INNOMOTICS



产品样本 06/2026

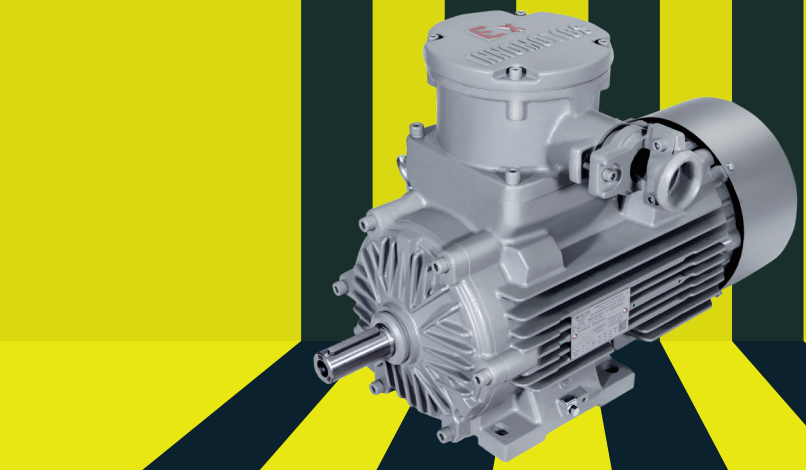
Innomotics Moves!

Low Voltage Flameproof motor IE3 1MB1/5 series

IE3 能效低压隔爆电动机 1MB1/5 系列

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为更好应对气候变化，快速响应市场需求，聚焦提升能效与可靠性的创新，推动产业绿色低碳转型和可持续发展。2023年7月1日，西门子将其低压至高压电机、齿轮电机、中压变频器和电主轴领域等相关业务进行整合，成立了茵梦达（Innomotics GmbH）。茵梦达总部位于德国纽伦堡，业务遍及全球49个国家，拥有16家工厂，全球员工约15000名。

凭借百余年技术积淀和创新，茵梦达将专注于电机和大型传动专业领域。作为行业领军企业，茵梦达将不断推动工业化进程和可持续发展。

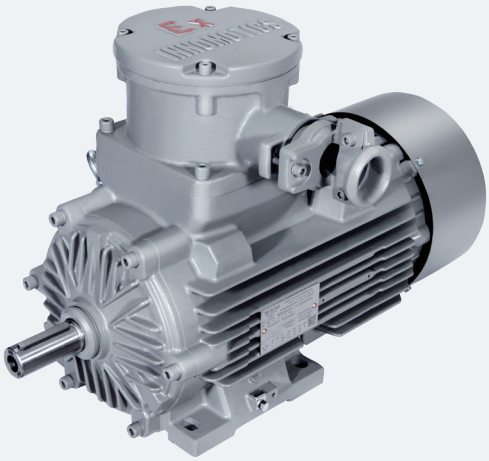
茵梦达在华拥有5家运营公司（包括一家区域总部和4家工厂），13家分公司和6家研发中心，其中在南京设立了“茵梦达低压电机事业部全球研发中心”，员工总数约3500人，是茵梦达在全球主要的研发和制造基地。



茵梦达电机（中国）有限公司原名西门子电机（中国）有限公司，于2006年3月1日正式运营，2024年5月正式更名。

从2018年荣获国家绿色工厂，到2019年被认定为国家高新技术企业，再到累计五次荣获西门子中国最佳运营工厂殊荣，茵梦达电机（中国）有限公司一直致力于为客户提供创新、高效、可持续的电机解决方案。

公司拥有员工约2000余人，占地面积18.2万平方米，年产电机约100万台，为茵梦达在华最大的低压、高效电机研发和生产基地。



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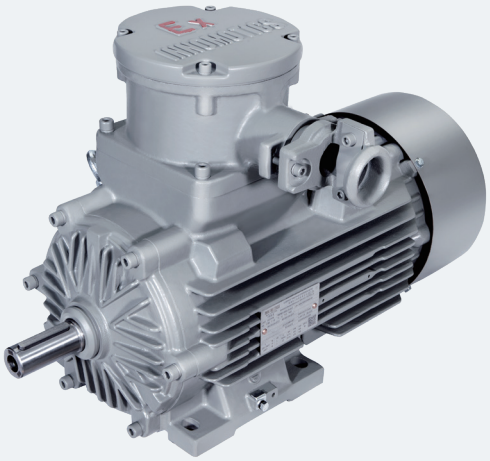
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概览 Overview

在许多工业和公共部门，爆炸危险一直存在，例如在化学工业、炼油厂、钻井平台、加油站、饲料制造和污水处理厂。

当爆炸性的气体、烟雾、雾气或尘埃与空气中的氧气以一定的易爆炸比例混合时，如果有接近于能够释放所谓最小点火能量的着火源，会存在爆炸的风险。

特别是在化学工业和石化工业中，当原油和天然气在运输时，或在采矿、碾磨（例如：谷物和固体颗粒）时，爆炸会造成严重的人员受伤和设备损坏。

为了保证在这些地区的安全性，大多数国家的立法者都根据国家和国际的标准，以法律和法规的形式制定和实施了适当的规定。

防爆设备的设计可以使正确使用这些设备时避免爆炸。

防爆设备可以根据不同类型的保护来设计。

使用现场必须根据爆炸危险发生的频率，由用户在主管当局的协助下，将其细分为指定区域。不同区域有对应的设备或装置类别。然后针对这些区域分析所需的保护类型，从而选择相应的设备（产品）类型。

In many industrial and public industries, explosion hazards are ever-present, e.g. the chemicals industry, refineries, on drilling platforms, gas stations, feed manufacturing and sewage treatment plants.

The risk of explosion is always present when gases, fumes, mist or dust are mixed with oxygen in the air in an explosive ratio close to sources of ignition that are able to release the so-called minimum ignition energy.

In the chemical and petrochemical industries in particular, when crude oil and natural gas are being transported, or in mining, milling (e.g. grain and granular solids), explosion can result in serious injury to persons and damage to equipment.

To ensure safety in these areas, legislators in most countries have implemented appropriate stipulations in the form of laws and regulations based on national and international standards.

Explosion-protected equipment is designed such that an explosion can be prevented when it is used properly.

The explosion-protected equipment can be designed in accordance with various types of protection.

The local conditions must be subdivided into specified zones by the user with the assistance of the responsible authorities in accordance with the frequency of occurrence of an explosion hazard. Device (equipment) categories are assigned to these zones. The zones are then subdivided into possible types of protection and therefore into possible equipment (product) types.

区域的分类

有爆炸风险的场所被划分为不同的区域。划分区域的标准取决于危险物质存在的时间以及发生危险的概率。各个区域分类的信息和规则遵循以下标准：

- GB 3836.14，IEC/EN 60079-10-1 适用于气体环境
- GB/T 3836.35，IEC/EN 60079-10-2 适用于粉尘环境

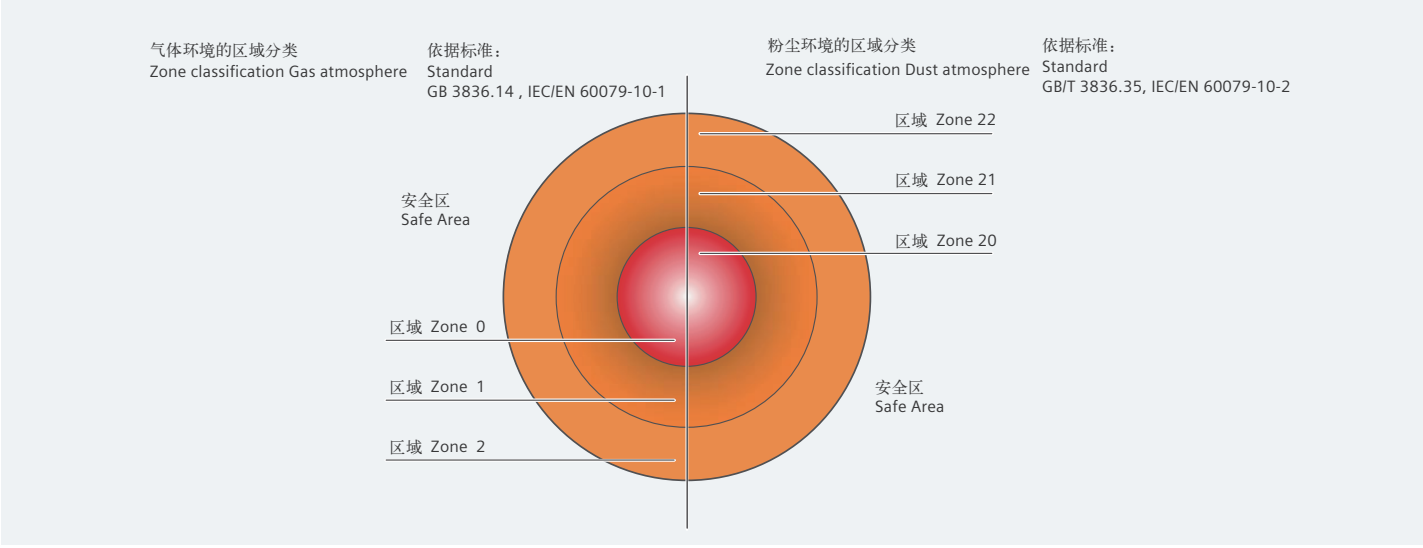
此外，在不同的爆炸分组和温度等级之间进行了分类，这些都包含在危险等级评估中。

Classification of zones

Areas subject to explosion hazard are divided into zones. Zoning is based on the presence time of explosive substances and probability of explosion. Information and specifications for classification of the zones are laid down in the following standards:

- GB 3836.14, IEC/EN 60079-10-1 for gas atmospheres
- GB/T 3836.35, IEC/EN 60079-10-2 for dust atmospheres

Furthermore, a distinction is made between various explosion groups as well as temperature classes and these are included in the hazard assessment.



根据各区域的分类和存在的危险，所使用的设备必须满足最低防护要求。设备必须在符合要求的工况下使用，以避免点燃外部的爆炸性环境。

Depending on the particular zone and therefore the associated hazard, operating equipment must comply with defined minimum requirements regarding the type of protection. The different types of protection require corresponding measures to prevent ignition that should be implemented at the motor in order to prevent a surrounding explosive atmosphere from being ignited.

区域 Zone		区域定义的标准： Zone definition acc. to GB 3836.14 & IEC/EN 60079-10-1 用于气体环境 for gas atmospheres GB/T 3836.35 & IEC/EN 60079-10-2 用于粉尘环境 for dust atmospheres	分配保护类型 Assigned types of protection	分类根据 Category according to 2014/34/EU	设备保护等级根据 Equipment protection level acc. to GB/T 3836.1 & IEC/EN 60079-0
气体 Gas [1) 2)]	粉尘 Dust [1) 2)]				
0	–	持续、长时间或频繁存在爆炸性气体环境的区域 An area in which there is an explosive gas atmosphere constantly, over a long period or frequently.	不允许低压电机使用 Low-voltage motors not permitted	1	Ga
1	–	在正常运行过程中，预计偶尔会出现爆炸性气体环境的 An area in which it is expected that an explosive gas atmosphere will occur occasionally during normal operation.	Ex eb, Ex db eb, Ex db	2	Gb
2	–	在正常运行过程中，预计很少或只短暂出现爆炸性气体环境的区域 An area in which it is expected that an explosive gas atmosphere will occur only rarely and then only briefly during normal operation.	Ex ec	3	Gc
–	20	持续、长时间或频繁存在由粉尘-空气混合物组成的爆炸性气体环境的区域 An area in which there is an explosive gas atmosphere comprising a dust-air mixture constantly, over a long period or frequently.	不允许低压电机使用 Low-voltage motors not permitted	1	Da
–	21	在正常运行的过程中，预计会偶尔存在由粉尘-空气混合物组成的爆炸性气体环境的区域 An area in which it is expected that an explosive gas atmosphere comprising a dust-air mixture will occur occasionally during normal operation.	Ex tb	2	Db
–	22	在正常运行的过程中，预计很少或只短暂在空气中形成一团易燃尘埃的爆炸性气体环境的区域 An area in which it is expected that an explosive gas atmosphere in the form of a cloud of flammable dust in air will occur only rarely and then only briefly during normal operation.	Ex tc [3)]	3	Dc

[1)] 电机用于
- 区域 1 也可以用于区域 2.
- 区域 21 也可以用于区域 22.

[2)] 若电机仅有气体防爆认证或粉尘防爆认证，不允许在混合环境中使用。混合环境：爆炸性的气体和粉尘同时在大气环境中存在。

[3)] Ex tc 电机不允许在含有导电粉尘的环境中运行。

[1)] Motors of
- Zone 1 can also be used in Zone 2.
- Zone 21 can also be used in Zone 22.

[2)] Motors which are certified for gas or dust protection must not be used in hybrid mixtures! Hybrid mixtures: when explosive gas and dust atmospheres occur simultaneously.

[3)] Ex tc motors are not approved for operation in environments containing conductive dust.

应用

以下情况常常需要选用防爆电机，以防止爆炸对人造成严重伤害和对财产造成严重损失。

- 化工和石化行业
- 矿物油和天然气生产
- 煤气产业
- 煤气供应公司
- 加油站
- 焦化厂
- 磨粉厂 (例如：玉米，固体)
- 污水处理厂
- 木材加工(例如：木屑，树脂)
- 其他易受爆炸危害的行业

Application

The explosion-proof motors are often used in the following industries to prevent explosion hazards that result in serious injury to persons and severe damage to property.

- Chemical and petrochemical industry
- Production of mineral oil and gas
- Gas works
- Gas supply companies
- Petrol stations
- Coking plants
- Mills (e.g. corn, solids)
- Sewage treatment plants
- Wood processing (e.g. sawdust, tree resin)
- Other industries subject to explosion hazards

气体和蒸汽的隔爆等级 Flameproof class of gases and vapors

使用场所 Location	标准代号 Code of standard GB/T 3836.1/GB/T 3836.2 / IEC60079-0 / IEC60079-1 隔爆等级 Flameproof class
矿用 For Mines	d I
除煤矿以外的爆炸性气体环境 Explosive gas environment except mines	d II A
	d II B
	d II C

按爆炸性混合物的自然温度 (°C) 分组 Temperature classes

电子设备的温度等级 Temperature class of electrical equipment	电子设备的最大表面温度 IMaximum surface temperature of electrical equipment	气体或蒸汽的点燃温度 Ignition temperature of gases or vapors
T1	450°C	> 450°C
T2	300°C	> 300°C
T3	200°C	> 200°C
T4	135°C	> 135°C
T5	100°C	> 100°C
T6	85°C	> 85°C

根据爆炸组别和温度等级对气体和蒸汽分类
Classification of gases and vapors into explosion groups and temperature classes

爆炸性 气体分组 explosion group	按爆炸性混合物的自然温度 (°C) 分组 Temperature classes					
	T1（450）	T2（300）	T3（200）	T4（135）	T5（100）	T6（85）
	材料名称 Material designation	材料名称 Material designation	材料名称 Material designation	材料名称 Material designation	材料名称 Material designation	材料名称 Material designation
IIA (MESG≥0.9mm)	丙酮 Acetone	醋酸戊醚 i-amyl acetate	汽油 Benzine	乙醛 Acetaldehyde		
	乙烷 Ethane	正丁烷 n-butane	汽油 Gasoline			
	乙酸乙酯 Ethyl acetate	正丁醇 n-butyl alcohol	特殊汽油 Special benzine			
	氯乙烷 Ethyl chloride	环己酮 Cyclohexanone	柴油燃料 Diesel fuel			
	氨 Ammonia	二氯乙烷 1.2- dichloroethane	民用燃油 Heating oils			
	苯 Benzene	乙酸酐 / 醋酸酐 Acetic acid anhydride	n-正己烷 n-hexane			
	醋酸 Acetic acid					
	一氧化碳 Carbon monoxide					
	甲烷 Methane					
	甲醇 Methanol					
	氯甲烷 Methyl chloride					
	萘 Naphthalene					
	苯酚 Phenol					
	丙烷 Propane					
	甲苯 Toluene					
IIB (0.5mm<MESG<0.9mm)	城市煤气（照明气） Town gas (illuminating gas)	乙醇 Ethyl alcohol	硫化氢 Hydrogen sulfide	乙基醚 Ethyl ether		
		乙烯 Ethylene				
		环氧乙烷 Ethylene oxide				
IIC (MESG≤0.5mm)	氢 Hydrogen	乙炔 Acetylene				二硫化碳 Carbon disulfide

MESG，GB/T 3836.11 和 IEC 60079-20-1 中规定的最大试验安全间隙，是指在规定的条件下，壳内所有浓度的被试验气体或蒸气与空气的混合物点燃后，通过 25 mm 长的接合面均不能点燃壳外爆炸性气体混合物的外壳空腔两部分之间的最大间隙。

MESG 值越小，意味着设备的防爆等级越高，对设备的要求越严苛。当设备可以满足在 IIC 气体组别下运行时，同时也满足 IIA 和 IIB 的要求。

MESG, maximum experimental safe gap (for an explosive mixture). It's maximum gap of a joint of 25 mm in width which prevents any transmission of an explosion during 10 tests made under the conditions specified in GB/T 3836.11 and IEC 60079-20-1.

The smaller the MESG value, the higher the explosion-proof level of the equipment, and the more stringent requirements for the equipment. If the equipment can run under the IIC gas group, it also meets the requirements of IIA and IIB.

INNOMOTICS XP 1MB1/5 电机隔爆标识说明 Explossion proof motor Marking of Flameproof Motors

Ex	db[1)]	IIC	T4	Gb

防爆标识 Marking for prevention of explosions：
IECEx 和 CNEX 防爆标识 IECEx and CNEX anti-explosion marking

防爆类型 Protection type：
db = 由隔爆外壳保护的设备 db = Protection by flameproof enclosures

爆炸性气体类别
II 类 = 除煤矿瓦斯气体之外的其它爆炸性气体类别
（根据爆炸性气体的不同，又分为 IIA、IIB、和 IIC 三类）
Explosion group：
Group II = Explosive gas atmosphere other than mines susceptible to firedamp (subdivided to IIA, IIB, and IIC according to different explosive gas)

II 类电气设备最高表面温度分组 Maximum allowable surface temperature for Group II electrical equipment:

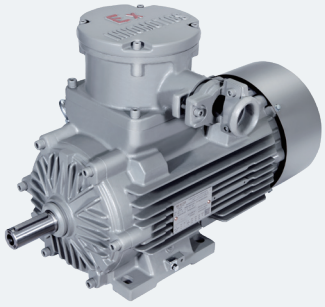
T1 = 450°C	T3 = 200°C	T5 = 100°C
T2 = 300°C	T4 = 135°C	T6 = 85°C

设备保护级别：
G = 气体防爆
Ga = “很高”的保护级别
Gb = “高”的保护级别
Gc = “一般”的保护级别
“很高” - 指在正常运行、出现预期的故障、或罕见故障时不会成为点燃源；
“高” - 指在正常运行、或出现预期故障时不会成为点燃源；
“一般” - 指在正常运行时不会成为点燃源，但可采取一些措施保证在点燃源预期经常出现的情况下不会形成有效点燃。
Protection level:
G = Explosive gas atmosphere
Ga = "very high" level of protection
Gb = "high" level of protection
Gc = "enhanced" level of protection
"very high" - not a source of ignition in normal operation, during expected malfunctions or during rare malfunctions;
"high" - not a source of ignition in normal operation or during expected malfunctions;
"enhanced" - not a source of ignition in normal operation and which may have some additional protection to ensure that it remains inactive as an ignition source in the case of regular expected occurrences.

注：
[1)] 最新标准 IEC60079-0. 2017 和 GB/T 3836.1-2021 中防爆类型标识为 db。

Notes：
[1)] Protection type is db in IEC60079-0. 2017 and GB/T 3836.1-2021.

产品概述 Product overview



额定功率：0.55 ~ 400 kW
机座号：80 ~ 355
电压与频率：220/380V 50Hz
380/660V 50Hz ，其他常用电压可选
标准颜色：RAL7030
冷却方式：IC411
隔爆标志：Ex db IIC T4 Gb
防护等级：IP55，IP56、IP65 可选
绝缘系统：F 级
注油装置：机座号 280 ~ 355 的电机标配，机座号 160 ~ 250 可选配
环境温度：-20°C ~ +40°C 标配设计，温度上限可选至 +60°C

Rated output：0.55 ~ 400 kW
Frame size：80 ~ 355
Voltage and Frequency：220/380V 50Hz
380/660V 50Hz, Other common voltage can be provide as option design
Standard color：stone grey（RAL7030）
Cooling method：IC411
Frame-proof marking：Ex db IIC T4 Gb
Protect degree：IP55,IP56(Option) and IP65(Option)
Insulation class：F
Re-greasing device：FS 280 ~ 355 motor as standard , FS 160 ~ 250 motor as option design
Ambient temperature：-20°C ~ +40°C as standard, max. ambient temperature can be designed to +60°C as option

INNOMOTICS XP 1MB1/5 系列高效隔爆型全封闭、自扇冷三相异步电动机是茵梦达针对于全球市场开发的一款全新产品。该系列防爆电机完全符合 IEC60079-0:2017 / IEC60079-1:2017 以及 GB/T 3836.1-2021 / GB/T 3836.2-2021 等设计标准，防爆等级为 Ex db IIC T4 Gb 且防爆性能通过 CQST 认证。其效率达到 IEC 60034-30 IE3 高效等级要求（50Hz），符合 GB18613-2020 能效等级三级。

该系列产品结合茵梦达传承百年的设计技术，其生产设备采用先进的数控机床设备，基于茵梦达先进的绝缘结构设计以及制造工艺，采用优质的冷轧硅钢片以及经过严格质量检测与控制的高品质零部件，具有性能优良，使用安全可靠，安装灵活，维护方便，振动小，噪音低等特点。

INNOMOTICS XP 1MB1/5 系列高效隔爆型电动机可广泛应用于石油、化工及油气等危险领域和场所。电机的设计使得电机内部的爆炸不会波及外界环境，内部由爆炸产生的能量在被称作“隔爆腔”的空间内消散，使得这些能量不足以点燃外部的爆炸性环境。

INNOMOTICS XP 1MB1/5 series flameproof motors in INNOMOTICS newly designed three-phase asynchronous for global market. It is totally enclosed fan cooling (TEFC) high efficiency motor. This series flameproof motor completely meet the standard of IEC60079- 0:2017/IEC60079-1:2017 and GB/T 3836.1-2021 / GB/T 3836.2-2021. The type of protection for this motor is Ex db IIC T4 Gb. And its efficiency fulfill efficiency grade IE3 of IEC 60034-30 (50Hz), and also Grade 3 efficiency of GB18613-2020.

This motor inherits INNOMOTICS hundred years design technology, the production equipment of this series adopt advanced CNC machine tools, based on INNOMOTICS advanced insulation structure design and manufacturing process, use high quality cold-rolled silicon steel sheets and high quality parts with strict quality control. This series products have excellent performance, safe and reliable to use, simple and flexible installation, easy to maintain, low vibration, low noise.

