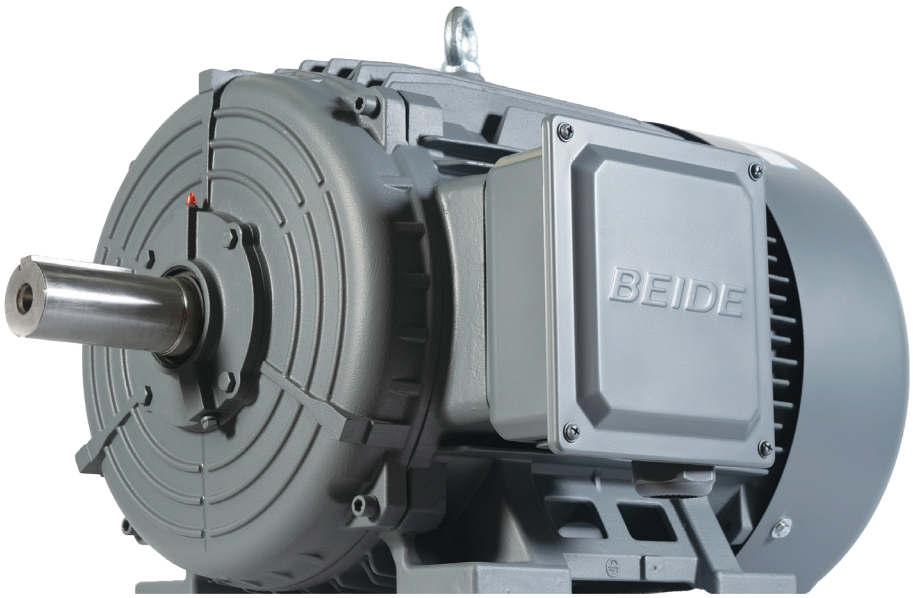
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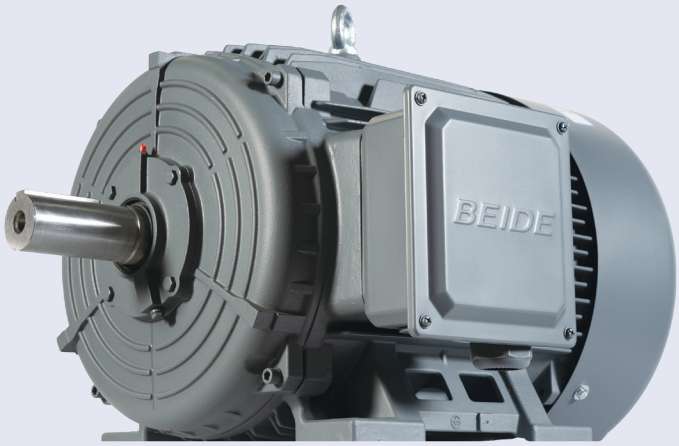
1TP8005 一级能效永磁同步电机
IE5+ Permanent Magnet Motor

产品样本 Catalog
2025. 07



茵梦达电机（中国）有限公司

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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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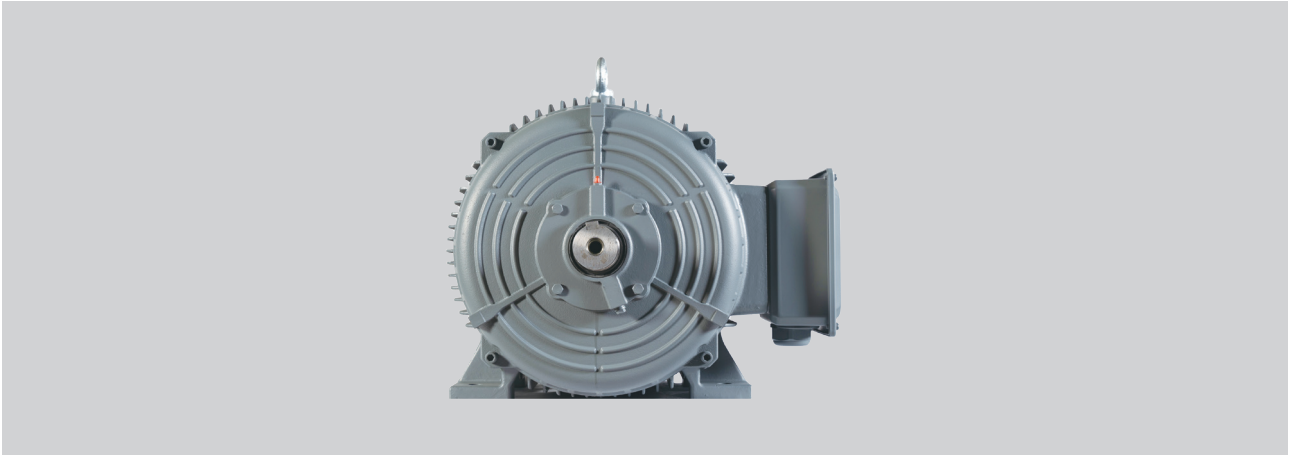
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概述 Overview



- 电机型号：1TP8
- 电机能效：
  GB Grade 1 (GB30253), IE5 (IEC 60034-30-2)
- 运行方式：变频器驱动
- 绝缘系统按 155（F）温度等级设计，在额定输出时按 130（B）温度等级考核
- 功率范围：5.5 – 18.5 kW
- 机座号：112 mm（其他机座电机敬请期待）
- 额定转速：1500 & 3000 rpm
- 冷却方式：
  IC411 (自扇冷却)
  IC416 (独立风扇) (可选)
- 防护等级：IP55
- 连接方式：星接
- 振动等级：A
- 机座材料：灰铸铁
- 标准颜色：铁灰色（RAL7011）
- 可选择增强悬臂力设计
- 标准安装结构类型（符合 IEC 60034-7 标准规定）：
  IM B3、IM B5、IM B35 等

- Motor Type: 1TP8
- Efficiency Class:
  GB Grade 1 (GB30253), IE5 (IEC 60034-30-2)
- Operation: Converter Driven
- Insulation system is designed for temperature class 155 (F). At rated output the motors can be used in temperature class 130 (B)
- Power Range: 5.5 – 18.5 kW
- Frame Size: 112 mm (Other available soon)
- Rated Speed: 1500 & 3000 rpm
- Cooling Method:
  IC411 (self-ventilation)
  IC416 (forced ventilation) (Optional)
- Protection Level: IP55
- Connection type: Star
- Vibration level: A
- Frame material: Grey Cast Iron
- Standard color: Iron Grey (RAL7011)
- Reinforced bearings for increased cantilever forces as option
- Standard mounting construction according to IEC 60034-7: IM B3, IM B5, IM B35 and etc

贝得永磁同步电机主要特点
Key features of PM motors：

更大扭矩及功率密度
High torque and power density

与感应电机技术相比，永磁同步电机在更小的外形尺寸下能够产生转矩。
Motor can deliver the same torque from a smaller frame size when compared to induction motor technology.

无与伦比的效率
Unparalleled efficiency

这些电机符合国家一级能效标准，因其高能效而脱颖而出。这对运营成本和碳足迹有着积极影响。
Complying with the IE5 efficiency class, these motors set themselves apart as a result of their high energy efficiency. This has a positive impact on operational expenses and the carbon footprint.

部分负荷时高效率
High efficiency in the partial load range

永磁同步电机在部分负载和较低转速下能够提供优秀的电机效率。
PM motors are able to deliver significantly higher energy efficiency values in the partial load range and at lower speeds.

重量更轻
Reduced weight

永磁同步电机更轻的重量使它们更适用于对电机重量敏感的应用场景。
PM motors have weigh less than conventional induction motors with a comparable power rating. This lower weight makes them ideal for applications where the overall weight is a critical factor.

设计灵活性
Design flexibility

永磁同步电机的特点，如紧凑性和重量轻等，为机械原始设备制造商（OEM）提供了更高程度的灵活性。
The inherent properties of PM motors, such as their compactness and reduced weight, provide machine OEMs with a higher degree of flexibility.

更宽运行转速范围
Wide operating rang

永磁同步电机具有更宽的转速范围，在这种宽转速范围内其效率变化极小，使其在应对各种应用时确保高度适用性。
PM motors are well known for their wide speed range without compromising efficiency and ensuring a high degree of flexibility in addressing various applications.

增强的动态性能
Enhanced dynamic performance

永磁同步电机加减速迅速，这使得它们成为速度和方向快速变化的应用场景的不二之选。
PM motors accelerate and decelerate quickly, making them the obvious choice for applications where speed and direction change rapidly.

