-	2xM25x1.5	1x6	6xM5
100 - 132	2-6	-	-	-	2xM32x1.5	1x10	6xM5
160 - 180	2-6	63	B	-	2xM40x1.5	1x35	6xM6
200 - 250	2-6	160	C	-	2xM63x1.5	1x70	6xM10
280	2-6	210	C	-	2xM63x1.5	2x150	M12
315	2-6	370	D	-	2xM63x1.5	2x240	M12
355 SM_	2-4	750	E	E-D	Medium	4x240	M12
355 SM_	6	370	D	-	2xM63x1.5	2x240	M12
355 ML_, LK_	2-6	750	E	E-D	Medium	4x240	M12

电缆外径信息请咨询ABB。For the information about cable outer diameter, please contact ABB.

辅助电缆入口 Auxiliary cable entries							
160 - 180	2-6				2xM20x1.5		
200 - 250	2-6				2xM20x1.5		
280 - 355	2-6				2xM20x1.5		

机座号 Motor size	机座接地 Earthing on frame	主接线盒接地 Earthing in main terminal box
71 - 112	M4	M4
132	M5	M5
160 - 250	夹持型clamp	M6
280 - 355	M10	2xM10

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, specify motor type, size and product codeaccording to the following example.

示例

电机型号	M3BP 280 SMB
极数	4
安装方式（IM 代码）	IM B3 (IM1001)
额定输出	75 kW
产品代码	3GBP282220-ADL
附加代码（如需）	

Example

Motor type	M3BP 280 SMB
Pole number	4
Mounting arrangement (IM-code)	IM B3 (IM1001)
Rated output	75 kW
Product code	3GBP282220-ADL
Variant codes if needed	

机座号

Frame Size

A	B	C					D,	E,	F,	G
M3BP	280SMB	3GBP 1-4	2 8 5-6	2 7	2 20 8-10	- 11	A 12	D 13	L 14	003 ect

A 电机型号
B 电机尺寸
C 产品代码
D 安装方式代码
E 电压和频率代码
F 产品族代码
G 变量代码

A Motor type
B Motor size
C Product code
D Mounting arrangement code
E Voltage and frequency code
F Generation code
G Variant codes

产品代码说明

位置 1-4

3GBP= 全封闭风扇冷却型鼠笼式铸铁机座电机

位置 5 和 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

转速 (极数)

1=2 极	6 = 12 极
2=4 极	7 ≥ 12 极
3=6 极	8 = 用于实现恒定转矩的风扇传动双速电机
4=8 极	9 = 多速电机，双速
5=10 极	

位置 8 和 10

序列号

第 11 位

-(破折号)

Explanation of the Product Code

Positions 1 and 4

3GBP= Totally enclosed fan cooled squirrel cage motor with cast iron frame

Positions 5 and 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	6 =12 poles
2=4 poles	7 ≥ 12 poles
3=6 poles	8 =Two-speed motors for fan drive motors for constant torque
4=8 poles	9 = Multi-speed motors, two-speed
5=10 poles	

Positions 8 to 10

Serial number

Positions 11

-(dash)

订购信息
Ordering Information

第 12 位 (数据表中用黑点标记)	Positions 12 (marked with black dot in data table)
安装型式	Mounting arrangement
A= 底脚安装型，顶部安装型接线盒	A=Foot-mounted, top-mouted terminal box
R= 底脚安装型，从 D 端观察的接线盒，右侧安装	R=Foot-mounted, terminal box RHS seen from D-end
L = 底脚安装型，从 D 端观察的接线盒，左侧安装	L =Foot-mounted, terminal box LHS seen from D-end
B= 凸缘安装型，大凸缘	B=Flange-mounted, large flange
C= 凸缘安装型，小凸缘 (机座号 71-132)	C=Flange-mounted, small flange (size 71 to 132)
H= 底脚安装型和凸缘安装型，顶部安装型接线盒	H=Foot-and flange-mounted, terminal box top-mounted
J = 底脚安装型和凸缘安装型，带螺孔的小凸缘	J =Foot-and flange-mounted, small flange with tapped holes
S= 底脚安装型和凸缘安装型，从 D 端观察的接线盒，右侧安装	S=Foot-and flange-mounted, terminal box RHS seen from D-end
T = 底脚安装型和凸缘安装型，从 D 端观察的接线盒，左侧安装	T =Foot-and flange-mounted, terminal box LHS seen from D-end
V= 凸缘安装型，专用凸缘	V=Flange-mounted, special flange
F= 底脚安装型和凸缘安装型，专用凸缘	F=Foot-and flange-mounted, special flange
位置 13 (数据表中用黑点标记)	**Positions 13 (marked with black dot in data table)**
电压和频率	Voltage and frequency
单速电机	Single-speed motors
B 380 V △ 50 Hz	B 380 V △ 50 Hz
D 400 V △ ，415 V △，690 VY 50 Hz	D 400 V △ ，415 V △，690 VY 50 Hz
E 500 V △ 50 Hz	E 500 V △ 50 Hz
E 500 V Y 50 Hz	E 500 V Y 50 Hz
S 230 V △ ，400 VY，415 VY 50 Hz	S 230 V △ ，400 VY，415 VY 50 Hz
T 660 V △ 50 Hz	T 660 V △ 50 Hz
U 690 V △ 50 Hz	U 690 V △ 50 Hz
X 其他额定电压、连接或频率，最高 690 V	X Other rated voltage, connection or frequency, 690 V maximum
双速电机	Double - speed motors
A 220 V 50 Hz	A 220 V 50 Hz
B 380 V 50 Hz	B 380 V 50 Hz
D 400 V 50 Hz	D 400 V 50 Hz
E 500 V 50 Hz	E 500 V 50 Hz
S 230 V 50 Hz	S 230 V 50 Hz
X 其他额定电压、连接或频率，最高 690 V	X Other rated voltage, connection or frequency, 690 V maximum
备注	Remark
如果电压代码为 X，则必须订购变量代码为 209 的非标准电压或频率 (专用绕组)	For voltage code X the variant code 209 Non-standard voltage or frequency (special winding) must be ordered.
位置 14	Positions 14
产品族代码	Genertion code
A、B、C…G…L	A、B、C…G…L
必要时，变量代码必须跟在产品代码后面。	The product code must be, if needed, followed by variant codes.

铭牌
Rating Plates

铭牌以表格形式提供相应电压下的速度、电流和功率因数的数值。

- 100%额定负载下的最低标称效率
- 效率等级
- 制造年份

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

- Lowest nominal efficiency at 100% rated load
- Efficiency level
- Year of manufacture

机座号 71-90
Motor Size 71-90

ABB	3~Motor	IE3 M3BP90LA4		IM 1001	IE3 CE	
	3GBP092510-ASL		No.		Cl. F	IP 55
	6205-2Z/C3		6204-2Z/C3			28 kg
	V	Hz	r/min	kW	A	Cos φ
	230△/ 400 Y	50	1443	1.1	4.30 / 2.40	0.76
	460 Y	60	1750	1.1	2.20	0.74
50Hz: IE3-81.4(100%)						
				2016		IEC 60034-1

机座号 100-132
Motor Size 100-132

ABB					IE3 CE	
3~Motor	IE3 M3BP132SMB4			Cl. F	IP 55	
3GBP132220-ADL					IM 1001	
Sr. No.				2016		
V	Hz	r/min	kW	A	Cos φ	
690 Y	50	1463	5.5	6.90	0.74	
400△	50	1463	5.5	11.9	0.74	
460△	60	1767	5.5	10.4	0.74	
50Hz: IE3-89.6(100%)						
6208-2Z/C3		6208-2Z/C3			68 kg	
					IEC 60034-1	

机座号 160-355
Motor Size 160-355

ABB						
CE	IE3 IEC 60034-1					
3 ~	IE3 M3BP280SMC4			IMB3/IM1001		2016
No.					Ins.cl. F	IP 55
V	Hz	kW	r/min	A	cos φ	Duty
690 Y	50	90	1485	92	0.86	S1
400△	50	90	1485	158	0.86	S1
380△	50	90	1483	166	0.87	S1
415△	50	90	1486	155	0.85	S1
440△	60	90	1785	144	0.86	S1
460△	60	90	1786	139	0.85	S1
50Hz: IE3-95.2(100%)						
Prod. code	3GBP282230-ADL					
6216/C3		6216/C3				700 kg

IP55 - IC411 - 绝缘等级F，温升等级B
IE3效率等级数据根据 IEC 60034-30-1：2014
IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class 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	3/4 负载 load	1/2 负载 load		I_N		T_N			J=1/4		
kW				r/min	100%	75%	50%	cos ϕ	A	I_S/I_N	Nm	T_I/T_N	T_B/T_N	GD^2kgm^2	kg	dB
3000 r/min = 2极/ 2 poles					400 V 50 Hz				CENELEC- 设计 design							
0.37		M3BP 71MC 2	3GBP071330-••L	2743	73,8	74,4	71,7	0,76	0,94	4,9	1,26	2,3	2,8	0,00088	10	58
0.55		M3BP 71ME 2	3GBP071350-••L	2755	77,8	79,3	78,4	0,83	1,25	6,8	1,9	2,8	3,1	0,00045	11	56
0.75		M3BP 80MC 2	3GBP081330-••L	2879	80,7	81,0	78,8	0,82	1,6	7,2	2,5	3,4	4,2	0,0010	17	57
1.1		M3BP 80ME 2	3GBP081350-••L	2865	82,7	83,8	83,1	0,84	2,3	7,2	3,7	3,5	4,1	0,00120	18	60
1.5		M3BP 90SLA 2	3GBP091010-••L	2901	84,2	84,8	83,8	0,89	2,9	7,7	4,9	2,1	3,5	0,00280	27	69
2.2		M3BP 90LA 2	3GBP091510-••L	2904	85,9	86,3	84,8	0,89	4,2	8,8	7,2	3,1	3,8	0,00360	30	64
3		M3BP 100MLA 2	3GBP101410-••L	2895	87,1	87,9	87,3	0,92	5,4	8,2	9,9	3,3	3,9	0,00130	42	68
4		M3BP 112ME 2	3GBP111350-••L	2882	88,1	89,9	90,9	0,93	6,9	8,3	13,0	2,9	3,7	0,0139	56	70
5.5		M3BP 132SMC 2	3GBP131230-••L	2908	89,2	89,5	88,5	0,90	9,8	7,6	18,0	2,3	3,8	0,0182	69	70
7.5		M3BP 132SME 2	3GBP131250-••L	2916	90,1	90,5	90,1	0,90	13,3	8,4	24,6	2,5	4,3	0,0203	75	70
11		M3BP 160MLA 2	3GBP161410-••L	2943	91,2	92,0	91,6	0,91	19,1	7,2	35,6	2,6	3,6	0,0570	144	69
15		M3BP 160MLB 2	3GBP161420-••L	2947	91,9	92,2	91,8	0,88	26,5	8,2	48,5	3,2	4,2	0,0630	152	69
18.5		M3BP 160MLC 2	3GBP161430-••L	2949	92,4	93,0	92,6	0,90	32,0	9,0	59,8	3,3	3,9	0,0760	164	73
22		M3BP 180MLA 2	3GBP181410-••L	2956	92,7	93,1	92,7	0,90	37,7	7,8	71,0	3,4	3,8	0,110	205	73
30		M3BP 200MLA 2	3GBP201410-••L	2957	93,3	93,8	93,6	0,88	52,4	7,5	96,9	2,5	3,1	0,182	263	73
37		M3BP 200MLB 2	3GBP201420-••L	2960	93,7	94,2	94,1	0,89	64,2	8,2	120	3,1	3,4	0,222	289	73
45		M3BP 225SMA 2	3GBP221210-••L	2968	94,0	94,0	93,0	0,87	79,6	7,3	145	3,2	3,1	0,296	335	76
55		M3BP 250SMA 2	3GBP251210-••L	2968	94,3	93,7	93,6	0,89	94,8	6,8	177	2,4	3,0	0,426	400	76
75		M3BP 280SMB 2	3GBP281220-••L	2978	94,7	94,4	93,5	0,88	130	7,0	240	2,3	3,0	0,90	665	74
90		M3BP 280SMC 2	3GBP281230-••L	2975	95,0	95,0	94,2	0,88	158	6,4	289	2,1	2,8	0,990	690	74
110		M3BP 315SMB 2	3GBP311220-••L	2982	95,2	94,9	93,9	0,87	192	7,0	352	1,8	2,7	1,30	910	78
132		M3BP 315SMC 2	3GBP311230-••L	2982	95,4	95,4	94,6	0,87	229	6,8	422	2,0	2,8	1,50	965	78
160		M3BP 315SMD 2	3GBP311240-••L	2983	95,6	95,6	94,9	0,87	275	7,4	512	2,2	2,8	1,70	1025	78
200		M3BP 315MLA 2	3GBP311410-••L	2983	95,8	95,8	95,3	0,88	342	7,7	640	2,5	3,1	2,10	1190	81
250	[1]	M3BP 355SMA 2	3GBP351210-••L	2985	95,8	95,6	94,6	0,89	423	7,7	800	2,1	3,3	3,00	1600	83
315	[1]	M3BP 355SMB 2	3GBP351220-••L	2980	95,8	95,7	95,0	0,89	529	7,0	1009	2,1	3,0	3,40	1680	83
355	[1]	M3BP 355SMC 2	3GBP351230-••L	2984	95,8	95,8	95,0	0,88	605	7,2	1136	2,2	3,0	3,60	1750	83

