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

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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

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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。

产品优点

- 高可靠性
采用 ABB 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

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

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

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.

Advantages

- High Reliability
ABB uses the high 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

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.

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 $\eta = 94.2\%$ |
| 普通效率 45kW 电机 | 效率 $\eta = 91.7\%$ |
| IE3 M3BP 电机输入功率 | $=45/94.2*100=47.77\text{kW}$ |
| 普通效率电机输入功率 | $=45/91.7*100=49.07\text{kW}$ (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 | $= (49.07 - 47.77) * 8760 * 0.8 = 9110 \text{ RMB}$ (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，电机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。

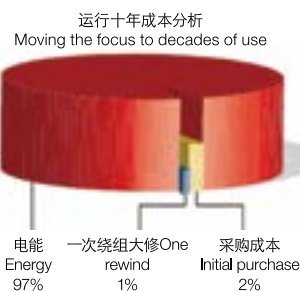
Save operation cost

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

| | |
|-------------------------|--|
| ABB IE3 M3BP 45kW motor | Efficiency $\eta = 94.2\%$ |
| IE2 45kW motor | Efficiency $\eta = 91.7\%$ |
| IE3 M3BP Input | $=45/94.2*100=47.77\text{kW}$ |
| IE2 motor input | $=45/91.7*100=49.07\text{kW}$ (1.30kW deviation) |
| Annual operation cost | =Input*Run time*Electricity price |
| Annual energy saving | $= (49.07 - 47.77) * 8760 * 0.8 = 9110 \text{ RMB}$ (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.

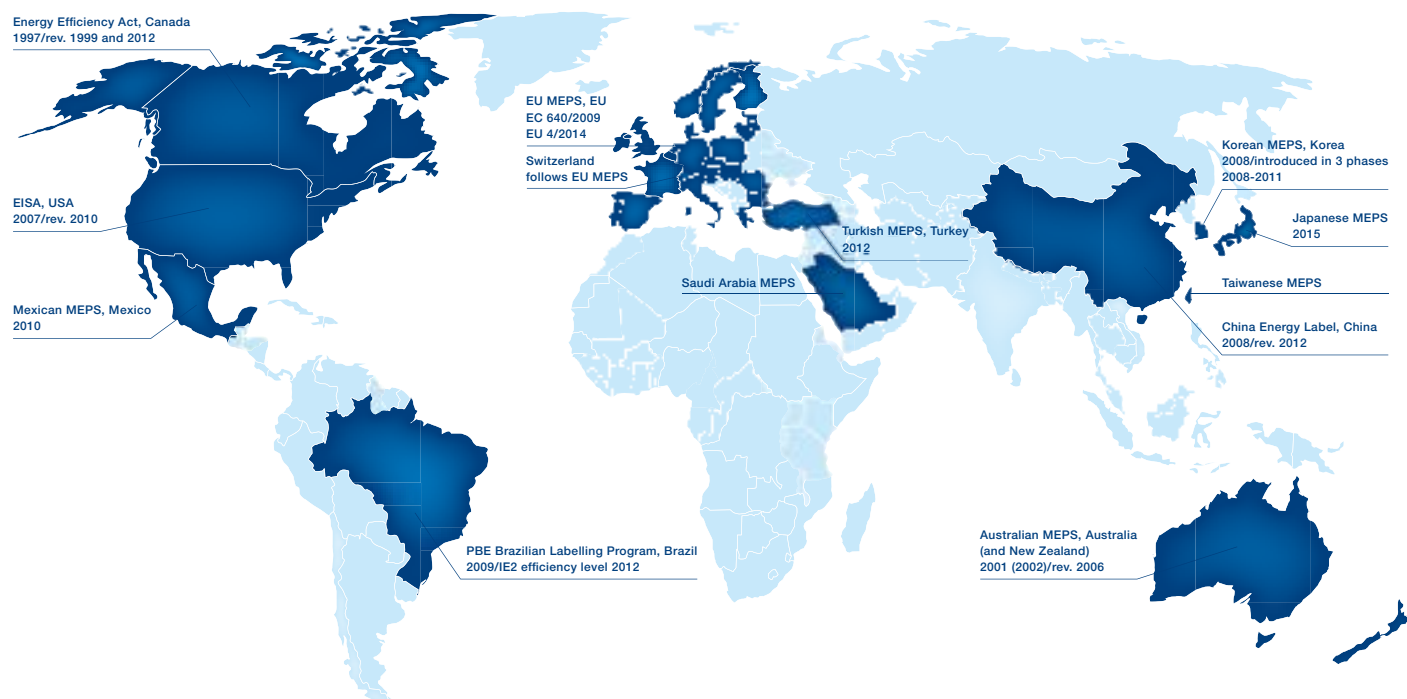
Power Plant Dry Cooling Tower

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。

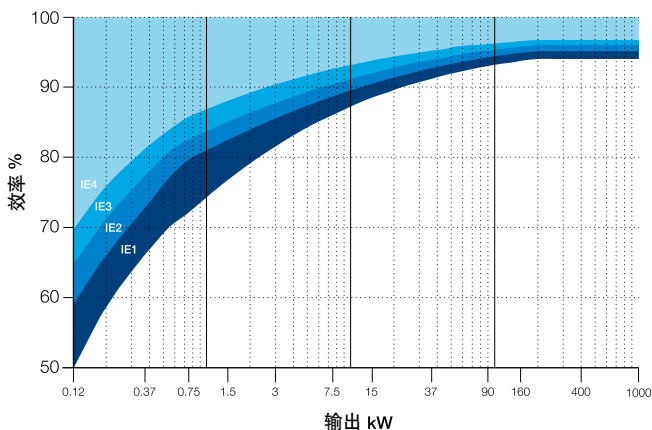
统一的标准和全球日益普及的最低能效标准 (MEPS) 对于全球气候保护是个好消息, 但是需要谨记的是协调能效标准是个需要持续的过程。尽管最低能效标准在一些国家/地区已生效, 但各地的范围和要求方面有所不同, 且仍在不断进化。与此同时, 一些新的国家/地区也正在计划采用当地的最低能效标准。获取最新信息请访问 www.abb.com/motors&generators/energyefficiency

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 EPAact (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 CO₂ 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.

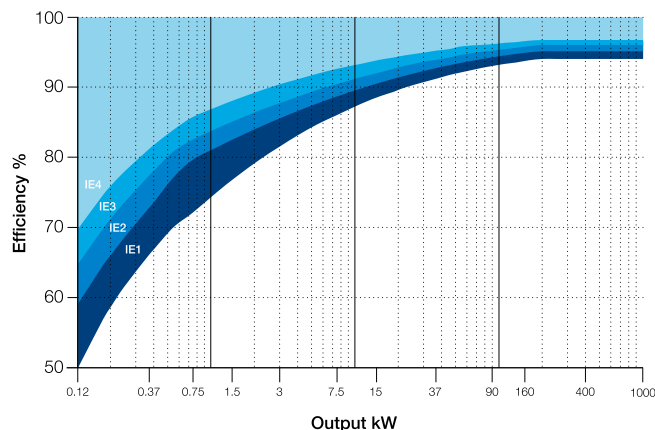
Harmonized standards and the increasing adoption of MEPS around the world are good news. However, it is important to remember that harmonization is an ongoing process. Even though MEPS are already in effect in several regions, they are evolving and they differ in terms of scope and requirements. At the 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 EPAact 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。

作为电机技术领导企业，ABB 提供范围广泛的低压电机。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.