运行温度更低
Cooler operation

由于没有转子电流损耗，永磁同步电机具有更低的运行温度，这延长了电机寿命。
With no rotor current losses, PM motors frequently operate at cooler temperatures, extending component lifetimes and reducing thermal stress.

电机优化配置 Motor Features



绝缘系统

永磁同步电机具有一个为变频器运行而设计的先进绝缘系统，可确保绕组拥有很长的使用寿命，且不会出现相关风险。

1TP8电机端子处允许的电压峰 - 峰值为：

- $U_{相间}$：3000V
- $U_{相对地}$：2200V

绕组温度保护

贝得永磁同步电机可选绕组温度保护。请参考“电机保护”部分。

轴承电流保护

贝得系列永磁同步电机，自225机座号开始，都标准配置了非驱动端（NDE）轴承绝缘。

这确保了电机轴承系统有更长的使用寿命，同时也允许使用标准轴承来替换。这种设计降低了电机在整个使用寿命期间的维护成本。

控制方法

永磁同步电动机可以全速度范围内无编码器控制运行。当与变频器（VSD）配合使用时，这些电机提供了无与伦比的精度和其他优点。

矢量控制（磁场定向控制）

矢量控制，也被称为磁场定向控制（FOC），能提供更精确的电机转矩和速度控制。通过将电机产生转矩的电流与磁化电流解耦，磁场定向控制允许对转矩和磁通进行独立控制，从而提供更精确的控制动态。也可以实现永磁同步电机无编码器的平稳运行。

应用场景

适合要求转矩快速变化和高精度的应用。

Insulation system

PM motors have an advanced insulation system designed for converter operation, ensuring a long winding lifetime without any associated risks.

The allowed voltage peak-peak at 1TP8 motor terminals:

- $U_{phase\text{-}to\text{-}phase}$: 3000V
- $U_{phase\text{-}to\text{-}ground}$: 2200V

Thermal protection

For Beide PM motors, thermal protection is optional. Please refer to part "Motor protection".

Bearing current protection

All PM motors in the SH225 series from Beide have insulated NDE bearings as standard.

This ensures a longer motor bearing system service life, while also allowing standard bearings to be used instead of hybrid bearings. This design reduces maintenance costs over the motor's lifetime.

Control methods

Topology of the rotor design allows encoderless operation in complete speed range. When teamed up with variable speed drives (VSD), these motors offer unparalleled precision and versatility.

Vector control (field-oriented control):

Vector control, also known as field-oriented control (FOC), provides more precise motor torque and speed control. By decoupling the motor's torque-producing current from the magnetizing current, FOC allows the torque and flux to be independently controlled, thereby providing more precise control dynamics. Smooth operation without an encoder is inherently possible.

Applications:

Ideally suited for applications demanding fast torque changes and high precision.

主要应用 Application

从单个应用到大型工业基础设施项目，永磁同步电机无与伦比的效率、紧凑性和卓越性能使其成为显而易见的选择。贝得的永磁同步电机适用于物流、暖通空调（HVAC）、供水和污水处理、汽车、食品加工、纺织等诸多应用领域。永磁同步电机不受限于传统应用，在其他要求苛刻的使用场景中也表现出色，特别适用于需要恒定转矩或高功率密度起决定性作用的应用场景下。

广泛的应用领域不局限于以下这些，例如：

- 泵
- 风扇
- 鼓风机
- 压缩机
- 传送带
- 挤出机
- 搅拌机

From individual applications up to large-scale infrastructure projects in industry, the unparalleled efficiency, compactness and superior performance of PM motors make them the obvious choice. Beide has PM motors suitable for applications such as material handling, HVAC, water and wastewater, automotive, food processing, textiles - to name just a few. PM motors are not limited to conventional applications, but excel in other demanding use cases, especially where constant torque is required or high power density is a decisive factor.

The wide field of applications that can be addressed includes the following, for example:

- Pumps
- Fans
- Blowers
- Compressors
- Conveyor belts
- Extruders
- Mixers









参考标准 Reference standards

名称 Title	IEC 标准 IEC standard	中国国家标准 Chinese standard
旋转电动机定额和性能 Rotating electrical machines – Part 1: Rating and performance	IEC 60034-1	GB/T 755
旋转电动机损耗与效率确定的标准测试方法 Rotating electrical machines – Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)	IEC 60034-2	GB/T 1032
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	IEC 60034-5	GB/T 4942.1
旋转电动机冷却方法 Rotating electrical machines – Part 6: Methods of cooling (IC Code)	IEC 60034-6	GB/T 1993
旋转电动机结构型式、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 construction, mounting arrangements and terminal box position (IM Code)	IEC 60034-7	GB/T 997
旋转电动机旋转电机线端标志与旋转方向 Rotating electrical machines – Part 8: Terminal markings and direction of rotation	IEC 60034-8	GB/T 1971
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	IEC 60034-14	GB 10068
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 Rotating electrical machines – Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080	IEC 60072-1	GB/T 4772.1
中小型旋转电机安全要求 Safety requirements of small and medium size rotating electrical machines		GB 14711
电气绝缘 耐热性和表示方法 Electrical insulation – Thermal evaluation and designation	IEC 60085	GB/T 11021
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	IEC 60721-2-1	GB/T 4797.1
标准电压 Standard voltages	IEC 60038	GB/T 156

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。

Vibration

1TP8 rotors are dynamically balanced to severity grade A using a half key.

Table below contains the effective vibration values for unloaded motors.

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/um	速度 Vibration velocity/(mm/s)	位移 Vibration displacement/um	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)]

注：

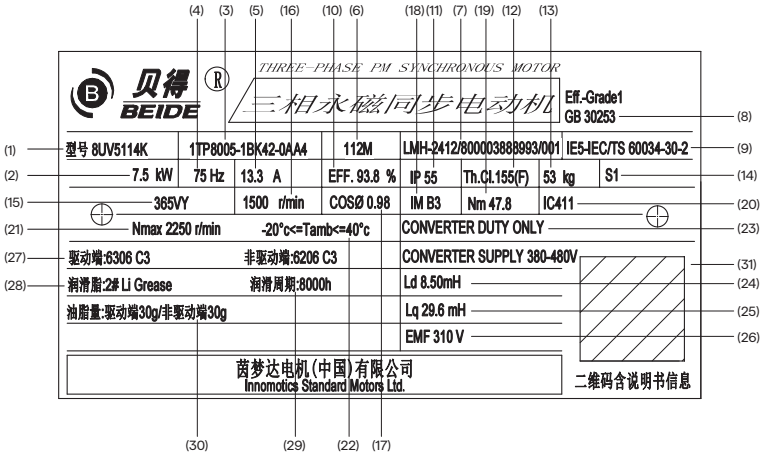
[1)] 该值为 GB/T 10068-2020 中定义的轴中心高 H>132 mm 的两极电机，当两倍电网频率占主导时的振动速度限值。

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.

铭牌样例 Nameplate

1TP8 铸铁系列电机铭牌 1TP8 Cast iron motor nameplate



1.	三相永磁同步电动机型号	Type of Three-phase Permanent Magnet Motor
2.	额定功率	Rated power
3.	订货号	Order No.
4.	额定频率	Frequency
5.	额定电流	Rated current
6.	机座号	Frame size
7.	产品序列号	Series number
8.	中国国家标准及中国能效等级	GB standard & China efficiency class
9.	IE 等级及 IEC 能效标准	IE efficiency class & IEC efficiency standard
10.	效率	Efficiency
11.	防护等级	Degree of protection
12.	绝缘等级	Thermal class
13.	重量	Motor weight
14.	工作制	Duty type
15.	额定电压和连接方式	Rated voltage & winding connections
16.	额定转速	Rated speed
17.	功率因数	Power factor
18.	安装方式	Type of construction
19.	额定转矩	Rated torque
20.	冷却方式	Cooling method
21.	最大转速	Maximum speed
22.	环境温度	Environment temperature
23.	变频器输入电压	Converter supply voltage
24.	d 轴电感	Ld
25.	q 轴电感	Lq
26.	额定转速下反电动势	back EMF @ rated speed
27.	驱动端与非驱动端轴承	DE & NDE Bearing
28.	润滑油脂类型	Grease type
29.	润滑周期	Re-grease interval
30.	润滑油脂量	Re-greasing quantity
31.	二维码	QR code

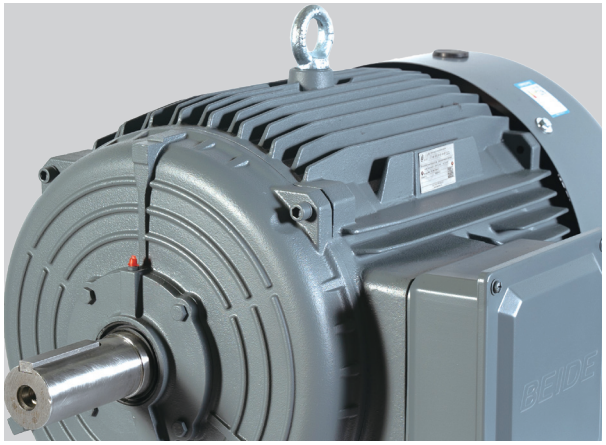
机械特性 Mechanical design

接线盒

接线盒标准位置处于机座右侧，且自身可 4 × 90º 旋转安装，从而使电缆可以从各个方向进入。所有接线盒都有两个进线孔，其中一个进线孔采用葛兰密封，另一个进线孔采用螺塞密封。

Connection box

The connection box is located at the right side of motor housing as standard, and can be rotated by 4 × 90º to allow for cable entry from each direction. All the connection box have 2 cable entries, one is sealed by the cable gland, and another sealed by screwed plug.