[1] 单向风扇结构可降低声压级3dB(A)，但风扇的旋转方向必须注明，具体见变量代码044和045
[1] 3dB(A) sound pressure level reduction with unidirectional fan construction. Direction of rotation must be stated when ordering, see variant codes 044 and 045

I_S/I_N = 启动电流
Starting current
T_I/T_N = 转子堵转转矩
Locked rotor torque
T_B/T_N = 最大转矩
Breakdown torque

IP55 - IC411 - 绝缘等级F，温升等级B
IE3效率等级数据根据 IEC 60034-30-1：2014
IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class 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	3/4 负载 load	1/2 负载 load		I_N	I_S/I_N	T_N	T_I/T_N	T_B/T_N	J=1/4		
kW			r/min	100%	75%	50%	cos ϕ	A		Nm			GD^2kgm^2	kg	dB
1500 r/min = 4极/ 4 poles				400 V 50 Hz				CENELEC- 设计 design							
0.25	M3BP 71MD 4	3GBP072340-••L	1416	73,5	75,1	73,8	0,8	0,6	4,8	1,68	2	2,6	0,0009	11	45
0.37	M3BP 71MLE 4	3GBP072450-••L	1432	77,3	77,4	74,5	0,76	0,9	5,8	2,46	2,7	3,3	0,00122	15	45
0.55	M3BP 80MLC 4	3GBP082430-••L	1444	80,8	81,6	80,1	0,8	1,2	6,7	4	3	3,5	0,0028	20	45
0.75	M3BP 80MLE 4	3GBP082450-••L	1448	82,5	82,5	80,1	0,78	1,7	7,4	4,9	3,5	4,0	0,00330	22	50
1.1	M3BP 90LA 4	3GBP092510-••L	1443	84,1	84,6	83,5	0,76	2,4	5,2	7,3	3,4	4,2	0,00490	28	56
1.5	M3BP 90LB 4	3GBP092520-••L	1445	85,3	85,0	82,6	0,77	3,3	5,7	9,9	3,8	4,6	0,00670	32	56
2.2	M3BP 100LA 4	3GBP102510-••L	1448	86,7	89,0	86,1	0,81	4,5	7,5	14,0	2,3	3,6	0,0109	38	56
3	M3BP 100MLB 4	3GBP102420-••L	1444	87,7	88,4	87,6	0,81	6,1	7,0	19,8	3,3	4,1	0,0121	42	58
4	M3BP 112ME 4	3GBP112350-••L	1453	88,6	88,9	88,0	0,74	8,9	7,8	26,0	3,5	4,3	0,0188	52	59
5.5	M3BP 132SMB 4	3GBP132220-••L	1463	89,6	89,8	88,7	0,74	11,9	7,6	36,0	2,8	3,9	0,0295	68	70
7.5	M3BP 132SME 4	3GBP132250-••L	1462	90,4	90,8	90,2	0,76	15,7	7,9	49,0	3,0	4,0	0,0376	78	64
11	M3BP 160MLA 4	3GBP162410-••L	1477	91,4	91,8	91,1	0,82	21,1	7,6	71,3	2,6	3,3	0,110	160	61
15	M3BP 160MLB 4	3GBP162420-••L	1477	92,1	92,4	91,6	0,82	28,5	8,2	97,0	3,0	3,7	0,135	179	61
18.5	M3BP 180MLA 4	3GBP182410-••L	1481	92,6	93,2	92,9	0,83	34,9	7,2	119	2,8	3,0	0,219	215	60
22	M3BP 180MLB 4	3GBP182420-••L	1481	93,0	93,5	93,3	0,82	41,4	6,5	142	3,0	3,2	0,243	229	60
30	M3BP 200MLA 4	3GBP202410-••L	1483	93,6	93,8	93,4	0,84	54,8	7,5	193	2,7	3,2	0,385	292	63
37	M3BP 225SMA 4	3GBP222210-••L	1482	93,9	94,1	93,8	0,83	68,9	7,2	239	3,1	3,1	0,427	322	67
45	M3BP 225SMB 4	3GBP222220-••L	1482	94,2	94,4	94,0	0,84	82,3	8,0	290	3,2	3,5	0,525	357	66
55	M3BP 250SMA 4	3GBP252210-••L	1482	94,6	94,7	94,0	0,84	100	7,1	354	2,9	3,4	0,694	406	68
75	M3BP 280SMB 4	3GBP282220-••L	1485	95,0	95,2	94,8	0,86	133	6,4	483	2,3	2,8	1,380	645	75
90	M3BP 280SMC 4	3GBP282230-••L	1485	95,2	95,5	95,2	0,86	158	7,1	578	2,5	2,9	1,730	700	75
110	M3BP 315SMB 4	3GBP312220-••L	1489	95,4	95,5	94,9	0,84	195	7,0	705	2,1	3,0	2,430	930	71
132	M3BP 315SMC 4	3GBP312230-••L	1488	95,6	95,9	95,5	0,86	231	6,7	847	2,2	2,9	2,90	1000	71
160	M3BP 315SMD 4	3GBP312240-••L	1488	95,8	96,0	95,8	0,85	282	6,9	1026	2,2	3,0	3,20	1065	71
200	M3BP 315MLB 4	3GBP312420-••L	1487	96,0	96,4	96,4	0,86	351	6,8	1284	2,4	3,0	3,90	1220	74
250	M3BP 355SMA 4	3GBP352210-••L	1491	96,0	96,0	95,6	0,86	435	6,4	1601	2,1	2,9	5,90	1610	78
315	M3BP 355SMB 4	3GBP352220-••L	1491	96,0	96,1	95,7	0,85	550	7,3	2018	2,4	3,3	6,90	1780	78
355	M3BP 355SMC 4	3GBP352230-••L	1490	96,0	96,2	95,8	0,86	616	6,3	2273	2,3	2,8	7,20	1820	78

I_S/I_N = 启动电流
Starting current
T_I/T_N = 转子堵转转矩
Locked rotor torque
T_b/T_N = 最大转矩
Breakdown torque

IP55 - IC411 - 绝缘等级F，温升等级B
IE3效率等级数据根据 IEC 60034-30-1：2014
IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class 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	3/4 负载 load	1/2 负载 load		I_N	I_S/I_N	T_N	T_I/T_N	T_B/T_N	J=1/4		
kW			r/min	100%	75%	50%	cos ϕ	A		Nm			GD^2kgm^2	kg	dB
1000 r/min = 6极/ poles				400 V 50 Hz				CENELEC- 设计 design							
0.18	M3BP 71ME 6	3GBP073350-••L	887	63,9	64,2	59,7	0,74	0,57	3,2	1,9	1,9	2,2	0,00091	10	45
0.25	M3BP 80MB 6	3GBP083320-••L	942	68,6	67	61,7	0,61	0,82	4,8	2,5	2,7	2,9	0,0019	14	47
0.37	M3BP 80MC 6	3GBP083330-••L	936	73,5	73,9	71,1	0,67	1,06	5,1	3,8	2,6	2,9	0,0028	16	50
0.55	M3BP 80ME 6	3GBP083350-••L	933	77,2	77,9	75,9	0,68	1,52	5	5,6	2,7	2,9	0,0035	18	47
0.75	M3BP 90SLD 6	3GBP093040-••L	940	78,9	80,3	79,2	0,75	1,8	4,4	7,6	2,1	2,8	0,00560	29	44
1.1	M3BP 90LF 6	3GBP093560-••L	944	81,0	81,7	80,1	0,75	2,6	4,7	11,1	2,1	2,8	0,00680	33	44
1.5	M3BP 100MLB 6	3GBP103420-••L	960	82,5	82,5	80,1	0,68	3,8	5,4	14,9	2,7	3,4	0,0120	41	49
2.2	M3BP 112MJ 6	3GBP113390-••L	962	84,3	85,5	84,7	0,68	5,3	4,2	21,8	1,4	2,3	0,0196	53	66
3	M3BP 132SMB 6	3GBP133220-••L	973	85,6	85,1	82,9	0,62	8,0	6,6	29,2	2,7	3,8	0,0355	75	57
4	M3BP 132SMF 6	3GBP133260-••L	971	86,8	86,5	84,7	0,62	10,7	6,6	39,0	2,7	3,8	0,0416	82	57
5.5	M3BP 132SMJ 6	3GBP133290-••L	966	88,0	89,1	88,9	0,73	12,3	4,2	54,0	1,7	2,7	0,0408	81	57
7.5	M3BP 160MLA 6	3GBP163410-••L	975	89,1	90,0	90,0	0,77	15,7	5,7	73,2	1,4	3,0	0,0890	146	59
11	M3BP 160MLB 6	3GBP163420-••L	975	90,3	91,1	91,1	0,78	22,5	6,4	108	1,6	3,1	0,138	180	64
15	M3BP 180MLA 6	3GBP183410-••L	979	91,2	91,9	91,6	0,79	30,1	5,2	147	1,5	2,7	0,212	212	63
18.5	M3BP 200MLA 6	3GBP203410-••L	989	91,7	91,9	91,2	0,82	35,2	6,5	179	2,2	3,2	0,496	272	59
22	M3BP 200MLB 6	3GBP203420-••L	989	92,2	92,4	91,4	0,81	42,4	7,3	212	2,6	3,5	0,585	297	59
30	M3BP 225SMA 6	3GBP223210-••L	988	92,9	93,0	92,2	0,77	60,4	7,7	291	2,9	3,6	0,724	349	63
37	M3BP 250SMA 6	3GBP253210-••L	990	93,3	93,7	93,5	0,80	71,1	6,5	357	2,4	3,1	1,30	431	58
45	M3BP 280SMB 6	3GBP283220-••L	991	93,7	94,0	93,5	0,84	82,0	7,4	433	2,7	3,0	1,870	645	72
55	M3BP 280SMC 6	3GBP283230-••L	992	94,1	94,3	93,8	0,86	99,0	7,5	528	2,8	3,0	2,570	725	71
75	M3BP 315SMB 6	3GBP313220-••L	994	94,6	94,9	94,6	0,84	136	6,8	720	1,8	2,6	4,10	930	75
90	M3BP 315SMC 6	3GBP313230-••L	994	94,9	95,1	94,7	0,84	164	7,2	864	2,0	3,0	4,60	1000	76
110	M3BP 315SMD 6	3GBP313240-••L	994	95,1	95,3	95,0	0,83	200	7,3	1056	2,2	3,1	4,90	1040	75
132	M3BP 315MLB 6	3GBP313420-••L	995	95,4	95,5	95,1	0,82	242	7,3	1266	2,3	3,2	6,30	1200	72
160	M3BP 355SMA 6	3GBP353210-••L	993	95,6	95,8	95,6	0,82	292	6,7	1538	2,5	2,6	7,90	1520	75
200	M3BP 355SMB 6	3GBP353220-••L	993	95,8	96,2	96,1	0,82	365	6,7	1923	2,6	2,5	9,70	1680	75
250	M3BP 355SMC 6	3GBP353230-••L	993	95,8	96,1	95,8	0,81	465	7,7	2404	3,0	3,1	11,30	1820	75
315	M3BP 355MLB 6	3GBP353420-••L	993	95,8	96,1	96,0	0,83	571	6,8	3029	2,6	3,2	13,50	2180	76
355	M3BP 355LKA 6	3GBP353810-••L	993	95,8	96,0	95,9	0,81	653	7,5	3413	2,9	3,2	15,50	2500	76