INNOMOTICS XP 1MB1/5 series high-efficiency flameproof motors can be widely used in petroleum, chemical industry, oil and gas and other hazardous areas and places.These motors are designed such that an explosion within the housing cannot result in an explosion in the environment. The energy that is generated internally by an explosion is dissipated in the so-called “flameproof enclosure” so far that the energy is no longer sufficient for ignition outside the casing.

设计参考标准 Reference Standard

名称 Title	中国国家标准 Chinese standard	IEC 标准 IEC standard
《爆炸性环境 第1部分：设备 通用要求》 Explosive atmospheres - Part 0: Equipment - General requirements	GB/T 3836.1	IEC 60079-0
《爆炸性环境 第2部分：由隔爆外壳"d"保护的设备》 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"	GB/T 3836.2	IEC 60079-1
《0CD3系列（IP55）隔爆型（Ex db IIC T4）三相异步电动机技术条件（机座号80~355）》 0CD3 series (IP55) flameproof (Ex db IIC T4) three-phase asynchronous motors - Technical specification (frame size 80 ~ 355)	Q/321081 KJA013	
《包装储运图示标志》 Packaging - Distribution packaging - Graphical symbols for handling and storage of packages	GB/T 191	ISO 780
《旋转电机 定额和性能》 Rotating electrical machines - Part 1: Rating and performance	GB/T 755	IEC 60034-1
《旋转电机(牵引电机除外)确定损耗和效率的试验方法》 Rotating electrical machines - Part 2: Methods for determining losses and efficiency of rotating electrical machinery from tests (excluding machines for traction vehicles)	GB/T 755.2	IEC 60034-2
《旋转电机结构型式、安装型式及接线盒位置的分类（IM代码）》 Rotating electrical machines; part 7: classification of types of constructions and mounting arrangements (IM code)	GB/T 997	IEC 60034-7
《三相异步电动机试验方法》 Rotating electrical machines - Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)	GB/T 1032	IEC 60034-2-1
《旋转电机 线端标志与旋转方向》 Rotating electrical machines - Part 8: Terminal markings and direction of rotation	GB/T 1971	IEC 60034-8
《旋转电机冷却方法》 Rotating electrical machines; part 6: methods of cooling (IC code)	GB/T 1993	IEC 60034-6
《电工电子产品环境试验 第2部分：试验方法 试验Db 交变湿热（12h＋12h循环）》 Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	GB/T 2423.4	IEC 60068-2-30
《旋转电机尺寸和输出功率等级 第1部分:机座号56~400和凸缘号55~1080》 Dimensions and output series for rotating electrical machines; part 1: frame numbers 56 to 400 and flange numbers 55 to 1080	GB/T 4772.1	IEC 60072-1
《旋转电机整体结构的防护等级（IP代码）-分级》 Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code); Classification	GB/T 4942.1	IEC 60034-5
《轴中心高为56 mm及以上电机的机械振动 振动的测量、评定及限值》 Rotating electrical machines - Part 14: Mechanical vibration of certain machines with shaft heights 56 mm and higher; Measurement, evaluation and limits of vibration severity	GB/T 10068	IEC 60034-14
《旋转电机噪声测定方法及限值 第1部分：旋转电机噪声测定方法》 Acoustics - Test code for the measurement of airborne noise emitted by rotating electrical machines	GB/T 10069.1	ISO 1680
《旋转电机噪声测定方法及限值 第3部分：噪声限值》 Rotating electrical machines - Part 9: Noise limits	GB/T 10069.3	IEC 60034-9
《中小型旋转电机通用安全要求》 General requirements for safety of small and medium size rotating electrical machines	GB/T 14711	
《中小型三相异步电动机能效限定值及能效等级》 Minimum allowable values of energy efficiency and energy efficiency grades for small and medium three-phase asynchronous motors	GB 18613	IEC 60034-30
《电气绝缘 耐热性和表示方法》 Electrical insulation - Thermal evaluation and designation	GB/T 11021	IEC 60085
《交流低压电机散嵌绕组匝间绝缘 第1部分：试验方法》 Interturn insulation of random-wound winding for AC low-voltage electrical machines- Part 1: Test methods	GB/T 22719.1	
《交流低压电机散嵌绕组匝间绝缘 第2部分：试验限值》 Interturn insulation of random-wound winding for AC low-voltage electrical machines- Part 2: Test limits	GB/T 22719.2	
《电工电子产品自然环境条件 温度和湿度》 Classification of environmental conditions - Part 2-1: Environmental conditions appearing in nature - Temperature and humidity	GB/T 4797.1	IEC 60721-2-1
《标准电压》 IEC standard voltages	GB/T 156	IEC 60038

噪声

噪声值

噪声值根据 DIN EN ISO 1680 标准在噪音室测得。表面声压级噪声 L_{pfa} 计算表示单位为 dB（A）。声压级噪声的空间平均值是在其测量面上测得的。测量面是距离电机 1 米的测量包络面。声功率级噪声用 L_{WA} 来表示，单位为 dB（A）。噪音值见选型数据表，选型数据表中的噪声值仅适用于全封闭自扇冷却（冷却方式：IC411）。电动机在 50 Hz 电源供电空载运行时，噪音容差为 +3 dB。当在 60 Hz 电源下空载运行时，噪音容差大约为 +4 dB。

振动

所有电动机转子都使用半键按照 A 级（标准）振动等级进行动态平衡。电动机在空载时测得振动速度有效值不超过下表中的 A 级所列值。电机还可选择B级振动等级设计。

Noise levels

Noise levels for mains-fed operation

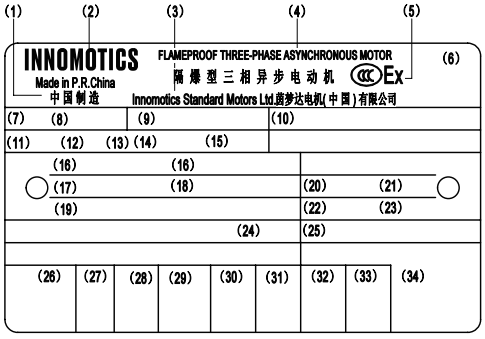
The noise levels are measured in accordance with DIN EN ISO 1680 in a anechoic room. It is specified as the A-valued measuring-surface sound pressure level L_{pfa} in dB (A). This is the spatial mean value of the sound pressure levels measured on the measuring surface. The measuring surface is a cube 1 m away from the motor surface. The sound power level is also specified as L_{WA} in dB (A). Please find the noise value in technical data table, the specified values are only valid for totally enclosed fan cooling (cooling method: IC411) motor with no load at 50 Hz with no load, and the tolerance is +3 dB. While motor operating 60 Hz with no load, the values are approximately +4 dB (A) higher.

Vibration

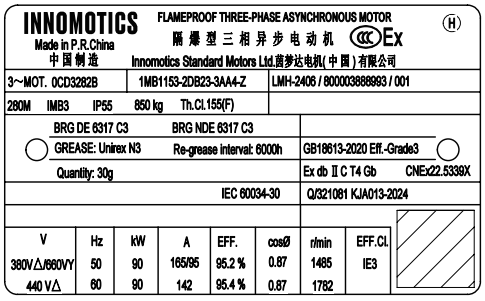
INNOMOTICS XP 1MB1/5 rotors are dynamically balanced to severity grade A using a half key. Table below contains the effective vibration values for unloaded motors. Vibration grade B can be provided as option.

振动等级 Vibration Grade	机座号 Frame size (mm)	56 ≤ FS ≤ 132		H>132	
	安装方式 Mounting	位移 Vibration displacement/(μm)	速度 Vibration velocity/(mm/s)	位移 Vibration displacement/(μm)	速度 Vibration velocity/(mm/s)
A	自由悬置 Free suspension	45	2.8	45	2.8
	刚性安装 Rigid mounting	-	-	37	2.3
					2.8[1)]
B	自由悬置 Free suspension	18	1.1	29	1.8
	刚性安装 Rigid mounting	-	-	24	1.5
					1.8[1)]

铭牌信息 Nameplate



铭牌样例 Nameplate example



1	生产国家	Country of origin	19	加注油脂量	Re-grease quantity
2	商标	Trademark (brand / company)	20	能效标准	Efficiency standard
3	生产厂	Manufacturer	21	能效等级	China efficiency classification
4	产品名称	Product name	22	防爆标识	Mark of explosion protection type
5	防爆标志	Mark of explosion protection	23	防爆认证号	Ex certificate number
6	键的类型	Key type	24	企业标准	Company standard
7	电动机类别	Category of motor	25	额定电压	Rated voltage
8	电动机型号	Motor type	26	接线方式	Connection method
9	订货号	Order number	27	额定频率	Rated frequency
10	生产序列号	Production series number	28	额定功率	Rated power
11	机座号	Frame size	29	额定电流	Rated current
12	安装结构型式	Mounting type	30	效率	Efficiency
13	IP防护等级	IP protection degree	31	功率因数	Power factor
14	整机重量	Weight	32	额定转速	Rated speed
15	热等级	Thermal class	33	能效等级	Efficiency classification according to IEC standard
16	轴承型号	Bearing type	34	二维码	QR code
17	润滑脂型号	Bearing grease type			
18	再润滑周期	Re-grease interval			

注：

1) 该值为 GB/T 10068-2020 中定义的轴中心高 H>132 mm 的两极电机，当两倍电网频率占主导时的振动速度限值。

Note:

1) The level are vibration velocity limit when the twice line frequency vibration level is dominant defined by GB/T 10068-2020, for 2p motors that frame size bigger than 132mm.

机械特性 Mechanical design

安装结构型式 Construction and mounting type

结构型式 Construction type	机座带底脚，端盖无法兰 With feet and without flange on driven end-shield (DE)					
安装型式 Mounting type	IM B3 FS 80~355	IM B6 [3] FS 80~315M	IM B7 [3)4)] FS80~315M	IM B8 [6] FS80~250	IM V5 [1)3)5)] FS80~315M	IM V6 [2)3)] FS 80~315M
示意图 Diagram						
电机编号第14位号上对应的字母 Letter, position 14th of Motor code	A	T	U	V	C	D

结构型式 Construction type	机座不带底脚，端盖有法兰 Without feet and with flange on driven end-shield (DE)			机座带底脚，端盖有法兰 With feet and with flange on driven end-shield (DE)	
安装型式 Mounting type	IM B5 FS 80~315	IM V1 [1] FS 80~355	IM V3 [2] FS80~315	IM B35 FS80~355	IM V15 [1) 3)5)] FS80~315M
示意图 Diagram					
电机编号第14位号上对应的字母 Letter, position 14th of Motor code	F	G	H	J	W

结构型式 Construction type	机座不带底脚，端盖有标准小法兰 Without feet and with C-flange on driven end-shield (DE)			机座带底脚，端盖有标准小法兰 Without feet and with C-flange on driven end-shield (DE)
安装型式 Mounting type	IM B14 FS 80~160	IM V18 [1] FS 80~160	IM V19 [2] FS80~160	IM B34 FS 80~160
示意图 Diagram				
电机编号第14位号上对应的字母 Letter, position 14th of Motor code	K	M	L	N

[1] 标配防雨罩，不能选用第二轴伸（选件号 L05）。
[2] 当户外使用时，建议采取防护措施，以避免水直接喷射到电机轴上。
[3] 对于机座号 315 的电动机，订货前请咨询茵梦达。
[4] 当接线盒位于机座顶部时，进线口默认朝向安装后会朝上，如需朝下，请选择选件代码 R12。
[5] 当接线盒位于机座左侧或右侧时，进线口默认朝向非驱动端，如需进线口朝其他方向，请选择选件代码 R10，R11 或 R12。但须检查电机安装后是否有足够空间供电缆进线。
[6] 不可同时选用再润滑装置（选件号 L23）。

[1] Protection cover provide as standard. The second shaft extension (option code L05) is not allowed.
[2] When used outdoors, please take some protection measures to prevent water from spraying on the shaft.
[3] For FS315, please consult with INNOMOTICS before ordering.
[4] When terminal box is mounted on the top of the motor, the cable inlet will toward to top after installation, if need toward to down, please select option code R12.
[5] When terminal box is mounted on the left or right side of the motor, the cable entry will be toward to non-driven end as default, if the cable entry is requested toward to other direction, separate option code (option code R10, R11 or R12) should be configured. Please ensure enough space of cable connection.
[6] Re-greasing device (option code L23) can not be configured.

轴承系统

INNOMOTICS XP 1MB1/5系列电动机标准配置深沟球轴承。电动机标准设计驱动端轴承固定，非驱动端轴承浮动。

标准配置的轴承可以承受一定的悬臂力，关于悬臂力可以参见第14页“轴伸上所允许的载荷”部分。当电动机轴端承受的悬臂力较大时，可以考虑选择增强悬臂力的轴承设计（选件号：L22）。

基座号在FS80~132范围内电动机不带再润滑装置；FS160~250范围电动机标配不带再润滑装置(但可以选配，选件号：L23)；FS280以上电动机标配再润滑装置。

下表列出了标准配置下的轴承型号。

Bearing Assignment

INNOMOTICS XP 1MB1/5 series motor are supplied with ball bearing as standard. Bearing design meets the requirements of explosion protection. Fixed bearing at DE, and floating bearing at NDE assembled as standard configuration.

The standard bearing can endure a maximum cantilever force, referred to page 14 - Permissible forces on shaft extension. If higher cantilever force on the shaft required, the increased cantilever bearing design (Option code: L22) should be considered.

As standard, FS80 ~ 250 motors are not with regreasing device, but re-greasing device (Option code: L23) can be configured. FS280 ~ 355 motors with regreasable bearing and regreasing for FS160~250 device is configured as standard.

The following table lists the standard bearing configuration.

轴承选配 Bearing Assignment

机座号 Frame size	极数 Pole	标准配置 Standard design				选项配置 Optional design			
		水平安装 Horizontal		竖直安装 Vertical		增强悬臂力的设计（选项代码L22） Increased cantilever force (option code L22)		再润滑轴承（选件号：L23） Re-greasing bearing (Option code: L23)	
		驱动端轴承 DE bearing	非驱动端轴承 NDE bearing	驱动端轴承 DE bearing	非驱动端轴承 NDE bearing	驱动端轴承 DE bearing	非驱动端轴承 NDE bearing	驱动端轴承 DE bearing	非驱动端轴承 NDE bearing
80	2 ~ 6	6204 2Z C3	6204 2Z C3	6204 2Z C3	6204 2Z C3	-	-	-	-
90	2 ~ 6	6205 2Z C3	6205 2Z C3	6205 2Z C3	6205 2Z C3	-	-	-	-
100	2 ~ 6	6306 2Z C3	6306 2Z C3	6306 2Z C3	6306 2Z C3	-	-	-	-
112	2 ~ 6	6306 2Z C3	6306 2Z C3	6306 2Z C3	6306 2Z C3	-	-	-	-
132	2 ~ 8	6308 2Z C3	6308 2Z C3	6308 2Z C3	6308 2Z C3	-	-	-	-
160	2 ~ 8	6309 2Z C3	6309 2Z C3	6309 2Z C3	6309 2Z C3	NU309	6309 C3	6309 C3	6309 C3
180	2 ~ 8	6310 2Z C3	6310 2Z C3	6310 2Z C3	6310 2Z C3	NU310	6310 C3	6310 C3	6310 C3
200	2 ~ 8	6312 C3	6312 C3	6312 C3	6312 C3	NU312	6312 C3	6312 C3	6312 C3
225	2 ~ 8	6313 C3	6313 C3	6313 C3	6313 C3	NU313	6313 C3	6313 C3	6313 C3
250	2 ~ 8	6315 C3	6315 C3	6315 C3	6315 C3	NU315	6315 C3	6315 C3	6315 C3
280	2	6315 C3	6315 C3	6315 C3	6315 C3	NU315	6315 C3	☐	☐
	4 ~ 8	6317 C3	6317 C3	6317 C3	6317 C3	NU317	6317 C3	☐	☐
315	2	6316 C3	6316 C3	6319 C3	6319 C3	NU316	6316 C3	☐	☐
	4 ~ 8	6319 C3	6319 C3	6319 C3	6319 C3	NU319	6319 C3	☐	☐
355	2	6317 C4L	6317 C4L	6320 C4L	6320 C4L	NU317	6317 C4L	☐	☐
	4 ~ 8	6320 C4L	6320 C4L	6320 C4L	6320 C4L	NU320	6320 C4L	☐	☐

当选择B43或L27时，非驱动端配置同型号C3游隙绝缘轴承。

润滑脂寿命和再润滑周期

对于不可再润滑的轴承，其润滑脂寿命与轴承寿命相当。

Grease life and re-greasing interval

For permanent lubrication, the bearing grease lifetime is matched to the bearing lifetime.

润滑脂寿命和再润滑周期（电动机水平安装） Grease lifetime and re-grease interval (Horizontal installation)

使用持久润滑型轴承时 Using permanent lubrication bearing		
机座号 Frame size	极数 Poles	润滑脂寿命 Grease lifetime up to CT 40°C [1]
80～250	2-8	20000 或 (or) 40000 [2]

[1] 标准的最高环境温度为40°C，对于持久润滑型轴承，环境温度每升高10°C，润滑脂寿命缩短一半。

[2] 40000小时适用于电动机水平安装，且轴不受额外轴向力的工作情况。

[1] Maximum ambient temperature is 40°C under standard conditions. For permanent lubrication bearings, grease lifetime will be halved for each 10K ambient temperature rising.

[2] The 40000h grease lifetime is suited for horizontal mounting motors without additional axial force.

使用可再润滑型轴承时 Using re-greasable bearing				
机座号 Frame size	极数 Poles	轴承 Bearing	润滑周期 Interval (小时 / h)	
			标准环境温度及N05/N06 Standard include e.g. N05/N06	更高的环境温度如N07/N08 Hot ambient e.g. N07/N08
160	2P	6309 C3 NU309	4000	2000
	4~8P		8000	4000
180	2P	6310 C3 NU310	4000	2000
	4~8P		8000	4000
200	2P	6312 C3 NU312	4000	2000
	4~8P		8000	4000
225	2P	6313 C3 NU313	4000	2000
	4~8P		8000	4000
250	2P	6315 C3 NU315	4000	2000
	4~8P		8000	4000
280	2P	6315 C3 NU315	4000	2000
	4P	6317 C3 NU317	6000	3000
	6~8P		8000	4000
315	2P	6316 C3 NU316	3000	1500
	4P	6319 C3 NU319	4000	2000
	6~8P		6000	3000
355	2P	6317 C4 NU317	3000	1500
	4P	6320 C4 NU320	4000	2000
	6~8P		6000	3000

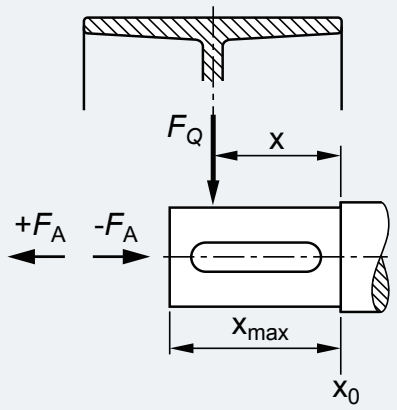
当电动机在非正常的条件下运行时，轴承的寿命会缩短。如下面几种情况：

- 当电动机的运行速度高于额定速度时，由于电动机的振动增大，使得轴承受到额外的径向力和轴向力，导致其寿命减少；
- 当环境或设备等因素引起电动机振动加大时，同样轴承也会因此受到额外的径向力和轴向力，而导致其寿命减少；

When the motor runs outside of normal conditions, the bearing life will be reduced, such as the following conditions.

- When motor runs beyond the rated speed, the increase of motor vibration will result in the extra radial and axial force on bearing. This will reduce the life of bearing;
- When the motor vibration increase due to the environment or other equipment, the bearing also will endure more radial and axial force. This also will reduce the life of bearing;

轴伸上所允许的载荷 Admissible forces on shaft extension



F_Q = 悬臂力 Cantilever force (N)
FA = 轴向力 Axial force (N)
x = 载荷施加的位置与轴肩的距离 Distance between point of force and shoulder of shaft (mm)
l = 轴伸的长度 Length of shaft extension (mm)

以下表格中所列出的数值是指允许施加在轴伸上的载荷，并且是基于轴承寿命 L10h = 20000 小时 计算的。

施加的载荷不可超过所允许的值，从而确保在隔爆间隙内轴的挠度不会超出允许的范围。

表中数值适用于 50 Hz 的使用条件。当在 60 Hz 条件下使用时，须将表中的载荷数值减小 6 %，以达到同样的使用寿命。

The allowed loads on the drive-end shaft extensions are assigned in the following tables, and these values are based on a calculated bearing service life of L10h = 20000 h.

The specified cantilever forces must not be exceeded to ensure compliance with the maximum admissible shaft bending in the flameproof joint.

The values in these tables are applicable for 50 Hz application. When using at 60 Hz, the allowed loads must be reduced by 6% in order to achieve the same lifetime.