接线盒技术参数 Connection boxes technical data

机座号 Frame Size	主接线端子数 Number of main terminals	最多可容纳的辅助端子数 Max. allowable auxiliary terminals	接线螺钉螺纹 Contact screw thread	引接线最大截面积 (mm^2) Max. connectable cross-section	外接电缆直径 (mm) Outer cable diameter (sealing range)	进线孔尺寸 (葛兰+螺塞) Cable entry size (Gland+Screwed plug)
112	6	12	M5	10	18 ~ 25	M32 × 1.5+M32 × 1.5

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 the end-shield (DE)					
安装型式 Mounting type	IM B3 FS112	IM B6 FS112	IM B7 FS112	IM B8 FS112	IM V5 [1) 3)] FS112	IM V6 [2)3)] FS112
示意图 Diagram						
电动机订货号第 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 the end-shield (DE)			机座带底脚，端盖有法兰 With feet and with flange on the end-shield (DE)		
安装型式 Mounting type	IM B5 FS112	IM V1 [1)3)] FS112	IM V3 [2)3)] FS112	IM B35 FS112	IM V15 [1)3)] FS112	IM V35 [2)3)] FS112
示意图 Diagram						
电动机订货号第 14 位号上对应的字母 Letter, position 14th of Motor code	F	G	H	J	W	Y

[1)] 室外使用时推荐使用护罩（选件号 H00）；
[2)] 当户外安装时，推荐对电动机轴采取防护措施，避免水直接喷射到电动机轴上；
[3)] 当立式安装配独立风机时，请根据现场使用实际工况，与茵梦达咨询。

[1)] At outdoor application, the using of protective cover (Option code H00) is recommended;
[2)] At out door application the protection of shaft again jet-water is recommended;
[3)] If vertical mounting with separate fan, please consult with INNOMOTICS refer to actual operation conditions on site.

冷却与通风

所有电动机标配装有径流（离心）式冷却风扇，其冷却效能与电动机的旋转方向无关（冷却方法符合 IEC60034-6 标准的 IC411）。

对于某些应用，可以考虑配置独立驱动风扇 ，如，

- 电动机在低于 20% 额定转速运行时，推荐使用独立驱动风扇，从而使电动机得到有效利用；
- 电动机在明显高于额定同步转速的速度运行时，同样推荐选用独立驱动风扇，这样有助于降低电动机噪声。

独立驱动风扇的选件号为 F70。当安装独立驱动风扇时，电动机的长度将增加 ΔL。

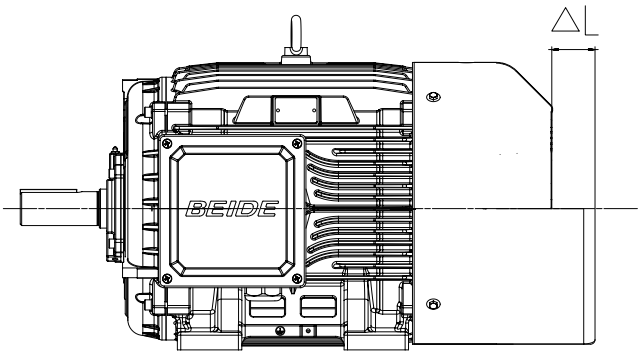
Cooling and ventilation

The 1TP8 standard motors are fitted with an radial flow fan for cooling in accordance with IEC 60034-6 cooling method.

For some special application, separately driven fan should be considered to be configurated.

- The use of a separately driven fan is recommended to increase motor utilization at low speed less than 20% of rated speed;
- When motor speed significantly higher than the synchronous speed, the separately fan is also recommended to be used. It can help reduce the motor noise.

The separately driven fan can be supplied already fitted, Option code F70. When the separately driven fan is mounted, the length of the motor increase by ΔL.



独立驱动风扇技术参数 Technical data for separately fan

对应电动机机座号 Motor frame size	电压 Voltage (V)	频率 Frequency (Hz)	功率 Rated output (W)	电流 Current (A)	转速 Speed (r/min)	△L (mm)
112	220D / 380Y	50	52	0.21/0.12	2800	75

注：
风扇可以在 210 ~ 240 VD/360 ~ 420VY 50Hz 电源供电下运行，也可以在 220 ~ 260 VD/380 ~ 480 VY 60 Hz 电源供电下运行。其他电源供电，须特殊询价。

Note:
The fan can be running with supply 210 ~ 240 VD/360 ~ 420 VY 50 Hz, and also 220 ~ 260 VD/380 ~ 480 VY 60 Hz. Other voltage supply, possible on request.

风机电机参数

对于某些客户现场有外部冷却设备的应用，可以提供无风扇和风扇罩的风机电机，风机电机的选件号为 F90。当电机无风扇和风扇罩时，电动机的长度将减少 ΔL。

Technical data for fan motor

For some special application with external cooling facility, we can provide motor without fan and fan cover, the option code is F90. When motor without fan and fan cover, the length will decrease ΔL.

对应电动机机座号 Motor frame size	F90 电机减少长度 Δl（mm） Length decrease of motor Δl
112	70

轴承系统

1TP8 系列电动机标准配置深沟球轴承或角接触球轴承，这些轴承是密封的或可再润滑型的。

FS112 的 1TP8 电动机驱动端与非驱动端轴承浮动；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 16 页“电动机轴驱动端允许的最大悬臂力”。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）。

FS112 电动机标配不带再润滑装置。

Bearing system

1TP8 series motors are supplied with the ball bearing as standard. These bearings are either of the sealed or regreasable type.

For FS112, the floating bearings are assembled; The standard bearing can endure a maximum cantilever force, referred to page 19 - Permissible cantilever forces. If higher cantilever force on the shaft required, the increased cantilever bearing design (Option code: L22) should be considered.

As standard, FS112 motors are not with regreasing device.

轴承选配 Bearing Assignment

机座号 Frame size	额定转速 Rated Speed	标准配置 Standard design			增强悬臂力设计轴承 (选件号 L22) Increased cantilever-bearing (Option code: L22)		
		驱动端轴承 DE bearing	非驱动端轴承 (水平安装) NDE bearing (Horizonal mounting)	非驱动端轴承 (立式安装) NDE bearing (Vertical mounting)	驱动端轴承 DE bearing	非驱动端轴承 (水平安装) NDE bearing (Horizonal mounting)	非驱动端轴承 (立式安装) NDE bearing (Vertical mounting)
112	3000, 1500	6306 2RZ C3	6206 2RZ C3	6206 2RZ C3	6308 2RZ C3	6206 2RZ C3	6206 2RZ C3

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；
- 当环境温度每升高 10°C，润滑脂寿命以及再润滑时间缩短一半。

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

- When 1TP8 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;
- If the coolant temperature is increased by 10 ºC, the grease lifetime and regreasing interval is halved.

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。但是，这只能是在电机严格按照本样本中规定的技术数据运行。

对于以规定间隔再润滑的电机，轴承寿命可以延长，从而补偿不利因素，诸如温度、安装条件、转速、轴承规格和机械载荷造成的影响。

Grease life and re-greasing interval

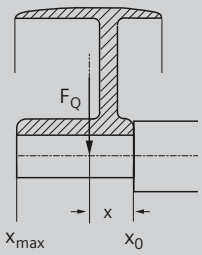
For permanent lubrication, the bearing grease lifetime is matched to the bearing lifetime. This can, however, only be achieved if the motor is operated in accordance with the catalog specifications.