I_S/I_N = 启动电流
Starting current
T_I/T_N = 转子堵转转矩
Locked rotor torque
T_B/T_N = 最大转矩
Breakdown torque

IE3 M3BP - 低压高性能过程用途电机变量代码
IE3 M3BP - Low Voltage Process Performance Motor Variant Codes

代码 /Code	变量代码 /Variant	71	80	90	100	112	132	160	180	200	225	250	280	315	355
530	正常质保期延长 2 年 Two-year extension on standard warranty	-	-	-	-	-	-	R	R	R	R	R	P	P	P
平衡 /Balancing															
417	B 级振动 (IEC 60034-14) Vibration acc. to Grade B (IEC 60034-14).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
423	无键平衡 Balanced without key.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
424	全键平衡 Full-key balancing	P	P	P	P	P	P	P	P	P	P	P	P	P	P
轴承和润滑 /Bearings and Lubrication															
036	轴承装运锁 Transport lock for bearings.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
037	D 端圆柱滚子轴承 Roller bearing at D-end.	-	-	-	-	-	-	P	P	P	P	P	P	P	P
039	耐低温油脂 Cold-resistant grease	P	P	P	P	P	P	S	S	S	S	S	P	P	P
040	耐高温油脂 Heat-resistant grease	P	P	P	P	P	P	S	S	S	S	S	P	P	P
041	通过注油嘴对轴承加油 Bearings regreasable via grease nipples.	P	P	P	P	P	P	S	S	S	S	S	S	S	S
043	SPM 振动测量接头 SPM compatible nipples for vibration measurement	P	P	P	P	P	P	S	S	S	S	S	S	S	S
057	两端 2RS 轴承 2RS bearings at both ends.	P	P	P	P	P	P	-	-	-	-	-	-	-	-
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.	-	-	-	-	-	-	P	P	P	P	P	P	P	P
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.	-	-	-	-	-	-	-	-	-	-	-	P	P	P
107	轴承安装 Pt100(2 线) Pt100 2-wire in bearings.	-	-	-	-	-	-	P	P	P	P	P	P	P	P
128	轴承安装两只 Pt100(2 线) Double PT100, 2-wire in bearings	-	-	-	-	-	-	-	-	-	-	-	P	P	P
130	轴承安装 Pt100(3 线) Pt100 3-wire in bearings.	-	-	-	-	-	-	-	-	-	-	-	P	P	P
188	63 系列轴承 63-series bearings.	P	P	P	P	P	P	S	S	S	S	S	S	S	S
796	注油嘴 JIS B 1575 PT 1/8, A 型 Grease nipples JIS B 1575 PT 1/8 Type A	-	-	-	-	-	-	P	P	P	P	P	P	P	P
797	不锈钢 SPM 测量接头 Stainless steel SPM nipples	-	-	-	-	-	-	P	P	P	P	P	P	P	P
798	不锈钢注油嘴 Stainless steel grease nipples	-	-	-	-	-	-	P	P	P	P	P	P	P	P
799	平扣式油嘴，DIN3404，M10x1 螺纹 Grease nipples flat type DIN 3404, thread M10x1	-	-	-	-	-	-	-	-	-	-	-	P	P	P
800	挂针型注油嘴 JIS B 1575 PT 1/8 Grease nipples JIS B 1575 PT 1/8 pin type	-	-	-	-	-	-	-	-	-	-	-	P	P	P
行业标准设计 /Branch standard designs															
178	不锈钢 / 耐酸螺栓 Stainless steel / acid proof bolts.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
204	底脚安装电机的定位螺栓 Jacking bolts for foot mounted motors.	-	-	-	-	-	-	-	-	-	-	-	P	P	S
209	非标准电压或频率（特殊绕组） (注：此代码的使用需先与工厂确认) Non-standard voltage or frequency, (special winding).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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 ambient temperature-20˚C to -40˚C , with space heaters (code 450/451 must be added)	-	-	-	-	-	-	P	P	P	P	P	P	P	P
425	防腐蚀定子和转子。 Corrosion protected stator and rotor core.	P	P	P	P	P	P	P	P	P	P	P	P	P	P

* S = 在标准情况下包含
P = 仅适用于新生产模式
R = 根据需要
- = 不适用

S = Included as standard
P = New manufacture only
R = On request
- = Not applicable

IE3 M3BP - 低压高性能过程用途电机变量代码
IE3 M3BP - Low Voltage Process Performance Motor Variant Codes

代码 /Code	变量代码 /Variant	71	80	90	100	112	132	160	180	200	225	250	280	315	355
冷却系统 /Cooling system															
068	轻合金金属风扇 Light alloy metal fan	-	-	-	-	-	-	P	P	P	P	P	P	P	P
075	冷却方式 IC418(无叶无罩) Cooling method IC418(without fan).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
183	独立电机冷却（轴流风扇，N 端） Separate motor cooling (fan axial, N-end).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
206	钢风扇 Steel fan	-	-	-	-	-	-	P	P	P	P	P	P	P	P
422	独立冷却风机 (N 端，背包式冷却) Separate motor cooling (on top) with integrated fanmotor	-	-	-	-	-	-	-	-	-	-	-	P	P	P
尺寸图 /Documentation															
141	外形尺寸图 Binding dimension drawing.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
排水孔 /Drain holes															
065	塞紧现有排水孔 Plugged existing drain holes.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
接地螺栓 /Earthing Bolt															
067	外部接地螺栓 Exter-l earthing bolt.	S	S	S	S	S	S	S	S	S	S	S	S	S	S
加热元件 /Heating elements															
450	加热带，100-120V Heating element, 100-120 V	P	P	P	P	P	P	P	P	P	P	P	P	P	P
451	加热带，200-240V Heating element, 200 - 240 V	P	P	P	P	P	P	P	P	P	P	P	P	P	P
绝缘系统 /Insulation system															
014	H 级绝缘绕组 Winding insulation class H.	P	P	P	P	P	P	R	R	R	R	R	-	-	-
405	用于变频电源的特殊绕组绝缘 Special winding insulation for frequency converter supply.	P	P	P	P	P	P	R	R	R	R	R	-	-	-
安装方式 /Mounting arrangements															
008	IM 2101 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).	P	P	P	P	P	P	-	-	-	-	-	-	-	-
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).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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).	P	P	P	P	P	P	-	-	-	-	-	-	-	-
066	除 IM B3 (1001)、 IM B5 (3001)、IM B14 (3601)、IM B35 (2001) 、 IM B34 (2101) 外的其它安装方式 Modified for specified mounting position differing from IM B3 (1001), IM B5 (3001), B14 (3601), IM B35 (2001) & IM B34 (2101)	P	P	P	P	P	P	P	P	P	P	P	P	P	P
305	附加吊环 Additio-l lifting lugs.	-	-	-	-	-	-	-	-	-	-	-	P	P	P
320	IM2001 底脚 / 缺边法兰安装， 由 IM1001 派生 (B3 派生出 B35) IM 2001 foot/flat botton flange mounted, from IM 1001 (B35 flat bottom flange from B3) (B14 from B5).	P	P	P	P	P	P	-	-	-	-	-	-	-	-
喷漆 /Painting															
114	特殊油漆颜色，标准等级（此代码需注明备注限定颜色种类的编号，列表之外的其它颜色需同时选用 999/ 限定范围之外的特殊油漆颜色，标准等级） Special paint color, standard grade	P	P	P	P	P	P	P	P	P	P	P	P	P	P
115	C4M 喷漆系统，根据 ISO 12944-5:2007 Painting system C4M acc. to ISO 12944-2: 2007	-	-	-	-	-	-	P	P	P	P	P	P	P	P
168	仅涂底漆 Primer paint only.	P	P	P	P	P	P	-	-	-	-	-	P	P	P
754	C5M 喷漆系统，根据 ISO 12944-5:2007 Painting system C5M acc. to ISO 12944-2:2007	-	-	-	-	-	-	P	P	P	P	P	P	P	P

* S = 在标准情况下包含
P = 仅适用于新生产模式
R = 根据需要
- = 不适用

S = Included as standard
P = New manufacture only
R = On request
- = Not applicable

IE3 M3BP - 低压高性能过程用途电机变量代码
IE3 M3BP - Low Voltage Process Performance Motor Variant Codes

代码 /Code	变量代码 /Variant	71	80	90	100	112	132	160	180	200	225	250	280	315	355
防护 /Protection															
005	金属防护罩，立式电机，轴伸向下 Protective roof, vertical motor, shaft down.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
158	防护等级 IP65 Degree of protection IP65.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
403	防护等级 IP56 Degree of protection IP56.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
783	D 端迷宫式密封 Labyrinth sealing at D-end.	-	-	-	-	-	-	-	-	-	-	-	S	S	S
784	D 端伽马密封 Gamma-seal at D-end.	P	P	P	P	P	P	S	S	S	S	S	-	-	-
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.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
004	标准铭牌上的附加内容（最多 12 位） Additio-l text on std rating plate (max 12 digits on free text line).	-	-	-	P	P	P	P	P	P	P	P	P	P	P
095	重敲输出（持续电压、频率）、间歇工作制 Restamping output (maintained voltage, frequency), intermittent duty.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
135	安装额外不锈钢指示牌 Mounting of additio-l identification plate, stainless.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
139	附加指示牌，单独交付 Additio-l identification plate delivered loose.	-	-	-	-	-	-	P	P	P	P	P	P	P	P
163	变频铭牌。铭牌数据根据报价单（需先技术确认） Frequency converter rating plate. Rating data according to quotation.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
轴和转子 /Shaft & rotor															
069	根据基本目录的双轴伸 Two shaft extensions as per basic catalogue.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
070	D 端特殊轴伸 , 标准材料（需先技术确认） Special shaft extension at D-End, standard shaft material	P	P	P	P	P	P	P	P	P	P	P	P	P	P
131	电机半键交付（键不超过轴直径） Motor delivered with half key (key not exceeding shaft diameter)	P	P	P	P	P	P	-	-	-	-	-	-	-	-
165	开口键槽轴伸 Shaft extension with open keyway	-	-	-	-	-	-	P	P	P	P	P	S	S	S
410	不锈钢轴 (标准或非标设计) Shaft material stainless steel	P	P	P	P	P	P	-	-	-	-	-	P	P	P
600	N 端特殊轴伸，标准轴材料。 Special shaft extension at N-end, standard shaft material.	P	P	P	P	P	P	P	P	P	P	P	P	P	P

* S = 在标准情况下包含
P = 仅适用于新生产模式
R = 根据需要
- = 不适用

S = Included as standard
P = New manufacture only
R = On request
- = Not applicable

IE3 M3BP - 低压高性能过程用途电机变量代码
IE3 M3BP - Low Voltage Process Performance Motor Variant Codes