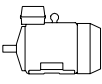
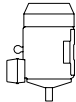
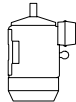
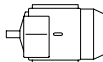
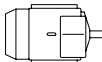
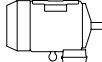
As the Motor leading Enterprise, ABB offers a wide range of LV Motors available. It has long advocated the need for efficiency in motors, and high efficiency products have formed the core of its portfolio for many years. The core of ABB's Process performance range is based on full range in IE2 and IE3 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

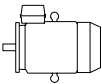
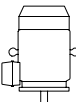
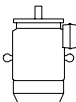
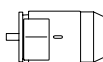
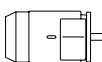
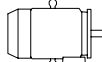
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| IM B3 IM 1001 | IM V5 IM 1011 | IM V6 IM 1031 | IM B6 IM 1051 | IM B7 IM 1061 | IM B8 IM 1071 |

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

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

代码 I / 代码 II
Code I / code II

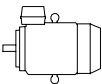
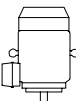
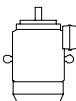
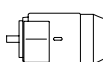
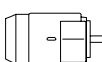
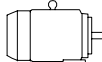
| | | | | | |
|---|---|---|---|---|--|
|  |  |  |  |  |  |
| IM B5 IM 3001 | IM V1 IM 3011 | IM V3 IM 3031 | *) IM 3051 | *) IM 3061 | *) IM 3071 |

产品代码 12
Product code pos. 12

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

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

代码 I / 代码 II
Code I / code II

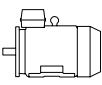
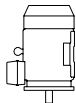
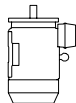
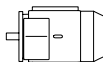
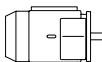
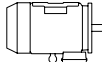
| | | | | | |
|---|---|---|---|---|--|
|  |  |  |  |  |  |
| IM B14 IM 3601 | IM V18 IM 3611 | IM V19 IM 3631 | *) IM 3651 | *) IM 3661 | *) IM 3671 |

产品代码 12
Product code pos. 12

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

底脚和凸缘安装型电机, 大凸缘 Foot- and flange-mounted motor with feet, large flange

代码 I / 代码 II
Code I / code II

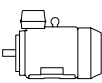
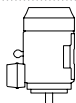
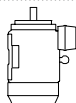


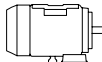
| | | | | | |
|---|---|---|---|---|--|
|  |  |  |  |  |  |
| IM B35 IM 2001 | IM V15 IM 2011 | IM V35 IM 2031 | *) IM 2051 | *) IM 2061 | *) IM 2071 |

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

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

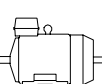
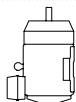
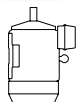
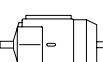

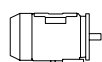
| | | | | | |
|---|---|---|---|---|--|
|  |  |  |  |  |  |
| IM B34 IM 2101 | IM V17 IM 2111 | IM 2131 | IM 2151 | IM 2161 | IM 2171 |

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

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

代码 I / 代码 II
Code I / code II

| | | | | | |
|---|---|---|---|---|--|
|  |  |  |  |  |  |
| IM 1002 | IM 1012 | IM 1032 | IM 1052 | IM 1062 | IM 1072 |

产品代码 12
Product code pos. 12

*) 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 circulator (open circuit) |

Position 2

| | |
|----|--|
| A: | 表示空气（为简化指示而省略） For air (omitted for simplified 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 simplified 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 Mounting | 56 ≤ H ≤ 132 | | | 132 < H ≤ 280 | | | H > 280 | | |
|-------------------------|-------------------------|----------------------|--------------------|---------------------------------|----------------------|--------------------|---------------------------------|----------------------|--------------------|---------------------------------|
| | | 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 |

IK 代码说明

Explanation of the IK code

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

位置1

Position 1

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

位置2

Position 2

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

位置1

Position 1

IK代码和冲击能量之间的关系：
Relation between IK code and impact energy:

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

产品概述 - 绝缘

General information - Insulation

ABB 采用 F 级绝缘材料，B 级温升，是业界对电机的通用要求。

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

B 级绝缘 (130°C)

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

F 级绝缘 (155°C)

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

H 级绝缘 (180°C)

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

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

Thermal class 130 (B)

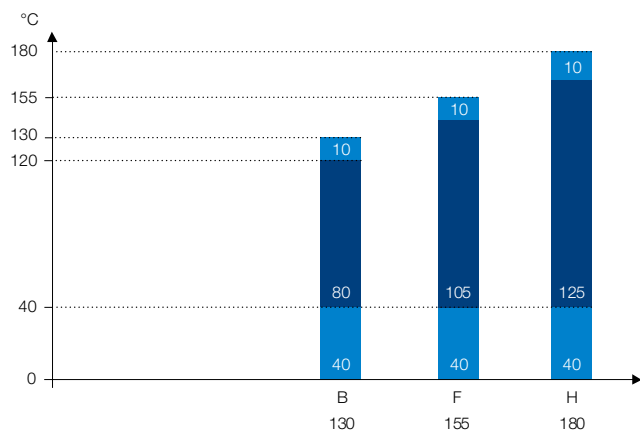
- Nominal ambient temperature 40°C
- Max permissible temperature rise 80K
- Hot spot temperature margin 10K

Thermal class 155 (F)

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

Thermal class 180 (H)

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



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

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 with low 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 and some 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 $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$ ，海拔高度不超过 1000m。

电压、频率

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

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

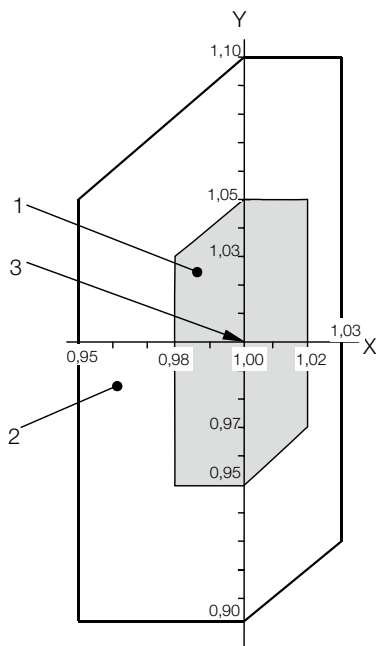
Rated Output

M3BP motors rated outputs means that the motor runs under continuous duty S1 (IEC 60034-1) operation at ambient temperature from $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$ and at altitudes of up to 1000 m above sea level.

Voltage and Frequency

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

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



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

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

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 electrical data

| | 效率 Efficiency | 功率因数* Power factor | 启动电流 Locked rotor current I_s / I_N | 堵转转矩 Locked rotor torque T_l / T_N | 最大转矩 Breakdown torque T_b / T_N | 转动惯量 Moment of inertia | 噪声等级 Noise level |
|---------------|------------------|-----------------------|--|---|--|------------------------------|---------------------|
| PN (kW) ≤ 150 | -15 % (1-η) | -1/6 (1-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 40°C, 最高海拔为 1000m。如果当电机在较高的环境温度或海拔下运行, 输出功率相应降低。详情请咨询 ABB。

Ambient temperatures and high altitudes

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

对于不同高度和 (或) 不同环境温度的功率换算系数 kHT

Factor kHT for different site altitudes and / or coolant temperature

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

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

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

由于在速度和工艺用电方面的优化，ABB 低压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。

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苛刻的应用要求。

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：

1. 确定规格

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

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

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

尤其是在使用较长的供电电缆时，还必须考虑供电电缆的压降。

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

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

The use of ABB industrial drives together with 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.