For motors which can be regreased at defined regreasing intervals, the bearing lifetime can be extended and/or unfavorable factors such as temperature, mounting conditions, speed, bearing size and mechanical load can be compensated.

润滑脂寿命和再润滑周期（电动机水平安装） Grease life (Horizonal installation)

机座号 Frame size	额定转速 Rated Speed	润滑脂寿命 Grease lifetime up to CT 40 ºC
持久润滑型轴承的润滑脂 Grease for permanent lubrication bearing		
112	3000rpm， 1500rpm	20000h
可再润滑型轴承的润滑脂 Grease for regreasable bearing		
112	3000rpm， 1500rpm	8000h

电动机轴驱动端允许的最大悬臂力 Permissible cantilever forces on DE shaft



为了计算径向负载的最大悬臂力，据轴肩处的悬臂力 F_Q（N）必须位于轴伸端以内，（长度为 x）。长度 x［mm］是距离轴肩的距离。长度最长为 x_{max}，与轴伸长度相同。总的悬臂力 F_Q 使用以下公式计算。

$$F_Q = c \cdot F_U$$

预紧力系数 c 是从皮带制造商那得到的经验数值，下面的估算值可以应用。

- 对于一般扁平的皮带，c = 2；
- 对于 V 型皮带，c = 2 ~ 2.5；
- 对于特殊的皮带（取决于皮带类型和负载），c = 2 ~ 2.5。

计算切向力 F_U（N）使用下列公式：

$$F_U = 2 \cdot 10^7 \frac{P}{n \times D}$$

F_U 切向力（N）
P 额定功率（kW）
n 额定转速
D 滑轮直径（mm）

In order to calculate the admissible cantilever forces for a radial load, the line of force (i.e. the centerline of the pulley) of the cantilever force F_Q(N) must lie within the free shaft extension (dimension x).Dimension x [mm] is the distance between the point of application of force F_Q and the shaft shoulder. Dimension x_{max}. Corresponds to the length of the shaft extension. Total cantilever force is calculated using the following equation.

$$F_Q = c \cdot F_U$$

The pre-tension factor c is a value gained from experience from the belt manufacturer. The following approximate value can be assumed.

- For normal flat leather belts with an idler pulley, c = 2.
- For v-belts, c = 2 to 2.5.
- For special synthetic belts (depending on the type and load), c = 2 to 2.5.

The circumferential force F_U (N) is calculated using the following equation.

$$F_U = 2 \cdot 10^7 \frac{P}{n \times D}$$

F_U circumferential force in N
P rated motor power (transmitted power) in kW
n rated motor speed
D pulleys in mm.

假设电动机不受任何轴向力，下面的表格中列出了允许的径向悬臂力值（单位：牛顿）。

The table below contains the permissible Radial Force values in Newtons with the assumption of zero axial forces.

标准电机最大悬臂力 Admissible cantilever forces for standard version				增强悬臂力的轴承设计（编号 L22） Bearing design for increased cantilever forces Order code L22	
机座号 Frame size	型号 Motor Type	悬臂力范围 [1] Admissible cantilever force [1]		悬臂力范围 [1] Admissible cantilever force [1]	
		for x_0 N	for x_{max} N	for X_0	for X_{max}
112	1TP8005-1BK3	1850	1600	2800	2350
	1TP8005-1BK4	1850	1550	2750	2350
	1TP8005-1BL4	1500	1300	2200	1900
	1TP8005-1BL5	1450	1250	2150	1850
	1TP8005-1BL6	1400	1200	2100	1800
	1TP8005-1BL7	1350	1150	2050	1750

[1] 对于安装型式为 IM B6，IM B7，IM B8，IM V5，IM V6 时，在电动机底脚的支撑力足够的情况下，皮带张力垂直于或指向安装平面。采用底脚安装的电动机两个底脚必须牢固。

[1] It should be considered that for types of construction IM B6, IM B7, IM B8, IMV5 and IM V6 the belt tension is only permitted to act and the feet must be supported. Both feet must be secured for foot-mounting types of construction.

电气特性 Electrical design

额定输出

1TP8 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 ºC ~ 40 ºC，海拔高度不超过 1000 m。

电气数据公差

- 效率 η
  $P_{rated} \leq 150$ kW: - 0.15 x (1 – η)
  $P_{rated} > 150$ kW: - 0.10 x (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
- 最大转矩：-10 %
- 转动惯量：± 10 %

绝缘系统

1TP8 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。

1TP8 系列电动机标准设计温度等级为 155（F）。当 1TP8 额定点运行时，其绝缘系统按 130（B）温度等级考核。

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 1TP8 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。

Rated Output

1TP8 motors rated output powers means that the motor runs under continuous duty S1 (IEC 60034 - 1) operation when operated at ambient temperature from -20 ºC to 40 ºC and at altitudes of up to 1000 m over sea.

Tolerance for electrical data

- Efficiency η at
  $P_{rated} \leq 150$ kW: - 0.15 x (1 – η)
  $P_{rated} > 150$ kW: - 0.10 x (1 – η)
  With η being a decimal number
- Power factor - (1 – cos ϕ) / 6
  Minimum absolute value: 0.02
  Maximum absolute value: 0.07
- Breakdown torque -10 %
- Moment of inertia ± 10 %

Insulation system

The insulation system of 1TP8 results in high reliability, a long service life and high resistance to stress, for example, during starting or under overload conditions.

1TP8 series motors are designed for temperature class 155 (F). At rated operation point the motors can be 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.

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。

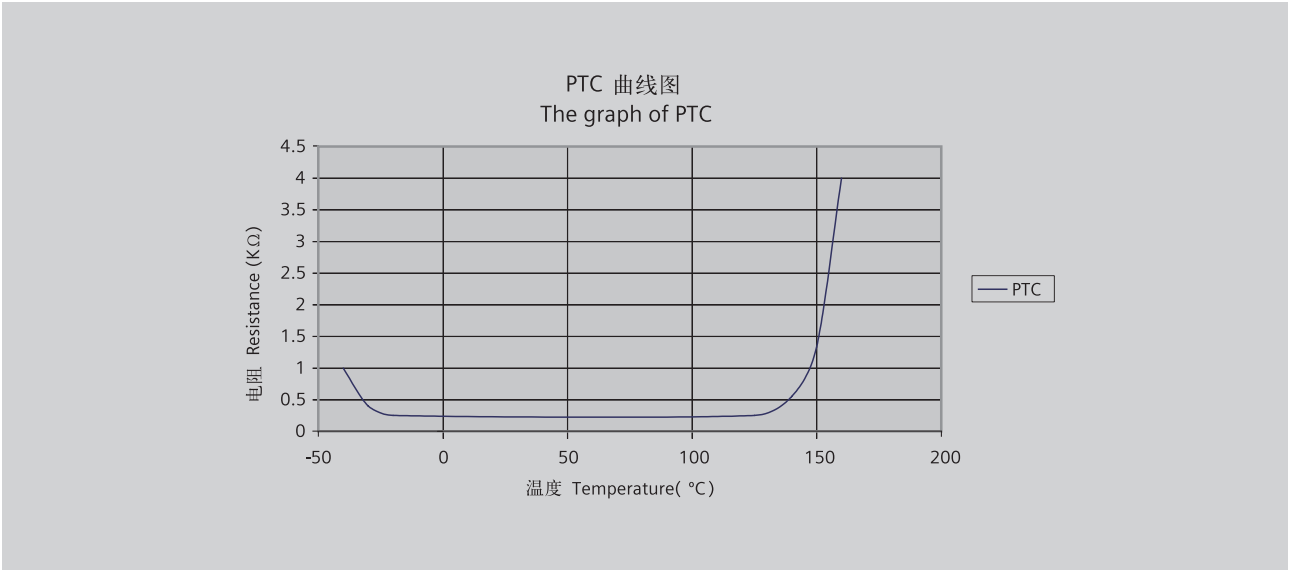
PTC 热敏电阻本身不能耐受大电流和高电压。否则会导致半导体器件损坏。PTC 热敏电阻和跳闸装置的开关滞后效应小，因此可以实现快速重起。对于重载起动、起动频率高、负载变化大、环境温度高或电源波动大等应用场合，建议电动机使用该类保护。

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.