代码 /Code	变量代码 /Variant	71	80	90	100	112	132	160	180	200	225	250	280	315	355
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.	-	-	-	-	-	-	P	P	P	P	P	P	P	P
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	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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	P	P	P	P	P	P	P	P	P	P	P	P	P	P
123	定子绕组安装双金属温度开关 (NCC,3 联 ,170 °C) Bimetal detectors, break type (NCC), (3 in series), 170 °C, in stator winding	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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	-	-	-	-	-	-	P	P	P	P	P	P	P	P
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	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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	S	S	S	S	S	S	S	S	S	S	S	S	S	S
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	P	P	P	P	P	P	-	-	-	-	-	-	-	-
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	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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	P	P	P	P	P	P	-	-	-	-	-	-	-	-
445	定子绕组安装 PT100(2 线)，每相 1 个 Pt100 2-wire in stator winding, 1 per phase	P	P	P	P	P	P	P	P	P	P	P	P	P	P
446	定子绕组安装 PT100(2 线)，每相 2 个 Pt100 2-wire in stator winding, 2 per phase	-	-	-	-	-	-	P	P	P	P	P	P	P	P
502	定子绕组安装 PT100(3 线)，每相 1 个 Pt100 3-wire in stator winding, 1 per phase	-	-	-	-	-	-	-	-	-	-	-	P	P	P
503	定子绕组安装 PT100(3 线)，每相 2 个 Pt100 3-wire in stator winding, 2 per phase	-	-	-	-	-	-	-	-	-	-	-	P	P	P

* S = 在标准情况下包含
P = 仅适用于新生产模式
R = 根据需要
- = 不适用

S = Included as standard
P = New manufacture only
R = On request
- = Not applicable

IE3 M3BP - 低压高性能过程用途电机变量代码
IE3 M3BP - Low Voltage Process Performance Motor Variant Codes

代码 /Code	变量代码 /Variant	71	80	90	100	112	132	160	180	200	225	250	280	315	355
接线盒 /Termi-I box															
015	△接线电机 Motor supplied in D connection.	P	P	P	P	P	P	-	-	-	-	-	-	-	-
017	Y 接线电机 Motor supplied in Y connection.	P	P	P	P	P	P	-	-	-	-	-	-	-	-
019	比标准接线盒大 Larger than standard termi-I box.	-	-	-	-	-	-	-	-	-	-	-	P	P	P
020	分离式接线盒 Detached termi-I box.	-	-	-	-	-	-	-	-	-	-	-	P	P	P
021	左侧接线盒，从 D 端看 Termi-I box LHS (seen from D-end).	-	-	-	-	-	-	P	P	P	P	P	P	P	P
022	电缆进线孔在左侧（从 D 端看） Cable entry LHS (seen from D-end).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
157	接线盒防护等级 IP65 Termi-I box degree of protection IP65.	-	-	-	-	-	-	P	P	P	P	P	P	P	P
180	右侧接线盒，从 D 端看 Termi-I box RHS (seen from D-end).	-	-	-	-	-	-	P	P	P	P	P	P	P	P
230	标准金属电缆密封管（1 个） Standard metal cable glands.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
278	电缆密封管 ,D 型中尺寸开口 Cable sealing end unit, size medium for D-opening	-	-	-	-	-	-	-	-	-	-	-	-	P	P
279	电缆密封管 ,D 型大尺寸开口 Cable sealing end unit, size large for D-opening	-	-	-	-	-	-	-	-	-	-	-	-	P	P
292	适配器 C-C Adapter C-C	-	-	-	-	-	-	-	-	-	-	-	P	-	-
293	适配器 D-D Adapter D-D	-	-	-	-	-	-	-	-	-	-	-	-	P	P
294	适配器 E-D Adapter E-D	-	-	-	-	-	-	-	-	-	-	-	-	P	P
295	适配器 E-2D Adapter E-2D	-	-	-	-	-	-	-	-	-	-	-	-	P	P
380	独立的测温元件接线盒，标准材料 Separate termi-I box for temperature detectors, std. material	-	-	-	-	-	-	-	-	-	-	-	P	P	P
400	4 x 90 度可转动的接线盒 4 x 90 degr tur-ble termi-I box.	-	-	-	-	-	-	S	S	S	S	S	S	S	S
413	延长电缆连接，无接线盒 Extended cable connection, no termi-I box.	-	-	-	-	-	-	-	-	-	-	-	P	P	P
418	独立的辅助接线盒，标准材料 Separate termi-I box for auxiliaries, standard material.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
468	电缆进口从 D 端 Cable entry from D-end.	-	-	-	-	-	-	P	P	P	P	P	P	P	P
469	电缆进口从 N 端 Cable entry from N-end.	-	-	-	-	-	-	P	P	P	P	P	P	P	P
567	独立接线盒，铸铁材料 Separate termi-I box material: cast Iron	-	-	-	-	-	-	-	-	-	-	-	P	P	P
729	铝制无孔出线板 Aluminum non-drilled flange for cable glands	-	-	-	-	-	-	P	P	P	P	P	P	P	P
730	为 NPT 葛兰预留 Prepared for NPT cable glands	P	P	P	P	P	P	-	-	-	-	-	-	-	-
731	2 个标准金属电缆密封管 Two standard metal cable glands.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
744	不锈钢出线板 Stainless steel non-drilled flange for cable glands.	-	-	-	-	-	-	-	-	-	-	-	P	P	P

* S = 在标准情况下包含
P = 仅适用于新生产模式
R = 根据需要
- = 不适用

S = Included as standard
P = New manufacture only
R = On request
- = Not applicable

IE3 M3BP - 低压高性能过程用途电机变量代码
IE3 M3BP - Low Voltage Process Performance Motor Variant Codes

代码 /Code	变量代码 /Variant	71	80	90	100	112	132	160	180	200	225	250	280	315	355
测试 /Testing															
145	样本电机的型式试验报告，400V 50Hz Type test report from a catalogue motor, 400V 50Hz.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
148	出厂试验报告 Routine test report.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
760	振动等级测试 Vibration level test	P	P	P	P	P	P	-	-	-	-	-	-	-	-
762	噪声水平测试 Noise level test for one motor from specific delivery batch.	P	P	P	P	P	P	-	-	-	-	-	-	-	-
变速驱动 /Variable speed drives															
470	为空心轴脉冲编码器预留安装（等同于 Leine & Linde） Prepared for hollow shaft pulse tacho (L&L equivalent).	-	-	-	-	-	-	P	P	P	P	P	P	P	P
472	安装 1024 脉冲编码器（L&L 861007455-1024） 1024 pulse tacho (L&L 861007455-1024).	-	-	-	-	-	-	P	P	P	P	P	P	P	P
473	安装 2048 脉冲编码器（L&L 861007455-2048） 2048 pulse tacho (L&L 861007455-2048).	-	-	-	-	-	-	P	P	P	P	P	P	P	P
474	独立电机冷却（轴流风扇，N 端），预留安装空心轴脉冲编码器的位置（等同于 Leine & Linde） Separate motor cooling (axial fan, N-end) and prepared for hollow shaft tacho (L&L equivalent)	-	-	-	-	-	-	P	P	P	P	P	P	P	P
476	独立电机冷却（轴流风扇，N 端），安装 1024 脉冲编码器（L&L 861007355-1024） Separate motor cooling (axial fan, N-end) and 1024 pulse tacho (L&L 861007455-1024)	-	-	-	-	-	-	P	P	P	P	P	P	P	P
477	独立电机冷却（轴流风扇，N 端），安装 2048 脉冲编码器（L&L 861007355-2048） Separate motor cooling (axial fan, N-end) and 2048 pulse tacho (L&L 861007455-2048)	-	-	-	-	-	-	P	P	P	P	P	P	P	P
701	N 端绝缘轴承 Insulated bearing at N-end.	-	-	-	-	-	-	R	R	R	R	R	P	P	P
704	EMC 葛兰 EMC cable gland.	P	P	P	P	P	P	P	P	P	P	P	P	P	P

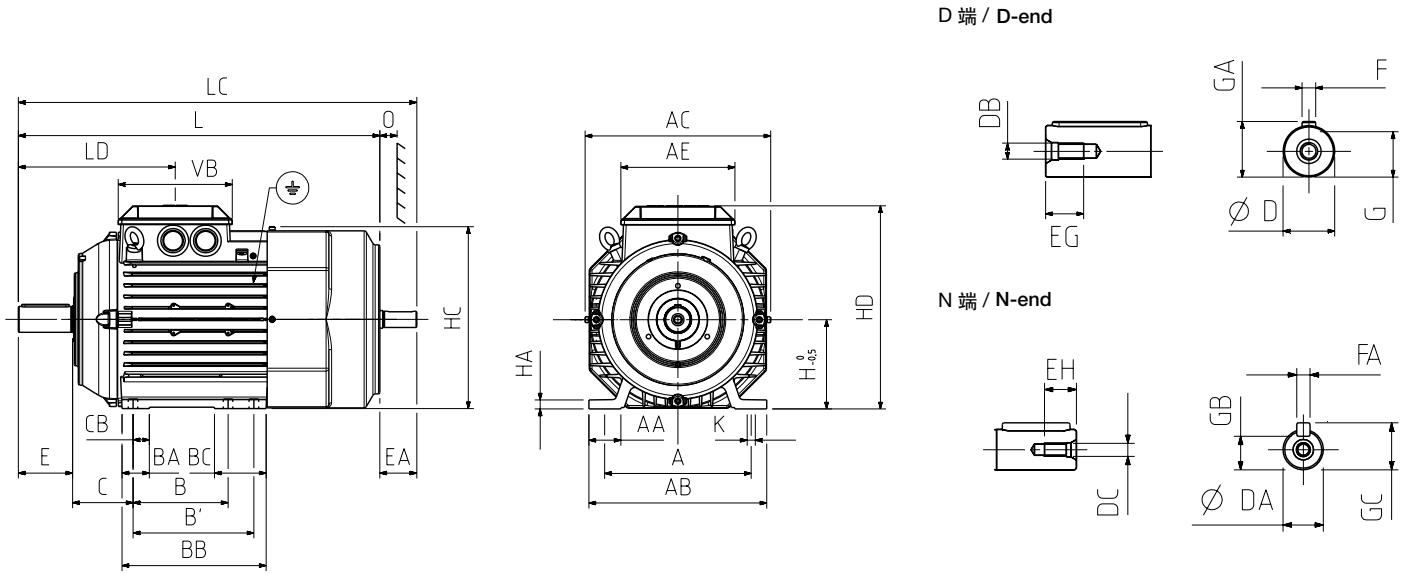
* S = 在标准情况下包含
P = 仅适用于新生产模式
R = 根据需要
- = 不适用

S = Included as standard
P = New manufacture only
R = On request
- = Not applicable

外形图及外形尺寸
Dimension drawings

机座号 71-132
Frame size 71-132

底脚安装型电机
Foot-mounted cast iron motors



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

机座号 Motor size	A	AA	AB	AC	AE	B	B'	BA	BB	BC	C	CB	D-Tol.	DA	DB	DC	E
71 M_	112	24	136	139	105	90	-	24	110	24	45	10	14-j6	11	M5	M4	30
71 ML_	112	24	136	139	105	90	-	24	110	24	45	10	14-j6	11	M5	M4	30
80 M_	125	28	154	157	105	100	-	28	124	28	50	12	19-j6	14	M6	M5	40
80 ML_	125	28	154	157	105	100	112	28	136	40	50	12	19-j6	14	M6	M5	40
90 SL_	140	30	170	177	118	100	125	28	150	54	56	12	24-j6	14	M8	M5	50
90 L_	140	30	170	177	118	100	125	28	150	54	56	12	24-j6	14	M8	M5	50
100 L_	160	38	200	197	118	140	-	34	172	34	63	16	28-j6	19	M10	M6	60
100 ML_	160	38	200	197	118	140	-	34	172	34	63	16	28-j6	19	M10	M6	60
100 LK_	160	38	200	197	118	140	160	34	192	54	63	16	28-j6	19	M10	M6	60
112	190	41	230	239	168	140	-	34	170	34	70	14	28-j6	19	M10	M6	60
132	216	47	262	273	168	140	178	40	212	76	89	16	38-k6	24	M12	M8	80