允许的径向载荷F_Q Admissible cantilever radial force F_Q

允许的数值：X_0的值用于 X = 0 的位置，$X_{0,5}$的值用于 X = 0.5l 的位置，X_{max}的值用于 X = l 的位置（l = 轴伸长度） Valid are: x_0 values for x = 0, $x_{0,5}$ for x = 0,5 - l, and x_{max} values for x = l (l = shaft extension)												
机座号 Frame size	x_0 转速 speed				$x_{0,5}$ 转速 speed				x_{max} 转速 speed			
	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]
080	0.57	0.70	0.80	0.81	0.53	0.57	0.58	0.56	0.42	0.43	0.43	0.42
090	0.52	0.66	0.85	0.94	0.48	0.66	0.69	0.70	0.44	0.49	0.51	0.52
100	1.34	1.62	1.69	1.55	1.11	1.11	1.12	1.03	0.83	0.82	0.83	0.76
112	1.30	1.63	1.80	1.82	1.15	1.30	1.19	1.20	0.86	0.97	0.88	0.89
132	1.98	2.46	2.81	3.05	1.79	1.83	1.88	2.00	1.42	1.29	1.33	1.42
160	2.77	3.43	3.70	4.30	2.51	2.85	3.29	2.57	1.95	1.94	2.23	1.75
180	3.07	3.78	4.38	4.86	2.80	3.44	3.99	4.43	2.57	2.88	2.94	3.70
200	3.96	5.01	5.63	6.19	3.64	4.61	5.17	5.69	3.36	4.26	4.39	5.25
225	4.50	5.59	6.26	7.23	4.17	5.09	5.69	6.58	3.89	4.66	5.22	4.77
250	5.43	6.72	7.65	8.72	4.93	6.10	6.95	7.92	4.51	5.58	6.36	6.25
280	4.69	7.43	8.94	8.86	4.33	6.85	8.24	8.17	4.00	6.33	7.07	6.79
315 S/M	5.48	8.30	9.28	9.21	5.21	7.36	6.91	5.70	4.79	5.53	4.78	4.12
315 L	4.05	5.35	6.83	8.60	3.80	4.92	5.80	5.35	3.58	4.03	4.21	3.88
355	3.90	3.93	请咨询茵梦达 Values on request		3.70	3.57	请咨询茵梦达 Values on request		3.52	2.61	请咨询茵梦达 Values on request	

当径向载荷为零时所允许的轴向载荷 Admissible axial force

机座号 Frame size	水平安装 Horizontal shaft				竖直安装 - 轴伸端朝上 Vertical shaft - Shaft extension at top 安装结构型式 Mounting types：IM V3, IM V6, IM V14, IM V19, IM V36							
	轴向力 +FA Axial force +FA				轴向力向上 Force acting upwards				轴向力向下 Force acting downwards			
	转速 speed				转速 speed				转速 speed			
	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]
080	0.32	0.50	0.64	0.73	0.35	0.54	0.69	0.78	0.83	1.00	1.13	1.22
090	0.33	0.52	0.69	0.79	0.38	0.59	0.76	0.86	0.86	1.05	1.21	1.31
100	0.89	1.25	1.62	1.92	1.00	1.38	1.74	2.02	1.66	2.01	2.40	2.70
112	0.88	1.30	1.62	1.88	0.98	1.43	1.76	2.03	1.68	2.07	2.38	2.62
132	1.31	1.88	2.34	2.72	1.48	2.10	2.58	2.97	2.41	2.93	3.37	3.74
160	2.01	2.81	3.32	3.90	2.31	3.17	3.82	4.32	2.81	3.56	3.93	4.59
180	2.24	3.08	3.78	4.37	2.62	3.58	4.31	5.01	2.98	3.70	4.37	4.85
200	2.76	3.89	4.70	5.43	3.38	4.54	5.46	6.30	3.85	4.94	5.65	6.26
225	3.12	4.35	5.24	6.24	3.95	5.43	6.46	7.28	4.24	5.23	5.97	7.15
250	3.79	5.29	6.43	7.58	4.82	6.61	7.84	8.83	5.14	6.35	7.40	8.71
280	3.67	5.84	7.30	7.27	5.21	7.98	9.21	9.18	4.51	6.51	8.19	8.16
315 S/M	4.13	7.00	7.73	8.74	7.26	10.35	11.85	13.06	4.70	7.65	8.29	9.50
315 L	4.03	6.07	7.34	8.29	8.45	10.93	13.04	14.12	4.77	6.09	6.88	7.74
355	4.98	7.67	请咨询茵梦达 Values on request		12.60	15.17	请咨询茵梦达 Values on request		5.16	6.21	请咨询茵梦达 Values on request	

当径向载荷为零时所允许的轴向载荷 Admissible axial force

机座号 Frame size	水平安装 Horizontal shaft				竖直安装 - 轴伸端朝下 Vertical shaft - Shaft extension at bottom 安装结构型式 Mounting types：IM V1, IM V5, IM V10, IM V15, IM V18							
	轴向力 -FA Axial force -FA				轴向力向上 Force acting upwards				轴向力向下 Force acting downwards			
	转速 speed				转速 speed				转速 speed			
	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]
080	0.86	1.04	1.18	1.27	0.89	1.08	1.23	1.32	0.29	0.46	0.59	0.68
090	0.92	1.12	1.28	1.38	0.98	1.18	1.35	1.45	0.27	0.45	0.61	0.72
100	1.78	2.14	2.51	2.80	1.89	2.27	2.63	2.91	0.77	1.12	1.51	1.81
112	1.77	2.19	2.51	2.77	1.86	2.32	2.64	2.92	0.79	1.18	1.49	1.73
132	2.58	3.15	3.61	3.99	2.75	3.37	3.85	4.24	1.14	1.66	2.10	2.47
160	3.12	3.92	4.43	5.01	3.42	4.27	4.92	5.43	1.71	2.46	2.82	3.48
180	3.36	4.20	4.90	5.49	3.74	4.70	5.43	6.13	1.86	2.58	3.25	3.73
200	4.46	5.59	6.40	7.13	5.08	6.25	7.16	8.01	2.14	3.24	3.94	4.56
225	5.07	6.30	7.19	8.19	5.90	7.38	8.41	9.23	2.29	3.28	4.02	5.20
250	6.17	7.67	8.81	9.96	7.20	8.99	10.22	11.21	2.76	3.97	5.02	6.33
280	6.05	8.64	10.10	10.07	7.59	10.78	12.01	11.98	2.13	3.71	5.39	5.36
315 S/M	6.73	10.18	10.91	11.92	9.86	13.53	15.03	16.24	2.10	4.47	5.11	6.32
315 L	6.63	9.25	10.52	11.47	11.05	14.11	16.22	17.30	2.17	2.91	3.70	4.56
355	7.78	11.15	请咨询茵梦达 Values on request		15.40	18.65	请咨询茵梦达 Values on request		2.36	2.73	请咨询茵梦达 Values on request	

在存在径向力[1]的条件下允许的额外的轴向力 Additional axial force

机座号 Frame size	水平安装 Horizontal shaft				竖直安装 - 轴伸端朝上 Vertical shaft - Shaft extension at top 安装结构型式 Mounting types：IM V3, IM V6, IM V14, IM V19, IM V36							
	轴向力 +FA Axial force +FA				轴向力向上 Force acting upwards				轴向力向下 Force acting downwards			
	转速 speed				转速 speed				转速 speed			
	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]
080	0.05	0.15	0.22	0.27	0.08	0.19	0.27	0.32	0.55	0.65	0.72	0.76
090	0.08	0.16	0.24	0.30	0.14	0.23	0.32	0.36	0.61	0.68	0.76	0.82
100	0.26	0.48	0.74	1.16	0.37	0.60	0.86	1.27	1.03	1.24	1.51	1.94
112	0.26	0.51	0.67	0.90	0.35	0.63	0.81	1.05	1.05	1.27	1.43	1.64
132	0.38	0.69	0.93	1.13	0.55	0.91	1.17	1.38	1.48	1.74	1.96	2.15
160	0.78	1.21	1.52	1.79	1.08	1.57	2.02	2.21	1.58	1.96	2.13	2.48
180	0.90	1.35	1.70	2.02	1.28	1.85	2.23	2.66	1.64	1.97	2.29	2.50
200	1.04	1.63	2.06	2.43	1.66	2.28	2.82	3.30	2.13	2.68	3.01	3.26
225	1.19	1.86	2.35	2.77	2.02	2.94	3.57	3.81	2.31	2.74	3.08	3.68
250	1.43	2.25	2.84	3.35	2.46	3.57	4.25	4.60	2.78	3.31	3.81	4.48
280	1.65	2.55	3.22	3.22	3.19	4.69	5.13	5.13	2.49	3.22	4.11	4.11
315 S/M	1.73	3.02	3.49	3.55	5.56	6.38	7.34	7.34	3.00	3.68	3.78	3.78
315 L	1.73	2.77	3.49	3.98	6.68	8.52	9.94	10.16	3.00	3.68	3.78	3.78
355	2.73	4.29	请咨询茵梦达 Values on request		10.84	13.44	请咨询茵梦达 Values on request		3.40	4.48	请咨询茵梦达 Values on request	

[1] 此处的径向力指第 15 页“允许的径向载荷 FQ”表中数值

[1] The radial force means data of "Admissible cantilever radial force FQ" in page 15.

在存在径向力[1] 的条件下允许的额外的轴向力 Additional axial force

机座号 Frame size	水平安装 Horizontal shaft				竖直安装 - 轴伸端朝下 Vertical shaft - Shaft extension at bottom 安装结构型式 Mounting types：IM V1, IM V5, IM V10, IM V15, IM V18							
	轴向力 -FA Axial force -FA				轴向力向上 Force acting upwards				轴向力向下 Force acting downwards			
	转速 speed				转速 speed				转速 speed			
	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]
080	0.59	0.69	0.76	0.81	0.62	0.73	0.81	0.86	0.01	0.11	0.18	0.22
090	0.67	0.75	0.84	0.89	0.73	0.82	0.91	0.96	0.02	0.09	0.17	0.23
100	1.15	1.36	1.63	2.05	1.26	1.49	1.74	2.16	0.14	0.35	0.63	1.06
112	1.14	1.40	1.56	1.79	1.24	1.52	1.69	1.94	0.16	0.38	0.54	0.75
132	1.65	1.96	2.20	2.40	1.82	2.18	2.44	2.65	0.21	0.47	0.69	0.88
160	1.89	2.32	2.63	2.90	2.19	2.67	3.12	3.32	0.48	0.86	1.02	1.37
180	2.02	2.47	2.82	3.14	2.40	2.97	3.35	3.78	0.52	0.85	1.17	1.38
200	2.74	3.33	3.76	4.13	3.36	3.99	4.52	5.01	0.42	0.98	1.30	1.56
225	3.14	3.81	4.30	4.72	3.97	4.89	5.52	5.76	0.36	0.79	1.13	1.73
250	3.81	4.63	5.22	5.73	4.84	5.95	6.63	6.98	0.40	0.93	1.43	2.10
280	4.03	5.35	6.02	6.02	5.57	7.49	7.93	7.93	0.11	0.42	1.31	1.31
315 S/M	4.33	6.20	6.67	6.73	8.16	9.56	10.52	10.52	0.40	0.50	0.60	0.60
315 L	4.33	5.95	6.67	7.16	9.28	11.70	13.12	13.34	0.40	0.50	0.60	0.60
355	5.53	7.77	请咨询茵梦达 Values on request		13.64	16.92	请咨询茵梦达 Values on request		0.60	1.00	请咨询茵梦达 Values on request	

[1] 此处的径向力指第 15 页“允许的径向载荷 FQ”表中数值

[1] The radial force means data of "Admissible cantilever radial force FQ" in page 15.

当需要电机轴伸承受更大的径向载荷时，可以选择在驱动端使用滚子轴承（选件号 L22）。此时非驱动端的轴承将固定。

施加的载荷不可超过所允许的值，从而确保在隔爆间隙内轴的挠度不会超出允许的范围。

表中数值适用于 50 Hz 的使用条件。当在 60 Hz 条件下使用时，须将表中的载荷数值减小 6 %，以达到同样的使用寿命。

If higher radial loads are needed, roller bearing at DE side (option code L22) can be selected. In this case, the NDE bearing will be located bearing.

The specified cantilever forces must not be exceeded to ensure compliance with the maximum admissible shaft bending in the flameproof joint.

The values in these tables are applicable for 50 Hz application. When using at 60 Hz, the allowed loads must be reduced by 6% in order to achieve the same lifetime.

当选用L22选项时，允许的径向载荷F_Q Admissible cantilever radial force F_Q when using option L22

允许的数值：X_0的值用于 X = 0 的位置，$X_{0,5}$的值用于 X = 0.5l 的位置，X_{max}的值用于 X = l 的位置（l = 轴伸长度） Valid are: x_0 values for x = 0, $x_{0,5}$ for x = 0,5 - l, and x_{max} values for x = l (l = shaft extension)												
机座号 Frame size	x_0 转速 speed				$x_{0,5}$ 转速 speed				x_{max} 转速 speed			
	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]
160	5.38	5.34	6.15	4.82	2.87	2.85	3.29	2.57	1.95	1.94	2.23	1.75
180	8.15	8.10	7.93	9.95	4.37	4.34	4.44	5.57	2.98	2.96	3.03	3.81
200	11.03	11.41	11.01	13.45	6.14	6.35	6.13	7.49	4.24	4.39	4.23	5.18
225	14.99	14.64	16.11	14.01	8.53	6.73	8.20	7.13	5.94	4.98	5.48	4.77
250	18.19	19.21	18.71	17.34	9.95	10.51	10.24	9.49	6.83	7.22	7.03	6.51
280	16.48	18.07	16.80	16.14	9.64	10.48	9.74	9.35	6.71	7.27	6.75	6.49
315 S/M	21.25	12.97	12.10	10.59	12.93	6.87	6.45	5.97	9.27	4.98	4.81	4.17
315 L	15.96	10.30	10.74	9.92	9.82	5.56	5.80	5.35	7.13	4.03	4.21	3.88
355	18.70	请咨询茵梦达 Values on request			11.40	请咨询茵梦达 Values on request			8.20	请咨询茵梦达 Values on request		

当选用L22选项时，在存在径向力[1]的条件下允许的额外的轴向力 Additional axial force when using option L22

机座号 Frame size	水平安装 Horizontal shaft				竖直安装 Vertical shaft							
	轴向力 ±FA Axial force ±FA				轴向力向上 Force acting upwards				轴向力向下 Force acting downwards			
	转速 speed				转速 speed				转速 speed			
	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]	3000 rpm [KN]	1500 rpm [KN]	1000 rpm [KN]	750 rpm [KN]
160	2.09	2.81	3.23	3.84	2.39	3.17	3.73	4.26	1.79	2.46	2.73	3.42
180	2.40	3.26	3.88	4.41	2.78	3.76	4.41	5.05	2.02	2.76	3.35	3.77
200	3.53	4.72	5.60	6.33	4.15	5.37	6.36	7.20	2.91	4.07	4.84	5.46
225	3.40	4.66	5.47	7.15	4.23	5.74	6.69	8.19	2.57	3.59	4.25	6.11
250	4.50	6.09	7.29	8.51	5.53	7.41	8.70	9.76	3.47	4.77	5.88	7.26
280	3.98	6.43	7.77	8.83	5.52	8.57	9.68	10.74	2.44	4.30	5.86	6.92
315 S/M	3.77	7.19	8.61	9.71	6.35	10.13	11.98	13.08	1.19	4.25	5.24	6.34
315 L	4.11	7.16	8.40	9.35	7.25	11.17	13.07	14.13	0.97	3.15	3.73	4.57
355	5.39	请咨询茵梦达 Values on request			10.51	请咨询茵梦达 Values on request			0.27	请咨询茵梦达 Values on request		

[1] 此处的径向力指上表"允许的径向载荷FQ（NU轴承）"表中数值

[1] The radial force means data of "Admissible cantilever radial force FQ (reinforced bearing)" above.

接线盒

接线盒标准位置位于机座顶端，且自身可 4 × 90 °C 旋转，从而使电缆可以从各个方向进入。当选择进线口朝向电机驱动端时，须留意电机安装环境前方是否留有足够空间供电缆走线。标准接线盒使用喇叭口型进线斗，机座号 80 ~ 225 的电机有一个进线斗，机座号 250 ~ 355 的电机有两个进线斗。

Connection box

The connection box is located on the top of motor housing as standard, and can be rotated by 4 × 90° to allow for cable entry from each direction. When selecting the entrance to the motor drive end, please notice whether there is enough space in front of the installation for the cable line. For the standard connection box with hoop gland, the motor of FS 80~225 has one hoop gland, and the motor of FS250~355 has two.

根据需求，INNOMOTICS XP 1MB1/5 系列隔爆电机还可提供葛兰进线的接线盒（选件号：X98）；另外还可以配置带有辅助接线盒的葛兰进线接线盒（选件号：L97），这里辅助接线盒可以满足电机配置较多热保护时从而需要较多辅助接线端子的情况，这些端子可以通过这个辅助接线盒单独接线。

Besides standard connection box, another type of connection box with cable gland (option code: X98) can be configured for INNOMOTICS XP 1MB1/5 series motors. And connection box with auxiliary terminal box (option code: L97) also can be configured, this type of connection box can be used for separate connection of more thermal protectors selected.



标准配置接线盒
Standard connection box



X98接线盒（可选）
Connection box of option code X98



L97接线盒（可选）
Connection box of option code L97

标准接线盒 Standard main terminal box

机座号 Frame Size	主接线端子数 No. of main terminal	主接线端子螺纹 Main terminal thread	主接线端子允许的线缆尺寸范围（mm^2）[2] Main terminal's permissible cable cross section (mm^2)	主进线孔数量 No. of main cable entry	接线斗直径 Hoop gland dia. (mm)	进线电缆直径可选尺寸 Cable diameter can be selected (mm) min.~ max.	最大辅助端子数 [1] Max. auxiliary terminal	辅助电缆进线孔[3] Auxiliary cable entry
80	6	M4	6 ~ 35	1	42	13 ~ 14 19 ~ 20 24 ~ 25	6	1 x M20 × 1.5
90								
100		M4		1			8	
112								
132								
160		M5	6 ~ 70	1	58	13 ~ 14 19 ~ 20 25 ~ 26 30 ~ 31 34 ~ 35	12	
180								
200		M6	16 ~ 70	1	72	19 ~ 20 25 ~ 26 31 ~ 32 37 ~ 38 41 ~ 42	12	
225								
250		M10	16 ~120	2			12	
280								
315		M16	50 ~185	2	90	30 ~ 31 35 ~ 36 44 ~ 45 49 ~ 50 59 ~ 60 69 ~ 70	12	
355		M20	50 ~ 300					

注：
[1] 每个辅助接线端子所能适配的电缆接头不超过 2.5 mm^2。
[2] 请根据进线电缆直径可选尺寸选择电缆，并保证所选电缆允许的电缆直径处于此列数据范围内。
[3] 对于 FS160-355，如需两个辅助电缆进线孔，请选择 X98 接线盒。

Notes:
[1] The adaptable diameter to each auxiliary terminal can not exceed 2.5mm^2.
[2] Please choose the cable entry diameter according to the cable diameter can be selected column. And ensure the allowed cable entry diameter is within the range in this column.
[3] For FS160-355, if two auxiliary cable entry is needed, please select X98 connection box.

选项 - 配备闷盖的接线盒（选项代码X98）

Option - Main terminal box with plug (option code X98)

机座号 Frame Size	主接线端子数 No. of main terminal	主接线端子螺纹 Main terminal thread	主进线孔 Main cable entry	最大辅助端子数 [1] Max. auxiliary terminal	辅助进线孔 Auxiliary cable entry
80	6	M4	1xM16×1.5+1xM25×1.5	6	1xM20×1.5
90					
100		M4	2xM32×1.5	8	
112					
132					
160		M5	2xM40×1.5	12	2xM20×1.5
180					
200		M6	2xM50×1.5	12	
225					
250		M10	2xM63×1.5	12	
280					
315		M16	2xM80×2	12	
355		M20			

选项 - 带辅助接线盒的接线盒（选项代码L97）

Option - Main terminal box together with auxiliary terminal box design (option code L97)

机座号 Frame Size	主接线端子数 No. of main terminal	主接线端子螺纹 Main terminal thread	主进线孔 Main cable entry	最大辅助端子数 [1] Max. auxiliary terminal	辅助进线孔 Auxiliary cable entry
160	6	M5	2xM40×1.5	26	2xM20×1.5
180					
200		M6	2xM50×1.5		
225					
250		M10	2xM63×1.5	32	
280					
315		M16	2xM80×2		
355		M20			

注：

[1] 每个辅助接线端子所能适配的电缆接头不超过 2.5 mm^2。

Notes:

[1] The adaptable diameter to each auxiliary terminal can not exceed 2.5mm^2.

接线盒位置

接线盒除标准位置外，还可处于电动机机座的左侧或右侧，电动机接线盒位置可以在电动机订货号的第 16 位用数字表示出。

- 标配接线盒在顶部，电动机订货号的第 16 位数字为 4，进线口默认朝向机座右侧；
- 接线盒在右边，电动机订货号的第 16 位数字为 5，进线口默认朝向非驱动端；
- 接线盒在左边，电动机订货号的第 16 位数字为 6，进线口默认朝向非驱动端。

接线盒的位置是指从电动机驱动端来看的位置。

Location of the connection box

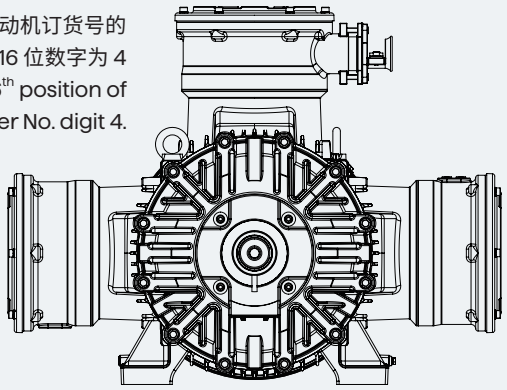
Besides standard position, the connection box also can be on the right or left of motor housing. The position of terminal box is indicated on the 16th digit of motor order code.

- On top (Standard), 16th digit of Motor Order No. digit 4, the cable inlet will toward the right of frame as default.
- On RHS, 16th digit of Motor Order No. digit 5, the cable inlet will toward non-drive side as default.
- On LHS, 16th digit of Motor Order No. digit 6, the cable inlet will toward non-drive side as default.

The position of connection box is described by viewed from drive end (DE).

当接线盒位于机座左侧或右侧时，进线口默认朝向非驱动端，如需进线口朝其他方向，请选择选件代码R10，R11或R12。但须检查电机安装后是否有足够空间供电缆进线。

When terminal box is mounted on the left or right side of the motor, the cable entry will be toward to non-driven end as default, if the cable entry is requested toward to other direction, separate option code (option code R10, R11 or R12) should be configured. Please ensure enough space of cable connection.



接线盒的进线孔

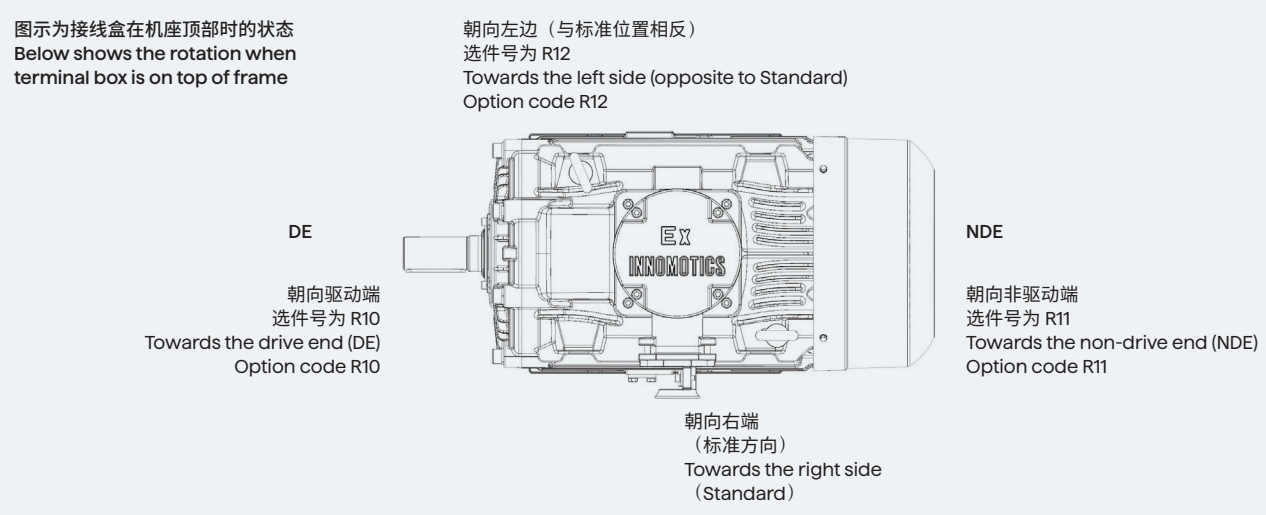
除非另作规定，否则对于接线盒在机座顶部的电机，进线孔默认朝向右侧（从电机驱动端看）。可通过选项来旋转接线盒，改变进线孔方向。旋转的方向为从接线盒正上方俯视时的方向。

- 接线盒顺时针旋转 90°，选件号为 R10。
- 接线盒逆时针旋转 90°，选件号为 R11。
- 接线盒旋转 180°，选件号为 R12。

Cable entry on connection box

Unless stated, otherwise for the motor with the connection box at the top, the cable entry is at right side (viewed from motor driven side) by default. Terminal box can be rotated by using options to change the direction of cable entry. The rotation direction defines by viewing from the top of terminal box.