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 demanding applications.

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

1. Dimensioning

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

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

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

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

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 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。

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. 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。

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.

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。

Insulation and filters must be selected according to Table 2.

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

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

| 所要求的绕组绝缘和滤波器 | |
|------------------------|--|
| $500V < U_N \leq 600V$ | ABB 标准绝缘 +dU/dt 滤波器 或 ABB 特殊绝缘（变量代码 405） |
| $600V < U_N \leq 690V$ | ABB 特殊绝缘（变量代码 405） 及 变频器输出端的 dU/dt 滤波器 |

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

dU/dt 滤波器的详细信息，请参见相关的 ABB 驱动目录。

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

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。

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.

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

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

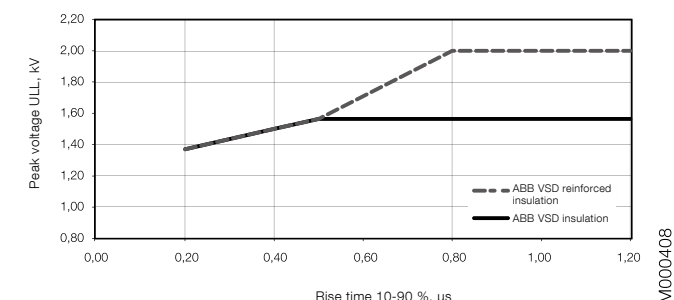
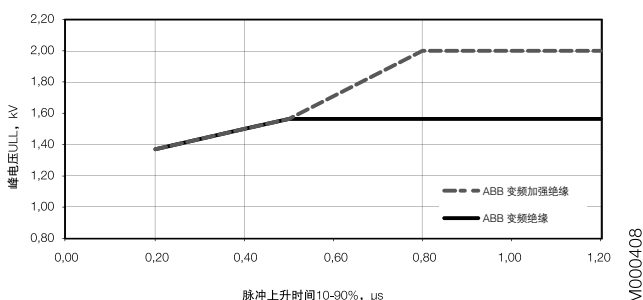
- 1300 V peak: Standard insulation
- 1800 V peak: Special insulation, variant code 405

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。

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.

图 1 受脉冲上升时间的影响，电机端子处允许的最大相对地电压峰值

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



6. 轴承电流

必须在所有电机中消除轴承电压和电流，确保整项工作的可靠开展。如果使用具有非受控直流电压的驱动器，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。

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.

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。

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 \leq 机座号 \leq IEC 355 | 非驱动端绝缘轴承 |
| $P_N \geq 350$ kW | 非驱动端绝缘轴承，关在变频器中设置共模滤波器 |

共模滤波器

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

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。

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

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

Common mode filters

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

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。

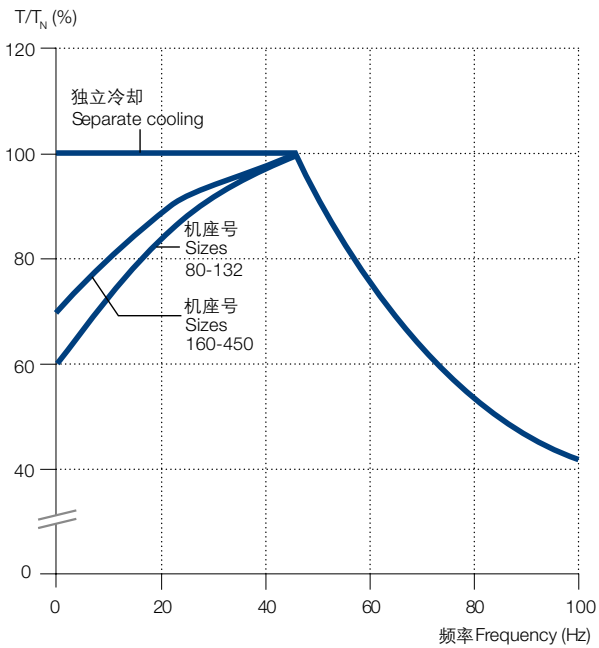
However, if only class F temperature rise with a sinusoidal supply is indicated for the motor in the technical data section, dimensioning must be done according to the temperature rise curve B.

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 to 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

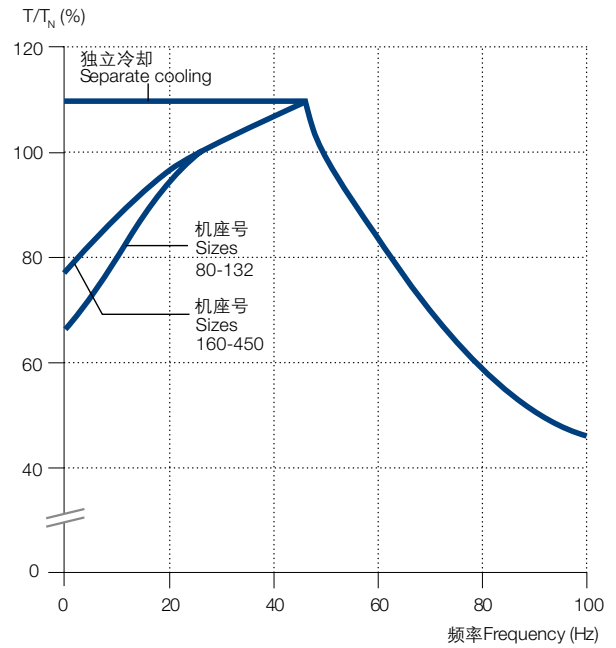
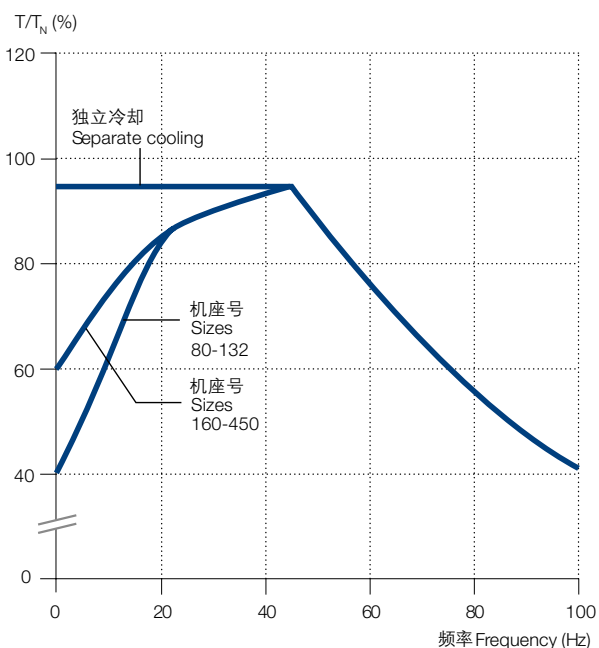
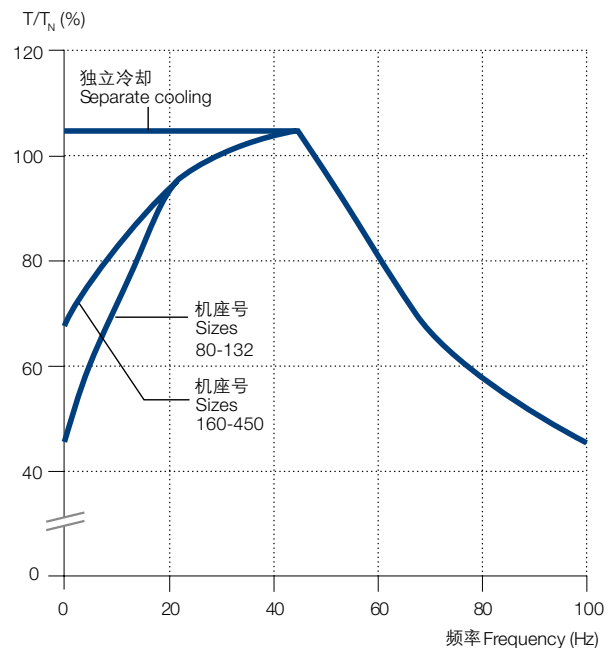