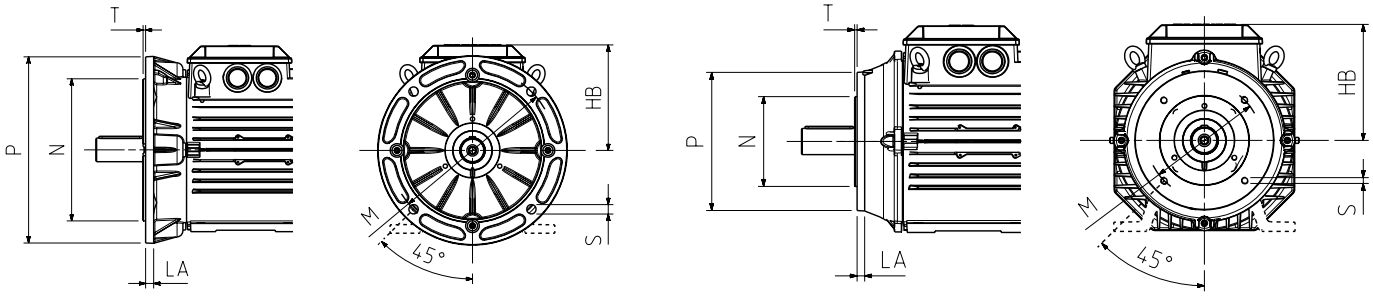
机座号 Motor size	EA	EG	EH	F	FA	G	GA	GB	GC	H	HA	HC	HD	K	L	LD	O	VB
71 M_	23	12.5	10	5	4	11	16	8.5	12.5	71	9	139	178	7	264	112	20	105
71 ML_	23	12.5	30	5	4	11	16	8.5	12.5	71	9	139	178	7	294	112	20	105
80 M_	30	16	12.5	6	5	15.5	21.5	11	16	80	10	157	194	10	331	126	20	105
80 ML_	30	16	12.5	6	5	15.5	21.5	11	16	80	10	157	194	10	363	126	20	105
90 SL_	30	19	12.5	8	5	20	27	11	16	90	10	178	218	10	356	151	20	118
90 L_	30	19	12.5	8	5	20	27	11	16	90	10	178	218	10	390	151	20	118
100 L_	40	22	16	8	6	24	31	15.5	21.5	100	12	198	247	12	381	164	25	118
100 ML_	40	22	16	8	6	24	31	15.5	21.5	100	12	198	247	12	403	164	25	118
100 LK_	40	22	16	8	6	24	31	15.5	21.5	100	12	198	247	12	435	164	25	118
112	40	22	16	8	6	24	31	16	22	112	12	223	258	12	442	200	25	168
132	50	28	19	10	8	33	41	20	27	132	13	268	300	12	532	231	30	168

公差 Tolerances	
A, B	± 0.8
D, DA	ISO j6
F, FA	ISO h9
H	+0 -0.5
N	ISO j6
C, CA	± 0.8

外形图及外形尺寸
Dimension drawings

机座号 71-132
Frame size 71-132

凸缘底脚或凸缘安装型电机
Flange-and foot & flange mounted cast iron motors



IM B5 (IM 3001), V1 (IM 3011), V3 (IM 3031), IM B35 (IM 2001), IM V15 (IM 2011), IM V36 (IM 2031)

大凸缘 / Large flange

机座号 Motor size	HB	LA	M	N	P	S	T
71	108	9	130	110	160	10	3.5
80	114	10	165	130	200	12	3.5
90	128	10	165	130	200	12	3.5
100	147	11	215	180	250	15	4
112	146	11	215	180	250	15	4
132	168	12.5	265	230	300	15	4

公差 Tolerances	
A, B	± 0.8
D, DA	ISO j6
F, FA	ISO h9
H	+0 -0.5
N	ISO j6
C, CA	± 0.8

IM B14 (IM 3601), V18 (IM 3611), V19 (IM 3631), IM B34 (IM 2101), V17 (IM 2111)

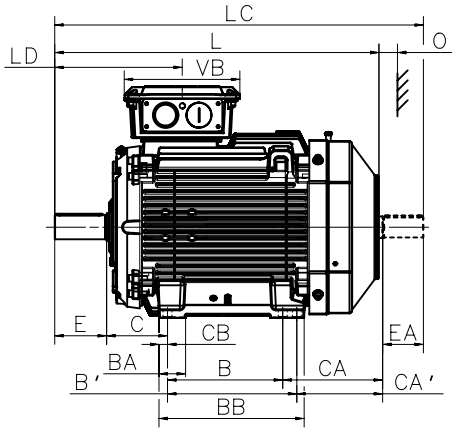
小凸缘 / Small flange

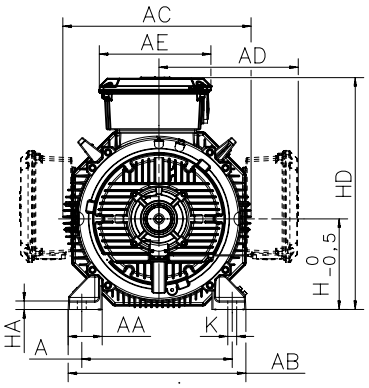
机座号 Motor size	HB	LA	M	N	P	S	T
71	108	8	85	70	105	M6	2.5
80	114	8	100	80	120	M6	3
90	128	10	115	95	140	M8	3
100	147	10	130	110	160	M8	3,5
112	146	14	130	110	160	M8	3.5
132	168	12	165	130	200	M10	3.5

外形图及外形尺寸
Dimension drawings

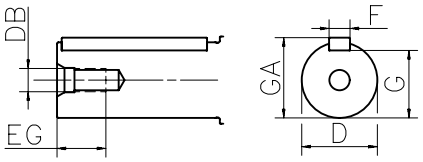
机座号 160-250
Frame size 160-250

底脚安装型电机
Foot-mounted cast iron motors

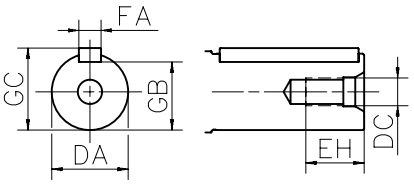




D 端 / D-end



N 端 / N-end



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

机座号 Motor size	极数 Pole	A	AA	AB	AC	AD	AE	B	B'	BA	BB	C	CA	CA'	CB	D	DA	DB	DC	E
160 [1]	2-6	254	67	310	338	261	257	210	254	69	294	108	164	126	20	42	32	M16	M12	110
160 [2]	2-6	254	67	310	338	261	257	210	254	69	294	108	262	224	20	42	32	M16	M12	110
180	2-6	279	67	340	381	281	257	241	279	68	317	121	263	225	19	48	32	M16	M12	110
200	2-6	318	69	378	413	328	300	267	305	80	345	133	314	276	20	55	45	M20	M16	110
225	2	356	84	435	460	348	300	286	311	69	351	149	314	289	20	55	55	M20	M20	110
225	4-6	356	84	435	460	348	300	286	311	69	351	149	314	289	20	60	55	M20	M20	140
250	2	406	92	480	508	376	300	311	349	69	392	168	281	243	23	60	55	M20	M20	140
250	4-6	406	92	480	508	376	300	311	349	69	392	168	281	243	23	65	55	M20	M20	140

机座号 Motor size	极数 Pole	EA	EG	EH	F	FA	G	GA	GB	GC	H	HA	HD	K	L	LC	LD	O	VB
160 [1]	2-6	80	36	28	12	10	37	45	27	35	160	23	421	14.5	584	671.5	287.5	45	257
160 [2]	2-6	80	36	28	12	10	37	45	27	35	160	23	421	14.5	681	768.5	287.5	45	257
180	2-6	80	36	28	14	10	42.5	51.5	27	35	180	23	461	14.5	726	815	300.5	50	257
200	2-6	110	42	36	16	14	49	59	39.5	48.5	200	23	528	18.5	821	934	320.5	70	311
225	2	110	42	42	16	16	49	59	49	59	225	23	573	18.5	849	971	313.5	80	311
225	4-6	110	42	42	18	16	53	64	49	59	225	23	573	18.5	879	1001	343.5	80	311
250	2	110	42	42	18	16	53	64	49	59	250	23	626	24.0	884	1010	343.5	90	311
250	4-6	110	42	42	18	16	58	69	49	59	250	23	626	24.0	884	1010	343.5	90	311

公差 Tolerances	
A, B	ISO js14
C, CA	± 0.8
D, DA	ISO k6 < Ø 50 mm
	ISO m6 > Ø 50 mm
F, FA	ISO h9
H	+0 -0.5

附注 Footnotes

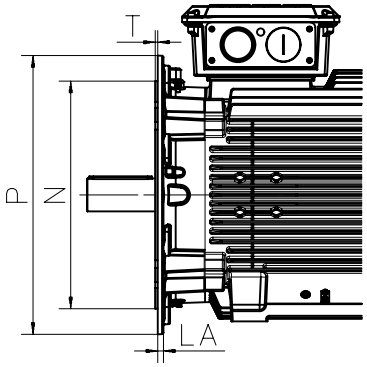
[1] MLA2
[2] MLA2 以外其余型号
All others

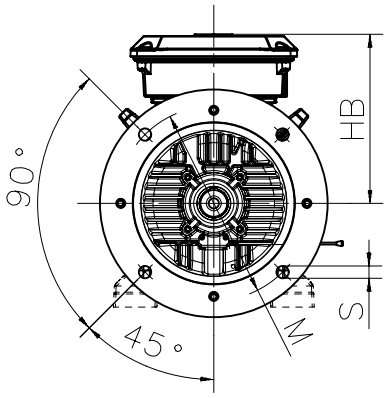
外形图及外形尺寸
Dimension drawings

机座号 160-250
Frame size 160-250

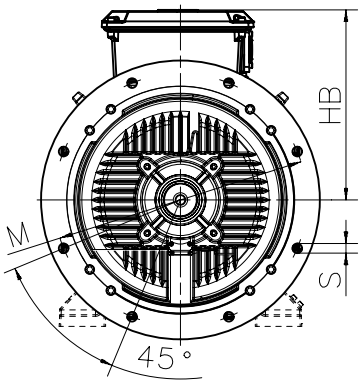
凸缘底脚或凸缘安装型电机
Flange-and foot & flange mounted cast iron motors

机座号 160-200
160 to 200





机座号 225-250
225 to 250



IM B5 (IM 3001), V1 (IM 3011), V3 (IM 3031), IM B35 (IM 2001), IM V15 (IM 2011), IM V36 (IM 2031)

机座号 Motor size	极数 Pole	HB	LA	M	N	P	S	T
160 [1]	2-6	261	20	300	250	350	19	5
160 [2]	2-6	261	20	300	250	350	19	5
180	2-6	281	15	300	250	350	19	5
200	2-6	328	20	350	300	400	19	5
225	2	348	20	400	350	450	19	5
225	4-6	325	20	400	350	450	19	5
250	2	376	24	500	450	550	19	5
250	4-6	376	24	500	450	550	19	5

公差 Tolerances	
A, B	ISO js14
C, CA	± 0.8
D, DA	ISO k6 < Ø 50 mm
	ISO m6 > Ø 50 mm
F, FA	ISO h9
H	+0 -0.5
N	ISO j6