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 ºC，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 ºC，跳闸温度为 155 ºC，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。

两种 PT100 热敏电阻温度保护

- 电动机绕组带 3 个 2 线制 PT100 测温元件，电动机订货号第 15 位字母为“H”，需 6 个辅助接线端子。
- 电动机绕组带 6 个 2 线制 PT100 测温元件，电动机订货号第 15 位字母为“J”，需 12 个辅助接线端子。

2 alternatives of PTC protection

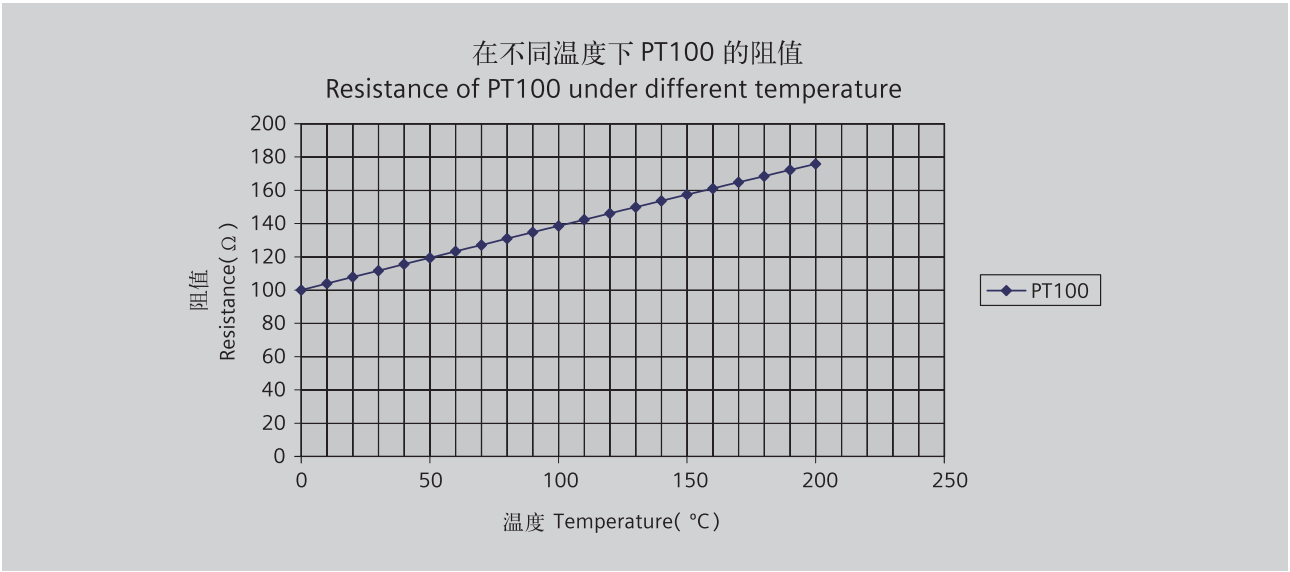
- Motor winding is protected with PTC thermistors with 3 embedded temperature sensors for tripping. Connection be done through 2 auxiliary terminals in the connection box. 15th position of Motor Order No. letter B.
- Motor winding is protected with two sets of three temperature sensors, one set is for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

2 alternatives of PT100

- Installation of 3 PT100 resistance thermometers. Connection be done through 6 auxiliary terminals in the connection box. 15th position of Motor Order No. letter H.
- Installation of 6 PT100 resistance thermometers. Connection be done through 12 auxiliary terminals in the connection box. 15th position of Motor Order No. letter J.



轴承保护

1TP8 电动机轴承标配不带任何保护。对于某些苛刻的应用，推荐对轴承采取保护措施。轴承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来进行保护。温度传感器的引接线引入电动机主接线盒内。

1TP8 电动机轴承装两个 PT100 测温元件，选件号为 Q72，需 4 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（选件号：Q04）进行保护，需 2 个辅助接线端子。

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。防潮加热带的电气参数如下表所示。

Bearing protection

1TP8 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.

Installation of 2 PT100 screwed-in resistance thermometers for 1TP8 motor bearings, Option code: Q72. Connection be done through 4 auxiliary terminals in the connection box.

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 (Option code: Q04), 2 auxiliary terminals in connection box are needed."

Anti-condensation heaters must be switched off during operation. When motor shut down, the heaters must be switched on.

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

机座号 Frame size	功率 Power（W）	电压 Voltage（V）
112	30	220

1TP8 电动机所允许的最大安全转速如下表

The allowed maximum safe operating speed of 1TP8 motors shows the diagram

机座号 Frame Size	额定转速 3000rpm		额定转速 1500rpm	
	最高转速 Max. rpm	最大频率 fmax	最高转速 Max. rpm	最大频率 fmax
112	4500	225	2250	112.5

变频应用 Converter fed application

1TP8 永磁同步电机需搭配变频器使用。

需要根据特定的变频器说明书正确选择变频器型号， 并确认所选变频器带有永磁同步电动机控制功能。

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。

电机转子内嵌永磁体，电机在旋转状态下电机接线端子处有电压存在。应在电机停止旋转时进行电机维护。具体请参见永磁同步电机操作手册。

1TP8 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 480 V 时正常运行。

1TP8 电动机最高运行转速及频率请参考样本数据或电机铭牌。

1TP8 电动机在低转速时仍能输出额定扭矩， 其特定的负载扭矩如以下图表所示。

1TP8 motor has to be driven with a converter.

Select the frequency converter correctly based on the specific user manual and verify that the selected frequency converter has function of controlling permanent magnet motors.

The installation guidelines of the converter manufacturer with regards to electromagnetic compatibility must be considered during the design and implementation phases.

The motor rotor has embedded permanent magnets, and there is voltage present at the motor terminals when the motor is rotating. Motor maintenance should be carried out when the motor has stopped rotating. Please refer to the operating manual for specific instructions.

The standard insulation of the 1TP8 motors is designed such that operation is possible on converter at main voltage up to 480V.

The maximum operating speed and frequency of the 1TP8 motor should be referred to the catalog data or the motor nameplate.

1TP8 motors are capable for converter-fed operation with certain characteristics load, of which the load torque characteristics is referred in the following diagram.

扭矩特性

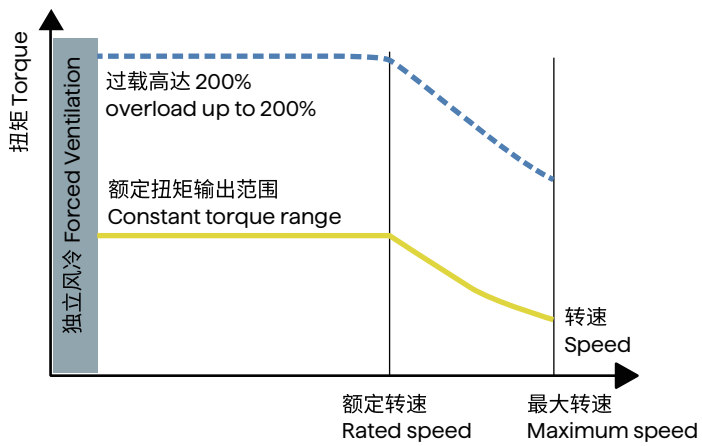
1TP8 永磁同步电机在广泛的速度范围内可以输出额定扭矩，无需独立风扇冷却。

贝得永磁同步电机具有高达200%的短时间过载能力。

Torque characteristics

1TP8 permanent magnet motors can output rated torque over a wide speed range without requiring forced ventilation.

Beide PM motors have up to 200% short time overload capability.



订货号和型号 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	T	P	8	0	0	5	–						–				

低压永磁同步系列电动机
Low-voltage Permanent Magnet motor series

0 = 铸铁壳
0 = Cast Iron

5 = 超高效电动机，中国能效等级 1 级
5 = Premium Efficiency, China Energy Efficiency Grade 1

机座号编号 Code of frame size
1A = 100；1B = 112；1C = 132；1D = 160；1E = 180
2A = 200；2B = 225；2C = 250；2D = 280 3A = 315

额定转速编号 Code of Rated Speed
K = 1500 rpm; L = 3000 rpm

机座长度编号 Code of frame length
0 or 1 = S（短机座 short）
2 or 3 or 4 = M（中机座 medium）
4 or 5 or 6 or 7 = L（长机座 long）

电机额定电压 /电机连接方式 Motor Rated voltage / motor connections
20 = 365 V / Y [1)]

结构和安装方式编号 Code of Construction and mounting type

A[2)] = IM B3	U[2)] = IM B7	T[2)] = IM B6	J[2)] = IM B35	V[2)] = IM B8
F[2) 3)] = IM B5	C[2) 4)] = IM V5	W[2) 4)] = IM V15	G[2) 3) 4)] = IM V1	
D[2)] = IM V6	Y[2)] = IM V35	H[2) 3)] = IM V3		

