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产品样本 03/2026

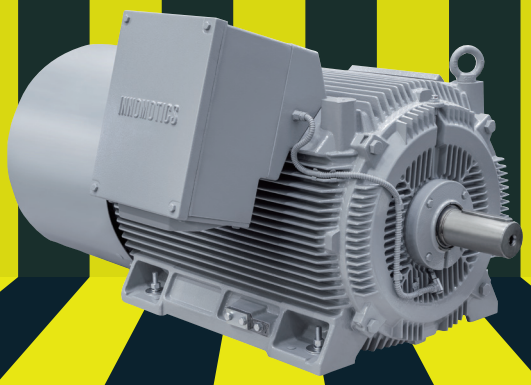
Innomotics Moves!

Low Voltage motors 1LE8 increased power series

低压大功率异步电动机 1LE8 系列

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INNOMOTICS



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。

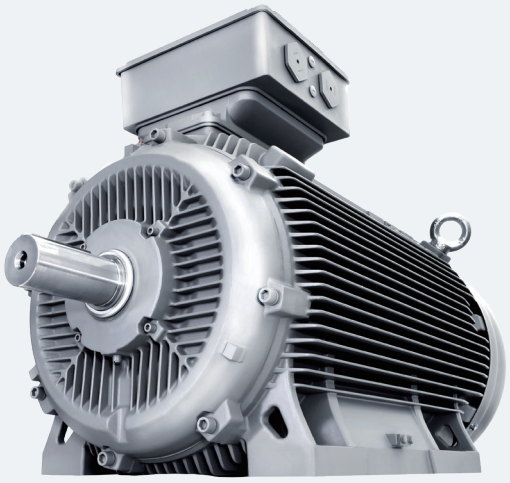


茵梦达（天津）驱动技术有限公司（简称ILM）是茵梦达有限公司与中方合作伙伴天津百利机械装备集团有限公司及天津电气科学研究院有限公司合资建立的研发与制造高低压电机的重要基地。

西门子（天津）传动设备有限责任公司（SLDE）于2022年8月23日在天津市滨海高新区正式成立，在全球业务调整的背景之下，自西门子电气传动有限公司（SEDL）分立新设而成。2024年7月19日，SLDE正式更名为茵梦达（天津）驱动技术有限公司（ILM）。ILM的主要业务延续了西门子的技术与产品优势，集合了茵梦达在华全部高压电机及大功率低压电机生产线。在全球深耕电机制造150年所积累的丰富经验的基础上，ILM将成为茵梦达在华的电机生产制造中心。

ILM生产的电机产品广泛应用于冶金、矿山、石油、化工、起重、造纸、纺织及新兴制造相关领域，产品广泛销售到亚太、欧洲、美洲、非洲等世界各地。

在公司愿景的指引下，ILM正在通过推行以人为本、目标明确、激情洋溢的企业文化，提高公司竞争力，为客户创造可持续的最优价值。



目录 Contents

总体介绍
Overview 5

机械特性
Mechanical design 11

电气特性
Electrical design 17

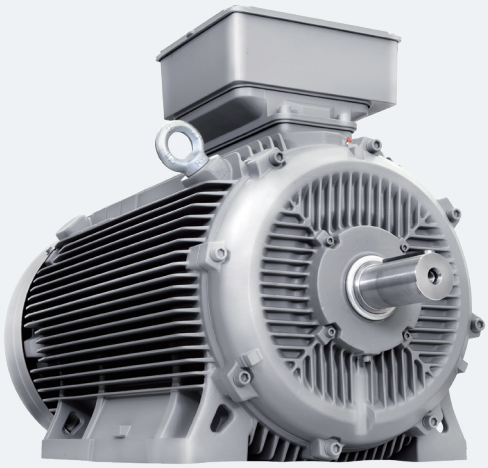
变频应用
Converter fed application 21

订货号
Order No. 23

选型技术数据表
Technical data table 24

选件
Options 32

外形尺寸
Dimension drawings 38



总体介绍 Overview

INNOMOTICS 1LE8 是基于 INNOMOTICS 全球设计平台，针对中国市场开发的适用于一般用途和严苛环境大负荷应用的新一代低压大功率电机；

INNOMOTICS 1LE8 新一代低压大功率电动机的特点是可靠、功率大，通过设计优化，使电机结构非常紧凑且具有高功率密度，可适用于最高到 690V 变频使用。紧凑高效，坚固耐用。