图 3 其它控制类型的变频器负载曲线
Figure 3. Loadability curves for other frequency converters

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

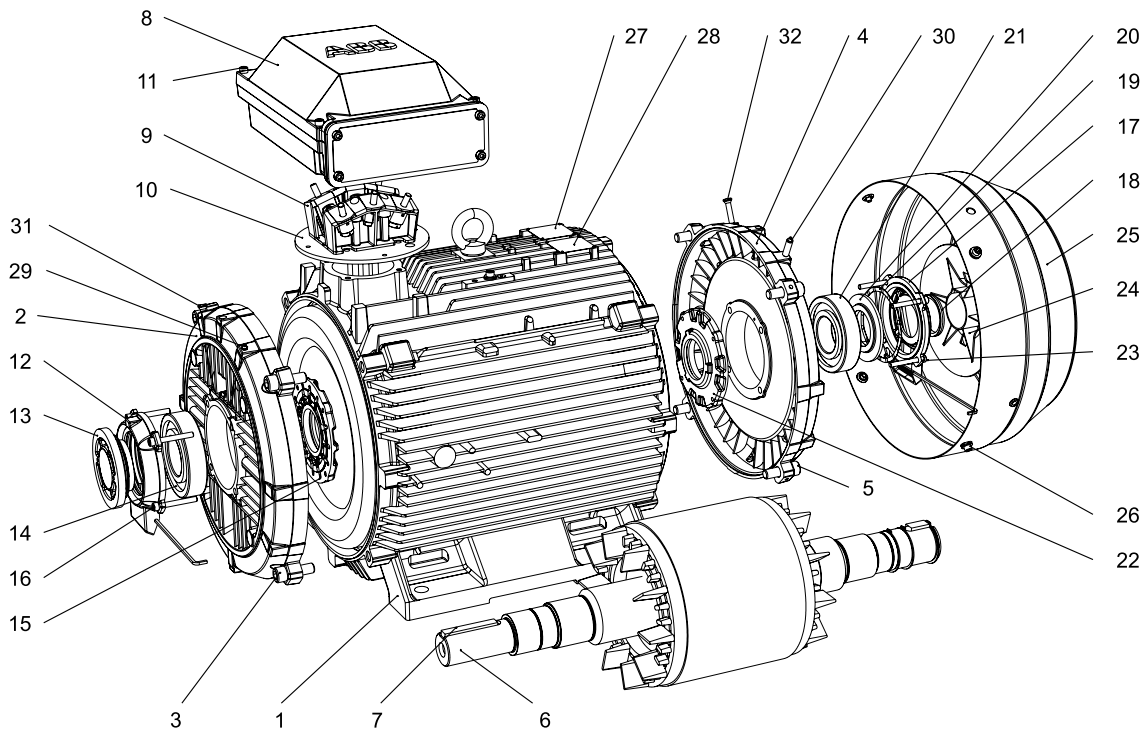
机座号 71-355, 0.18-355kW
Motor size 71-355, 0.18-355kW

| | | | |
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| 机械设计 | | Mechanical design | |
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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 | 16 轴承盖螺钉 (D端) | 1 Stator frame | 16 Screws for bearing cover |
| 2 端盖 (D端) | 17 轴承外盖 (N端) | 2 End shield, D-end | 17 Outer bearing cover, N-end |
| 3 端盖螺钉 (D端) | 18 密封件 (N端) | 3 Screws for end shield, D-end | 18 Seal, N-end |
| 4 端盖 (N端) | 19 波形弹簧 | 4 End shield, N-end | 19 Wave spring |
| 5 端盖螺钉 (N端) | 20 阀盘 (N端) | 5 Screws for end shield, N-end | 20 Valve disc, N-end |
| 6 带轴转子 | 21 轴承 (N端) | 6 Rotor with shaft | 21 Bearing, N-end |
| 7 键 (D端) | 22 轴承内盖 (N端) | 7 Key, D-end | 22 Inner bearing cover, N-end |
| 8 接线盒 | 23 轴承盖螺钉 (N端) | 8 Terminal box | 23 Screws for bearing cover |
| 9 接线板 | 24 风扇 | 9 Terminal board | 24 Fan |
| 10 中间法兰 | 25 风罩 | 10 Intermediate flange | 25 Fan cover |
| 11 接线盒盖螺钉 | 26 风罩螺钉 | 11 Screws for terminal box cover | 26 Screws for fan cover |
| 12 轴承外盖 (D端) | 27 铭牌 | 12 Outer bearing cover, D-end | 27 Rating plate |
| 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) | 28 润滑铭牌 | 13 Valve disc with labyrinth seal, D-end; standard in 2-pole motors, V-ring in 4-8 pole motors | 28 Lubrication plate |
| 14 轴承 (D端) | 29 注油嘴 (D端) | 14 Bearing, D-end | 29 Grease nipple, D-end |
| 15 内轴承盖 (D端) | 30 注油嘴 (N端) | 15 Inner bearing cover, D-end | 30 Grease nipple, N-end |
| | 31 SPM注油嘴 (D端) | | 31 SPM nipple, D-end |
| | 32 SPM注油嘴 (N端) | | 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

| 机座号 Motor size | 极数 Number of poles | 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) | |
| | | 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 equipped 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 ₁ | 2-4 | 750 | E | E-D | Medium | 4x240 | M12 |
| 355 SM ₂ | 6 | 370 | D | - | 2xM63x1.5 | 2x240 | M12 |
| 355 ML ₁ LK ₁ | 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。

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) | |

机座号

| 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

When placing an order, specify motor type, size and product code according to the following example.

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 | |

Frame Size

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)

安装型式

A= 底脚安装型, 顶部安装型接线盒
R= 底脚安装型, 从 D 端观察的接线盒, 右侧安装
L= 底脚安装型, 从 D 端观察的接线盒, 左侧安装
B= 凸缘安装型, 大凸缘
C= 凸缘安装型, 小凸缘 (机座号 71-132)
H= 底脚安装型和凸缘安装型, 顶部安装型接线盒
J= 底脚安装型和凸缘安装型, 带螺孔的小凸缘
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
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
V= 凸缘安装型, 专用凸缘
F= 底脚安装型和凸缘安装型, 专用凸缘

位置 13 (数据表中用黑点标记)

电压和频率

单速电机

B 380 V Δ 50 Hz
D 400 V Δ , 415 V Δ , 690 VY 50 Hz
E 500 V Δ 50 Hz
E 500 V Y 50 Hz
S 230 V Δ , 400 VY, 415 VY 50 Hz
T 660 V Δ 50 Hz
U 690 V Δ 50 Hz
X 其他额定电压、连接或频率, 最高 690 V

双速电机

A 220 V 50 Hz
B 380 V 50 Hz
D 400 V 50 Hz
E 500 V 50 Hz
S 230 V 50 Hz
X 其他额定电压、连接或频率, 最高 690 V