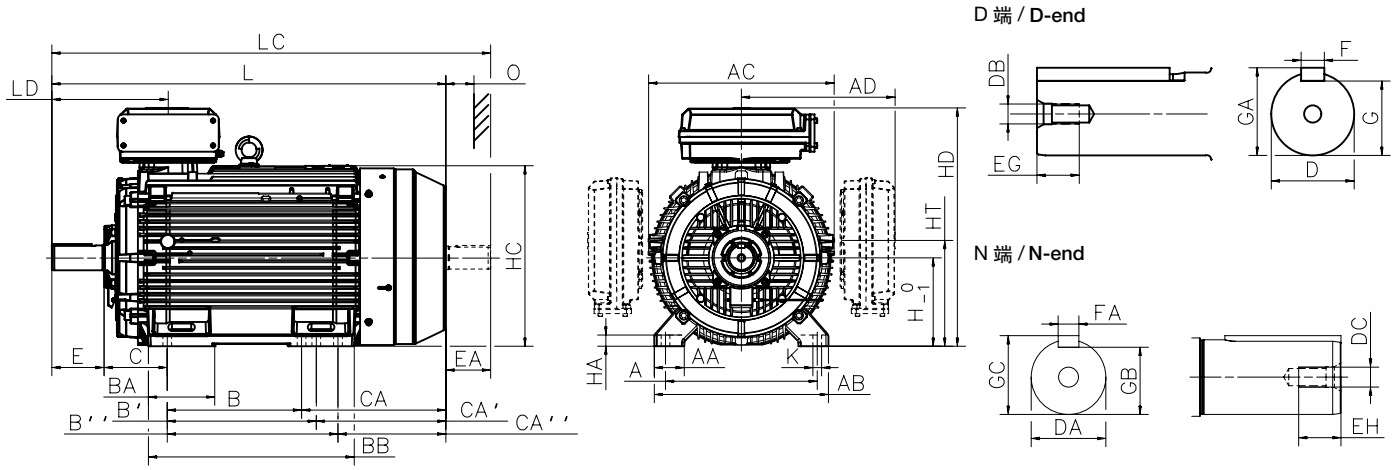
附注
Footnotes

[1] MLA2
[2] MLA2 以外其余型号
All others

外形图及外形尺寸
Dimension drawings

机座号 280-315
Frame size 280-315

底脚安装型电机
Foot-mounted cast iron motors



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

机座号 Motor size	极数 Poles	A	AA	AB	AC	AD [1]	AD [2]	B	B'	B''	BA	BB	C	CA	CA'	CA''	D	DA	DB	DC	E
280 SM_	2	457	84	530	577	481	-	368	419	-	147	506	190	400	349	-	65	60	M20	M20	140
	4-6	457	84	530	577	481	-	368	419	-	147	506	190	400	349	-	75	65	M20	M20	140
280 ML_	2	457	84	530	577	-	504	419	457	-	193	608	190	400	349	-	65	60	M20	M20	140
	4-6	457	84	530	577	481	504	419	457	-	193	608	190	400	349	-	75	65	M20	M20	140
315 SM_	2	508	100	590	654	545	-	406	457	-	180	558	216	420	369	-	65	60	M20	M20	140
	4-6	508	100	590	654	545	-	406	457	-	180	558	216	420	369	-	80	75	M20	M20	170
315 ML_	2	508	100	590	654	545	-	457	508	-	212	669	216	480	429	-	65	60	M20	M20	140
	4-6	508	100	590	654	545	-	457	508	-	212	669	216	480	429	-	90	75	M24	M20	170
315 LK_	2	508	100	590	654	562	576	508	560	710	336	851	216	635	583	433	65	60	M20	M20	140
	4-6	508	100	590	654	562	576	508	560	710	336	851	216	635	583	433	90	75	M24	M20	170

机座号 Motor size	极数 Poles	EA	EG	EH	F	FA	G	GA	GB	GC	H	HA	HC	HD [1] top-m.	HD [2] top-m.	HT	K	L	LC	LD top-m.	LD side-m.	O
280 SM_	2	140	40	40	18	18	58	69	53	64	280	31	564	762	-	337.5	24	1088	1238	336	539	100
	4-6	140	40	40	20	18	67.5	79.5	58	69	280	31	564	762	-	337.5	24	1088	1238	336	539	100
280 ML_	2	140	40	40	18	18	58	69	53	64	280	31	564	-	785	337.5	24	1189	1340	336	590	100
	4-6	140	40	40	20	18	67.5	79.5	58	69	280	31	564	762	785	337.5	24	1189	1340	336	590	100
315 SM_	2	140	40	40	18	18	58	69	53	64	315	40	638	852	-	375	28	1174	1322	356	585	115
	4-6	140	40	40	22	20	71	85	67.5	79.5	315	40	638	852	-	375	28	1204	1352	386	615	115
315 ML_	2	140	40	40	18	18	58	69	53	64	315	40	638	852	-	375	28	1285	1433	356	640	115
	4-6	140	48	40	25	20	81	95	67.5	79.5	315	40	638	852	-	375	28	1315	1463	386	670	115
315 LK_	2	140	40	40	18	18	58	69	53	64	315	40	638	852	880	359	28	1491	1639	356	721	115
	4-6	140	48	40	25	20	81	95	67.5	79.5	315	40	638	852	880	359	28	1521	1669	386	751	115

公差 Tolerances	
A, B	± 0.8
C, CA	± 0.8
D	ISO k6 < Ø 50 mm
	ISO m6 > Ø 50 mm
F	ISO h9
H	+ 0 -0.5
N	ISO j6

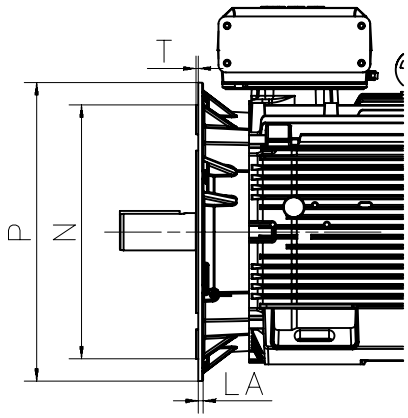
附注 Footnotes

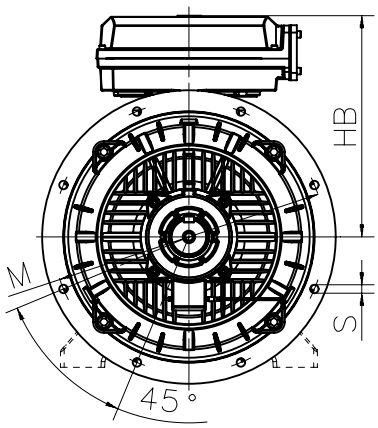
[1] 接线盒 370 Terminal box 370
[2] 接线盒 750 Terminal box 750

外形图及外形尺寸
Dimension drawings

机座号 280-315
Frame size 280-315

凸缘底脚或凸缘安装型电机
Flange-and foot & flange mounted cast iron motors





IM B5 (IM 3001)V1, (IM 3011), V3 (IM 3031), IM B35 (IM 2001), IM V15 (IM 2011), IM V36 (IM 2031)

机座号 Motor size	极数 Poles	HB [1]	HB [2]	LA	M	N	P	S	T
280 SM_	2	482	-	23	500	450	550	18	5
	4-6	482	-	23	500	450	550	18	5
280 ML_	2	-	505	23	500	450	550	18	5
	4-6	482	505	23	500	450	550	18	5
315 SM_	2	537	-	25	600	550	660	23	6
	4-6	537	-	25	600	550	660	23	6
315 ML_	2	537	-	25	600	550	660	23	6
	4-6	537	-	25	600	550	660	23	6
315 LK_	2	537	565	25	600	550	660	23	6
	4-6	537	565	25	600	550	660	23	6

公差 Tolerances	
A, B	± 0.8
D	ISO j6
F	ISO h9
H	+0 - 0.1
N	ISO j6 (280 SM_)
	ISO js6 (315_)
C	± 0.8

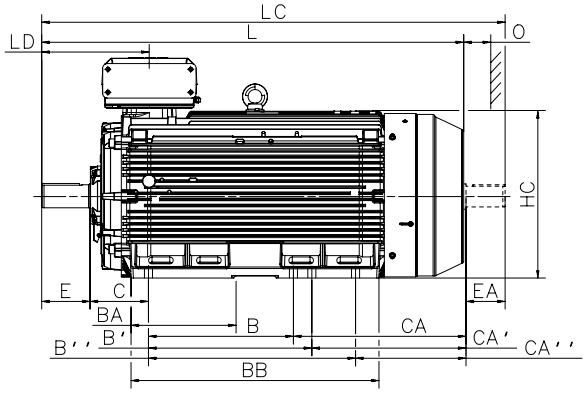
附注 Footnotes

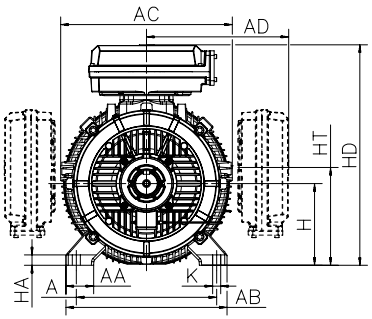
[1] 接线盒 370 Terminal box 370
[2] 接线盒 750 Terminal box 750

外形图及外形尺寸
Dimension drawings

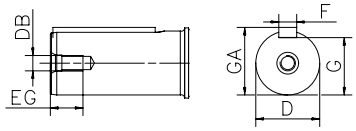
机座号 355
Frame size 355

底脚安装型电机
Foot-mounted cast iron motors

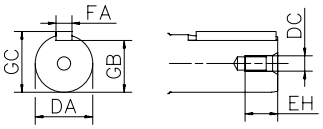




D 端 / D-end



N 端 / N-end



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

机座号 Motor size	极数 Poles	A	AA	AB	AC	AD [1]	AD [2]	B	B'	B"	BA	BB	C	CA	CA'	CA"	D	DA	DB	DC	E	EA	EG	EH
355 SM_	2	610	120	700	746	604	618	500	560	-	221	722	254	525	465	-	70	70	M20	M20	140	140	42	40
	4-6	610	120	700	746	604	618	500	560	-	221	722	254	525	465	-	100	90	M24	M24	210	170	51	48
355 ML_	2	610	120	700	746	604	618	560	630	-	267	827	254	500	570	-	70	70	M20	M20	140	140	42	40
	4-6	610	120	700	746	604	618	560	630	-	267	827	254	500	570	-	100	90	M24	M24	210	170	51	48
355 LK_	2	610	120	700	746	604	618	630	710	900	447	1077	254	750	670	480	70	70	M20	M20	140	140	42	40
	4-6	610	120	700	746	604	618	630	710	900	447	1077	254	750	670	480	100	90	M24	M24	210	170	51	48

机座号 Motor size	极数 Poles	F	FA	G	GA	GB	GC	H	HA	HC	HD [1] top-	HD [2] top-	HD [3] side-m.	HT	K	L	LC	LD [1] top-	LD [2] top-	LD [3] top-	LD side-m.	O
355 SM_	2	20	20	62.5	74.5	62.5	74.5	355	45	725	944	958	843	425	35	1409	1559	397	397	-	679	130
	4-6	28	25	90	106	81	95	355	45	725	944	958	843	425	35	1479	1659	467	467	-	750	130
355 ML_	2	20	20	62.5	74.5	62.5	74.5	355	45	725	944	958	843	425	35	1514	1664	397	397	-	732	130
	4-6	28	25	90	106	81	95	355	45	725	944	958	843	425	35	1584	1764	467	467	-	802	130
355 LK_	2	20	20	62.5	74.5	62.5	74.5	355	45	725	944	958	843	425	35	1764	1914	397	397	-	857	130
	4-6	28	25	90	106	81	95	355	45	725	944	958	843	425	35	1834	2014	467	467	-	927	130

公差 Tolerances	
A, B	± 0.8
D, DA	ISO m6
F, FA	ISO h9
H	+0 -0.1
N	ISO j6
C, CA	± 0.8