INNOMOTICS 1LE8 电动机技术特性

- 机座材料：灰铸铁；
- 标准颜色：石头灰（RAL7030）；
- 额定功率：355 ~ 1000 kW 50Hz；
- 达到 GB18613-2020 标准能效等级 2 级和 3 级，且能满足 IEC 60034-30 标准中的 IE4 和 IE3 效率等级（50Hz）；
- 优化的紧凑结构设计，具有很高的功率密度；
- 标准安装结构类型（符合 IEC 60034-7 标准规定）：IM B3、IM V1、IM B35 等；
- 所有的电动机设计防护等级为 IP55（IEC 60034-5）且可达到 IP56，IP65 防护等级；

INNOMOTICS 1LE8, based on INNOMOTICS global design platform, is a new generation of low-voltage high-power motor suitable for general purpose and severe duty application and developed for the Chinese market.

INNOMOTICS 1LE8 new generation low-voltage high-power motor is characterized by reliability and high power. Optimized design, the motor structure is very compact, can be up to 690V VSD operation. rugged design, compact dimensions/high power density.

Features of INNOMOTICS 1LE8

- Frame material: grey cast iron;
- Standard color: stone grey (RAL 7030);
- Rated power output: 355 ~ 1000 kW at 50Hz;
- With efficiency grade 2 and 3 according to GB18613-2020 and efficiency class IE4 and IE3 (50Hz) according to IEC 60034-30;
- Optimized compact style construction design, characterized by reliable and powerful performance;
- Standard mounting construction according to IEC 60034-7: IM B3, IM V1, IM B35 and etc;
- All motors are designed to IP55 degree of protection (IEC 60034-5) and optionally meet IP56, IP65 degree of protection;

- 标配再润滑装置；
- 可选择增强悬臂力设计；
- 电动机可选 PTC 或 PT100 热敏电阻或 PT1000 进行绕组保护；
- 接线盒标准位置处于机座右侧45°，进线孔处于右侧（从驱动端看），选项中接线盒位置和进线方向可变化；
- 绝缘系统按 155（F）温度等级设计，在额定输出和直接供电时按 130（B）温度等级使用，在变频使用时，按155（F）温度等级使用；
- 电动机标准冷却方式为自扇冷却 IEC 60034-6 规定的 IC 411，可提供独立驱动风扇强制冷却；

运行环境

- 防护等级 IP55（IEC 60034-5）；
- 高度不超过海拔 1000 m（IEC 60034-1）；
- 允许的环境温度在 -20 °C ~ 40 °C（IEC 60034-1）；
- 所允许的相对湿度：
  - -20 °C ≤ T ≤ 20 °C：100 %
  - 20 °C < T ≤ 30 °C：95 %
  - 30 °C < T ≤ 40 °C：55 %

对于更高的环境温度、以及（或者）高于海拔 1000 m 的地点，电动机的额定功率换算系数为 k_{HT}。所允许的功率值（P_{adm}）：

$$P_{adm} = P_{rated} \bullet k_{HT}$$

- Re-greasing devices as standard;
- Reinforced bearings for increased cantilever forces as option;
- Winding protections with PTC, PT100 and PT1000 as option;
- Terminal box on RHS, and cable entry on right side (viewed from driven end). Variable location of connection boxes and cable entries as option;
- Insulation system is designed for Temperature class 155 (F), At VSD operation, the motors can be used in temperature class 155 (F);. At rated output with line-fed operation, the motors can be used in temperature class 130 (B);
- Self ventilated motors with radial-flow fans (cooling method IC411 according to IEC 60034-6) as standard, forced air cool with external separately driven fans as option.