备注

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)

位置 14

产品族代码

A、B、C...G...L

必要时, 变量代码必须跟在产品代码后面。

Positions 12 (marked with black dot in data table)

Mounting arrangement

A=Foot-mounted, top-mounted terminal box
R=Foot-mounted, terminal box RHS seen from D-end
L=Foot-mounted, terminal box LHS seen from D-end
B=Flange-mounted, large flange
C=Flange-mounted, small flange (size 71 to 132)
H=Foot-and flange-mounted, terminal box top-mounted
J=Foot-and flange-mounted, small flange with tapped holes
S=Foot-and flange-mounted, terminal box RHS seen from D-end
T=Foot-and flange-mounted, terminal box LHS seen from D-end
V=Flange-mounted, special flange
F=Foot-and flange-mounted, special flange

Positions 13 (marked with black dot in data table)

Voltage and frequency

Single-speed motors

B 380 V Δ 50 Hz
D 400 V Δ , 415 V Δ , 690 VY 50 Hz
E 500 V Δ 50 Hz
E 500 V Y 50 Hz
S 230 V Δ , 400 VY, 415 VY 50 Hz
T 660 V Δ 50 Hz
U 690 V Δ 50 Hz
X Other rated voltage, connection or frequency, 690 V maximum

Double - speed motors

A 220 V 50 Hz
B 380 V 50 Hz
D 400 V 50 Hz
E 500 V 50 Hz
S 230 V 50 Hz
X Other rated voltage, connection or frequency, 690 V maximum

Remark

For voltage code X the variant code 209 Non-standard voltage or frequency (special winding) must be ordered.

Positions 14

Genertion code

A、B、C...G...L

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 Δ / 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 Δ | 50 | 1463 | 5.5 | 11.9 | 0.74 |
| 460 Δ | 60 | 1767 | 5.5 | 10.4 | 0.74 |
| 50Hz: IE3-89.6(100%) | | | | | |
| | | | | 68 kg | |
| 6208-2Z/C3 | | | | 6208-2Z/C3 | |
| 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 Δ | 50 | 90 | 1485 | 158 | 0.86 S1 |
| 380 Δ | 50 | 90 | 1483 | 166 | 0.87 S1 |
| 415 Δ | 50 | 90 | 1486 | 155 | 0.85 S1 |
| 440 Δ | 60 | 90 | 1785 | 144 | 0.86 S1 |
| 460 Δ | 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 100% | 3/4 负载 load 75% | 1/2 负载 load 50% | | cos φ | I _N A | I _s /I _N | T _N Nm | T _l /T _N | T _b /T _N | | | |
| kW | | | r/min | | | | | | | | | | J=1/4 GD ² kgm ² | kg | dB | |
| 3000 r/min = 2极 / 2 poles | | | | 400 V 50 Hz | | | | GENELEC- 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 132SME 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_l/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 100% | 3/4 负载 load 75% | 1/2 负载 load 50% | | cos φ | I _N A | I _S /I _N | T _N Nm | T _L /T _N | | | |
| kW | | | r/min | 400 V 50 Hz | | | CENELEC- 设计 design | | | | | J=1/4 GD ² kgm ² | kg | dB | |
| 1500 r/min = 4极/ 4 poles | | | | | | | | | | | | | | | |
| 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 80MLE 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_L/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 cos φ | 电流 Current | | | 转矩 / Torque | | 转动惯量 Moment of inertia J=1/4 GD ² kgm ² | 重量 Weight kg | 声压等级 Sound pressure level, L _{PA} dB |
|------------------------|--------------------|----------------------|-------------|---|-----------------------|-----------------------|--------------------------------------|---------------------|--------------------------------|----------------------|--------------------------------|--------------------------------|---|--------------------|--|
| | | | | 满载 load 100% | 3/4 负载 load 75% | 1/2 负载 load 50% | | I _N A | I _s /I _N | T _N Nm | T _l /T _N | T _b /T _N | | | |
| kW | | | r/min | 400 V 50 Hz | | | CENELEC- 设计 design | | | | | | | | |
| 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_l/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 | S | P | P |
| 040 | 耐高温油脂 Heat-resistant grease | P | P | P | P | P | P | S | S | S | S | S | S | 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 |

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|------------------------------------|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 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-I 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 | 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 | 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-I 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 bottom 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 |

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| 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-I 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-I 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-I 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 |
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| 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 (2x3 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 |

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| 接线盒 /Termi-l 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-l box. | - | - | - | - | - | - | - | - | - | - | - | P | P | P |
| 020 | 分离式接线盒 Detached termi-l box. | - | - | - | - | - | - | - | - | - | - | - | P | P | P |
| 021 | 左侧接线盒, 从 D 端看 Termi-l 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-l box degree of protection IP65. | - | - | - | - | - | - | P | P | P | P | P | P | P | P |
| 180 | 右侧接线盒, 从 D 端看 Termi-l 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-l 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-l 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-l box. | - | - | - | - | - | - | - | - | - | - | - | P | P | P |
| 418 | 独立的辅助接线盒, 标准材料 Separate termi-l 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-l 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

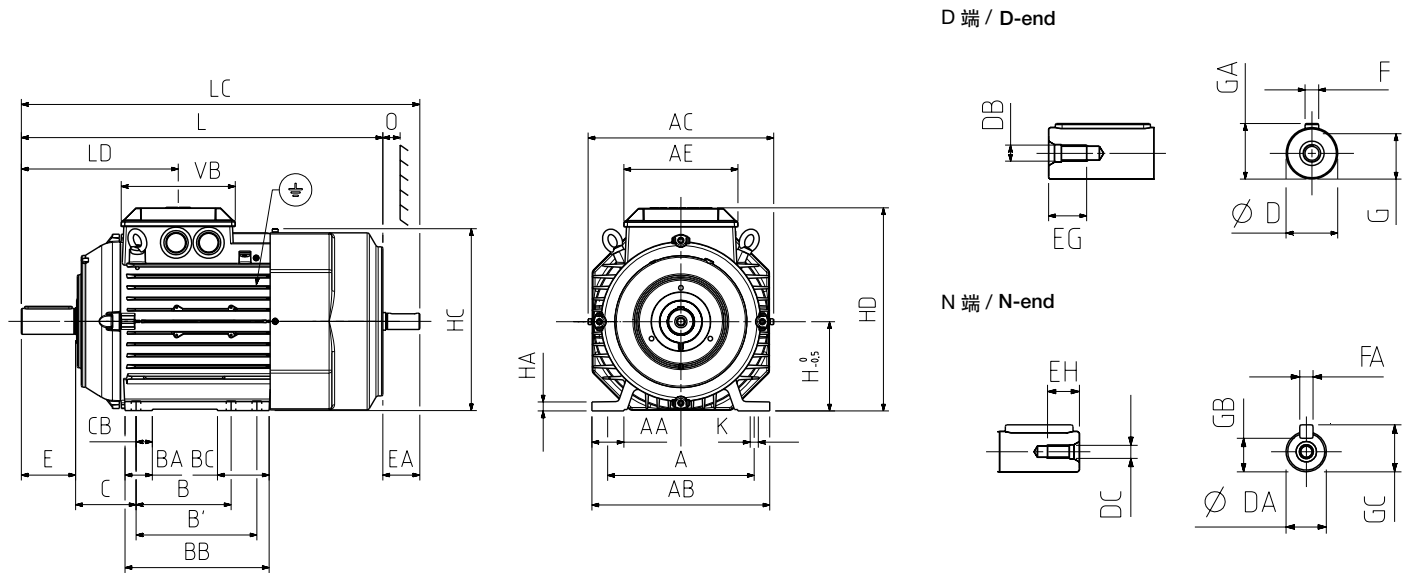
| 代码 /Code | 变量代码 /Variant | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 200 | 225 | 250 | 280 | 315 | 355 |
|------------------------------------|--|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 测试 /Testing | | | | | | | | | | | | | | | |
| 145 | 样本电机的型式试验报告, 400V 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 S = Included as standard
P = 仅适用于新生产模式 P = New manufacture only
R = 根据需要 R = On request
- = 不适用 - = 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 |