- Rotating the connection box by clockwise 90°, Option code R10.
- Rotating the connection box by counter-clockwise 90°, Option code R11.
- Rotating connection box by 180°, Option code R12.



如果接线盒的位置改变时（如右侧或左侧），必须检查进线孔的位置是否方便进线。必须检查电机安装后是否有足够空间供电缆进线。具体尺寸参考 36 页外形尺寸。必要时，可以同时订购其它选件（R10，R11 和 R12）。

If the position of the connection box (connection box RHS or LHS) is changed, the position of the cable entry must be checked. It is necessary to check whether there is enough space for cable entry. The specific dimensions refer to outline dimensions in page 36. If necessary, it can be ordered with the corresponding order codes (R10, R11 and R12).

电气特性 Electrical design

额定输出

INNOMOTICS XP 1MB1/5 电动机的额定功率是指电动机在连续运行的情况下 S1（IEC 60034-1），此时周围环境温度为 -20 °C ~ 40 °C，海拔高度不超过 1000 m。

电压、频率

IEC 60034-1 将电压和频率的偏差分为 A 类（电压偏差 ±5 %，频率偏差 ±2 %）和 B 类（电压偏差 ±10 %，频率偏差 +3 % / -5 %）。电动机均能够在 A 类和 B 类提供额定转矩。在 A 类中，温度比正常运行下温度大约提升 10 K。

Rated Output

INNOMOTICS XP 1MB1/5 motors rated output powers means that the motor runs under continuous duty S1 (IEC 60034 - 1) operation when operated at ambient temperature from -20 °C to 40 °C and at altitudes of up to 1000 m over sea.

Voltage and Frequency

IEC 60034-1 differentiates between Category A (combination of voltage deviation ±5 % and frequency deviation ±2 %) and Category B (combination of voltage deviation ±10 % and frequency deviation +3 % / -5 %) for voltage and frequency fluctuations. The motors can supply their rated torque in both Category A and B. In Category A, the temperature rise is approximately 10 K higher than during normal operation.

标准 Standard 60034 - 1	类别 Category A	类别 Category B
电压偏差 Voltage deviation	±5 %	±10 %
频率偏差 Frequency deviation	±2 %	+3 % / -5 %
根据标准，不推荐电动机在 B 类情况下长时间运行 According to the standard, longer operation is not recommended for Category B.		

电气数据公差

- 效率 η
  - 0.15 × (1 – η)
  - 效率 η 为小于 1 的值
- 功率因数：(1 – cos φ) / 6
  - 最小绝对值：0.02
  - 最大绝对值：0.07
- 转差率：±20 %（电动机的偏差 < 1 kW ± 30 % 时是允许的）
- 堵转电流：+20 %
- 堵转转矩：-15 % ~ +25 %
- 最大转矩：-10 %
- 转动惯量：±10 %

过载倍数

根据 IEC60034 标准要求，INNOMOTICS XP 1MB1/5 系列电动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。

Tolerance for electrical data

- Efficiency η
  - 0.15 × (1 – η)
  - With η being a decimal number
- Power factor - (1 – cos φ) / 6
  - Minimum absolute value: 0.02
  - Maximum absolute value: 0.07
- Slip ±20 % (for motors < 1 kW ±30 % is admissible)
- Locked-rotor current +20 %
- Locked-rotor torque -15 % to +25 %
- Breakdown torque -10 %
- Moment of inertia ±10 %

Overload times

According to IEC60034, INNOMOTICS XP 1MB1/5 series motors are designed to withstand overload capacity of 1.5 times rated current for 2 minutes at rated voltage and frequency.

绝缘系统

INNOMOTICS XP 1MB1/5 电动机绝缘系统具有可靠性、耐用性好和寿命长、耐冲击能力强的特点。

INNOMOTICS XP 1MB1/5 系列电动机标准设计温度等级为 155（F）。当 INNOMOTICS XP 1MB1/5 电动机电网直接供电，且输出额定功率时，其绝缘系统按 130（B）温度等级使用。

电动机保护

电动机过热保护

电动机热保护是指将温度保护传感器或温度检测传感器嵌入电动机定子绕组或其他适当的地方，从而使其不会因为过热而受到破坏。

不同的电动机热保护方式可以在电动机订货号的第 15 位采用不同的字母或者选件号来表示。下面是电动机的绕组保护和轴承保护的几种保护方式。

绕阻保护

■ **PTC 热敏电阻温度保护**

目前，最常用的电动机绕组过热保护方式是采用在电动机绕组中安装 PTC 热敏电阻进行保护。由于热敏电阻的热容量较低以及其在绕足间优良的热传导特性，绕组温度可被准确的监控。当达到极限温度时（标称跳闸温度），PTC 热敏电阻阻值会出现一个阶跃变化。这一变化被跳闸装置捕捉后，即可断开辅助回路。

PTC 热敏电阻本身不能耐受大电流和高电压，否则会导致半导体器件损坏。PTC 热敏电阻和跳闸装置的开关滞后效应小，因此可以实现快速重起。对于重载起动、起动频率高、负载变化大、环境温度高或电源波动大等应用场合，建议电动机使用该类保护。

Insulation system

The insulation system of INNOMOTICS XP 1MB1/5 results in high reliability, a long service life and high resistance to stress, for example, during starting or under overload conditions.

INNOMOTICS XP 1MB1/5 series motors are designed for temperature class 155 (F). At rated output with line-fed operation, the motors are used in temperature class 130 (B).

Motor protection

Motor thermal overload protection

Motor thermal protection means to use of thermal protectors and thermal detectors incorporated into the stator windings or placed in other suitable positions in motor in order to protect them against serious damage due to thermal overloads.

The order variants for motor protection are coded with letters in the 15th position of the Motor Order No., or ordered with Option code. Some protection method about winding protection and bearing protection are shown in the following.

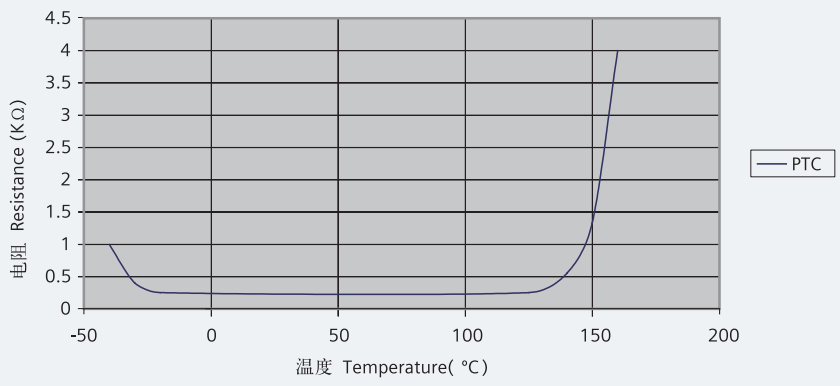
Winding protection

■ **PTC thermistors protection**

The most comprehensive protection against thermal overloading of the motor is provided by PTC thermistors (thermistor motor protection) installed in the motor winding. The temperature of the winding can be accurately monitored thanks to its lowheating capacity and the excellent heat contact with the winding. When a limit temperature is reached (nominal tripping temperature), the resistance of PTC thermistors will have a step change. This is evaluated by a tripping unit and can be used to open auxiliary circuits.

The PTC thermistors themselves cannot be subjected to high currents and voltages. This would result in destruction of the semiconductor. The switching hysteresis of the PTC thermistor and tripping unit is low, which supports fast restarting of the drive. Motors with this type of protection are recommended for heavy duty starting, switching duty, extreme changes in load, high ambient temperatures or fluctuating supply systems.

PTC 曲线图
The graph of PTC



两种 PTC 热敏电阻温度保护

- 电动机绕组带一组三芯串联的 PTC 热敏电阻用于跳闸，跳闸温度为 155 °C，电动机订货号第 15 位字母为“B”，需 2 个辅助接线端子。
- 电动机绕组带两组三芯串联的 PTC 热敏电阻，其中一组用于在电动机跳闸前报警，一组用于跳闸，报警温度为 145 °C，跳闸温度为 155 °C，电动机订货号第 15 位字母为“C”，需 4 个辅助接线端子。

■ PT100 热敏电阻传感器温度保护

PT100 热敏电阻是一种精确高、灵敏度高的传感器，其线性温度阻值优于其他电阻式传感器，性能稳定、可靠性高，其特性曲线如下。

四种 PT100 热敏电阻保护选项：

- 绕组中带三个单支二线制 PT100 测温元件，电机的铭牌编号 15 位数为H，选项代码为 Q60（适用于 FS100 ~ 355），需 6 个辅助接线端子。
- 绕组中带六个单支二线制 PT100 测温元件，电机的铭牌编号 15 位数为J，选项代码为 Q61（适用于 FS180 ~ 355），需 12 个辅助接线端子。
- 绕组中带三个单支三线制 PT100 测温元件，电机的铭牌编号 15 位数为 Q，选项代码为 Q63（适用于 FS160 ~ 355），需 9 个辅助接线端子。
- 绕组中带六个单支三线制 PT100 测温元件，电机的铭牌编号 15 位数为 R，选项代码为 Q64（适用于 FS180 ~ 355），需 18 个辅助接线端子。

2 alternatives of PTC protection

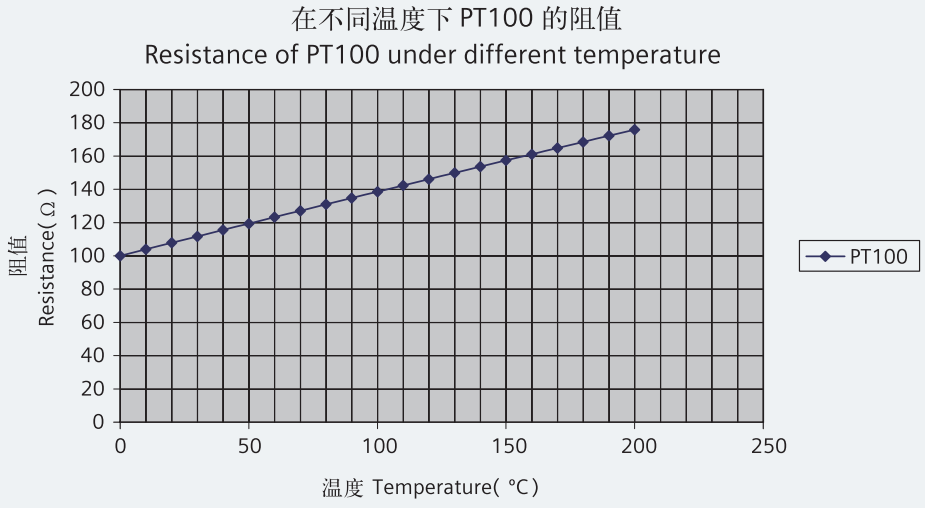
- Motor winding is protected with PTC thermistors with 3 embedded temperature sensors for tripping. Connection be done through 2 auxiliary terminals in the connection box. 15th position of Motor Order No. letter B.
- Motor winding is protected with two sets of three temperature sensors, one set is for warning, another set for tripping. The warning temperature is 145 °C, and tripping temperature is 155 °C. Connection be done through 4 auxiliary terminals in the connection box. 15th position of Motor Order No. letter C.

■ PT100 resistance thermometers protection

PT100 thermometers are a high precision, high sensitivity, better linear temperature resistance, more stable performance, and high reliability sensor, whose characteristics are as following.

4 alternatives of PT100

- Installation of 3 single 2 wires PT100 resistance thermometers. Connection be done through 6 auxiliary terminals in the connection box. 15th position of Motor Order No. letter H. Option code is Q60(FS100~355).
- Installation of 6 single 2 wires PT100 resistance thermometers. Connection be done through 12 auxiliary terminals in the connection box. 15th position of Motor Order No. letter J.Option code is Q61(FS180~355).
- Installation of 3 single 3 wires PT100 resistance thermometers. Connection be done through 9 auxiliary terminals in the connection box. 15th position of Motor Order No. letter Q. Option code is Q63(FS160~355).
- Installation of 6 single 3 wires PT100 resistance thermometers. Connection be done through 18 auxiliary terminals in the connection box. 15th position of Motor Order No. letter R.Option code is Q64(FS180~355).



■ PT1000 热敏电阻传感器温度保护

PT1000 热敏电阻可对电机绕组温度进行更精确地监测，有两种选项方案可供选择：

- 绕组中带一个单支两线制 PT1000 测温元件，电机的铭牌编号 15 位数为 K，选项代码为 Q35（适用于 FS80 ~ 355），需 2 个辅助接线端子。
- 绕组中带两个单支两线制 PT1000 测温元件，电机的铭牌编号 15 位数为 L，选项代码为 Q36（适用于 FS80 ~ 355），需 4 个辅助接线端子。

轴承保护

INNOMOTICS XP 1MB1/5 电动机轴承标配不带轴承测温装置。对于某些苛刻的应用，推荐对轴承采取高温保护措施。轴承温度保护是通过在电动机驱动端和非驱动端的轴承端盖拧入温度传感器、监控温度来进行保护。温度传感器的引接线引入电动机主接线盒内。

- 前后端轴承各装一个单支双线制PT100测温元件，选项代码为Q72，共需使用4个辅助接线端子。
- 前后端轴承各装一个单支三线制PT100测温元件，选项代码为Q78，共需使用6个辅助接线端子。
- 前后端轴承各装一个双支三线制PT100测温元件，选项代码为Q79，共需使用12个辅助接线端子。

防潮加热保护

当电动机处于较为恶劣的环境时，比如湿度非常大或者昼夜温差比较大，电动机的绕组很可能出现凝露的现象，这样会带来电动机烧毁的风险。对于这种情况，建议对电动机绕组配置防潮加热带进行保护。

电动机防潮加热带必须在电动机工作过程中处于不工作状态；当电动机停机时，防潮加热带必须启动工作，为绕组加热。根据所需电压的不同，两种防潮加带的选项可供选择：

- 绕组中安装220V防潮加热带，电机的选项代码为Q04
- 绕组中安装230V防潮加热带，电机的选项代码为Q02。

这两种选项均需使用两个辅助接线端子。防潮加热带的电气参数如下表所示。

■ PT1000 resistance thermometers protection

The PT1000 thermistor can monitor the temperature of the motor winding more accurately. 2 alternatives of PT1000

- Installation of 1 single 2 wires PT1000 resistance thermometers. Connection be done through 2 auxiliary terminals in the connection box. 15th position of Motor Order No. letter K. Option code is Q35(FS80~355).
- Installation of 2 single 2 wires PT1000 resistance thermometers. Connection be done through 4 auxiliary terminals in the connection box. 15th position of Motor Order No. letter L. Option code is Q36(FS80~355).

Bearing protection

INNOMOTICS XP 1MB1/5 motors bearing has no protection as standard. For some severe application, such as high load, high coolant temperature and etc., the bearing is recommended to be protected. The bearing is protected through thermometers screwed into the bearing plates of motor driven end (DE) and non-drive-end (NDE). The wires are routed through the main connection box.

- Equipped with one single 2-wires PT100 thermometer in each side bearings, and the option code is Q72, which totally requires 4 auxiliary terminals for both sides.
- Equipped with one single 3-wires PT100 thermometer in each side bearings, and the option code is Q78, which totally requires 6 auxiliary terminals for both sides.
- Equipped with one double 3-wires PT100 thermometer in each side bearings, and the option code is Q79, which totally requires 12 auxiliary terminals for both sides.

Anti-condensation heater

Motors whose windings are at risk of condensation due to the climatic conditions, e.g. inactive motors in humid atmospheres or motors that are subjected to widely fluctuating temperatures can be equipped with anti-condensation heaters.

Anti-condensation heaters must be switched off during operation. When motor shut down, the heaters must be switched on. 2 alternatives of anti-condensation heaters:

- Installed in the windings,220V. The motor's option code is Q04.
- Installed in the windings,230V. The motor's option code is Q02.

These two options are required to use two auxiliary terminals. The electrical parameters of anti-condensation heaters are shown in the following table.

防潮加热带电气参数 Electrical data of Anti-condensation heater

机座号 Frame size	功率和电压 Power (W) & voltage (V)	
	Q04	Q02
80 ~ 90	20 W / 220 V	20 W / 230 V
100 ~ 112	30 W / 220 V	30 W / 230 V
132 ~ 160	40 W / 220 V	40 W / 230 V
180 ~ 200	50 W / 220 V	50 W / 230 V
225 ~ 280	60 W / 220 V	60 W / 230 V
315	80 W / 220 V	80 W / 230 V
355	100 W / 220 V	110 W / 230 V

变频应用 Converter fed application

1MB1/5 电动机适于变转速、恒转速的各种应用，如风机、泵、压缩机、纺织机械等。

当变频器驱动电动机时，电磁干扰的程度大小取决于变频器的类型（种类，IGBT 数量，干扰控制措施及制造商）、布线、距离以及应用需求。在设计和应用阶段必须参考变频器制造商关于电磁兼容性的安装指导。

当 1MB1/5 电动机变频应用（变频器供电），且输出额定功率时，电动机的绝缘等级 155（F），使用温度等级 130（B）。电机降容输出约 7%-8%，选件号 B43。对于变频防爆应用，须选择绕组测温，如 PTC、PT100 等。为了避免杂散电流对电动机轴承的损坏，FS315 和 FS355 电机在选择 B43 选件后将标配绝缘轴承，推荐 FS250 ~ 280 电动机选配绝缘轴承。

变频器驱动运行

1MB1/5 电动机的标准绝缘系统设计要求，能够保证其在变频器供电电压不超过 460 V 时正常运行。

1MB1/5 电动机带有特定的负载时能够使用变频器驱动，其特定的负载扭矩如以下图表所示：

1MB1/5 motors are suitable for pumps, fans, compressors, texitle machine and mechanical machine applications where variable or constant speed is required.

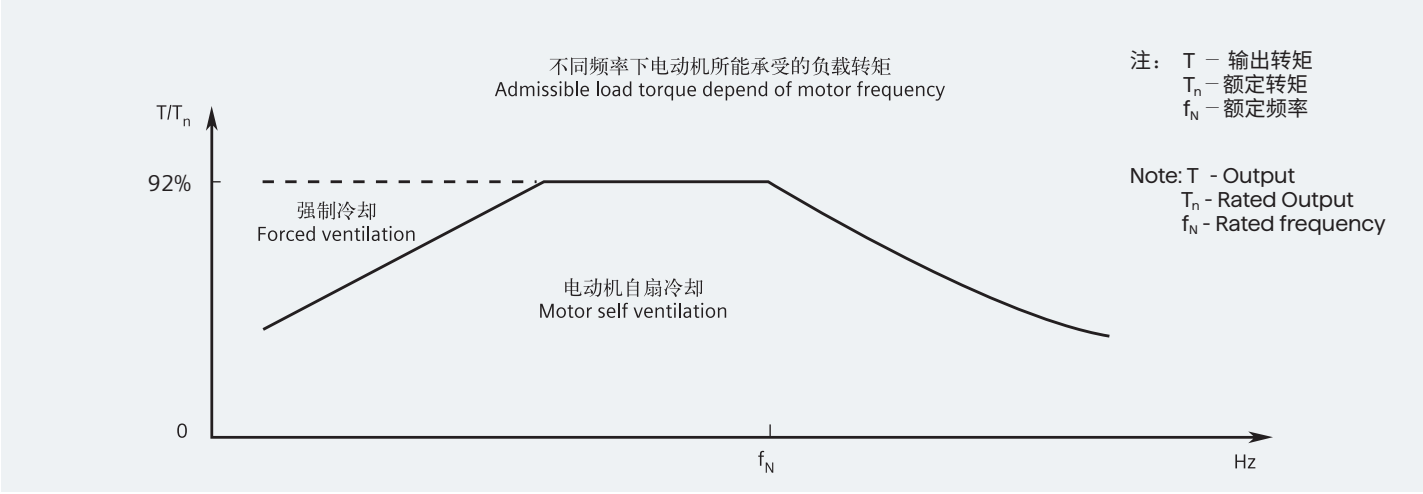
In application where the motor is driven by a converter, the degree of electrical interference depends on the type of converter used (type, number of IGBTs, interference suppression measures, and manufacturer), cabling, distance and application requirements.The installation guidelines of the converter manufacturer with regards to electromagnetic compatibility must be considered at all times during the design and implementation phases.

At rated output with converter fed operation, the motors will be temperature class 155 (F), utilized according to 130 (B). derating approx. 7%-8%. Option code B43. With converter fed operation, winding protection is recommended, eg. PTC, PT100... To prevent damage as a result of bearing currents, insulated bearings are equipped as default for FS315 and FS355 when B43 is selected. insulated bearings are recommended to be assembled for frame size 250 and 280.

Converter-fed operation

The standard insulation of the 1MB1/5 motors is designed such that operation is possible on the converter at mains voltage up to 460 V.

1MB1/5 motors are capable for converter-fed operation with certain characteristics load, of which the load torque characteristics is referred in the following diagram:



1MB1/5 系列电机在不同频率下工作时的情况为：5 ~ 30Hz 范围为变转矩，30 ~ 50Hz 为恒转矩，50Hz ~ Max 为恒功率。

在电动机运行速度超过额定转速时，噪声和振动值将增加，并且轴承的寿命将缩短。需要注意再润滑周期和润滑脂的寿命。

变频运行时当频率超过 60 Hz 时，需要按照特定的限值进行动平衡。

1MB1/5 隔爆电机所允许的变频范围请详询茵梦达。

变频铭牌

1MB1/5 电动机变频使用时，选件号 B43，电机铭牌会有两块，除了 P10 页所示标准铭牌外，还额外提供一个变频铭牌，变频铭牌上会提供 5 Hz、25 Hz、50 Hz、Max 这四种频率时的参数。

The situation when 1MB1/5 series motors working on different frequencies is: inconstant torque at 5 ~ 30Hz, constant torque at 30 ~ 50Hz, constant power at 50Hz ~ Max.

At operating speeds above rated speed the noise and vibration levels increase and the bearing life time reduce. Attention should be paid to the re-greasing intervals and the grease service life.

For converter-fed operation with frequencies greater than 60 Hz special balancing is required for compliance with the specified limit values.

The allowed variable frequency range of 1MB1/5 flameproof motors please consult with INNOMOTICS.

VSD nameplate

When with converter fed operation (option code B43), 1MB1/5 will have two nameplates. In addition to the standard nameplate shown on page P10, an additional VSD nameplate will be mounted on the housing, and the parameters of 5Hz、25Hz、50Hz and Max frequency will be shown on the VSD nameplate.