Environmental

- Degrees of motor protection IP55 (IEC 60034-5);
- Altitude shall not exceed 1000m above sea-level (IEC 60034-1);
- Allowed air temperature between -20 °C and 40 °C (IEC 60034-1);
- Permitted relative humidity:
  - -20 °C ≤ T ≤ 20 °C：100 %
  - 20 °C < T ≤ 30 °C：95 %
  - 30 °C < T ≤ 40 °C：55 %

For higher coolant temperatures and / or site altitudes higher than 1000 m above sea level, the specified motor output must be reduced by using the factor k_{HT}. The results in an admissible output (P_{adm}) of the motor:

$$P_{adm} = P_{rated} \bullet k_{HT}$$

对于不同高度和（或）不同环境温度的功率换算系数 k_{HT} Factor k_{HT} for different side altitudes and / or coolant temperature							
海拔高度 Site altitude above sea level	对应海拔高度的环境温度 Site altitude above sea level Coolant temperature						
	30 °C	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C
1000 m	100%	100%	100%	95%	90%	85%	80%
1500 m	100%	100%	97%	92%	87%	82%	
2000 m	100%	97%	93%	88%	84%		
2500 m	98%	94%	90%	85%	81%		
3000 m	95%	91%	87%	83%			

参考标准 Reference standards

名称 Title	中国国家标准 Chinese standard	IEC标准 IEC standard
	Q/321081 KJA015-2018	
《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
《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

参考标准 Reference standards

名称 Title	中国国家标准 Chinese standard	IEC标准 IEC standard
	Q/321081 KJA015-2018	
《标准电压》 IEC standard voltages	GB/T 156	IEC 60038
《旋转电机热保护》 Rotating electrical machines - Part 11: Thermal protection	GB/T 13002	IEC 60034-11
《单速三相笼型感应电动机起动性能》 Rotating electrical machines - Part 12: Starting performance of single-speed three-phase cage induction motors	GB/T 21210	IEC 60034-12
《旋转电机绝缘结构功能性评定 总则》 Rotating electrical machines -Functional evaluation of insulation systems -General guidelines	GB/T 17948.7	IEC 60034-18-1
《旋转电机电压型变频器供电的旋转电机无局部放电 (I 型) 电气绝缘结构的鉴别和质量控制试验》 Rotating electrical machines - Part 18-41: Partial discharge free electrical insulation systems (Type I) used in rotating electrical machines fed from voltage converters - Qualification and quality control tests	GB/T 22720.1	IEC 60034-18-41
《旋转电机效率分级（IE代码） 第1部分：电网供电的交流电动机》 Rotating electrical machines. Part 30-1. Efficiency classes of line operated AC motors (IE code)	GB/T 32891.1	IEC 60034-30-1
《电工电子产品应用环境条件第3部分：有气候防护场所固定使用》 Environmental conditions existing in the application of electric and electronic products - Section 3: Stationary use at weather-protected locations	GB/T 4798.3	IEC 60721-3-3

噪声

噪声值（直接供电运行）

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。测量面是距离电动机表面一立方米的地方。声功率级噪声用 L_{WA} 来表示，单位为 dB（A）。选型数据表中所给出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的情况，容差为 +3 dB。当在 60 Hz 电源下空载运行时，偏差值大约为 +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。

Noise levels

Noise levels for mains-fed operation

The noise levels are measured in accordance with DIN EN ISO 1680 in a dead 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). The specified values in Technical data table 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

1LE8 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)	H>132	
	安装方式 Mounting	位移 Vibration displacement/(μ m)	速度 Vibration velocity/(mm/s)
A	自由悬置 Free suspension	45	2.8
	刚性安装 Rigid mounting	37	2.3
			2.8[1)]
B	自由悬置 Free suspension	29	1.8
	刚性安装 Rigid mounting	24	1.5
			1.8[1)]