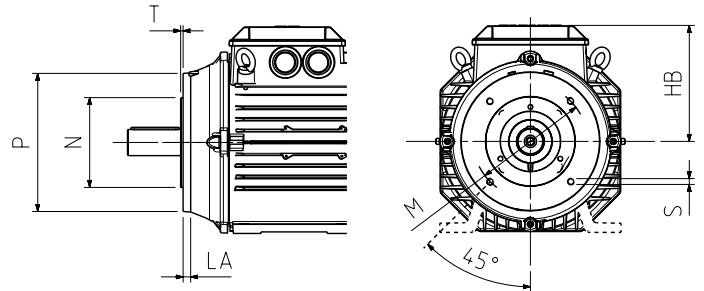
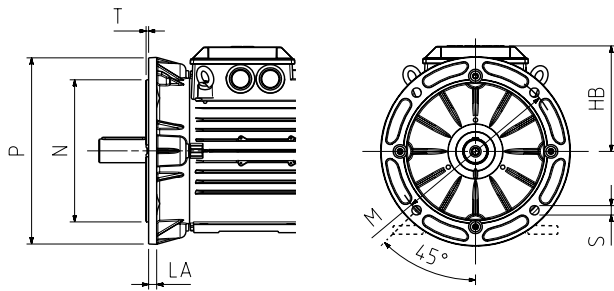
| 机座号 Motor size | EA | EG | EH | F | FA | G | GA | GB | GC | H | HA | HC | HD | K | L | LD | O | VB |
|-------------------|----|------|------|----|----|------|------|------|------|-----|----|-----|-----|----|-----|-----|----|-----|
| 71 M | 23 | 12.5 | 10 | 5 | 4 | 11 | 16 | 8.5 | 12.5 | 71 | 9 | 139 | 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)

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

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 |

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 |

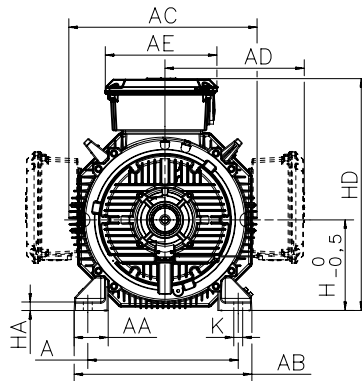
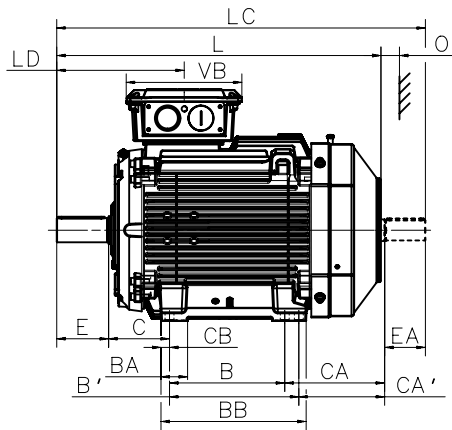
公差 Tolerances

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

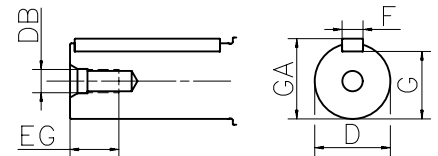
外形图及外形尺寸 Dimension drawings

机座号 160-250 Frame size 160-250

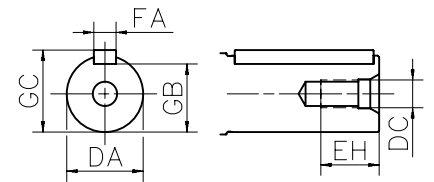
底脚安装型电机 Foot-mounted cast iron motors



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 | 附注 Footnotes |
|------------------|---------------------------|
| A, B | ¹⁾ MLA2 |
| C, CA | ²⁾ MLA2 以外其余型号 |
| D, DA | All others |
| F, FA | |
| H | |

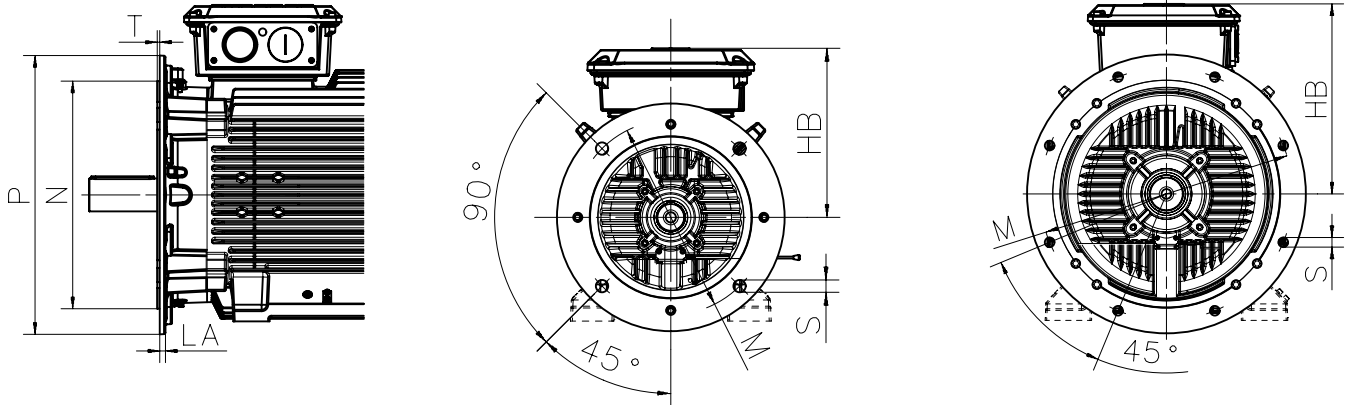
外形图及外形尺寸 Dimension drawings

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)