变频铭牌样例：VSD nameplate sample

INNOMOTICS
Made in P.R.China
中国制造

FLAMEPROOF THREE-PHASE ASYNCHRONOUS MOTOR (H)
隔爆型三相异步电动机
Innomotics Standard Motors Ltd.茵梦达电机(中国)有限公司 Ex

3~MOT. 0CD3182A	1MB1153-1EA29-0AA4-Z	LMH-2406 / 800003888993 / 001

For converter supply 用于变频应用

Converter parameter according to DOL plate! 变频参数参见主铭牌

Duty S9

V	Hz	A	kW	Nm	1/min
38Δ	5.0	28.1	1.20	43.2	265
190Δ	25.0	36.3	9.40	61.8	1459
380Δ	50.0	38.9	20.5	66.0	2957
380Δ	60.0	38.0	20.5	55.0	3546

订货号和电机型号 Order No. and Motor Type

订货号 Order No.

1	2	3	4	5	6	7		8	9	10	11	12		13	14	15	16
1	M	B		1	5	3	–						–				

INNOMOTICS XP 1MB1/5系列隔爆型三相异步电动机
INNOMOTICS XP 1MB1/5 series flameproof three-phase asynchronous motor
1 = IEC 标准 FS080-280
5 = IEC 标准 FS315-355
1 = IEC motor series FS080-280
5 = IEC motor series FS315-355

效率 Efficiency
3 = IE3

机座号 Frame size
0D = 080 0E = 090
1A = 100 1B = 112 1C = 132 1D = 160 1E = 180
2A = 200 2B = 225 2C = 250 2D = 280
3A = 315 3B = 355

极数 Pole
A = 2 B = 4 C = 6 D = 8

机座长度 Frame length
0, 1 = 短机座 short 2, 3 = 中机座 medium 4, 5 = 长机座 long 6, 7, 8, 9 = 特殊机座 Special

电压、连接方式和频率编号 Code of voltage, connections and frequency
2-2 = 50Hz 230V Δ /400VY; 60Hz 460VY
3-4 = 50Hz 400V Δ /690VY; 60Hz 460V Δ
2-1 = 50Hz 220V Δ /380VY; 60Hz 440VY
0-1 = 50Hz 230V Δ
3-3 = 50Hz 380V Δ /660VY; 60Hz 440V Δ
2-3 = 50Hz 240V Δ /415VY; 60Hz 480VY
3-5 = 50Hz 415V Δ ; 60Hz 480V Δ
9-0 = 特殊电压和频率 Special voltage & frequency [1]

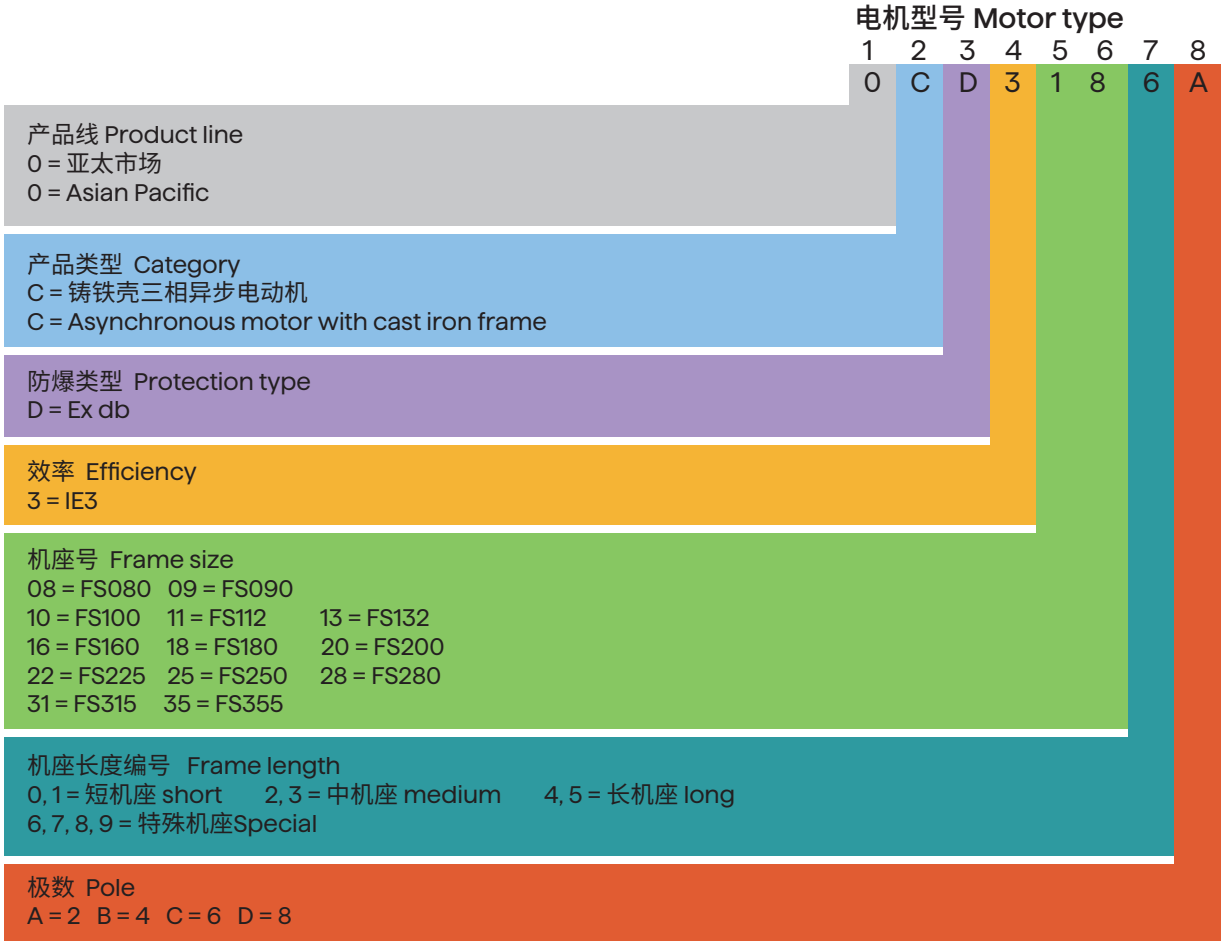
结构和安装方式编号 Code of construction and mounting type
A = IM B3 T = IM B6 U = IM B7 V = IM B8 D = IM V6 C = IM V5 [2]
F = IM B5 G = IM V1 [2] H = IM V3 J = IM B35 W = IM V15 [2]
K = IM B14 L = IM V19 M = IM V18 [2] N = IM B34

绕组保护编号 Code of winding protection
A = 无绕组保护 Without winding protection
B = 一组三芯串联的PTC热敏电阻用于跳闸 3 PTC thermistors for tripping
C = 两组三芯串联的PTC热敏电阻用于报警和跳闸 6 PTC thermistors for alarm and tripping
H = 一组三个PT100温度传感器 3 PT100 resistance thermometers
J = 两组三个PT100温度传感器 6 PT100 resistance thermometers
K = 一个PT1000温度传感器 1 PT1000 resistance thermometers
L = 两个PT1000温度传感器 2 PT1000 resistance thermometers
Q = 一组三个三线式PT100温度传感器 3 PT100 resistance thermometers in 3-wire connection
R = 两组三个三线式PT100温度传感器 6 PT100 resistance thermometers in 3-wire connection

接线盒位置编号（从驱动端看） Code of terminal box position (view from drive end)
4 = 顶出线 On top 5 = 右出线 On right hand side 6 = 左出线 On left hand side

附注：
[1] 用电压编号 90 及相应选件号来定制其它电压（参见选项描述）；
[2] 标配防雨罩。不能选用第二轴伸（选件号L05）。

Foot note:
[1] Order other voltages with voltage code 90 and the corresponding Option code (see under "Option").
[2] Protection cover provide as standard. The 2nd shaft extension (option code L05) is not allowed.


电机型号 Motor type
1 2 3 4 5 6 7 8
0 C D 3 1 8 6 A
产品线 Product line
0 = 亚太市场
0 = Asian Pacific
产品类型 Category
C = 铸铁壳三相异步电动机
C = Asynchronous motor with cast iron frame
防爆类型 Protection type
D = Ex db
效率 Efficiency
3 = IE3
机座号 Frame size
08 = FS080 09 = FS090
10 = FS100 11 = FS112 13 = FS132
16 = FS160 18 = FS180 20 = FS200
22 = FS225 25 = FS250 28 = FS280
31 = FS315 35 = FS355
机座长度编号 Frame length
0, 1 = 短机座 short 2, 3 = 中机座 medium 4, 5 = 长机座 long
6, 7, 8, 9 = 特殊机座Special
极数 Pole
A = 2 B = 4 C = 6 D = 8

选型技术数据表 Technical data table

中国能效等级 3 级，IE3

机座号 Frame Size	型号 Order No.	额定功率 Rated Output	额定转速 Rated Speed	效率 — 参照 GB18613-2020, 即 IEC 60034-30 Efficiency is in accordance with GB18613-2020, IEC 60034-30				额定转矩 Rated torque
				效率 Efficiency at (50 HZ) 4/4 load	效率 Efficiency at (50 HZ) 3/4 load	功率因数 Power factor	额定电流 Rated current	
		KW	rpm	%	%		A	Nm
	3000rpm 2 - pole 220VD/380VY 50HZ							
80M	1MB1153-0DA22-1 □□□	0.75	2835	80.7	82.9	0.86	1.64	2.5
80M	1MB1153-0DA32-1 □□□	1.1	2850	82.7	84.0	0.83	2.45	3.7
90S	1MB1153-0EA02-1 □□□	1.5	2870	84.2	84.8	0.86	3.15	5.0
90L	1MB1153-0EA42-1 □□□	2.2	2890	85.9	87.2	0.88	4.4	7.3
100L	1MB1153-1AA42-1 □□□	3	2865	87.1	88.3	0.87	6	10.0
	3000rpm 2 - pole 380VD/660VY 50HZ							
112M	1MB1153-1BA23-3 □□□	4	2915	88.1	89.6	0.90	7.7	13.1
132S	1MB1153-1CA03-3 □□□	5.5	2930	89.2	90.2	0.89	10.5	17.9
132S	1MB1153-1CA13-3 □□□	7.5	2930	90.1	91.5	0.90	14.1	24.4
160M	1MB1153-1DA23-3 □□□	11	2935	91.2	92.0	0.89	20.5	35.8
160M	1MB1153-1DA33-3 □□□	15	2935	91.9	92.6	0.89	28	48.8
160L	1MB1153-1DA43-3 □□□	18.5	2935	92.4	93.0	0.89	34	60.2
180M	1MB1153-1EA23-3 □□□	22	2950	92.7	93.0	0.89	40.5	71.2
200L	1MB1153-2AA43-3 □□□	30	2955	93.3	93.4	0.89	55	97.0
200L	1MB1153-2AA53-3 □□□	37	2955	93.7	93.9	0.89	67	120
225M	1MB1153-2BA23-3 □□□	45	2960	94.0	94.3	0.89	82	145
250M	1MB1153-2CA23-3 □□□	55	2975	94.3	94.1	0.89	100	177
280S	1MB1153-2DA03-3 □□□	75	2975	94.7	94.8	0.89	135	241
280M	1MB1153-2DA23-3 □□□	90	2975	95.0	95.3	0.90	160	289
315S	1MB5153-3AA03-3 □□□	110	2983	95.2	95.4	0.89	195	352
315M	1MB5153-3AA23-3 □□□	132	2982	95.4	95.6	0.89	235	423
315M	1MB5153-3AA43-3 □□□	160	2985	95.6	95.7	0.90	285	512
315L	1MB5153-3AA53-3 □□□	200	2982	95.8	96.0	0.90	350	640
315L	1MB5153-3AA63-3 □□□	250	2975	95.8	96.0	0.91	435	800
355M	1MB5153-3BA23-3 □□□	315	2980	95.8	96.0	0.91	550	1010
355M	1MB5153-3BA33-3 □□□	355	2986	95.8	96.0	0.91	620	1136
355L	1MB5153-3BA43-3 □□□	400	2983	95.8	96.1	0.91	700	1281

注 Note:

[1] 当电动机在50Hz电源供电空载运行时，噪音容差为+3dB。当在60Hz电源下空载运行时，噪音容差为+4dB。

[1] Noise value is only applicable to the direct power supply and the condition of no-load operation. If the motor in 50Hz power supply, the tolerance is +3dB. If the motor in 60Hz power supply, the tolerance is +4dB.

机座号 Frame Size	型号 Order No.	起动电流 Starting Current	起动转矩 Starting torque	最大转矩 Max torque	转动惯量 Moment of inertia(J)	噪音 [1] Noise LpfA	噪音 [1] Noise LWA	重量 Weight IMB3
		直接起动对额定转矩 (电流) 的倍数 For direct-on-line starting as multiple of the rated			kgm²	dB(A)	dB(A)	kg
	3000rpm 2 - pole 220VD/380VY 50HZ							
80M	1MB1153-0DA22-1 □□□	6.0	2.4	3.0	0.0011	51	62	33
80M	1MB1153-0DA32-1 □□□	6.5	2.6	3.4	0.0013	51	62	34
90S	1MB1153-0EA02-1 □□□	7.0	2.0	3.0	0.0028	60	72	44
90L	1MB1153-0EA42-1 □□□	7.5	2.8	3.6	0.0049	60	72	48
100L	1MB1153-1AA42-1 □□□	8.0	3.7	3.6	0.0050	63	75	66
	3000rpm 2 - pole 380VD/660VY 50HZ							
112M	1MB1153-1BA23-3 □□□	7.8	2.6	3.6	0.009	68	80	75
132S	1MB1153-1CA03-3 □□□	7.5	2.3	3.6	0.019	71	83	96
132S	1MB1153-1CA13-3 □□□	7.5	2.3	3.6	0.023	71	83	104
160M	1MB1153-1DA23-3 □□□	7.5	2.3	3.4	0.040	69	81	172
160M	1MB1153-1DA33-3 □□□	7.5	2.4	3.4	0.046	69	81	183
160L	1MB1153-1DA43-3 □□□	7.8	2.4	3.4	0.058	69	81	194
180M	1MB1153-1EA23-3 □□□	7.8	2.4	3.4	0.085	72	85	242
200L	1MB1153-2AA43-3 □□□	7.8	2.4	3.4	0.16	72	85	335
200L	1MB1153-2AA53-3 □□□	7.8	2.4	3.4	0.19	72	85	365
225M	1MB1153-2BA23-3 □□□	7.8	2.4	3.2	0.30	79	92	457
250M	1MB1153-2CA23-3 □□□	7.8	2.6	3.2	0.51	79	92	555
280S	1MB1153-2DA03-3 □□□	7.5	2.8	3.0	0.91	79	93	740
280M	1MB1153-2DA23-3 □□□	7.5	2.8	3.4	1.22	79	93	790
315S	1MB5153-3AA03-3 □□□	7.5	2.0	2.5	1.77	83	97	1140
315M	1MB5153-3AA23-3 □□□	7.5	2.3	2.7	2.08	83	97	1270
315M	1MB5153-3AA43-3 □□□	7.5	2.3	2.7	2.36	83	97	1340
315L	1MB5153-3AA53-3 □□□	7.5	2.3	2.7	2.71	83	97	1470
315L	1MB5153-3AA63-3 □□□	7.0	2.3	2.7	2.94	83	97	1590
355M	1MB5153-3BA23-3 □□□	7.0	2.0	2.3	5.10	85	100	2140
355M	1MB5153-3BA33-3 □□□	7.6	2.5	2.7	6.02	85	100	2570
355L	1MB5153-3BA43-3 □□□	7.6	2.3	2.5	6.02	85	100	2570

选型技术数据表 Technical data table

中国能效等级 3 级，IE3

机座号 Frame Size	型号 Order No.	额定功率 Rated Output	额定转速 Rated Speed	效率 — 参照 GB18613-2020, 即 IEC 60034-30 Efficiency is in accordance with GB18613-2020, IEC 60034-30				额定转矩 Rated torque
				效率 Efficiency at (50 HZ) 4/4 load	效率 Efficiency at (50 HZ) 3/4 load	功率因数 Power factor	额定电流 Rated current	
		KW	rpm	%	%		A	Nm
	1500rpm 4 - pole 220VD/380VY 50HZ							
80M	1MB1153-0DB22-1 □□□	0.55	1440	80.8	81.8	0.76	1.36	3.6
80M	1MB1153-0DB32-1 □□□	0.75	1440	82.5	82.9	0.75	1.84	5.0
90S	1MB1153-0EB02-1 □□□	1.1	1430	84.1	85.1	0.79	2.5	7.3
90L	1MB1153-0EB42-1 □□□	1.5	1440	85.3	86.0	0.79	3.4	9.9
100L	1MB1153-1AB42-1 □□□	2.2	1445	86.7	87.1	0.82	4.7	14.5
100L	1MB1153-1AB52-1 □□□	3	1440	87.7	88.1	0.82	6.3	19.9
	1500rpm 4 - pole 380VD/660VY 50HZ							
112M	1MB1153-1BB23-3 □□□	4	1450	88.6	89.6	0.82	8.4	26.3
132S	1MB1153-1CB03-3 □□□	5.5	1455	89.6	90.9	0.84	11.1	36.1
132M	1MB1153-1CB23-3 □□□	7.5	1455	90.4	91.7	0.85	14.8	49.2
160M	1MB1153-1DB23-3 □□□	11	1465	91.4	92.4	0.86	21.5	71.7
160L	1MB1153-1DB43-3 □□□	15	1465	92.1	92.9	0.86	29	97.8
180M	1MB1153-1EB23-3 □□□	18.5	1470	92.6	93.0	0.83	36.5	120
180L	1MB1153-1EB43-3 □□□	22	1470	93.0	93.7	0.83	43.5	143
200L	1MB1153-2AB53-3 □□□	30	1475	93.6	94.3	0.84	58	194
225S	1MB1153-2BB03-3 □□□	37	1482	93.9	94.1	0.83	70	238
225M	1MB1153-2BB23-3 □□□	45	1482	94.2	94.2	0.85	85	290
250M	1MB1153-2CB23-3 □□□	55	1485	94.6	95.0	0.86	103	354
280S	1MB1153-2DB03-3 □□□	75	1485	95.0	95.3	0.86	139	482
280M	1MB1153-2DB23-3 □□□	90	1485	95.2	95.6	0.87	165	579
315S	1MB5153-3AB03-3 □□□	110	1490	95.4	95.7	0.85	200	705
315M	1MB5153-3AB23-3 □□□	132	1492	95.6	95.8	0.85	245	846
315M	1MB5153-3AB43-3 □□□	160	1490	95.8	96.1	0.85	300	1025
315L	1MB5153-3AB53-3 □□□	200	1490	96.0	96.3	0.86	370	1282
315L	1MB5153-3AB63-3 □□□	250	1490	96.0	96.3	0.85	470	1604
355M	1MB5153-3BB23-3 □□□	315	1491	96.0	96.2	0.86	575	2019
355M	1MB5153-3BB33-3 □□□	355	1491	96.0	96.3	0.86	650	2276
355L	1MB5153-3BB43-3 □□□	400	1490	96.0	96.3	0.87	730	2565

注 Note:

[1] 当电动机在50Hz电源供电空载运行时，噪音容差为+3dB。当在60Hz电源下空载运行时，噪音容差为+4dB。

[1] Noise value is only applicable to the direct power supply and the condition of no-load operation. If the motor in 50Hz power supply, the tolerance is +3dB. If the motor in 60Hz power supply, the tolerance is +4dB.

机座号 Frame Size	型号 Order No.	起动电流 Starting Current	起动转矩 Starting torque	最大转矩 Max torque	转动惯量 Moment of inertia(J)	噪音 1) Noise LpfA	噪音 1) Noise LWA	重量 Weight IMB3
		直接起动对额定转矩 (电流) 的倍数 For direct-on-line starting as multiple of the rated			kgm²	dB(A)	dB(A)	kg
	1500rpm 4 - pole 220VD/380VY 50HZ							
80M	1MB1153-0DB22-1 □□□	5.5	2.2	3.2	0.0020	45	56	33
80M	1MB1153-0DB32-1 □□□	6.0	2.6	3.7	0.0025	45	56	34
90S	1MB1153-0EB02-1 □□□	6.5	2.7	3.7	0.0039	47	59	44
90L	1MB1153-0EB42-1 □□□	6.5	2.8	3.8	0.0050	47	59	47
100L	1MB1153-1AB42-1 □□□	8.3	3.4	4.6	0.0113	52	64	69
100L	1MB1153-1AB52-1 □□□	8.3	3.7	4.6	0.0154	52	64	73
	1500rpm 4 - pole 380VD/660VY 50HZ							
112M	1MB1153-1BB23-3 □□□	8.3	3.7	4.6	0.014	53	65	80
132S	1MB1153-1CB03-3 □□□	7.8	2.4	3.8	0.028	59	71	103
132M	1MB1153-1CB23-3 □□□	7.8	2.6	3.8	0.035	59	71	117
160M	1MB1153-1DB23-3 □□□	7.8	2.4	3.8	0.066	63	75	182
160L	1MB1153-1DB43-3 □□□	8.2	2.6	3.8	0.082	63	75	193
180M	1MB1153-1EB23-3 □□□	7.8	2.6	3.6	0.134	66	79	240
180L	1MB1153-1EB43-3 □□□	7.8	2.6	3.6	0.154	66	79	254
200L	1MB1153-2AB53-3 □□□	7.8	2.6	3.6	0.25	68	81	345
225S	1MB1153-2BB03-3 □□□	8.3	3.0	3.6	0.65	69	82	435
225M	1MB1153-2BB23-3 □□□	8.3	3.3	3.6	0.69	69	82	460
250M	1MB1153-2CB23-3 □□□	7.6	2.6	3.3	0.89	72	85	580
280S	1MB1153-2DB03-3 □□□	7.6	2.8	3.0	1.43	72	85	770
280M	1MB1153-2DB23-3 □□□	7.6	2.8	3.0	1.94	72	85	850
315S	1MB5153-3AB03-3 □□□	7.5	2.0	2.4	2.68	80	94	1170
315M	1MB5153-3AB23-3 □□□	7.5	2.0	2.4	3.04	80	94	1290
315M	1MB5153-3AB43-3 □□□	7.5	2.0	2.4	3.38	80	94	1330
315L	1MB5153-3AB53-3 □□□	7.5	2.0	2.4	4.04	80	94	1480
315L	1MB5153-3AB63-3 □□□	7.5	2.0	2.4	4.82	80	94	1680
355M	1MB5153-3BB23-3 □□□	8.0	3.0	3.0	6.72	81	95	2100
355M	1MB5153-3BB33-3 □□□	8.0	3.0	3.0	7.52	81	95	2250
355L	1MB5153-3BB43-3 □□□	8.0	3.0	3.0	8.88	81	95	2640

选型技术数据表 Technical data table

中国能效等级 3 级，IE3

机座号 Frame Size	型号 Order No.	额定功率 Rated Output	额定转速 Rated Speed	效率 — 参照 GB18613-2020, 即 IEC 60034-30 Efficiency is in accordance with GB18613-2020, IEC 60034-30				额定转矩 Rated torque
				效率 Efficiency at (50 HZ) 4/4 load	效率 Efficiency at (50 HZ) 3/4 load	功率因数 Power factor	额定电流 Rated current	
		KW	rpm	%	%		A	Nm
	1000rpm 6 - pole 220VD/380VY 50HZ							
80M	1MB1153-0DC32-1 □□□	0.55	935	77.2	77.5	0.67	1.62	5.6
90S	1MB1153-0EC02-1 □□□	0.75	940	78.9	80.3	0.70	2.05	7.6
90L	1MB1153-0EC42-1 □□□	1.1	945	81.0	81.6	0.69	3	11.1
100L	1MB1153-1AC42-1 □□□	1.5	950	82.5	84.1	0.74	3.75	15.1
112M	1MB1153-1BC22-1 □□□	2.2	945	84.3	86.1	0.74	5.4	22.2
132S	1MB1153-1CC02-1 □□□	3	965	85.6	86.6	0.75	7.1	29.7
	1000rpm 6 - pole 380VD/660VY 50HZ							
132M	1MB1153-1CC23-3 □□□	4	955	86.8	88.5	0.75	9.3	40.0
132M	1MB1153-1CC33-3 □□□	5.5	960	88.0	89.2	0.76	12.5	54.7
160M	1MB1153-1DC23-3 □□□	7.5	980	89.1	90.4	0.78	16.4	73.1
160L	1MB1153-1DC43-3 □□□	11	970	90.3	90.3	0.77	24	108
180L	1MB1153-1EC43-3 □□□	15	975	91.2	92.1	0.80	31	147
200L	1MB1153-2AC43-3 □□□	18.5	978	91.7	92.5	0.80	38.5	181
200L	1MB1153-2AC53-3 □□□	22	980	92.2	93.1	0.80	45.5	214
225M	1MB1153-2BC23-3 □□□	30	982	92.9	93.9	0.83	59	292
250M	1MB1153-2CC23-3 □□□	37	985	93.3	94.1	0.84	72	359
280S	1MB1153-2DC03-3 □□□	45	988	93.7	94.5	0.84	87	435
280M	1MB1153-2DC23-3 □□□	55	988	94.1	94.6	0.84	106	532
315S	1MB5153-3AC03-3 □□□	75	992	94.6	95.1	0.80	151	722
315M	1MB5153-3AC23-3 □□□	90	991	94.9	95.3	0.81	175	867
315M	1MB5153-3AC43-3 □□□	110	992	95.1	95.5	0.82	215	1060
315L	1MB5153-3AC53-3 □□□	132	993	95.4	95.8	0.82	255	1270
315L	1MB5153-3AC63-3 □□□	160	991	95.6	96.0	0.82	310	1542
315L	1MB5153-3AC73-3 □□□	200	990	95.8	96.1	0.85	375	1927
355M	1MB5153-3BC13-3 □□□	250	993	95.8	96.1	0.85	470	2406
355M	1MB5153-3BC23-3 □□□	315	994	95.8	96.0	0.85	590	3027

注 Note:

[1] 当电动机在50Hz电源供电空载运行时，噪音容差为+3dB。当在60Hz电源下空载运行时，噪音容差为+4dB。

[1] Noise value is only applicable to the direct power supply and the condition of no-load operation. If the motor in 50Hz power supply, the tolerance is +3dB. If the motor in 60Hz power supply, the tolerance is +4dB.