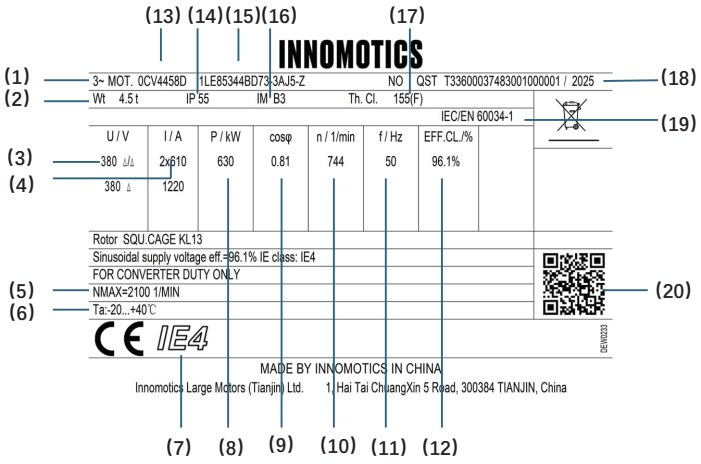
注：

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.

铭牌信息
Nameplate



1	三相异步电动机	Three-phase low-voltage motor
2	电机重量	Motor weight
3	额定电压	Rated voltage and Winding connections
4	额定电流	Rated current
5	最大转速	Max. Speed
6	环境温度	Enviroment temperature
7	IEC 能效等级	IEC efficiency class
8	额定功率	Rated output
9	功率因数	Power factor
10	额定转速	Rated speed
11	频率	Frequency
12	效率	Efficiency
13	产品型号	Motor type
14	防护等级	Degree of protection
15	订货号	Order No.
16	安装结构形式	Type of construction
17	热分级	Thermal class
18	产品序列号	Series number
19	IEC 标准	IEC standard
20	二维码	Scan code

轴承铭牌
Bearing nameplate

驱动端轴承/D-end bearing 6220C3	非驱动端轴承/N-end bearing 6220C3_INSULATED		
冷却空气温度/Coolant temp.	≤ 25	≤ 40	℃
运行时间/Operating hours	8000	6000	h
润滑脂用量/Quantity of grease	80	40	g
在每一润滑点，运行期间压入润滑脂 At each lubricating point, press in during operation.			
润滑脂按说明书 Grease acc. to instructions 润滑脂牌号/Delivered with Shell Gadus S2 V100 3			

CEZ1255

防冷凝加热器铭牌
Anti-condensation heating nameplate

防冷凝加热器
Anti-condensation heating
Typ 1PQ8 355-6PB40-Z
230 V 200 W
No ZY-N33006361875001000001-- 2021

CEZ1052

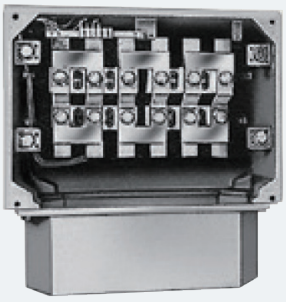
机械特性 Mechanical design

接线盒

接线盒标准位置处于机座右上侧，且可以通过旋转，从而使电缆从各个方向进入。

Connection box

The connection box is located on the lateral right of motor housing as standard, and can be rotated to allow for cable entry from each direction.



标准接线盒 Connection boxes technical data

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	辅助电缆进线孔 [2] Auxiliary cable entry
400	12	M16	4xM80 × 2	24	2xM25 × 1.5
450	12	M16	4xM80 × 2	24	2xM25 × 1.5

注：
[1] 当电机所需辅助接线端子数量超过 24 个时，应选用辅助接线盒（选件号 L97）。辅助接线盒有 2 个 M20×1.5 的螺纹孔用于安装葛兰，这两个螺纹孔由闷盖密封
[2] 当电机配置了温度传感器、热敏电阻或防潮加热带时，接线盒上会带有 2 个辅助电缆进线孔

[1] If the number of auxiliary terminal is over 24, the auxiliary terminal box shall be selected (option code L97). Two M20×1.5 thread holes are provided for gland, and these two holes are sealed with plugs when motor delivered
[2] When equipped with temperature sensor, thermistor，resistance thermometer or anti-condensation heating, the junction box will have two auxiliary cable inlet holes

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上侧或右上侧。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。