绕组保护编号 Code of winding protection
A = 无绕组保护 without winding protection
B[6)] = 绕组带一组三芯串联的 PTC 热敏电阻用于跳 3 PTC thermistors for tripping
C[6)] = 绕组带两组三芯串联的 PTC 热敏电阻用于报警和跳闸6 PTC thermistors for alarm and tripping
H[6)] = 绕组带 3 个 Pt100 测温元件3 resistance thermometers Pt100
J[6)] = 绕组带 6 个 Pt100 测温元件6 resistance thermometers Pt100
Z = 其他绕组保护Other temperature for winding protection

接线盒位置编号（从驱动端看） Code of connection box location (view from drive end)
4 = 置顶 on top；5[5)] = 右侧 on RHS；6[5)] = 左侧 on LHS

订货号和型号 Order No. and Motor Type

附注：

[1] 变频器进线电压为380V；

[2] 铭牌上标有结构型式。若需要冷凝水排放孔（订货号：H03），则必须指明电机的安装结构型式，以便在制造过程中确定冷凝水排放孔的具体位置；

[3] 对于 IM B5、IM V1、IM V3 安装结构型式电动机，须指定电动机订货号第 16 位数字为“4”；

[4] 电动机标配无防雨罩，但如需要加带防雨罩用于防护时，须订购选件号 H00；

[5] FS80-112 进线孔的方向朝向非驱动端；

[6] 选择此选件，接线盒将更改为铸铁壳。

Foot note:

[1] Converter input voltage 380V;

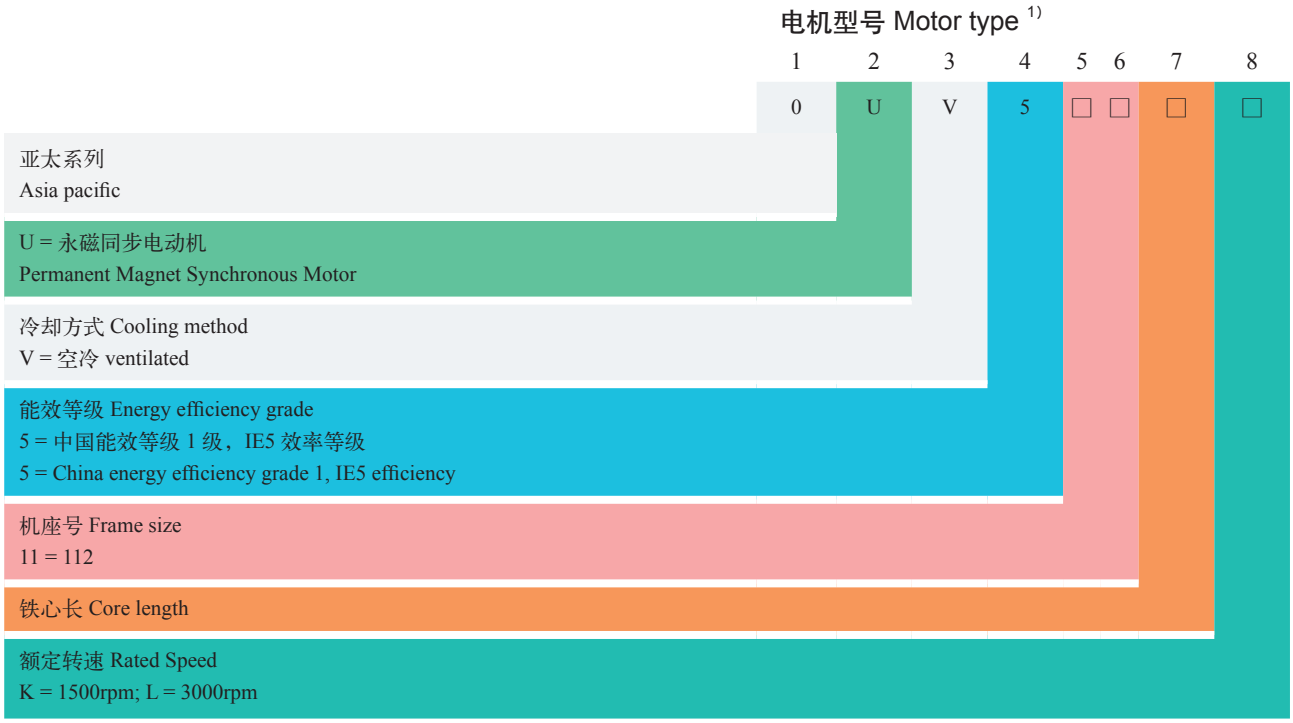
[2] The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code H03), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture;

[3] For motor with IM B5, IM V1, IM V3 construction and mounting type, the 16th digit of motor order No. must be "4";

[4] Without canopy, for protective cover with canopy needed Option code H00;

[5] Cable entry on connection box towards the non-drive FS80-112;

[6] Choose this option, the connection box will be changed to cast iron.



订货号样例：

中国能效等级一级、铸铁低压三相永磁同步电动机

额定转速 1500rpm，7.5kW，IM B3，365 V Y，IP55，接线盒位置处于顶端，进线孔右侧（从驱动端看）

电动机订货号：1TP8005-1BK42-0AA4

[1] 电机型号可用于能效备案查询。

Order No. example:

GB Grade 1 & IE5, Low voltage three phase cast iron Permanent Magnet Motor.

Rated Speed 1500rpm, 7.5kW, IM B3, 365 V Y, IP55, connection box on top and cable entry at right side (view from DE)

Motor order code: 1TP8005-1BK42-0AA4

[1] Motor type can be used for China Energy Label checking.

选型技术数据表 Technical data table

铸铁壳系列电机 Cast Iron Motors

贝得 1TP8 IE5 能效

机座号 Frame Size	额定功率 Rated power	订货号 Order No.	电动机型号 Motor Type	额定扭矩 Rated torque	额定电压 Rated Voltage	额定电流 Rated current	额定频率 Rated Frequency	接线方式 Connection Type	效率 Efficiency
	kW			Nm	V	A	Hz		%
额定转速 Rated Speed 3000rpm									
112	7.5	1TP8005-1BL42-0□□□	0UV5114L	23.9	365	12.9	150	Y	94.5
112	11	1TP8005-1BL52-0□□□	0UV5115L	35.0	365	18.9	150	Y	95
112	15	1TP8005-1BL62-0□□□	0UV5116L	47.8	365	25.7	150	Y	95.3
112	18.5	1TP8005-1BL72-0□□□	0UV5117L	58.9	365	31.6	150	Y	95.6
额定转速 Rated Speed 1500rpm									
112	5.5	1TP8005-1BK32-0□□□	0UV5113K	35.0	365	9.5	75	Y	93.2
112	7.5	1TP8005-1BK42-0□□□	0UV5114K	47.8	365	12.9	75	Y	93.8

选型技术数据表 Technical data table

铸铁壳系列电机 Cast Iron Motors

中国能效等级 1 级，IE5

机座号 Frame Size	额定功率 Rated power	订货号 Order No.	功率因数 Rated power factor	最大转速 Maximum speed	最大扭矩 Maximum torque	额定转速时反电势 bEMF at rated speed (20°C)	转动惯量 Moment of inertia	重量 IMB3 Weight
	kW			rpm		V	kgm^2	kg
额定转速 Rated Speed 3000rpm								
112	7.5	1TP8005-1BL42-0□□□	0.97	4500	47.8	325	0.0105	38
112	11	1TP8005-1BL52-0□□□	0.97	4500	70.0	340	0.0152	44
112	15	1TP8005-1BL62-0□□□	0.97	4500	95.5	327	0.0198	50
112	18.5	1TP8005-1BL72-0□□□	0.97	4500	117.8	322	0.0244	56
额定转速 Rated Speed 1500rpm								
112	5.5	1TP8005-1BK32-0□□□	0.98	2250	70.0	315	0.0152	44
112	7.5	1TP8005-1BK42-0□□□	0.98	2250	95.5	310	0.0198	50