机座号 Frame Size	型号 Order No.	起动电流 Starting Current	起动转矩 Starting torque	最大转矩 Max torque	转动惯量 Moment of inertia(J)	噪音 1) Noise LpfA	噪音 1) Noise LWA	重量 Weight IMB3
		直接起动对额定转矩 (电流) 的倍数 For direct-on-line starting as multiple of the rated			kgm²	dB(A)	dB(A)	kg
	1000rpm 6 - pole 220VD/380VY 50HZ							
80M	1MB1153-0DC32-1 □□□	5.0	2.6	3.2	0.0031	45	56	36
90S	1MB1153-0EC02-1 □□□	5.0	2.4	3.2	0.0044	49	61	45
90L	1MB1153-0EC42-1 □□□	5.5	2.7	3.5	0.0052	49	61	48
100L	1MB1153-1AC42-1 □□□	5.5	2.5	3.5	0.0114	49	61	69
112M	1MB1153-1BC22-1 □□□	6.0	2.7	3.4	0.014	53	65	78
132S	1MB1153-1CC02-1 □□□	6.0	2.7	4.0	0.024	57	69	96
	1000rpm 6 - pole 380VD/660VY 50HZ							
132M	1MB1153-1CC23-3 □□□	6.0	2.7	3.4	0.030	57	69	105
132M	1MB1153-1CC33-3 □□□	6.5	2.7	4.0	0.040	57	69	122
160M	1MB1153-1DC23-3 □□□	7.0	2.7	3.6	0.120	61	73	182
160L	1MB1153-1DC43-3 □□□	7.0	2.3	3.6	0.161	61	73	208
180L	1MB1153-1EC43-3 □□□	7.0	2.3	3.0	0.206	59	73	237
200L	1MB1153-2AC43-3 □□□	7.0	2.3	3.0	0.312	59	73	328
200L	1MB1153-2AC53-3 □□□	7.0	2.4	3.0	0.357	59	73	344
225M	1MB1153-2BC23-3 □□□	7.6	2.6	3.0	0.76	63	77	458
250M	1MB1153-2CC23-3 □□□	7.6	2.6	3.0	1.11	64	78	560
280S	1MB1153-2DC03-3 □□□	7.8	3.2	3.0	1.74	64	78	710
280M	1MB1153-2DC23-3 □□□	7.8	3.2	3.0	1.80	64	78	755
315S	1MB5153-3AC03-3 □□□	7.0	1.9	2.1	3.33	69	83	1110
315M	1MB5153-3AC23-3 □□□	7.0	1.9	2.1	3.94	69	83	1180
315M	1MB5153-3AC43-3 □□□	7.5	2.0	2.1	4.69	69	83	1300
315L	1MB5153-3AC53-3 □□□	7.5	2.0	2.1	5.52	69	83	1420
315L	1MB5153-3AC63-3 □□□	7.0	1.9	2.0	6.00	69	83	1590
315L	1MB5153-3AC73-3 □□□	7.0	1.9	2.0	6.78	69	83	1690
355M	1MB5153-3BC13-3 □□□	7.8	2.5	2.8	11.06	80	94	2300
355M	1MB5153-3BC23-3 □□□	8.0	3.0	3.1	14.43	80	94	2630

选型技术数据表 Technical data table

中国能效等级 3 级，IE3

机座号 Frame Size	型号 Order No.	额定功率 Rated Output	额定转速 Rated Speed	效率 — 参照 GB18613-2020, 即 IEC 60034-30 Efficiency is in accordance with GB18613-2020, IEC 60034-30				额定转矩 Rated torque
				效率 Efficiency at (50 HZ) 4/4 load	效率 Efficiency at (50 HZ) 3/4 load	功率因数 Power factor	额定电流 Rated current	
		KW	rpm	%	%		A	Nm
	750rpm 8-pole 220VD/380VY 50HZ							
132S	1MB1153-1CD02-1 □□□	2.2	725	81.9	82.6	0.73	5.6	29
132M	1MB1153-1CD22-1 □□□	3	720	83.5	84.5	0.74	7.4	39.8
	750rpm 8-pole 380VD/660VY 50HZ							
160M	1MB1153-1DD23-3 □□□	4	728	84.8	86.4	0.74	9.7	52.5
160M	1MB1153-1DD33-3 □□□	5.5	732	86.2	87.1	0.74	13.1	71.8
160L	1MB1153-1DD43-3 □□□	7.5	732	87.3	88.3	0.74	17.6	97.8
180L	1MB1153-1ED43-3 □□□	11	720	88.6	89.9	0.74	25.5	146
200L	1MB1153-2AD53-3 □□□	15	728	89.6	90.2	0.73	35	197
225S	1MB1153-2BD03-3 □□□	18.5	732	90.1	90.9	0.75	41.5	241
225M	1MB1153-2BD23-3 □□□	22	732	90.6	91.5	0.75	49	287
250M	1MB1153-2CD23-3 □□□	30	735	91.3	92.1	0.79	63	390
280S	1MB1153-2DD03-3 □□□	37	735	91.8	92.8	0.79	78	481
280M	1MB1153-2DD23-3 □□□	45	735	92.2	93.1	0.80	93	585
315S	1MB5153-3AD03-3 □□□	55	744	92.5	93.0	0.80	113	706
315M	1MB5153-3AD23-3 □□□	75	743	93.1	93.6	0.80	153	964
315L	1MB5153-3AD43-3 □□□	90	742	93.4	94.0	0.80	183	1158
315L	1MB5153-3AD53-3 □□□	110	742	93.7	94.2	0.80	225	1416
315L	1MB5153-3AD63-3 □□□	132	742	94.0	94.6	0.79	270	1699
315L	1MB5153-3AD73-3 □□□	160	743	94.3	94.5	0.79	325	2057
355L	1MB5153-3BD03-3 □□□	200	744	94.6	95.1	0.81	395	2567
355L	1MB5153-3BD13-3 □□□	250	743	94.6	95.2	0.81	495	3213

注 Note:

[1] 当电动机在50Hz电源供电空载运行时，噪音容差为+3dB。当在60Hz电源下空载运行时，噪音容差为+4dB。

[1] Noise value is only applicable to the direct power supply and the condition of no-load operation. If the motor in 50Hz power supply, the tolerance is +3dB. If the motor in 60Hz power supply, the tolerance is +4dB.

机座号 Frame Size	型号 Order No.	起动电流 Starting Current	起动转矩 Starting torque	最大转矩 Max torque	转动惯量 Moment of inertia(J)	噪音 1) Noise LpfA	噪音 1) Noise LWA	重量 Weight IMB3
		直接起动对额定转矩 (电流) 的倍数 For direct-on-line starting as multiple of the rated			kgm²	dB(A)	dB(A)	kg
	750rpm 8-pole 220VD/380VY 50HZ							
132S	1MB1153-1CD02-1 □□□	5.5	1.8	3.0	0.043	51	64	96
132M	1MB1153-1CD22-1 □□□	5.5	1.8	3.0	0.058	51	64	105
	750rpm 8-pole 380VD/660VY 50HZ							
160M	1MB1153-1DD23-3 □□□	5.5	1.7	2.8	0.096	55	68	162
160M	1MB1153-1DD33-3 □□□	6.0	1.7	3.0	0.128	55	68	173
160L	1MB1153-1DD43-3 □□□	6.0	1.8	3.0	0.164	55	68	185
180L	1MB1153-1ED43-3 □□□	5.5	2.0	3.0	0.259	60	73	262
200L	1MB1153-2AD53-3 □□□	6.5	2.5	3.5	0.416	61	74	365
225S	1MB1153-2BD03-3 □□□	6.5	2.0	3.0	0.598	58	72	413
225M	1MB1153-2BD23-3 □□□	6.5	2.0	2.5	0.615	58	72	426
250M	1MB1153-2CD23-3 □□□	6.5	2.0	3.0	1.033	67	80	530
280S	1MB1153-2DD03-3 □□□	5.5	2.4	2.5	1.470	59	72	665
280M	1MB1153-2DD23-3 □□□	6.0	2.4	2.5	1.767	59	72	760
315S	1MB5153-3AD03-3 □□□	6.5	1.8	2.6	3.823	75	88	1110
315M	1MB5153-3AD23-3 □□□	6.3	1.8	2.6	3.823	75	88	1110
315L	1MB5153-3AD43-3 □□□	6.3	1.9	2.6	4.563	75	88	1170
315L	1MB5153-3AD53-3 □□□	6.5	2.0	2.7	5.468	75	88	1290
315L	1MB5153-3AD63-3 □□□	6.0	2.0	2.7	5.362	75	88	1350
315L	1MB5153-3AD73-3 □□□	6.8	2.1	3.0	8.310	75	88	1690
355L	1MB5153-3BD03-3 □□□	6.8	2.1	2.5	10.206	79	92	2580
355L	1MB5153-3BD13-3 □□□	6.8	2.1	2.5	12.638	79	92	2640

选件 Options

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
电压与频率 Voltages and frequency			
1MB□153-□□□□2-1□□□	–	220VD / 380VY 50Hz；440VY 60Hz（50Hz output, 50Hz功率输出, 0.55kW ~ 3kW [2] ）	FS80 ~ 280
1MB□153-□□□□3-3□□□	–	380VD / 660VY 50Hz；440VD 60Hz（50Hz output, 50Hz功率输出,4kW ~ 315kW [2] ）	FS80 ~ 355
1MB□153-□□□□2-2□□□	–	230VD / 400VY 50Hz；460VY 60Hz（50Hz output, 50Hz功率输出）	FS80 ~ 280
1MB□153-□□□□3-4□□□	–	400VD / 690VY 50Hz；460VD 60Hz（50Hz output, 50Hz功率输出）	FS80 ~ 355
1MB□153-□□□□2-3□□□	–	240VD / 415VY 50Hz；480VY 60Hz（50Hz output, 50Hz功率输出）	FS80 ~ 280
1MB□153-□□□□3-5□□□	–	415VD 50Hz；480VD 60Hz （50Hz output, 50Hz功率输出）	FS80 ~ 355
1MB□153-□□□□0-1□□□	–	230VD 50Hz	FS80 ~ 280
1MB□153-□□□□9-0□□□	M4A	400VY 50Hz	FS80 ~ 280
	M4B	400VD 50Hz	FS80 ~ 355
	M2A	220VD/380VY 60Hz（50Hz output, 50Hz 的输出功率）	FS80 ~ 280
	M2B	380VD/660VY 60Hz（50Hz output, 50Hz 的输出功率）	FS100 ~ 355
	M2C	440VY 60Hz（50Hz output, 50Hz 的输出功率）	FS80 ~ 280
	M2D	440VD 60Hz（50Hz output, 50Hz 的输出功率）	FS80 ~ 355
	M2E	460VY 60Hz（50Hz output, 50Hz 的输出功率）	FS80 ~ 280
	M2F	460VD 60Hz（50Hz output, 50Hz 的输出功率）	FS80 ~ 355
绕组保护和轴承保护 Winding protection and bearing protection			
1MB□153-□□□□□-□□A□ [2]	–	无绕组保护 Without motor protection	FS80 ~ 355
1MB□153-□□□□□-□□B□	–	绕组带一组三芯串联的 PTC 热敏电阻用于跳闸，需用2个辅助接线端子 Motor protection with PTC thermistors with three embedded temperature sensors for tripping, need 2 terminals	FS80 ~ 355
1MB□153-□□□□□-□□C□	–	绕组带两组三芯串联的 PTC 热敏电阻用于报警和跳闸，需用4个辅助接线端子 Motor protection with PTC thermistors with six embedded temperature sensors for alarm & tripping, need 4 terminals	FS80 ~ 355

[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号。
[2] 无需附加费用。

[1] When ordering, need supplement "-Z" after order number. Add option code after that.
[2] Without additional charge.

选件 Options

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
1MB□153-□□□□□-□□H□-Z	Q60 [3]	绕组带3个单支两线制PT100测温元件，需用6个辅助接线端子 Installation of 3 single 2 wires PT100 resistance thermometers, need 6 terminals	FS100 ~ 355
1MB□153-□□□□□-□□J□-Z	Q61 [3]	绕组带6个单支两线制PT100测温元件，需用12个辅助接线端子 Installation of 6 single 2 wires PT100 resistance thermometers, need 12 terminals	FS180 ~ 355
1MB□153-□□□□□-□□K□-Z	Q35 [3]	绕组带1个单支两线制PT1000测温元件，需用2个辅助接线端子 Installation of 1 single 2 wires PT1000 resistance thermometers, need 2 terminals	FS80 ~ 355
1MB□153-□□□□□-□□L□-Z	Q36 [3]	绕组带2个单支两线制PT1000测温元件，需用4个辅助接线端子 Installation of 2 single 2 wires PT1000 resistance thermometers, need 4 terminals	FS80 ~ 355
1MB□153-□□□□□-□□Q□-Z	Q63 [3]	绕组带3个单支三线制PT100测温元件，需用9个辅助接线端子 Installation of 3 single 3 wires PT100 resistance thermometers, need 9 terminals	FS160 ~ 355
1MB□153-□□□□□-□□R□-Z	Q64 [3]	绕组带6个单支三线制PT100测温元件，需用18个辅助接线端子 Installation of 6 single 3 wires PT100 resistance thermometers（need 18 terminals）	FS180 ~ 355
–	Q02	绕组带 230 V 防潮加热带 Anti-condensation heating for 230 V	FS80 ~ 355
–	Q04	绕组带 220 V 防潮加热带 Anti-condensation heating for 220 V	FS80 ~ 355
–	Q72 [4]	轴承带2个单支双线制PT100测温元件，需用4个辅助接线端子 Installation of 2 single 2 wires PT100 resistance thermometers for bearings, need 4 terminals	FS160 ~ 355
–	Q78 [4]	轴承带2个单支三线制PT100测温元件，需用6个辅助接线端子 Installation of 2 single 3 wires PT100 resistance thermometers for bearings, need 6 terminals	FS160 ~ 355
–	Q79 [4]	轴承带2个双支三线制PT100测温元件，需用12个辅助接线端子 Installation of 2 double 3 wires PT100 resistance thermometers for bearings, need 12 terminals	FS280 ~ 355
变频应用 Converter fed application			
–	B43 [15]	由变频器驱动的电机 For converter-fed operation	FS80 ~ 355

[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号。
[3] 当单独选用时只需在订货号中指定相应的字母，而无需使用选件号；只有当与其它温度保护选项组合使用时才需使用选件号。
[4] 对于机座号 200、225、250、280，极数为 8 极的电机，选用时请咨询茵梦达。
[15] 对于变频防爆应用，须选择绕组测温，如 PTC、PT100等。机座号为FS315和FS355的电机在选用B43选件时，非驱动端标配为绝缘轴承，无需增加其它选件。

[1] When ordering, need supplement "-Z" after order number. Add option code after that.
[3] When selected separately, only specify the corresponding letter in ordering number. It is not necessary to configure the option code. When configured together with other temperature protection options, the option code should to be selected.
[4] For 8p motors of FS200\FS225\FS250\FS280, please consult with INNOMOTICS before ordering.
[15] For VSD application, please select winding protection, such as PTC and PT100 Etc. For the motors FS315 & FS355, when B43 is selected, the motor will be configured with insulated bearing at NDE.

选件 Options

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
电动机接线盒 Motor connection box			
1MB□153-□□□□□-□□□4 [2]	–	接线盒在顶端 Connection box on top 进线孔在右侧（从驱动端看）（标准电动机） cable entry on right (view from DE) (Standard version)	FS80 ~ 355
1MB□153-□□□□□-□□□5	–	接线盒在右边（从驱动端看） Connection box on RHS (view from DE)	FS132 ~ 355
1MB□153-□□□□□-□□□6	–	接线盒在左边（从驱动端看） Connection box on LHS (view from DE)	FS132 ~ 280
–	R10 [5]	接线盒顺时针旋转 90° Clockwise rotate the connection box through 90°	FS132 ~ 355
–	R11	接线盒逆时针旋转 90° Counter-clockwise rotate the connection box through 90°	FS80 ~ 355
–	R12	接线盒直接旋转 180° Rotation of the connection box through 180°	FS80 ~ 355
–	X98	电机通过 CNEx 认证且接线盒配备闷盖（客户自行安装葛兰） Single main terminal box with plugs, CNEx certified. (Customers prepare and assemble cables glands by themselves)	FS80 ~ 355
–	L97 [6]	电机通过 CNEx 认证且接线盒带辅助接线盒并配备闷盖（客户自行安装葛兰） Terminal box with auxiliary box, equiped with plugs, CNEx certified. (Customers prepare and assemble cables glands by themselves)	FS160 ~ 355

[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号。
[2] 无需附加费用。
[5] 选择此项时需留意安装环境，请确认进线孔前方有足够的空间用于接入电缆。
[6] 主接线盒为葛兰进线口配备闷盖的型式（同 X98 选件）。

[1] When ordering, need supplement "-Z" after order number. Add option code after that.
[2] Without additional charge.
[5] When ordering this option, please take care about the installation location that whether there is enough space for cable inserting.
[6] Main terminal box with plugs (The same as X98).

选件 Options

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
轴承 bearing			
–	L80	SKF 轴承 SKF bearings	FS80 ~ 315
–	L21	非驱动端轴承固定 Located bearing at NDE	FS80 ~ 355
–	L22 [7]	增强悬臂力轴承设计 Bearing design for increased cantilever forces	FS160 ~ 355
–	L23 [8]	再润滑装置 Regreasing device	FS160 ~ 250
–	Q01	端盖带 SPM 测量接头 Measuring nipples for SPM shock pulse sensors for bearing inspection	FS100 ~ 355
–	L27	非驱动端使用绝缘轴承 Insulated bearing on NDE	FS250 ~ 355
平衡及振动等级 Balance and Vibration quantity			
–	L00	B 级振动等级 Vibration quantity level B	FS80 ~ 355
机械设计和防护等级 Mechanical design and degrees of protection			
–	H70	第二外部接地 2nd External grounding	FS80 ~ 355
–	H22	IP56 防护等级（非高海况） IP56 degree of protection (non-heavy-sea)	FS80 ~ 355

[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号。
[7] 选择此选项时，电机会带有再润滑装置（选件号：L23），无须另外选择再润滑装置。
[8] 对于 FS280、FS315、FS355，再润滑装置是标配。加排油装置不可用于B8安装方式。

[1] When ordering, need supplement "-Z" after order number. Add option code after that.
[7] if this option is selected, the motor will be configured with re-greasing device (Option code: L23). Option L23 is not necessary to be configured again.
[8] Re-grease device is configured as standard for FS280, FS315, and FS355. Re-grease device can't be configured together with mounting construction IM B8.

选件 Options

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
–	H20	IP65 防护等级（非高海况） IP65 degree of protection (non-heavy-sea)	FS80 ~ 355
–	L05 [9) 10)]	第二轴伸 Second shaft extension	FS80 ~ 355
–	H23 [11)]	驱动端使用法兰端盖、骨架油封密封，可承受 0.1 bar 外部油压 Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar	FS80 ~ 355
铭牌和测试证书 Rating plate and test certificates			
–	B02	出厂检验报告 Acceptance test certificate 3.1 in accordance with EN 10204	FS80 ~ 355
–	D37 [14)]	IECEx 证书 IECEx Certificate	FS80 ~ 355
–	X12 [15)]	中国船级社 CCS 型式认可证书 With type test certificate according to China Classification Society (CCS)	FS80 ~ 355
–	X12+J74	CCS 目击测试船用产品证书，功率 ≥ 50kW 电机需要选择 Individual acceptance by CCS (for motors' output ≥ 50kW)	FS250 ~ 355
颜色和喷漆 Colors and Paint finish			
–	S01	不喷漆，只带底漆 Unpainted, only primed	FS80 ~ 355
–	W88 [13)]	适用于 TH，W，F1，WF1 以及海洋性气候环境用电机 Design for TH, W, F1, WF1 and sea-air resistance	FS80 ~ 355
–	W26	适用于 W，F2，TH 以及 WF2 环境用电机，同时满足 ISO12944 中 C4H 等级 Design for W, F2, TH and WF2, also follow C4H according to ISO12944	FS80 ~ 355

[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号。
[9] 带防雨罩的电动机不能选此选件。
[10] FS80-315 非驱动端的第二轴伸尺寸与驱动端轴伸尺寸相同，FS355 非驱动端的第二轴伸与驱动端轴伸尺寸不同。具体尺寸参见外形尺寸表。
[11] 不可用于 IM V3 和 IM V19。选择此项时，用户须确保骨架油封被充分润滑。
[13] 可用于室内，或暴露于阳光或气候环境的室外使用环境。
[14] 此时接线盒为葛兰孔进线并配备闷盖。（同选件 X98）。
[15] 对于 1DA4, 2DB2, 1CC3, 1ED4 四个型号，请注意使用时需要降容 4%。

[1] When ordering, need supplement "-Z" after order number. Add option code after that.
[9] Motors with canopy cannot be configured with this option.
[10] The dimension of second shaft extension is same as the one of drive end shaft for FS80-315, but different for FS355. Detailed information can be found in part of Dimension drawings.
[11] Not possible together with IM V3 and IM V19. When this option is configured, customer must make sure that the oil-seal ring is properly greased.
[13] Suitable for indoor or outdoor applications and exposed to climate conditions.
[14] Main terminal box with plugs. (Refer to option X98).
[15] For the types of 1DA4, 2DB2, 1CC3 and 1ED4, please note that a 4% derating should be considered.