接线盒的位置是指从电动机驱动端来看的位置。

- 接线盒在顶部，电动机订货号的第 16 位数字为 4；
- 标配接线盒在右上侧，电动机订货号的第 16 位数字为 5；
- 接线盒在左上侧，电动机订货号的第 16 位数字为 6。

Location of the connection box

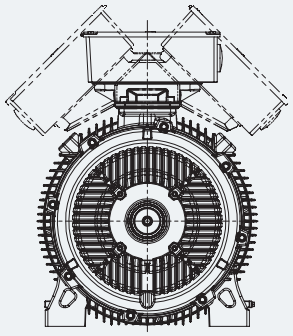
Besides standard position, the connection box also can be on the right or left of motor housing. The position of terminal box can be indicated on the 16th digit of motor order code.

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

- On top, 16th position of Motor Order No. digit 4.
- On RHS (Standard), 16th position of Motor Order No. digit 5.
- On LHS, 16th position of Motor Order No. digit 6.

在顶部的（选配），电动机订货号的第 16 位数字为 4
On top, 16th position of Motor Order No. digit 4.

左上侧（选配），电动机订货号的第 16 位数字为 6
On LHS, 16th position of Motor Order No. digit 6.



右上侧（标配），电动机订货号的第 16 位数字为 5
On RHS (Standard), 16th position of Motor Order No. digit 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)
适用范围 Range of application	1LE8003&1LE8033 &1LE8083 1LE8504&1LE8534 &1LE8584
安装型式 Mounting type	IM B3 FS400-450
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

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)
适用范围 Range of application	1LE8003&1LE8033 &1LE8083 1LE8504&1LE8534 &1LE8584	1LE8003&1LE8033 &1LE8083 1LE8504&1LE8534 &1LE8584
安装型式 Mounting type	IM V1 [1] FS400~450	IM B35 FS400~450
示意图 Diagram		
电机编号第14位号上对应的字母 Letter, position 14th of Motor code	G	J

[1] 室外使用时推荐使用护罩（选件号H00）；
[2] 当户外安装时，推荐对电机轴采取防护措施，避免水直接喷射到电机轴上；

[1] At outdoor application, the using of protective cover (option code H00) is recommended;
[2] At outdoor application the protection of shaft against jet-water is recommended;

冷却与通风

INNOMOTICS 1LE8 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）。2 极电机单向旋转，4-8 极电机双向旋转。

对于某些应用，可以考虑配置独立驱动风扇 ，如，

- 电动机在低速运行时，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。

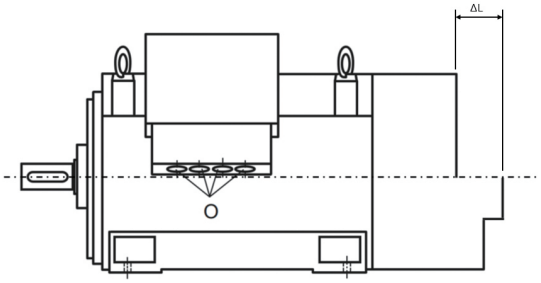
Cooling and ventilation

Standard motors are fitted with an radial flow fan for cooling in accordance with IEC 60034-6 cooling method. 2 poles unidirectional rotation, 4-8 poles bi-rolling.

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;
- 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)	ΔL (mm)
400	230 Δ / 400Y	50	3000	11.1/6.4	1453	353
450	230 Δ / 400Y	50	3000	11.1/6.4	1453	353

注：风扇可以在 210 ~ 240VD/360 ~ 420VY 50Hz 电源供电下运行，也可以在 220 ~ 260VD/380 ~ 480VY 60Hz 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 ~ 240VD/360 ~ 420VY 50Hz, and also 220 ~ 260VD/380 ~ 480VY 60Hz. Other voltage supply, possible on request.

轴承系统

INNOMOTICS 1LE8 系列电机标准配置深沟球轴承或角接触球轴承，这些轴承是可再润滑型的。

电机驱动端固定，非驱动端浮动。

标准配置的轴承可以承受一定的悬臂力，关于悬臂力参考第 12 页“电机轴允许的最大悬臂力”。当电机轴上需要承受的悬臂力较大时，可以考虑选择增强悬臂力的选项（选件号：L22），此时驱动端使用圆柱滚子轴承。

Bearing system

INNOMOTICS 1LE8 series motors are supplied with the ball bearing or angular contact ball bearing as standard. These bearings are regreasable type.