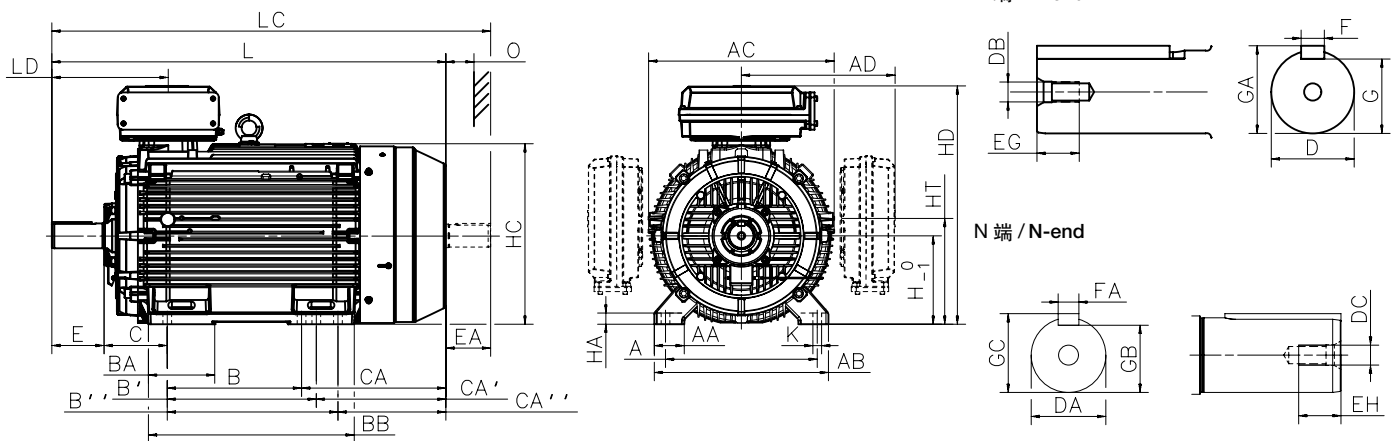
| 机座号 Motor size | 极数 Pole | HB | LA | M | N | P | S | T |
|-------------------|------------|-----|----|-----|-----|-----|----|---|
| 160 ¹⁾ | 2-6 | 261 | 20 | 300 | 250 | 350 | 19 | 5 |
| 160 ²⁾ | 2-6 | 261 | 20 | 300 | 250 | 350 | 19 | 5 |
| 180 | 2-6 | 281 | 15 | 300 | 250 | 350 | 19 | 5 |
| 200 | 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 | 附注 Footnotes |
|------------------|---|
| A, B | ¹⁾ MLA2 |
| C, CA | ²⁾ MLA2 以外其余型号 All others |
| D, DA | |
| F, FA | |
| H | |
| N | |

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 _L | 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 _L | 2 | 457 | 84 | 530 | 577 | 481 | 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 _L | 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 _L | 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 _L | 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 _L | 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 _L | 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 _L | 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 _L | 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 _L | 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

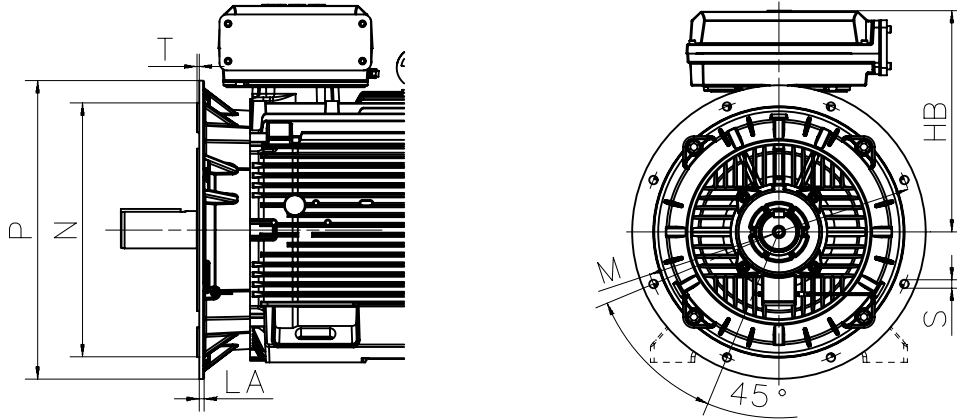
¹⁾ 接线盒 370 Terminal box 370

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 |

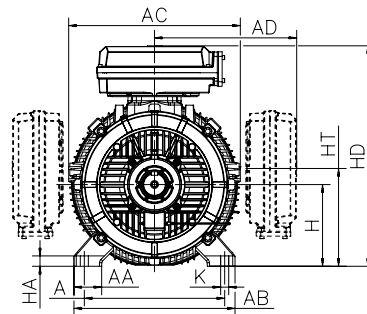
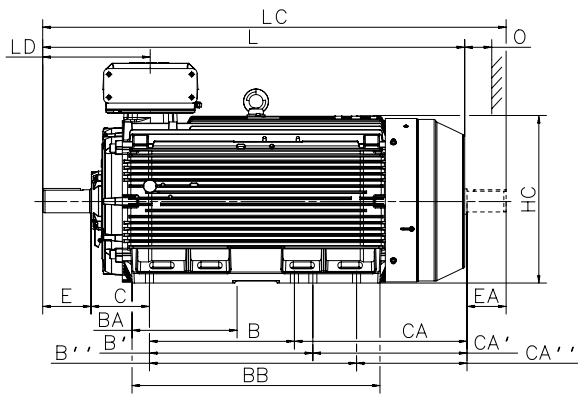
附注 Footnotes

- ¹⁾ 接线盒 370 Terminal box 370
²⁾ 接线盒 750 Terminal box 750

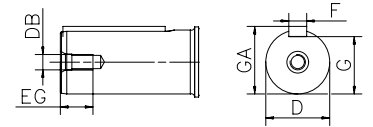
外形图及外形尺寸 Dimension drawings

机座号 355 Frame size 355

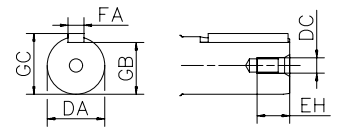
底脚安装型电机 Foot-mounted cast iron motors



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 |

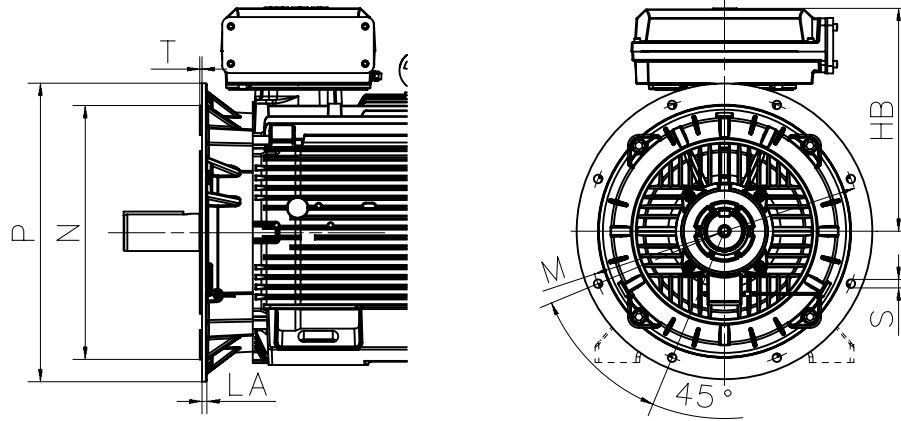
| 机座号 Motor size | 极数 Poles | F | FA | G | GA | GB | GC | H | HA | HC | HD ¹⁾ top- | HD ²⁾ top- | HD ³⁾ side-m. | HT | K | L | LC | LD ¹⁾ top- | LD ²⁾ top- | LD ³⁾ top- | LD side-m. | O |
|---------------------|-------------|----|----|------|------|------|------|-----|----|-----|--------------------------|--------------------------|-----------------------------|-----|----|------|------|--------------------------|--------------------------|--------------------------|---------------|-----|
| 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 | 附注 Footnotes |
|------------------|--|
| A, B ±0.8 | ¹⁾ 接线盒 370 ¹⁾ Terminal box 370 |
| D, DA ISO m6 | ²⁾ 接线盒 750 ²⁾ Terminal box 750 |
| F, FA ISO h9 | ³⁾ 包含吊环 ³⁾ Lifting lugs included |
| H +0 -0.1 | |
| N ISO j6 | |
| C, CA ±0.8 | |