选件 Options

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
质保 Liability			
–	Q82 [12]	将质保期延长至 36 个月 Extension of liability of defects to 36 months	FS80 ~ 355
环境温度 Coolant temperature			
–	N05	绝缘等级 155 (F)，按照 130 (B) 使用，环境温度 45 °C 时，降低功率约 4% Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	FS80 ~ 355
–	N06	绝缘等级 155 (F)，按照 130 (B) 使用，环境温度 50 °C 时，降低功率约 8% Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	FS80 ~ 355
–	N07	绝缘等级 155 (F)，按照 130 (B) 使用，环境温度 55 °C 时，降低功率约 13% Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	FS80 ~ 355
–	N08	绝缘等级 155 (F)，按照 130 (B) 使用，环境温度 60 °C 时，降低功率约 18% Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	FS80 ~ 355

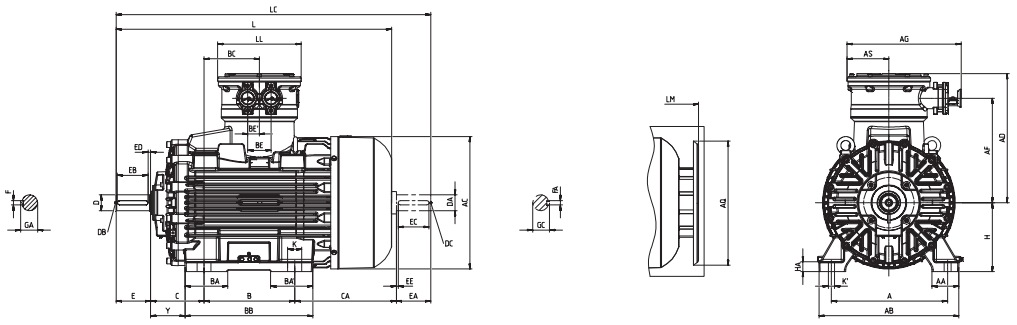
[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号。
[12] 选用时须咨询茵梦达。

[1] When ordering, need supplement "-Z" after order number. Add option code after that.
[12] Please consult with INNOMOTICS before ordering.

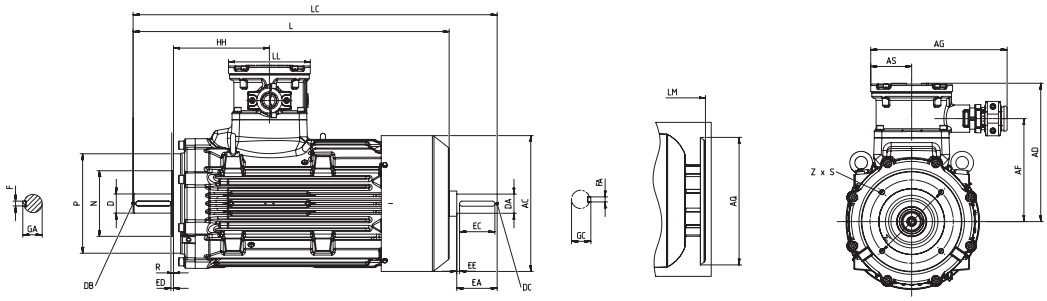
外形尺寸 Dimension drawings

INNOMOTICS XP 1MB1/5隔爆系列电动机 Flameproof series motor INNOMOTICS XP 1MB1/5
机座号从 80M ~ 355M Frame sizes 80M to 355M

IM B3 安装结构型式 Type of construction IM B3



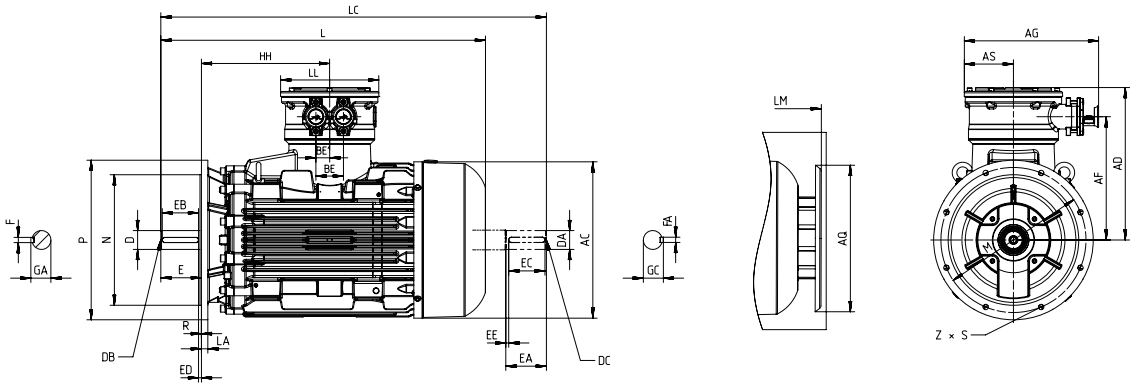
IM B14 安装结构型式 Type of construction IM B14



机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance																			
		A	AA	AB	AC	AD	AF	AG	AQ	AS	B	BA	BA'	BB	BC	BE[1)]	BE'[1)]	C		CA	H	
																		基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance
80M	0DA2, 0DA3, 0DB2, 0DB3, 0DC3	125	35	160	156.5	210	153	256	145	76	100	33	37	130	75.5	-	0	50	±1.5	204	80	0 -0.5
90S	0EA0,0EB0,0EC0	140	40	180	174	220	165	256	165	76	100	41	41	155	80	-	0	56	±1.5	239	90	0 -0.5
90L	0EA4, 0EB4, 0EC4	140	40	180	174	220	165	256	165	76	125	41	41	155	80	-	0	56	±1.5	239	90	0 -0.5
100L	1AA4, 1AB4, 1AB5, 1AC4	160	40	205	201	240	168	270	195	81	140	50	50	170	92	-	0	63	±2	306	100	0 -0.5
112M	1BA2, 1BB2, 1BC2	190	45	240	225	260	188	270	220	81	140	50	50	170	92	-	0	70	±2	276	112	0 -0.5
132S	1CA0, 1CA1, 1CB0, 1CC0, 1CD0	216	50	260	264.5	275	204	270	260	81	140	57	102	235	101	-	0	89	±2	292	132	0 -0.5
132M	1CC2, 1CD2	216	50	260	264.5	275	204	270	260	81	178	57	102	235	101	-	0	89	±2	254	132	0 -0.5
	1CB2, 1CC3	216	50	260	264.5	275	204	270	260	81	178	57	102	235	101	-	0	89	±2	309	132	0 -0.5
160M	1DA2, 1DA3, 1DB2, 1DC2, 1DD2, 1DD3	254	60	310	314	320	242.5	313	300	103	210	60	112	307	162.5	-	0	108	±3	393	160	0 -0.5
160L	1DA4, 1DB4, 1DC4, 1DD4	254	60	310	314	320	242.5	313	300	103	254	60	112	307	162.5	-	0	108	±3	349	160	0 -0.5
180M	1EA2, 1EB2	279	70	349	352.5	355	280	313	330	103	241	100	170	359	184	-	0	121	±3	405	180	0 -0.5
180L	1EB4, 1EC4, 1ED4	279	70	349	352.5	355	280	313	330	103	279	100	170	359	184	-	0	121	±3	367	180	0 -0.5
200L	2AA4, 2AA5, 2AB5, 2AC4, 2AC5, 2AD5	318	80	400	392.5	400	310	349.5	370	107.5	305	120	140	425	217	-	0	133	±3	403	200	0 -0.5
225S	2BB0, 2BD0	356	88	444	439	420	330	349.5	415	107.5	286	115	207	436	221	-	0	149	±4	494	225	0 -0.5

[1)] 对于FS80-225机座号的电动机，此处BE、BE‘尺寸适用于带有一个进线口的电动机；For FS80-225, the dimension BE and BE' are applicable for motors with only one cable inlet;
对于FS250-355机座号的电动机，此处BE、BE‘尺寸适用于有两个进线口的电动机。For FS250-355, the dimension BE and BE' are applicable for motors with two cable inlets.

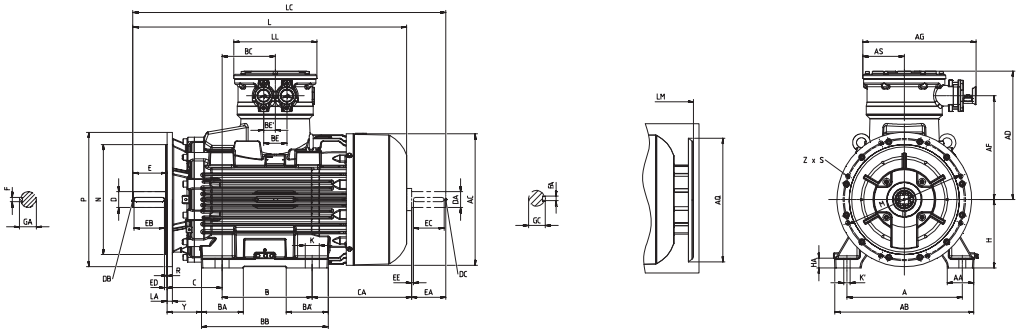
IM B5 以及 IM V1 安装结构型式 Type of construction IM B5 and IM V1



机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance																
		HA	Y	HH	K[2)]		K'	L	LC	LL	LM	D		DB	E		EB	
					基本尺寸 Dimension	极限偏差 Tolerance						基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance	基本尺寸 Dimension	极限偏差 Tolerance
80M	0DA2, 0DA3, 0DB2, 0DB3, 0DC3	13	37	125.5	10	-	15	380	434	152	435	19	+0.009 -0.004	M6*16	40	0 -0.3	32	+0.3 0
90S	0EA0,0EB0,0EC0	13	41	136	10	-	15	455	520	152	510	24	+0.009 -0.004	M8*19	50	0 -0.3	40	+0.3 0
90L	0EA4, 0EB4, 0EC4	13	41	136	10	-	15	455	520	152	510	24	+0.009 -0.004	M8*19	50	0 -0.3	40	+0.3 0
100L	1AA4, 1AB4, 1AB5, 1AC4	18	48	155	13	-	19	550	629	162	605	28	+0.009 -0.004	M10*22	60	0 -0.4	50	+0.3 0
112M	1BA2, 1BB2, 1BC2	18	55	162	13	-	19	520	606	162	575	28	+0.009 -0.004	M10*22	60	0 -0.4	50	+0.3 0
132S	1CA0, 1CA1, 1CB0, 1CC0, 1CD0	18	64	190	13	-	19	575	681	162	630	38	+0.018 +0.002	M12*28	80	0 -0.3	70	+0.3 0
132M	1CC2, 1CD2	18	64	190	13	-	19	575	681	162	630	38	+0.018 +0.002	M12*28	80	0 -0.3	70	+0.3 0
	1CB2, 1CC3	18	64	190	13	-	19	630	736	162	685	38	+0.018 +0.002	M12*28	80	0 -0.3	70	+0.3 0
160M	1DA2, 1DA3, 1DB2, 1DC2, 1DD2, 1DD3	20	87.5	270.5	15	-	23	790	931	206	855	42	+0.018 +0.002	M16*36	110	0 -0.4	100	+0.5 0
160L	1DA4, 1DB4, 1DC4, 1DD4	20	87.5	270.5	15	-	23	790	931	206	855	42	+0.018 +0.002	M16*36	110	0 -0.4	100	+0.5 0
180M	1EA2, 1EB2	19	97	305	15	-	22	840	987	206	905	48	+0.018 +0.002	M16*36	110	0 -0.4	100	+0.5 0
180L	1EB4, 1EC4, 1ED4	19	97	305	15	-	22	840	987	206	906	48	+0.018 +0.002	M16*36	110	0 -0.4	100	+0.5 0
200L	2AA4, 2AA5, 2AB5, 2AC4, 2AC5, 2AD5	25	101	350	19	-	25	895	1061	215	960	55	+0.030 +0.011	M20*42	110	0 -0.4	100	+0.5 0
225S	2BB0, 2BD0	25.5	117	370	19	-	25	1010	1209	215	1075	60	+0.030 +0.011	M20*42	140	0 -0.4	125	+0.5 0

[2)] 对于FS80-280机座号的电动机，底脚安装孔采用腰形孔；For FS80-280, the mounting holes on feet are slot holes;
对于FS315-355机座号的电动机，底脚安装孔采用圆孔。For FS315-355, the mounting holes on feet are round holes.

IM B35 安装结构型式 Type of construction IM B35



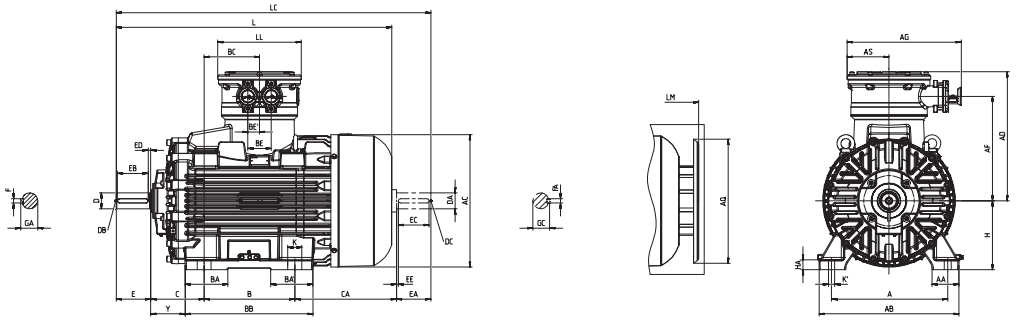
机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance														
		ED	F		GA	DA		DC	EA		EC		EE	FA		GC	R[3]
			基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance	基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance		
80M	0DA2, 0DA3, 0DB2, 0DB3, 0DC3	4	6	0 -0.03	21.5	19	+0.009 -0.004	M6	40	0 -0.3	32	+0.3 0	4	6	0 -0.03	21.5	0
90S	0EA0,0EB0,0EC0	5	8	0 -0.036	27	24	+0.009 -0.004	M8	50	0 -0.3	40	+0.3 0	5	8	0 -0.036	27	0
90L	0EA4, 0EB4, 0EC4	5	8	0 -0.036	27	24	+0.009 -0.004	M8	50	0 -0.3	40	+0.3 0	5	8	0 -0.036	27	0
100L	1AA4, 1AB4, 1AB5, 1AC4	5	8	0 -0.036	31	28	+0.009 -0.004	M10	60	0 -0.4	50	+0.3 0	5	8	0 -0.036	31	0
112M	1BA2, 1BB2, 1BC2	5	8	0 -0.036	31	28	+0.009 -0.004	M10	60	0 -0.4	50	+0.3 0	5	8	0 -0.036	31	0
132S	1CA0, 1CA1, 1CB0, 1CC0, 1CD0	5	10	0 -0.036	41	38	+0.018 +0.002	M12	80	0 -0.3	70	+0.3 0	5	10	0 -0.036	41	0
132M	1CC2, 1CD2	5	10	0 -0.036	41	38	+0.018 +0.002	M12	80	0 -0.3	70	+0.3 0	5	10	0 -0.036	41	0
	1CB2, 1CC3	5	10	0 -0.036	41	38	+0.018 +0.002	M12	80	0 -0.3	70	+0.3 0	5	10	0 -0.036	41	0
160M	1DA2, 1DA3, 1DB2, 1DC2, 1DD2, 1DD3	5	12	0 -0.043	45	42	+0.018 +0.002	M16	110	0 -0.4	100	+0.5 0	5	12	0 -0.043	45	0
160L	1DA4, 1DB4, 1DC4, 1DD4	5	12	0 -0.043	45	42	+0.018 +0.002	M16	110	0 -0.4	100	+0.5 0	5	12	0 -0.043	45	0
180M	1EA2, 1EB2	5	14	0 -0.043	51.5	48	+0.018 +0.002	M16	110	0 -0.4	100	+0.5 0	5	14	0 -0.043	51.5	0
180L	1EB4, 1EC4, 1ED4	5	14	0 -0.043	51.5	48	+0.018 +0.002	M16	110	0 -0.4	100	+0.5 0	5	14	0 -0.043	51.5	0
200L	2AA4, 2AA5, 2AB5, 2AC4, 2AC5, 2AD5	5	16	0 -0.043	59	55	+0.030 +0.011	M20	110	0 -0.4	100	+0.5 0	5	16	0 -0.043	59	0
225S	2BB0, 2BD0	10	18	0 -0.043	64	60	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	64	0

[3] R为凸缘配合面至轴伸肩的距离。The dimension R is the distance between flange mounting surface and shaft shoulder.

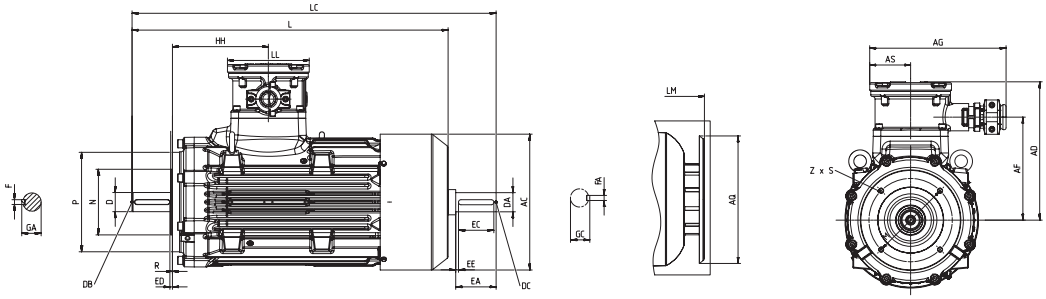
外形尺寸 Dimension drawings

INNOMOTICS XP 1MB1/5 隔爆系列电动机 Flameproof series motor INNOMOTICS XP 1MB1/5
机座号从 80M ~ 355L Frame sizes 80M to 355L

IM B3 安装结构型式 Type of construction IM B3



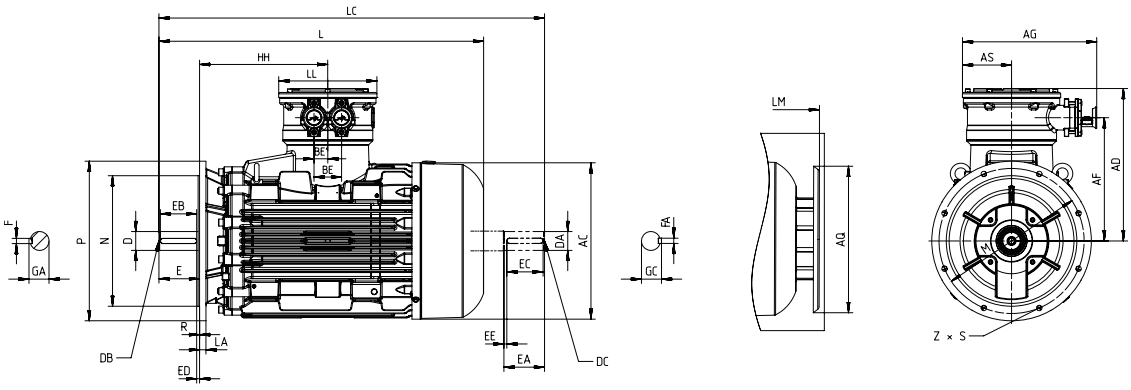
IM B14 安装结构型式 Type of construction IM B14



机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance																			
		A	AA	AB	AC	AD	AF	AG	AQ	AS	B	BA	BA'	BB	BC	BE[1]	BE'[1]	C		CA	H	
																		基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance
225M	2BA2	356	88	444	439	420	330	349.5	415	107.5	311	115	207	436	221	-	0	149	±4	469	225	0 -0.5
	2BB2, 2BC2, 2BD2	356	88	444	439	420	330	349.5	415	107.5	311	115	207	436	221	-	0	149	±4	469	225	0 -0.5
250M	2CA2	406	100	505	487	505	403	462.5	465	169	349	124	124	420	188	95	47.5	168	±4	421	250	0 -0.5
	2CB2, 2CC2, 2CD2	406	100	505	487	505	403	462.5	465	169	349	124	124	420	188	95	47.5	168	±4	421	250	0 -0.5
280S	2DA0	457	108	567	539	530	425	462.5	505	169	368	171	171	517	252	95	47.5	190	±4	491	280	0 -1
	2DB0, 2DC0, 2DD0	457	108	567	539	530	425	462.5	505	169	368	171	171	517	252	95	47.5	190	±4	491	280	0 -1
280M	2DA2	457	108	567	539	530	425	462.5	505	169	419	171	171	517	252	95	47.5	190	±4	440	280	0 -1
	2DB2, 2DC2, 2DD2	457	108	567	539	530	425	462.5	505	169	419	171	171	517	252	95	47.5	190	±4	440	280	0 -1
315S	3AC0, 3AD0	508	120	610	622	650	526	554	590	200	406	140	196	602	169	130	65	216	±4	497	315	0 -1
315M	3AA0	508	120	610	622	650	526	554	590	200	457	140	196	602	169	130	65	216	±4	442	315	0 -1
	3AB0, 3AC2, 3AD2, 3AD4	508	120	610	622	650	526	554	590	200	457	140	196	602	169	130	65	216	±4	446	315	0 -1
	3AA2	508	120	610	622	650	526	554	590	200	457	140	286	692	169	130	65	216	±4	532	315	0 -1
	3AB2	508	120	610	622	650	526	554	590	200	457	140	286	692	169	130	65	216	±4	536	315	0 -1

[1] 对于FS80-225机座号的电动机，此处BE、BE‘尺寸适用于带有一个进线口的电动机；For FS80-225, the dimension BE and BE' are applicable for motors with only one cable inlet;
对于FS250-355机座号的电动机，此处BE、BE‘尺寸适用于有两个进线口的电动机。For FS250-355, the dimension BE and BE' are applicable for motors with two cable inlets.