The bearing at NDE is floating，and DE bearing is fixed.

The standard bearing can endure a maximum cantilever force, referred to page 12 - Permissible cantilever forces. If higher cantilever force on the shaft required, the increased cantilever bearing design (Option code: L22) should be considered, accordingly roller bearing used at DE.

轴承选配 Bearing Assignment

机座号 Frame size	极数 Number of poles	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)		
		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（水平安装） NDE beari（Horizontal）	非驱动段轴承（竖直安装） NDE bearing（Vertical）
400	2	6218	6218	7218B&6218	6218	O.R.	O.R.	O.R.
	4 to 8	6224	6224	7224B&6224	6224	O.R.	O.R.	O.R.
450	2	6220	6220	7220B&6220	6220	O.R.	O.R.	O.R.
	4 to 8	6226	6226	7226B&6226	6226	O.R.	O.R.	O.R.

注：当 1LE8003&504 电机选择 L27 选项（非驱动端使用绝缘轴承）时，绝缘轴承的游隙为 C3，非驱动端标配绝缘轴承。

Note: When 1LE8003&504 motor using insulated bearings for NDE, option code L27, the clearance of the insulated bearings is C3. insulation bearing is standard configuration in NDE side.

轴承寿命（标称寿命）

轴承的标称额定寿命可根据 ISO 281 标准规定的标准计算程序计算出来的。如果电动机在该样本中所规定条件下运行，90 % 甚至更高比例的轴承的运行时间可达到标称寿命。通常，轴承的使用寿命取决于轴承规格、轴承载荷、运行条件、转速以及润滑脂寿命。

当电动机水平安装，且不受轴向力的情况下，电动机的轴承寿命至少能够达到 40,000 小时。在承受最大容许载荷的情况下，其寿命也至少有 20,000 小时，这里所说的轴承寿命，指的都是电动机在 50 Hz 下正常运行的情况。

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。

Bearing lifetime (nominal lifetime)

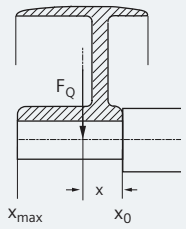
The nominal bearing lifetime is defined according standardized calculation procedures (ISO 281) and is reached or even exceeded for 90% of the bearings when the motors are operated in compliance with the data provide in the catalog. Generally, the bearing lifetime is defined by the bearing size, the bearing load, the operating condition, the speed and the grease lifetime.

The bearing lifetime of motors with horizontal type of construction is at least 40,000 hours if there is no additional axial loading at the coupling output and at least 20,000 hours with the maximum admissible loads. This assumes that the motor is operated at 50Hz.

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

- When 1LE8 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 °C, the grease lifetime and regreasing interval is halved.

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。

$$F_Q = c \bullet F_U$$

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：

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

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

请向茵梦达咨询关于最大悬臂力的详细信息。

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.

$$F_Q = c \bullet F_U$$

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.

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

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

Please inquire INNOMOTICS about the detailed information of admissible cantilever force.

电气特性 Electrical design

额定输出

INNOMOTICS 1LE8电动机的额定功率是指电动机在S1连续运行的情况下（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 1LE8 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 1LE8 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。

绝缘系统

INNOMOTICS 1LE8 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 1LE8 系列电动机标准设计温度等级为 155（F）。当 1LE8 电动机变频使用时，其绝缘系统按 155（F）温度等级使用。

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 1LE8 series motors are designed to withstand overload capacity of 1.5 times rated current for 2 minutes at rated voltage and frequency.

Insulation system

The insulation system of INNOMOTICS 1LE8 results in high reliability, a long service life and high resistance to stress, for example, during starting or under overload conditions.

INNOMOTICS 1LE8 series motors are designed for temperature class 155 (F). at VSD operation, the motors can be used in temperature class 155 (F).