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
绕组保护 Motor protection			
1TP8005-□□□□□-□□B□ [2]	–	绕组带一组三芯串联的 PTC 热敏电阻用于跳闸 Motor protection with PTC thermistors with three embedded temperature sensors for tripping	FS112
1TP8005-□□□□□-□□C□ [2]	–	绕组带两组三芯串联的 PTC 热敏电阻用于报警和跳闸 Motor protection with PTC thermistors with six embedded temperature sensors for alarm & tripping	FS112
1TP8005-□□□□□-□□H□ [2]	–	绕组带 3 个 Pt100 测温元件 Installation of three PT100 resistance thermometers	FS112
1TP8005-□□□□□-□□J□ [2]	–	绕组带 6 个 Pt100 测温元件 Installation of six PT100 resistance thermometers	FS112
线圈和绝缘 Windings and insulation			
–	Q04 [2]	绕组带 220 V 防潮加热带 Anti-condensation heater for 220 V AC (spaces heater)	FS112
电动机接线盒 Motor connection box			
–	R10 [3]	接线盒直接旋转 90º，进线口朝向驱动端 Rotation of the connection box through 90º, entry from DE	FS112
–	R11	接线盒直接旋转 90º，进线口朝向非驱动端 Rotation of the connection box through 90º, entry from NDE	FS112
–	R12	接线盒直接旋转 180º Rotation of the connection box through 180º	FS112
–	X07	铸铁接线盒 cast iron connection box	FS112
–	X47	电机接线盒标配 2 个自锁葛兰 Connection boxes of the motors include 2 self-locking cable gland	FS112

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 Bearings			
–	L80	SKF 轴承 SKF Bearing	FS112
–	L81	其他进口品牌轴承 Other imported brand bearings	FS112
–	L22 [4]	增强悬臂力轴承设计 Bearing design for increased cantilever forces	FS112
–	L20	驱动端轴承固定 Located bearing at DE	FS112
机械设计和防护等级 Mechanical design and degrees of protection			
–	L04	光轴设计，不带键槽和键 Shaft without key and keyway	FS112
–	L72 [5] [6]	第二标准轴伸 Second standard shaft extension	FS112
–	H00 [7]	电动机带防护罩 Motor with protective cover	FS112
–	H03 [8]	冷凝水排放孔 Condensation drainage holes	FS112
–	H04	外部接地 External earthing	FS112
–	P80 [17]	全圆法兰 Full circle flange	FS112
–	H22	IP56 防护等级（非高海况） IP56 degree of protection (non-heavy-sea)	FS112
–	H20	IP65防护等级 IP65degree of protection	FS112
–	V9Y [9]	增大一级法兰尺寸，增强悬臂力轴承设计，增大一级驱动端轴径及轴伸 Next larger flange, Bearing design for increased cantilever forces, next bigger size of DE Shaft diameter and Shaft length	FS112
–	V9Z [10]	增强悬臂力轴承设计, 同时增大一级驱动端轴径及轴伸 Bearing design for increased cantilever forces, Next bigger size of DE Shaft diameter and Shaft length	FS112

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
模块化技术 Modular technology			
–	F70 [11)]	IC 416 冷却方式（非自冷），电动机带独立驱动风扇 Mounting of separately driven fan	FS112
–	F90 [12)]	风机电机（无风扇和风扇罩，非驱动端全封闭） Fan motor (Without fan and fan cover, NDE closed)	FS112
–	F76	金属风扇 Metal Fan	FS112
–	X50 [13)]	安装欧姆龙编码器（E6B2-CWZ6C-1024）和独立驱动风扇 Mounting of Omron rotary pulse encoder (E6B2-CWZ6C-1024) and separately driven fan	FS112
–	X59	预留安装 E6B2-C/TRD-2T 编码器位置并安装独立驱动风扇 Prepared for of E6B2-C/TRD-2T encoder and install independent drive fan	FS112
–	W7Q [16)]	安装电机保持制动（外部380V交流供电） Mounting of holding brake (brake supply voltage: external 380 V AC)	FS112
–	W74 [14)]	安装欧姆龙编码器（E6B2-CWZ1X-1024）和独立驱动风扇 Mounting of Omron encoder (E6B2-CWZ1X-1024) and separated driven fan	FS112
铭牌和测试证书 Rating plate and test certificate			
–	B80	出厂检验报告 Acceptance test certificate 3.1 in accordance with EN 10204	FS112
–	W9P	能效标签及合格证不贴，随机带走 CEL label and quality certificate not pasted,delivered with motors	FS112
喷漆 Paint finish			
–	S01	不喷漆，只带底漆 Unpainted, only primed	FS112
–	W88 [15)]	适用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 resistant	FS112
包装 Packing			
–	B90	包装（FS80 ~ 132 电动机采用纸箱包装，FS160 ~ 355 电动机采用木箱包装） Packing (FS80 ~ 132 motors adopt the carton packaging, FS160 ~ 355 motors adopt the wooden cases packaging)	FS112

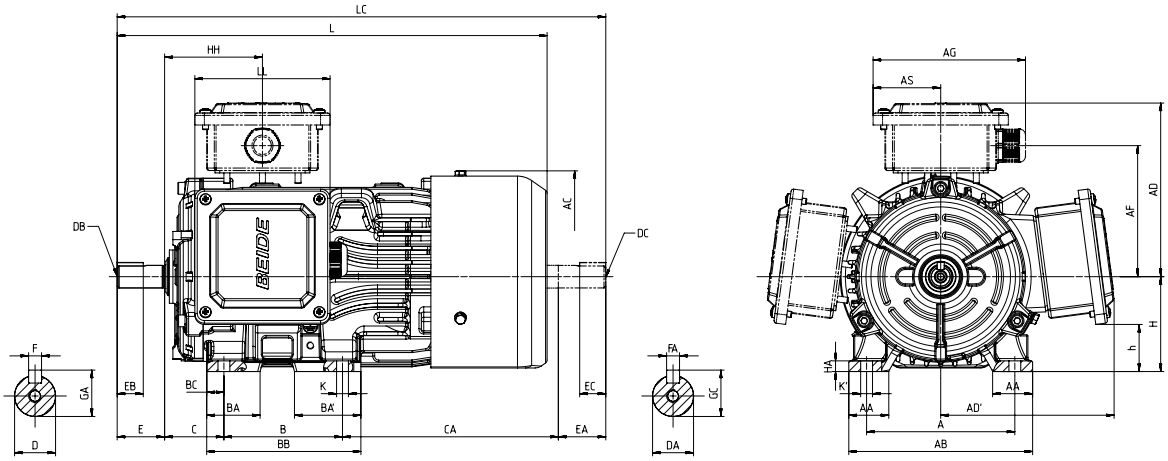
选件 Options

[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号。
[2] 选择此选件，接线盒将更改为铸铁壳。
[3] 不适用 FS80 ~ 112 法兰安装电机。
[4] 参照电动机轴驱动端允许的最大悬臂力进行选配。
[5] 带防雨罩或独立驱动风扇的电动机不能选此选件。
[6] 非驱动端上的第二轴尺寸与驱动端轴伸一致。同时选用V9Y或 V9Z选件时，第二轴伸不加大。
[7] 仅适用于 IM V5、IM V1、IMV15 以及 IM V18 安装结构型式。无法与选件号 L72 并用。
[8] 仅适用于水平安装的电动机。对于 IM B5 和 IM B14 安装结构型式的电动机，选择此选件时，必须确保接线盒处于机座顶端。对于其它安装结构型式的电机请咨询茵梦达。
[9] 适用于B5/V1/V3/B35/V15/V35端盖带法兰电机。当使用V9Y选项时，标配全圆法兰。
[10] 增大一级驱动端轴径及轴伸,等同于下一个机座的标准轴径、轴伸。
[11] 当安装独立风机时，电动机的长度将增加 ΔL。具体的增加尺寸和技术数据请查看独立驱动风扇技术参数表。无法与选件号 L72 并用。
[12] 无风扇和风罩时，电动机的长度将减小 Δl。按照铭牌上功率数值输出时，电动机必须有外部冷却。客户应当采用正确的冷却方式，没有或错误的冷却方式都将减少电动机的使用寿命，甚至会损坏电动机。
[13] SINAMICS 变频器联结 Omron 编码器（E6B2-CWZ6C-1024）时，变频器需要一些特殊配置。详细信息，请咨询茵梦达。
[14] SINAMICS 变频器可以直接与 Omron 编码器（E6B2-CWZ1X-1024）联结。
[15] 可用于室内、或暴露环境中的的室外安装，也可用于含有中等浓度 SO2 的工业环境中，并可用于海洋性气候环境中，但不适用于海上的应用。
[16] 此制动器不可与 X50，X59 及 W74 中的编码器同时选用。
[17] 当选用V9Y（加大法兰）时，法兰标配为全圆法兰。