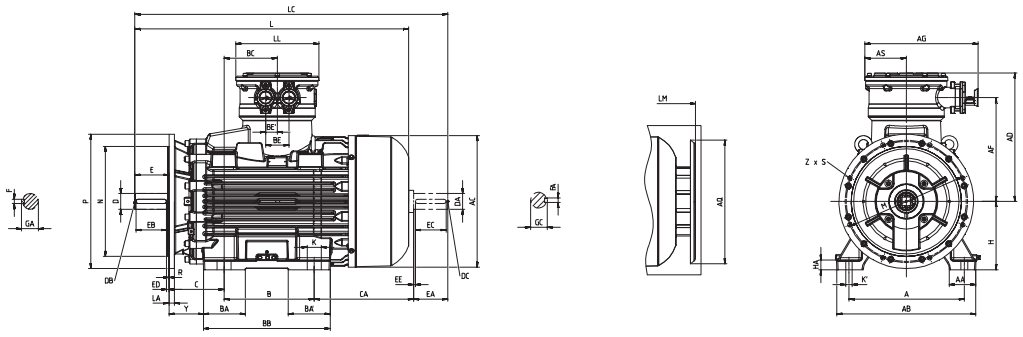
IM B5 以及 IM V1 安装结构型式 Type of construction IM B5 and IM V1



机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance																
		HA	Y	HH	K[2)]		K'	L	LC	LL	LM	D		DB	E		EB	
					基本尺寸 Dimension	极限偏差 Tolerance						基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance	基本尺寸 Dimension	极限偏差 Tolerance
225M	2BA2	25.5	117	370	19	-	25	980	1149	215	1045	55	+0.030 +0.011	M20*36	110	0 -0.4	100	+0.5 0
	2BB2, 2BC2, 2BD2	25.5	117	370	19	-	25	1010	1209	215	1075	60	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
250M	2CA2	35	132.5	356	24	-	40	1020	1218	338	1100	60	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	2CB2, 2CC2, 2CD2	35	132.5	356	24	-	40	1020	1218	338	1100	65	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
280S	2DA0	40	140	442	24	-	42	1125	1329	338	1205	65	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	2DB0, 2DC0, 2DD0	40	140	442	24	-	42	1125	1329	338	1205	75	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
280M	2DA2	40	140	442	24	-	42	1125	1329	338	1205	65	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	2DB2, 2DC2, 2DD2	40	140	442	24	-	42	1125	1329	338	1205	75	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
315S	3AC0, 3AD0	50	146	385	ϕ28	+0.52 0	-	1225	1429	400	1305	80	+0.030 +0.011	M20*36	170	0 -0.4	140	+0.5 0
315M	3AA0	50	146	385	ϕ28	+0.52 0	-	1195	1395	400	1275	65	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	3AB0, 3AC2, 3AD2, 3AD4	50	146	385	ϕ28	+0.52 0	-	1225	1429	400	1305	80	+0.030 +0.011	M20*36	170	0 -0.4	140	+0.5 0
	3AA2	50	146	385	ϕ28	+0.52 0	-	1285	1485	400	1365	65	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	3AB2	50	146	385	ϕ28	+0.52 0	-	1315	1519	400	1395	80	+0.030 +0.011	M20*36	170	0 -0.4	140	+0.5 0

[2)] 对于FS80-280机座号的电动机，底脚安装孔采用腰形孔；For FS80-280, the mounting holes on feet are slot holes;
对于FS315-355机座号的电动机，底脚安装孔采用圆孔。For FS315-355, the mounting holes on feet are round holes.

IM B35 安装结构型式 Type of construction IM B35



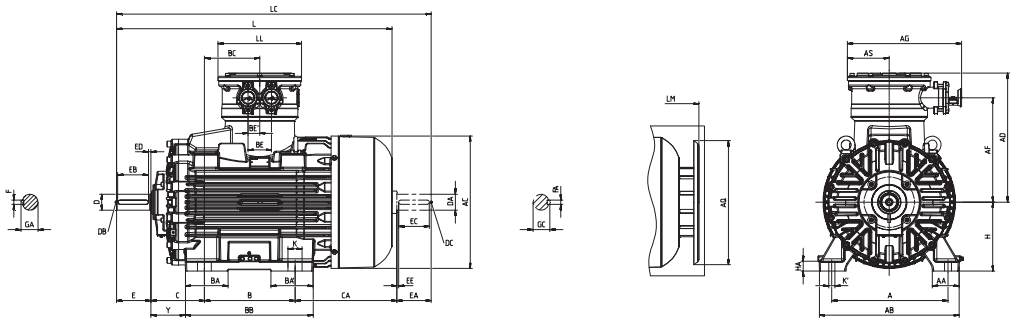
机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance															
		ED	F		GA	DA		DC	EA		EC		EE	FA		GC	R[3]
			基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance	基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance		
225M	2BA2	5	16	0 -0.043	59	55	+0.030 +0.011	M20	110	0 -0.4	100	+0.5 0	5	16	0 -0.043	59	0
	2BB2, 2BC2, 2BD2	10	18	0 -0.043	64	60	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	64	0
250M	2CA2	10	18	0 -0.043	64	60	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	64	0
	2CB2, 2CC2, 2CD2	10	18	0 -0.043	69	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
280S	2DA0	10	18	0 -0.043	69	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	2DB0, 2DC0, 2DD0	10	20	0 -0.052	79.5	75	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	20	0 -0.052	79.5	0
280M	2DA2	10	18	0 -0.043	69	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	2DB2, 2DC2, 2DD2	10	20	0 -0.052	79.5	75	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	20	0 -0.052	79.5	0
315S	3AC0, 3AD0	25	22	0 -0.052	85	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
315M	3AA0	10	18	0 -0.043	69	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	3AB0, 3AC2, 3AD2, 3AD4	25	22	0 -0.052	85	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	3AA2	10	18	0 -0.043	69	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	3AB2	25	22	0 -0.052	85	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0

[3] R为凸缘配合面至轴伸肩的距离。The dimension R is the distance between flange mounting surface and shaft shoulder.

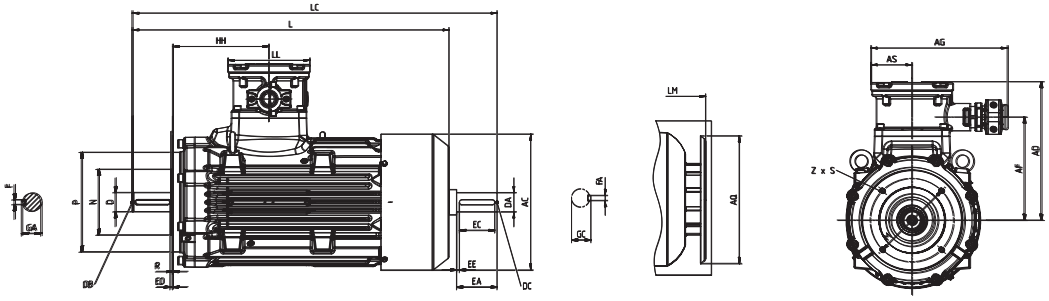
外形尺寸 Dimension drawings

INNOMOTICS XP 1MB1/5隔爆系列电动机 Flameproof series motor INNOMOTICS XP 1MB1/5
机座号从 80M ~ 355L Frame sizes 80M to 355L

IM B3 安装结构型式 Type of construction IM B3



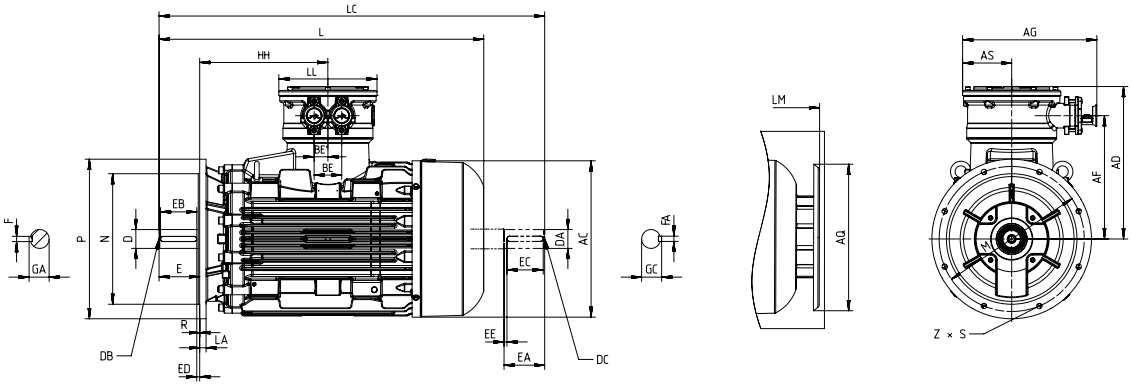
IM B14 安装结构型式 Type of construction IM B14



机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance																			
		A	AA	AB	AC	AD	AF	AG	AQ	AS	B	BA	BA'	BB	BC	BE[1]	BE'[1]	C		CA	H	
																		基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance
315L	3AA4	508	120	610	622	650	526	554	590	200	508	140	286	692	169	130	65	216	±4	481	315	0 -1
	3AB4, 3AC4, 3AD5, 3AD6	508	120	610	622	650	526	554	590	200	508	140	286	692	169	130	65	216	±4	485	315	0 -1
	3AC5	508	120	610	622	650	526	554	590	200	508	140	305	762	169	130	65	216	±4	555	315	0 -1
315K	3AA5	508	120	610	622	650	526	554	590	200	560	140	305	762	169	130	65	216	±4	499	315	0 -1
	3AB5, 3AC6	508	120	610	622	650	526	554	590	200	560	140	305	762	169	130	65	216	±4	503	315	0 -1
315J	3AA6	508	120	610	622	650	526	554	590	200	630	140	334	842	254	130	65	216	±4	509	315	0 -1
	3AB6, 3AC7, 3AD7	508	120	610	622	650	526	554	590	200	630	140	334	842	254	130	65	216	±4	513	315	0 -1
355L	3BB2	610	150	780	699	690	566	554	665	200	630	187	350	893	230	130	65	254	±4	545	355	0 -1
355K	3BA2	610	150	780	699	690	566	554	665	200	710	187	365	968	230	130	65	254	±4	540	355	0 -1
	3BB3, 3BC1, 3BD0	610	150	780	699	690	566	554	665	200	710	187	365	968	230	130	65	254	±4	540	355	0 -1
	3BA3	610	150	780	699	690	566	554	665	200	710	191	401	1078	230	130	65	254	±4	650	355	0 -1
	3BC2, 3BD1	610	150	780	699	690	566	554	665	200	710	191	401	1078	230	130	65	254	±4	650	355	0 -1
355J	3BA4	610	150	780	699	690	566	554	665	200	800	191	401	1078	230	130	65	254	±4	560	355	0 -1
	3BB4	610	150	780	699	690	566	554	665	200	800	191	401	1078	230	130	65	254	±4	560	355	0 -1

[1] 对于FS80-225机座号的电动机，此处BE、BE‘尺寸适用于带有一个进线口的电动机；For FS80-225, the dimension BE and BE' are applicable for motors with only one cable inlet;
对于FS250-355机座号的电动机，此处BE、BE‘尺寸适用于有两个进线口的电动机。For FS250-355, the dimension BE and BE' are applicable for motors with two cable inlets.

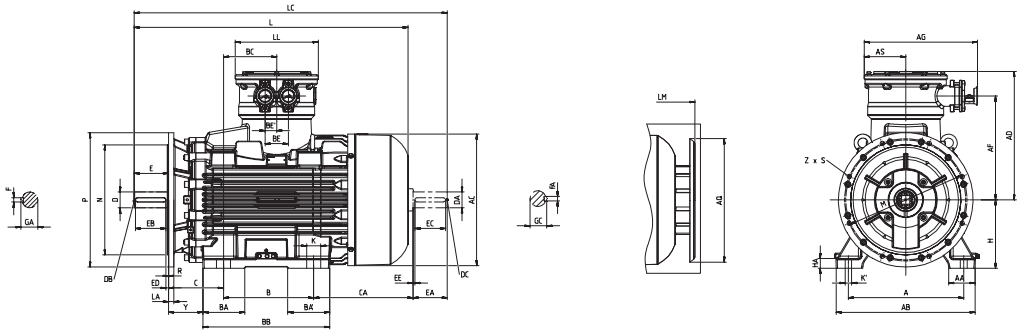
IM B5 以及 IM V1 安装结构型式 Type of construction IM B5 and IM V1



机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance																
		HA	Y	HH	K[2)]		K'	L	LC	LL	LM	D		DB	E		EB	
					基本尺寸 Dimension	极限偏差 Tolerance						基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance	基本尺寸 Dimension	极限偏差 Tolerance
315L	3AA4	50	146	385	ϕ28	+0.52 0	-	1285	1485	400	1365	65	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	3AB4, 3AC4, 3AD5, 3AD6	50	146	385	ϕ28	+0.52 0	-	1315	1519	400	1395	80	+0.030 +0.011	M20*36	170	0 -0.4	140	+0.5 0
	3AC5	50	146	385	ϕ28	+0.52 0	-	1385	1589	400	1465	80	+0.030 +0.011	M20*36	170	0 -0.4	140	+0.5 0
315K	3AA5	50	146	385	ϕ28	+0.52 0	-	1355	1555	400	1435	65	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	3AB5, 3AC6	50	146	385	ϕ28	+0.52 0	-	1385	1589	400	1465	80	+0.030 +0.011	M20*36	170	0 -0.4	140	+0.5 0
315J	3AA6	50	146	470	ϕ28	+0.52 0	-	1435	1635	400	1515	65	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	3AB6, 3AC7, 3AD7	50	146	470	ϕ28	+0.52 0	-	1465	1669	400	1545	80	+0.030 +0.011	M20*36	170	0 -0.4	140	+0.5 0
355L	3BB2	50	139	484	ϕ35	+0.62 0	-	1525	1769	400	1605	95	+0.035 +0.013	M24*50	170	0 -0.4	140	+0.5 0
355K	3BA2	50	139	484	ϕ35	+0.62 0	-	1570	1784	400	1650	75	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	3BB3, 3BC1, 3BD0	50	139	484	ϕ35	+0.62 0	-	1600	1844	400	1680	95	+0.035 +0.013	M24*50	170	0 -0.4	140	+0.5 0
	3BA3	50	139	484	ϕ35	+0.62 0	-	1680	1894	400	1760	75	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	3BC2, 3BD1	50	139	484	ϕ35	+0.62 0	-	1710	1954	400	1790	95	+0.035 +0.013	M24*50	170	0 -0.4	140	+0.5 0
355J	3BA4	50	139	484	ϕ35	+0.62 0	-	1680	1894	400	1760	75	+0.030 +0.011	M20*36	140	0 -0.4	125	+0.5 0
	3BB4	50	139	484	ϕ35	+0.62 0	-	1710	1954	400	1790	95	+0.035 +0.013	M24*50	170	0 -0.4	140	+0.5 0

[2)] 对于FS80-280机座号的电动机，底脚安装孔采用腰形孔；For FS80-280, the mounting holes on feet are slot holes;
对于FS315-355机座号的电动机，底脚安装孔采用圆孔。For FS315-355, the mounting holes on feet are round holes.

IM B35 安装结构型式 Type of construction IM B35



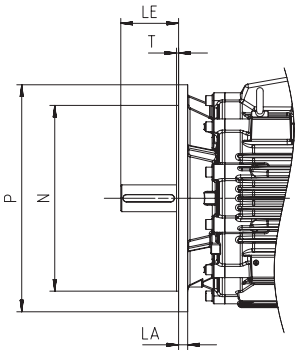
机座号 Frame size	型号 Type	尺寸及公差 Dimension and tolerance														
		ED	F		GA	DA		DC	EA		EC		EE	FA		GC	R[3]
			基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance	基本尺寸 Dimension	极限偏差 Tolerance		基本尺寸 Dimension	极限偏差 Tolerance		
315L	3AA4	10	18	0 -0.043	69	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	3AB4, 3AC4, 3AD5, 3AD6	25	22	0 -0.052	85	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	3AC5	25	22	0 -0.052	85	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
315K	3AA5	10	18	0 -0.043	69	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	3AB5, 3AC6	25	22	0 -0.052	85	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
315J	3AA6	10	18	0 -0.043	69	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
	3AB6, 3AC7, 3AD7	25	22	0 -0.052	85	65	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	69	0
355L	3BB2	25	25	0 -0.052	100	80	+0.030 +0.011	M20	170	0 -0.4	140	+0.5 0	25	22	0 -0.052	85	0
355K	3BA2	10	20	0 -0.052	79.5	60	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	64	0
	3BB3, 3BC1, 3BD0	25	25	0 -0.052	100	80	+0.030 +0.011	M20	170	0 -0.4	140	+0.5 0	25	22	0 -0.052	85	0
	3BA3	10	20	0 -0.052	79.5	60	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	64	0
	3BC2, 3BD1	25	25	0 -0.052	100	80	+0.030 +0.011	M20	170	0 -0.4	140	+0.5 0	25	22	0 -0.052	85	0
355J	3BA4	10	20	0 -0.052	79.5	60	+0.030 +0.011	M20	140	0 -0.4	125	+0.5 0	10	18	0 -0.043	64	0
	3BB4	25	25	0 -0.052	100	80	+0.030 +0.011	M20	170	0 -0.4	140	+0.5 0	25	22	0 -0.052	85	0

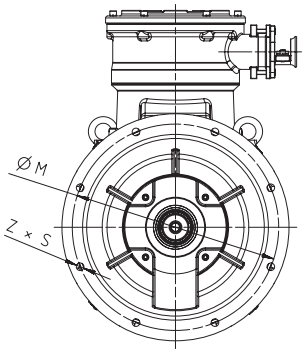
[3] R为凸缘配合面至轴伸肩的距离。The dimension R is the distance between flange mounting surface and shaft shoulder.

外形尺寸 Dimension drawings

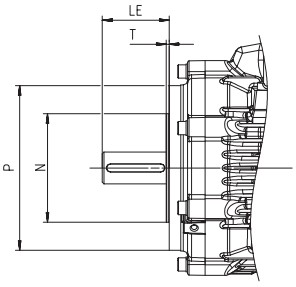
法兰尺寸 Flange dimension

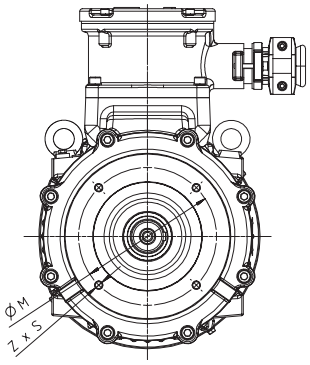
IM B5、IM B35、IM V1、IM V3 安装结构型式
Type of construction IM B5, IM B35, IM V1, IM V3





IM B14、IM V18、IM V19 安装结构型式
Type of construction IM B14, IM V18, IM V19





IM B5法兰尺寸 IM B5 flange dimension									
机座号 Frame size	法兰带通孔(FF/A) Flange with holes	尺寸 Dimension							
	DIN / EN 50347	LA	LE	M	N	P	S	T	Z
80	FF165	9.5	40	165	130	200	12	3.5	4
90	FF165	10	50	165	130	200	12	3.5	4
100	FF215	11	60	215	180	250	14.5	4	4
112	FF215	11	60	215	180	250	14.5	4	4
132	FF265	12	80	265	230	300	14.5	4	4
160	FF300	16	110	300	250	350	18.5	5	4
180	FF300	16	110	300	250	350	18.5	5	4
200	FF350	20	110	350	300	400	18.5	5	4
225	FF400	20	110/140	400	350	450	18.5	5	8
250	FF500	22	140	500	450	550	18.5	5	8
280	FF500	22	140	500	450	550	18.5	5	8
315	FF600	22	140/170	600	550	660	24	6	8
355	FF740	25	140/170	740	680	800	24	6	8

IM B14法兰尺寸 IM B14 flange dimension								
机座号 Frame size	法兰带盲孔(FT/C) Flange with blind holes	尺寸 Dimension						
	DIN / EN 50347	LE	M	N	P	S	T	Z
80	FT100	40	100	80	120	M6 × 15[1)]	3	4
90	FT115	50	115	95	140	M8 × 15	3	4
100	FT130	60	130	110	160	M8 × 17	3.5	4
112	FT130	60	130	110	160	M8 × 17	3.5	4
132	FT165	80	165	130	197	M10 × 19	3.5	4
160	FT215	110	215	180	250	M12 × 23	4	4

[1)] 上表中S尺寸为螺纹规格 × 孔深（例：M12 × 23表示螺纹规格M12，螺纹孔深度23mm）。

[1)] Dimension S in the table includes screw thread x depth. (eg: M12 x 23 means screw thread is M12 and the depth is 23 mm).

认证 Certificates



编号：CNEx22.5326X

防爆合格证

制造单位	茵梦达电机（中国）有限公司 地址：江苏省仪征市众鑫路 99 号
产品名称	隔爆型三相异步电动机
型号规格	0CD3082A 220/380V 0.75kW 50Hz
防爆标志	Ex db ⅡC T4 Gb
产品标准	Q/321081 KJA013-2024
总装图号	ASE43342039A

经对上述产品图样及技术文件的审查和样品检验，确认符合下列标准：
GB/T 3836.1-2021《爆炸性环境 第 1 部分：设备 通用要求》
GB/T 3836.2-2021《爆炸性环境 第 2 部分：由隔爆外壳 "d" 保护的设备》

记事：见附页。

中心主任 [signature] 颁发日期 2024 年 05 月 22 日
本证有效期 2024 年 05 月 22 日至 2027 年 11 月 17 日

南阳防爆电气研究所有限公司
国家防爆电气产品质量检验检测中心



中国国家强制性产品认证证书

证书编号：2020312301001174

认证委托人名称及地址
茵梦达电机（中国）有限公司
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江苏省仪征市众鑫路99号
产品名称和型号、型号、规格
隔爆型三相异步电动机
见附页
Ex db ⅡC T4 Gb
产品标准和技术要求
GB/T 3836.1-2021，GB/T 3836.2-2021

上述产品符合《强制性产品认证实施规则 防爆电气》
（CNCA-C23-01：2024）的要求，特发此证。
发证日期：2025年04月27日 有效期至：2030年05月28日

证书信息和有效性可扫描下方二维码或登录发证机构网站查验，
也可在认监委网站（www.cnca.gov.cn）查询。

法定代表人：

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质量管理体系认证证书

证书编号：00124Q35323R7L/3200

兹证明

茵梦达电机（中国）有限公司

统一信用代码：91321081783225284

注册/运营地址：中国江苏省仪征市众鑫路 99 号

质量管理体系符合标准：

GB/T 19001-2016 / ISO 9001:2015

通过认证范围如下：

中心高 H63-H355 三相异步电动机（含变频亦可范围内的防爆电动机）的设计、制造

首次发证日期：2005年4月29日 本次发证日期：2024年8月25日 有效期至：2027年7月9日

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环境管理体系认证证书

证书编号：00123E33506R5L/3200

兹证明

茵梦达电机（中国）有限公司

统一信用代码：91321081783225284

注册/运营地址：中国江苏省仪征市众鑫路 99 号

环境管理体系符合标准：

GB/T 24001-2016 / ISO 14001:2015

通过认证范围如下：

电机的设计制造及相关管理活动

首次发证日期：2010年9月17日 本次发证日期：2024年8月9日 有效期至：2026年9月16日

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INNOMOTICS

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如有变动，恕不事先通知

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