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 1LE8 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。1LE8033&534&083&584 电机标配两组三芯串联的 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。

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.

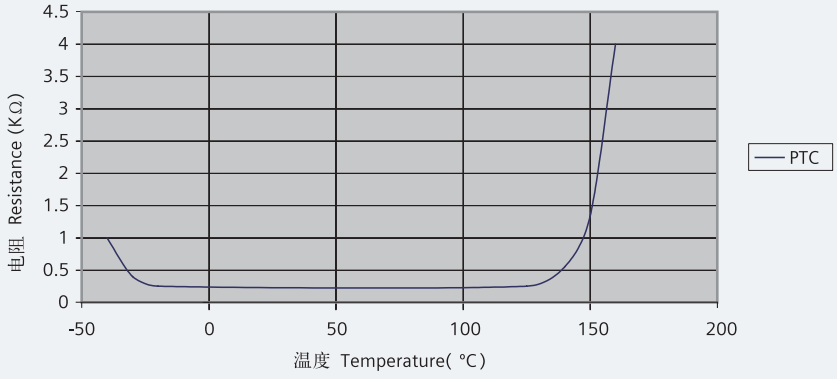
Winding protection

- **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. 1LE8033&534&083&584 Motor winding is protected with two sets of three temperature sensors as standard, one set is for warning, another set for tripping. The warning temperature is 145 °C, and tripping temperature is 155 °C.

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。
- 电动机绕组带 3 个 3 线制 PT100 测温元件，电动机订货号第 15 位字母为“Q”，需 9 个辅助接线端子。
- 电动机绕组带 6 个 3 线制 PT100 测温元件，电动机订货号第 15 位字母为“R”，需 18 个辅助接线端子。

2 alternatives of PTC protection

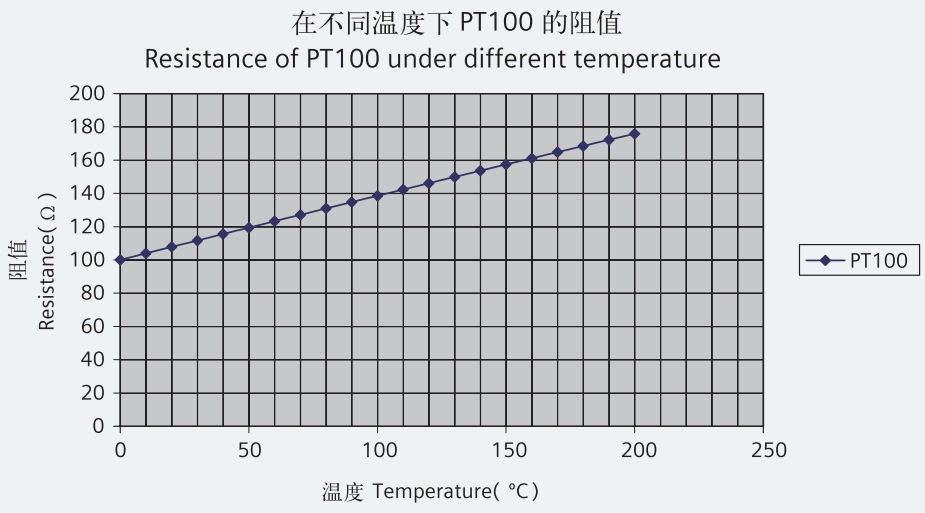
- Motor winding is protected with PTC thermistors with 3 embedded temperature sensors for tripping. Connection be done through 2 auxiliary terminals in the connection box. 15th position of Motor Order No. letter B.
- Motor winding is protected with two sets of three temperature sensors, one set is for 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 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.
- Installation of 3 PT100 resistance thermometers in 3-wire connection, through 9 auxiliary terminals in the connection box. 15th position of Motor Order No. letter Q.
- Installation of 6 PT100 resistance thermometers in 3-wire connection, through 18 auxiliary terminals in the connection box. 15th position of Motor Order No. letter R.