附注 Footnotes

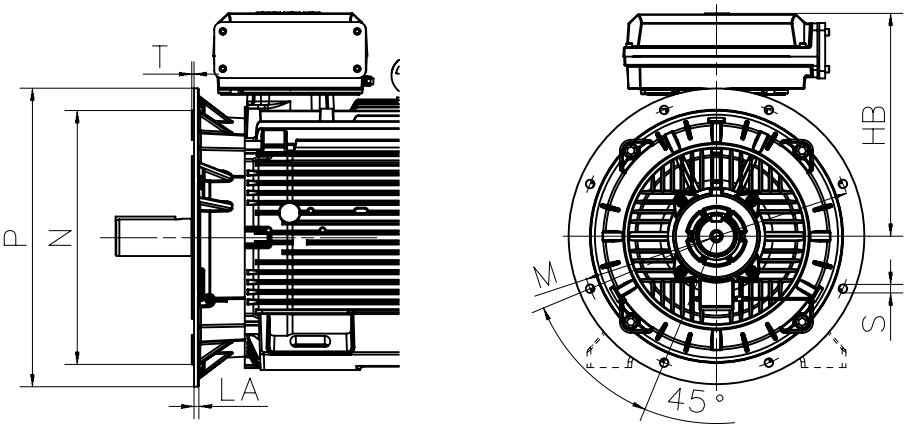
[1] 接线盒 370
[2] 接线盒 750
[3] 包含吊环

[1] Terminal box 370
[2] Terminal box 750
[3] Lifting lugs included

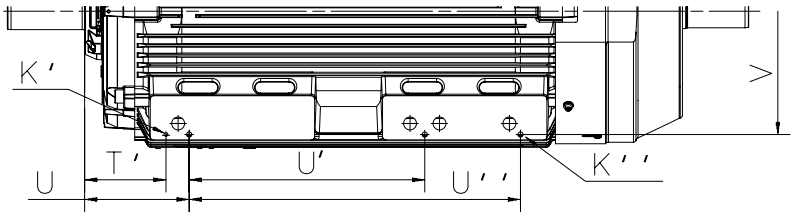
外形图及外形尺寸
Dimension drawings

机座号 355
Frame size 355

凸缘底脚或凸缘安装型电机
Flange-and foot & flange mounted cast iron motors



Bottom view



IM B5 (IM 3001), V1 (IM 3011), V3 (IM 3031), IM B35 (IM 2001), IM V15 (IM 2011), IM V36 (IM 2031)

凸缘 Flange

机座号 Motor size	极数 Poles	HB [1]	HB [2]	HB	LA	M	N	P	S	T
355 SM_	2	589	603	-	25	740	680	800	23	6
	4-6	589	603	-	25	740	680	800	23	6
355 ML_	2	589	603	-	25	740	680	800	23	6
	4-6	589	603	-	25	740	680	800	23	6
355 LK_	2	589	603	-	25	740	680	800	23	6
	4-6	589	603	-	25	740	680	800	23	6

底脚 Bottom

机座号 Motor size	极数 Poles	K'	K"	T'	U	U'	U"	V
355 SM_	2	10	M16	221	284	560	-	670
	4-6	10	M16	221	284	560	-	670
355 ML_	2	10	M16	221	284	630	-	670
	4-6	10	M16	221	284	630	-	670
355 LK_	2	10	M16	221	284	630	890	670
	4-6	10	M16	221	284	630	890	670

公差 Tolerances	
A, B	± 0.8
D, DA	ISO m6
F, FA	ISO h9
H	+0 -1.0
N	ISO js6
C, CA	± 0.8

附注 Footnotes

[1] 接线盒 370
[2] 接线盒 750

[1] Terminal box 370
[2] Terminal box 750

低压高性能过程用途铸铁电机简介 机座号 71 -132
IE3 Process performance cast iron motors in brief Size 71 -132

机座号 / Motor size		71	80	90	100	112	132
机座和端盖 Stator and end shields	材料 / Material	铸铁 / Cast iron					
	油漆颜色色调 / Paint color shade	Munsell 蓝 8B 4.5 / 3.25 / Munsell blue 8B 4.5 / 3.25					
	表面处理 / corrosion class	C3 (medium)					
底脚 / Feet	材料 / Material	铸铁一体式底脚 / Integrated cast iron feet					
轴承 Bearing	D 端 / D-end	6203-2Z/C3	6204-2Z/C3	6205-2Z/C3	6206-2Z/C3	6206-2Z/C3	6208-2Z/C3
	N 端 / N-end	6202-2Z/C3	6203-2Z/C3	6204-2Z/C3	6205-2Z/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 / D-end	V 型圈 / V-ring					
	N 端 / N-end						
润滑 / Lubrication		永久润滑密封轴承 / Permanently lubricated shielded bearings					
测量接头 Measureing nipples for condition monitioring of the bears		未配置 / Not included					
铭牌 / Rating plate	材料 / Material	不锈钢 / Stainless steel					
接线盒 Terminal box	接线盒座和盒盖 Frame and cover	铸铁 / Cast iron					
	表面处理 / corrosion class	C3 (medium)					
	盖螺钉 / Cover screws	电镀锌钢 / Zinc-electroplated steel					
连接件 Connections	电缆入口 / Threaded openings	2xM16	2xM25	2xM32			
	端子 / Terminals	6 个端子，用于跟电缆接线头连接 (不含连接头) 6 terminals for connection with cable lugs (not included)					
	电缆密封管 / Cable glands	可选用电缆密封管 / Cable glands as option					
风扇 / Fan	材料 / Material	玻璃纤维增强塑料 / Glass-fiber reinforced polypropylene					
风罩 Fan cover	材料 / Material	钢 / Steel					
	油漆颜色色调 / Paint color shade	Munsell 蓝 8B 4.5 / 3.25 / Munsell blue 8B 4.5 / 3.25					
	腐蚀等级 / corrosion class	C3 (medium)					
定子绕组 Stator winding	材料 / Material	铜 / Copper					
	绝缘 / Insulation	绝缘等级 F，温升等级 B，另行规定的情况除外 Insulation class F. Temperature rise class B unless otherwise stated.					
	绕组保护 / Winding protection	PTC 热敏电阻（3 个串联），150˚C / 3 PTC thermistors,150˚C					
转子绕组 / Rotor winding	材料 / Material	压铸铝 / Pressure die-cast alumiunm					
平衡方法 Balancing method		半键平衡 / Half-key balancing as standard					
键槽 / Keyway		闭口槽 / Closed keyway					
排水孔 / Drain holes		标准排水孔，交付时为打开状态 / Drain holse with closable plastic plugs, open on delivery					
防护等级 / Enclosure		IP 55					
冷却方式 / Cooling method		IC 411					

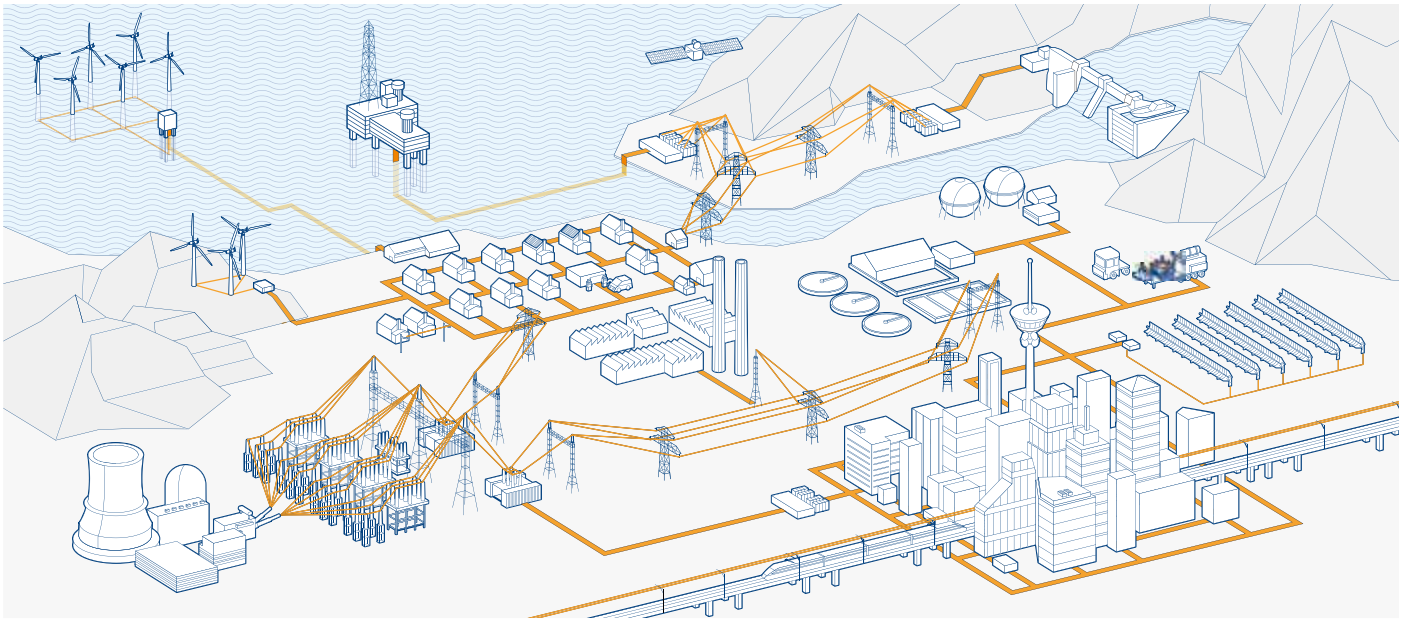
低压高性能过程用途铸铁电机简介 机座号 160 -250
IE3 Process performance cast iron motors in brief Size 160 -250

机座号 / Motor size		160	180	200	225	250
机座和端盖 Stator and end shields	材料 / Material	铸铁 / Cast iron				
	油漆颜色色调 / Paint color shade	Munsell 蓝 8B 4.5 / 3.25 / Munsell blue 8B 4.5 / 3.25				
	表面处理 / corrosion class	C3 (medium)				
底脚 / Feet	材料 / Material	铸铁一体式底脚，当接线盒为左 / 右，在安装时，为分体式底脚 Integrated cast iron feet，bolted feet when terminal box on LSH/RHS				
轴承 Bearing	D 端 / D-end	6309/C3	6310/C3	6312/C3	6313/C3	6315/C3
	N 端 / N-end	6209/C3	6209/C3	6210/C3	6212/C3	6213/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	Gamma 环密封件 /Gamma-ring				
	N 端 / N-end					
润滑 / Lubrication		可润滑轴承，注油嘴 M6 × 1 / Regreasable bearings, regreasing nipples M6x1				
测量接头 Measureing nipples for condition monitioring of the bears		配置 / Included				
铭牌 / Rating plate	材料 / Material	不锈钢 / Stainless steel				
接线盒 Terminal box	接线盒座和盒盖 Frame and cover	铸铁 / Cast iron				
	表面处理 / corrosion class	C3 (medium)				
	盖螺钉 / Cover screws	电镀锌钢 / Zinc-electroplated steel				
连接件 Connections	电缆入口 / Cable entries	2xM40, 2xM20		2xM63, 2xM20		
	端子 / Terminals	6 个端子，用于跟电缆接线头连接 (这里不包括连接头) 6 terminals for connection with cable lugs (not included)				
	电缆密封管 / Cable glands	标准情况下，包含电缆出线法兰，可选用电缆密封管 / Cable flange included, glands as option				
风扇 / Fan	材料 / Material	玻璃纤维增强塑料 /Glass-fiber reinforced polypropylene				
风罩 Fan cover	材料 / Material	钢 / Steel				
	油漆颜色色调 / Paint color shade	Munsell 蓝 8B 4.5 / 3.25 / Munsell blue 8B 4.5 / Munsell blue 8B 4.5/3.25				
	腐蚀等级 / corrosion class	C3 (medium)				
定子绕组 Stator winding	材料 / Material	铜 / Copper				
	绝缘 / Insulation	绝缘等级 F，温升等级 B，另行规定的情况除外 Insulation class F. Temperature rise class B unless otherwise stated.				
	绕组保护 / Winding protection	PTC 热敏电阻（3 个串联），150˚C / 3 PTC thermistors,150˚C				
转子绕 / Rotor winding	材料 / Material	压铸铝 / Pressure die-cast alumiunm				
平衡方法 / Balancing method		半键平衡 / Half-key balancing as standard				
键槽 / Keyway		闭口槽 / Closed keyway				
排水孔 / Drain holes		标准排水孔，交付时为打开状态 /Drain holse with closable plastic plugs, open on delivery				
防护等级 / Enclosure		IP 55				
冷却方式 /Cooling method		IC 411				