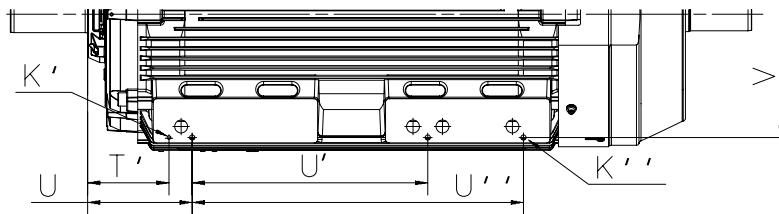
外形图及外形尺寸 Dimension drawings

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 | ¹⁾ Terminal box 370 |
| ²⁾ 接线盒 750 | ²⁾ Terminal box 750 |

低压高性能过程用途铸铁电机简介

IE3 Process performance cast iron motors in brief

机座号 71 -132
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 monitoring 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 | 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 aluminium | | | | | |
| 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 holes 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

IE3 Process performance cast iron motors in brief

机座号 160 -250

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 Measuring nipples for condition monitoring 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 aluminium | | | | |
| 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 holes with closable plastic plugs, open on delivery | | | | |
| 防护等级 / Enclosure | | IP 55 | | | | |
| 冷却方式 / Cooling method | | IC 411 | | | | |

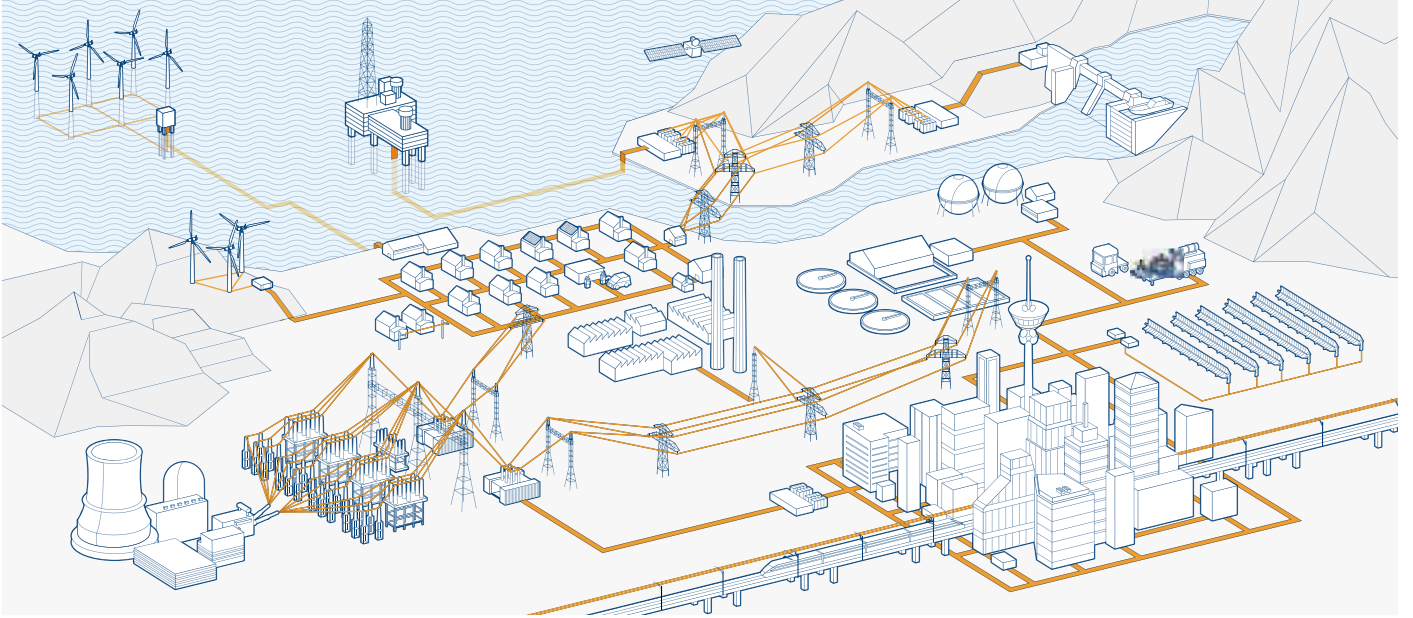
低压高性能过程用途铸铁电机简介

IE3 Process performance cast iron motors in brief

机座号 280 -355
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合适的解决方案。

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- 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

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- 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

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

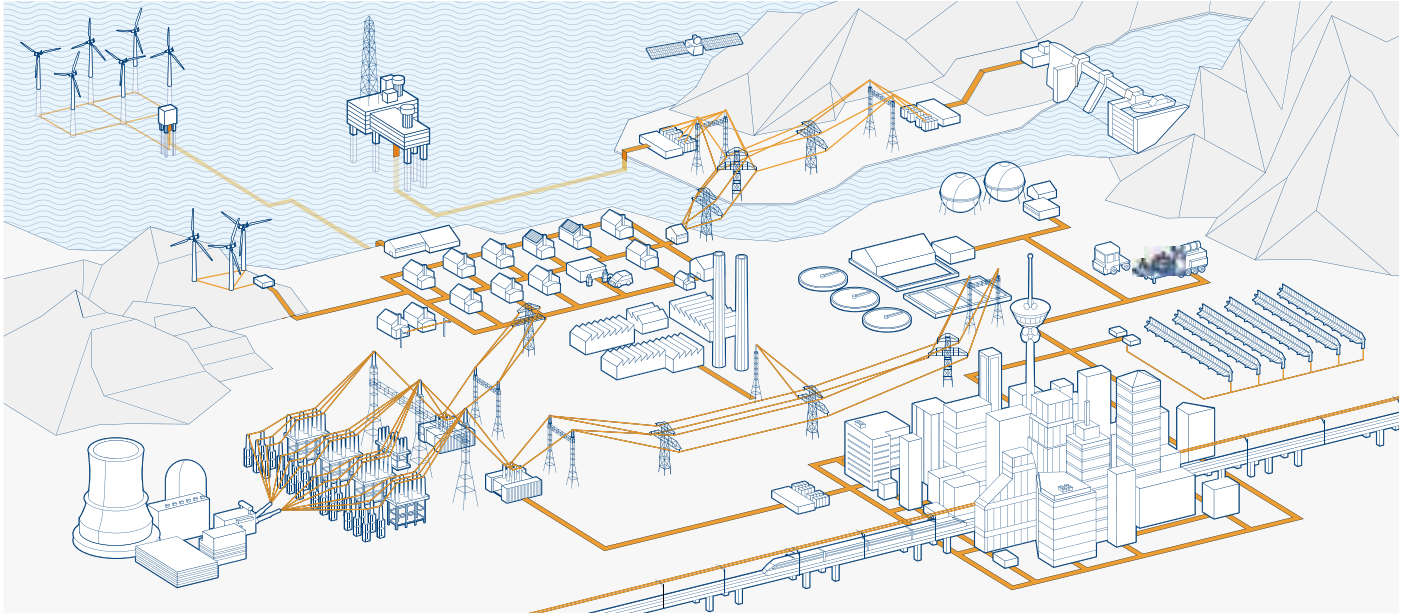


ABB is the leading manufacturer of low, medium and high voltage motors and generators, mechanical power transmission products with an offering of a complete portfolio of services. Our in-depth knowledge of virtually every type of industrial processing ensures we always specify the proper solution for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

Low and high voltage IEC induction motors

- Process performance motors
- General performance motors
- High voltage cast iron 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

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