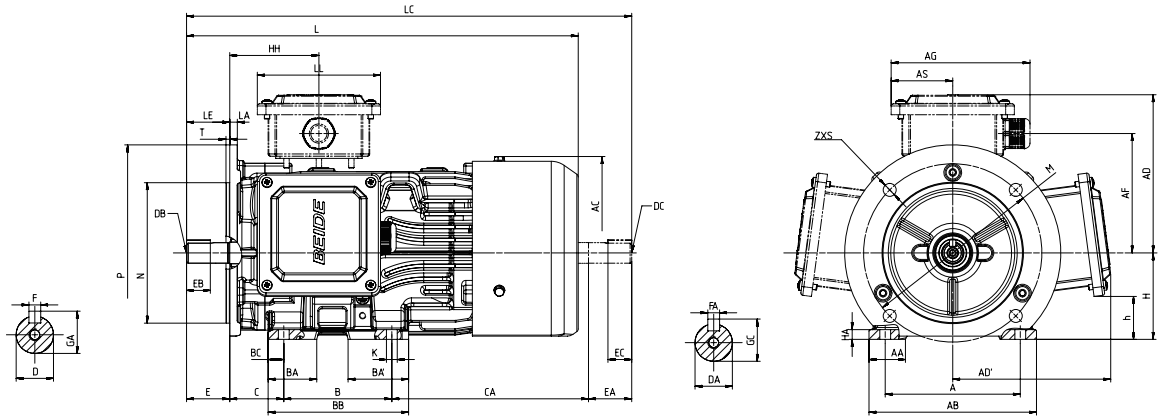
[1] Order No. supplement Z with option code when ordering;
[2] When choose these options, the connection boxes will be changed to cast iron shell;
[3] Not applicable to the FS80 ~ 112 flange mounted motors;
[4] Refer to "Permissible cantilever forces on DE shaft" for checking bearing configuration;
[5] Not possible in combination with canopy or separately driven fan (Order code: F70);
[6] Second standard shaft extension on NDE has same dimension on DE side; when combined with V9Y or V9Z, second shaft won't be enlarged;
[7] Only applicable for the construction type IM V5, IM V1, IM V15 and IM V18. Not possible in combination with Option code L72;
[8] Only applicable to the vertical mounting motors. For the construction type of IM B5 and IM B14, when choose this option, it is necessary to ensure the connection box is on top of the frame. For other construction types, please specially consult with Innomotics;
[9] Apply to Construction and mounting type B5/V1/V3/B35/V15/V35 motor;
[10] Next bigger size of DE Shaft diameter and Shaft length, same as shaft of next frame size;
[11] When the separately driven fan is mounted, the length of the motor increase by ΔL. For an explanation of the additional dimension please refer to technical data for separately fan. Unable to be used with the option L72;
[12] Without fan and fan cover, the length of the motor is decrease by Δl. By using the power output of rating plate, the motor must have external cooling by air flow. The correct motor cooling is in responsibility of customer. Missing or wrong cooling reduce the life time or damaged the motor;
[13] When SINAMICS inverter is connected with Omron encoder (E6B2-CWZ6C-024), additional configuration on inverter is needed. For detailed information, please contact INNOMOTICS;
[14] Omron encoder (E6B2-CWZ1X-1024) can be directly connected with SINAMICS inverter;
[15] Recommended for indoor or outdoor installations exposed to direct weather conditions. Industrial environment with moderate SO2, inshore maritime climate but not offshore;
[16] This type electro-magnetic brake can't be configured together with pulse encode in option X50, X59 and W74;
[17] When add option V9Y (larger flange), Full circle flange is configured as standard.

外形尺寸 Dimension drawings

1TP8005 系列电机
机座号 112 Frame size 112
IM B3 安装结构方式 Type of construction IM B3



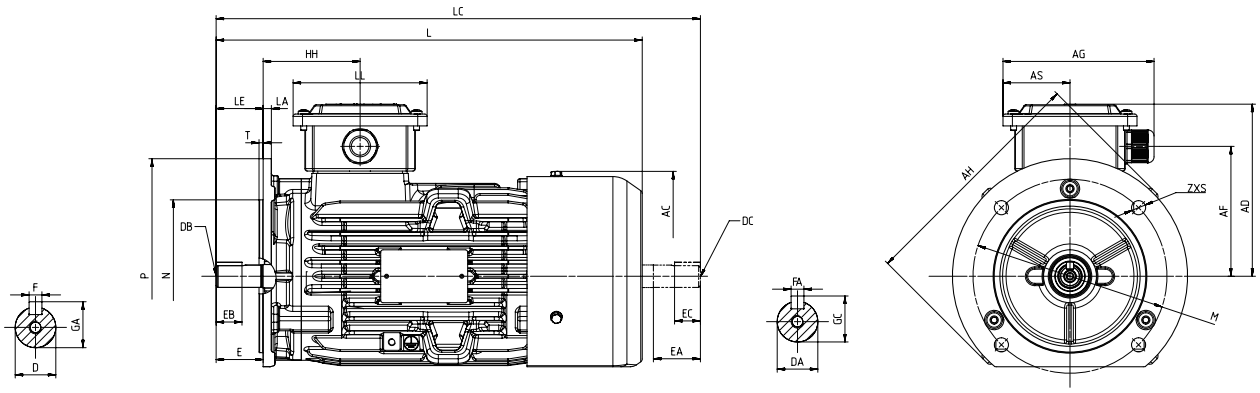
IM B35 安装结构方式 Type of construction IM B35



机座号 Frame size	类型 Type 1TP8005	额定转速 Rated Speed	尺寸图依据 IEC 标准 Dimension designation according to IEC standards																								
			A	AA	AB	AC[1]	AD/AD'	AF/AF'	AG	AH	AS	B[2]	BA	BA'	BB	BC	BE	C	CA[2]	H	h	HA	HH	K/K'	L	LC	LL
112M	1B □□	3000 1500	190	45	226	247	203/190	155.5/148	148	-	59.5	140	54	56	174	16	46	70	222	112	58	12	106	12	490	552	128

[1] 包含螺栓头的尺寸。
[2] 该尺寸为 DIN EN 50347 标准所列机座号对应尺寸。

IM B5 以及 IM V1 安装方式 Type of construction IM B5 and IM V1

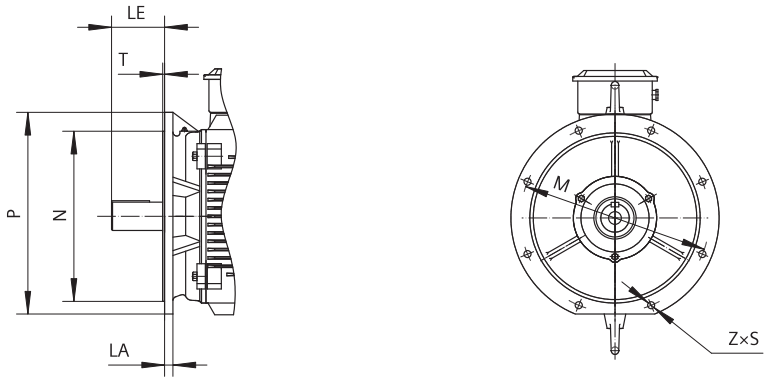


机座号 Frame size	类型 Type 1TP8005	额定转速 Rated Speed	驱动端轴伸直径 DE shaft extensiion						非驱动端轴伸（选件号为 L72） NDE shaft extension (option code L72)						驱动端轴伸直径（选件号为 V9Y 或 V9Z） DE shaft extensiion (option V9Y or V9Z)					
			D	DB	E	EB	F	GA	DA	DC	EA	EC	FA	GC	D	DB	E	EB	F	GA
112M	1B □□	3000 1500	ø28	M10x22	60	40	8	31	ø28	M10x22	60	40	8	31	ø38	M12x28	80	56	10	41

[1] Measured across the bolt heads.
[2] This dimension is assigned in DIN EN 50347 to the frame size listed.

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



机座号 Frame size	安装结构形式 Type of construction	法兰带通孔（FF/A）/ 带内螺纹孔（FT/C） Flange with through holes (FF/A) / tapped holes (FT/C)	尺寸图依据 IEC 标准 Dimension designation according to IEC standards							
		按照 DIN EN 50347 标准 According to DIN EN 50347	LA [1]	LE	M	N	P [2]	S	T	Z
112	IM B5, IM B35, IM V1, IM V3	FF215	11	60	215	180	250	14.5	4	4
	IM B5, IM B35, IM V1, IM V3	FF265 (带V9Y选项 with V9Y option)[2]	12	80	265	230	300	14.5	4	4

[1] 法兰厚度 LA 尺寸是指法兰安装孔处的厚度；

[2] 请注意，IM B35 安装方式全圆法兰外圆可能会低于机座底脚。带V9Y选项时，法兰为全圆法兰。

[1] Flange LA size refers to the thickness at the flange mounting hole;

[2] Please note, the outer circle dimension maybe lower than the base foot in IM B35. With V9Y option, full circle flange configured as standard.

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