低压高性能过程用途铸铁电机简介 机座号 280 -355
IE3 Process performance cast iron motors in brief Size 280 -355

机座号 / Motor size			280	315	355
机座和端盖 Stator and end shields	材料 / Material		铸铁 / Cast iron		
	油漆颜色色调 / Paint color shade		Munsell 蓝 8B 4.5 / 3.25 / Munsell blue 8B 4.5 / 3.25		
	表面处理 / Corrosion class		C3 (medium)		
底脚 / Feet	材料 / Material		铸铁一体式底脚 / Integrated cast iron feet		
轴承 Bearings	D 端 / D-end	2 极 / 2-pole	6316 / C3	6316 / C3	6316M / C3
		4-12 极 / 4-12-pole	6316 / C3	6319 / C3	6322 / C3
	N 端 / N-end	2 极 / 2-pole	6316 / C3	6316 / C3	6316M / C3
		4-12 极 / 4-12-pole	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 / D-end		V 型圈或迷宫式密封件 / V-ring or labyrinth seal		
	N 端 / N-end				
润滑 / Lubrication			可润滑轴承，注油嘴 M10x1 / Regreasable bearings, regreasing nipples M10x1		
测量接头 / Measuring nipples			配有 / Included		
铭牌 / Rating plate	材料 / Material		不锈钢 / Stainless steel		
接线盒 Terminal box	接线盒座和盒盖 / Frame and cover		铸铁 / Cast iron		
	表面处理 / Corrosion class		C3 (medium)		
	盖螺钉 / Cover screws		电镀锌钢 / Zinc-electroplated steel		
连接件 Connections	电缆入口	2-4 极 / 2-4-pole	2xM63+2xM20	2xM63, 2xØ48-60+2xM20	2xØ48-60, 60-80, 2xM20
	Cable-entries	6 极 / 6 pole			2xØ32-49, 48-60, 2M20
			连接件详细情况，请参见有关接线盒的章节 See section Standard terminal box for detailed information		
	端子 / Terminals		6 个端子，用于跟电缆接线头连接 (这里不包括连接头) 6 terminals for connection with cable lugs (not included)		
	电缆密封管 / Cable glands		标准情况下，包含电缆出线法兰，可选用电缆密封管 / Cable flange included, glands as option		
风扇 / Fan	材料 / Material		玻璃纤维增强塑料 / Glass-fiber reinforced polypropylene		
风罩 Fan cover	材料 / Material		钢 / Steel		
	油漆颜色色调 / Paint color shade		Munsell 蓝 8B 4.5 / 3.25 / Munsell blue 8B 4.5 / 3.25		
	腐蚀等级 / Corrosion class		C3 (medium)		
定子绕组 Stator winding	材料 / Material		铜 / Copper		
	绝缘 / Insulation		绝缘等级 F，温升等级 B，另行规定的情况除外 Insulation class F. Temperature rise class B unless otherwise stated		
	绕组保护 / Winding protection		PTC 热敏电阻（3 个串联），150˚C / 3 PTC thermistors, 150˚C		
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		
键槽 / Keyway			开口槽 / Open keyway		
排水孔 / Drain holes			标准排水孔，交付时为打开状态 Drain holes with closable plastic plugs, open on delivery		
防护等级 / Enclosure			IP 55, 可提供更高等级防护 / IP 55, higher protection on request		
冷却方式 / Cooling method			IC 411		

电机、发电机和机械传动产品以及全套服务的总览



ABB是低压、中压和高压电机及发电机、机械传动产品制造领域的领军企业，提供全套服务。我们掌握各种工业过程领域的专业知识，确保能够根据您的需求制定最佳的解决方案。

低压及高压
IEC感应电机
– 过程用途电机
– 一般用途电机
– 高压铸铁电机
– 模块化感应电机
– 模块化滑环式电机
– 同步磁阻电机

低压及中压
NEMA电机
– 钢制开启式电机
– 户外电机、水冷式电机、风机用电机
– 铸铁电机（TEFC）
– 空气冷却式（TEAAC）电机

用于易爆气体环境的电机和发电机
– IEC、NEMA电机和发电机，各种防护类型

同步电机

同步发电机
– 柴油机及汽油机用同步发电机
– 蒸汽及燃气轮机用同步发电机

风力发电机

小型水电站用发电机

其它电机及发电机
– 制动电机
– 直流电机及发电机
– 齿轮电机
– 船用电机及发电机
– 单相电机
– 耐高温电机
– 永磁电机及发电机
– 高速电机
– 烟道电机
– 清洁电机
– 水冷式电机
– 发电机设备
– 辊道电机
– 伺服电机
– 牵引电机

生命周期服务
– 安装和试运行
– 服务合同
– 预防性维护
– 备件
– 诊断
– 维修及整修
– 维修及整修
– 电机及发电机更换
– 技术支持及咨询
– 培训

机械传动部件、轴承、齿轮

Total offer of motors, generators and mechanical power transmission products with a complete portfolio of services

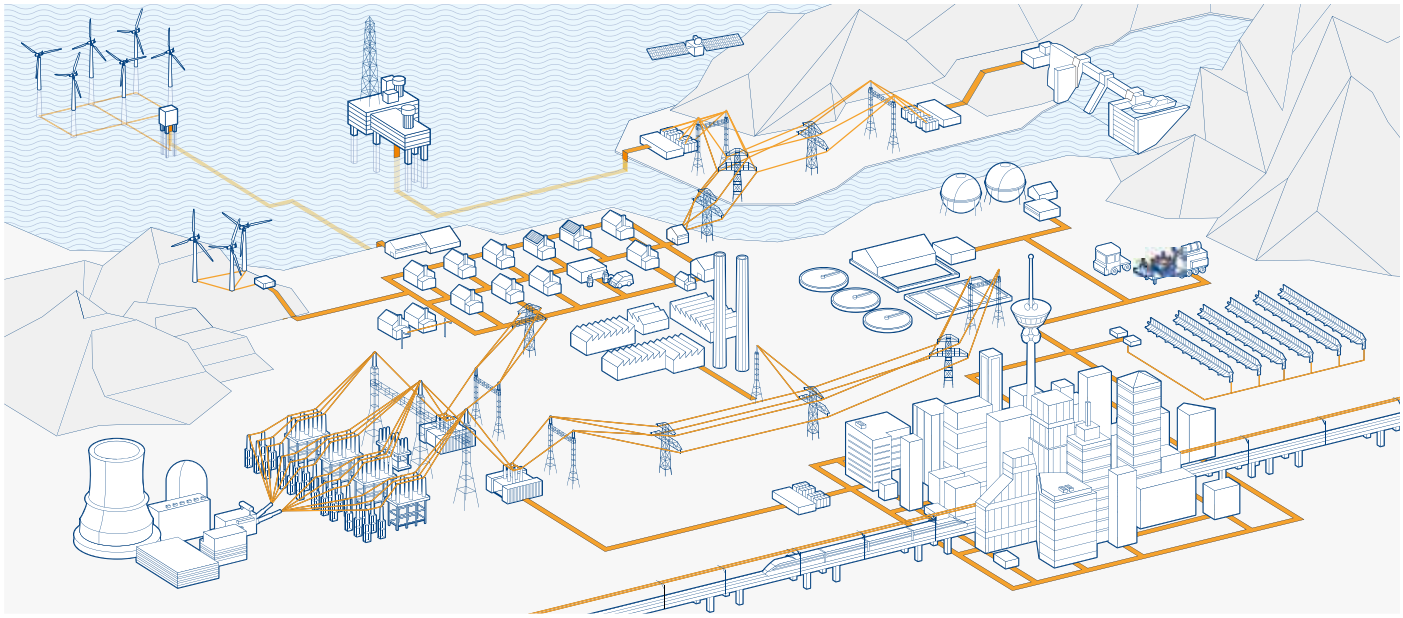


ABB is the leading manufacturer of low, medium and high voltage motors and generators, mechanical power transmission products with an offering of a complete portfolio of services. Our in-depth knowledge of virtually every type of industrial processing ensures we always specify the best solution for your needs.

Low and high voltage IEC induction motors
– Process performance motors
– General performance motors
– High voltage cast iron motors
– Induction modular motors
– Slip-ring modular motors
– Synchronous reluctance motors

Low and medium voltage NEMA motors
– Steel frame open drip proof (ODP) motors
– Weather protected, water cooled, fan ventilated
– Cast iron frame (TEFC)
– Air to air cooled (TEAAC) motors

Motors and generators for explosive atmospheres
– IEC and NEMA motors and generators, for all protection types

Synchronous motors

Synchronous generators
– Synchronous generators for diesel and gas engines
– Synchronous generators for steam and gas turbines

Wind power generators

Generators for small hydro

Other motors and generators
– Brake motors
– DC motors and generators
– Gear motors
– Marine motors and generators
– Single phase motors
– Motors for high ambient temperatures
– Permanent magnet motors and generators
– High speed motors
– Smoke extraction motors
– Wash down motors
– Water cooled motors
– Generator sets
– Roller table motors
– Servo motors
– Traction motors

Life cycle services
– Installation and commissioning
– Service contracts
– Preventive maintenance
– Spare parts
– Diagnosis
– Repair and refurbishment
– Site survey and overhaul
– Replacement motors and generators
– Technical support and consulting
– Trainings

Mechanical power transmission components, bearings, gears

联系我们
Contact us

9AKK106713A4712 CN-EN 05-2016

ABB 中国电机与发电机业务单元区域中心

北方区域中心（北京、天津、河北、河南、山西及内蒙古）
北京市朝阳区酒仙桥路 10 号恒通广厦
邮编：100015
电话：010-8456 6688
传真：010-6423 1613

南方区域中心（广东、广西、福建及海南）
广东省广州市珠江新城珠江西路 15 号珠江城大厦 29 楼
邮编：510623
电话：020-3785 0613
传真：020-3785 0608

东区 - 上海区域中心（上海和浙江）
上海市闵行区天星路 380 号
邮编：200245
电话：021-6113 7688
传真：021-6113 7788

东区 - 南京区域中心（江苏、安徽及山东）
南京市洪武北路 55 号置地广场 11 楼
邮编：210005
电话：025-8476 5716
传真：025-8663 5338

西北区域中心（陕西、宁夏、新疆、青海及甘肃）
西安市经济技术开发区文景路中段 158 号
邮编：710075
电话：029-8575 8288
传真：029-8575 8299

西南区域中心（四川、云南、贵州、西藏及重庆）
成都市人民南路四段 3 号来福士广场 T1 栋 8 楼
邮编：610042
电话：028-8526 8800
传真：028-8526 8900

华中区域中心（湖北、湖南及江西）
湖北省武汉市武昌区临江大道 96 号武汉万达中心 21 楼
邮编：430060
电话：027-8839 5888
传真：027-8839 5999

东北区域中心（辽宁、吉林及黑龙江）
辽宁省沈阳市和平区南京北街 206 号沈阳假日城市广场 2 座 16 楼
邮编：110001
电话：024-3132 7741
传真：024-3132 6699

扫码登陆 ABB 官网电机与发电机产品页面，通过在页面下方提交您对产品和服务的问题，同时预留您的联系方式，ABB 相关销售人员将在第一时间与您取得联系，给您专业、及时的回复。

用电力与效率
创造美好世界™