■ 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。

- 绕组中带一个单支两线制 PT1000 测温元件，电机订货号第 15 位字母为“K”，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，电机订货号第 15 位字母为“L”，需 4 个辅助接线端子。

轴承保护

INNOMOTICS 1LE8 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。

电机驱动端和非驱动端轴承位置各安装 1 个热电阻传感器，其中：
安装单支两线制热电阻传感器，选项代码为 Q72，需 4 个辅助接线端子；
安装单支三线制热电阻传感器，选项代码为 Q78，需 6 个辅助接线端子；
安装双支三线制热电阻传感器，选项代码为 Q79，需 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，建议选用防潮加热带对电机进行保护，电机驱动端和非驱动端的绕组将各配一防潮加热带，需4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。

■ PT1000 resistance thermometers protection

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

- 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.
- 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.

Bearing protection

INNOMOTICS 1LE8 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.

The resistance thermometer is installed at each position of DE and NDE bearing, where:
1 PT100 resistance thermometer - 2-wire input (4 terminals), option code Q72;
1 PT100 resistance thermometer - 3-wire input (6 terminals), option code Q78;
2 PT100 resistance thermometer - 3-wire input (12 terminals), option code Q79。

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, 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 Vlotage
400 & 450	200	230V

变频应用 Converter fed application

INNOMOTICS 1LE8 电动机适于变转速、恒转速的各种应用，如风机、泵、压缩机、钢铁、起重、造纸等。

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 INNOMOTICS 1LE8 电动机变频应用（变频器供电），且输出额定功率时，电动机的使用温度等级为 155（F）。为了避免杂散电流对电动机轴承的损坏，其中 1LE8033&534&083&584 标配绝缘轴承，1LE8003&504 变频使用时推荐使用绝缘轴承。请向茵梦达咨询关于绝缘轴承的详细信息。

变频器驱动运行

INNOMOTICS 1LE8003&504 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；1LE8033&534 能够保证在变频器供电电压不超过 500 V 时正常运行，1LE8083&584 采用加强绝缘系统设计要求，在变频器供电电压最高到 690V。

INNOMOTICS 1LE8 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：

INNOMOTICS 1LE8 motors are suitable for pumps, fans, compressors, metal, crane, P&P and mechanical machine applications where variable or constant speed is required.

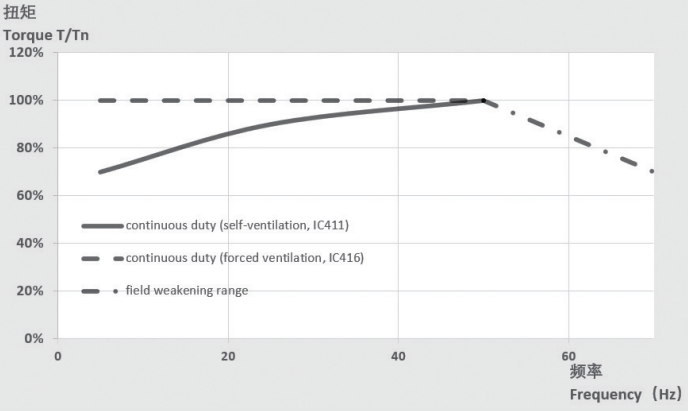
In application where the motor is driven by a converter, the degree of electrical interference depends on the type of converter used (type, number of IGBTs, interference suppression measures, and manufacturer), cabling, distance and application requirements.The installation guidelines of the converter 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 used in temperature class 155 (F). To prevent damage as a result of bearing currents, insulated bearings are recommended to be assembled for 1LE8003&504 motor. 1LE8033&534&083&584 is standard with insulated bearing.

Converter-fed operation

The standard insulation of the INNOMOTICS 1LE8003&504 motors is designed such that operation is possible on the converter at mains voltage up to 460 V. The reinforced insulation of the INNOMOTICS 1LE8033&534 motors is designed such that operation is possible on the converter at mains voltage up to 500 V, 1LE8083&584 motor is designed premium insulation system, is possible on the converter at mains voltage up to 690 V.

INNOMOTICS 1LE8 motors are capable for converter-fed operation with certain characteristics load, of which the load torque characteristics is referred in the following diagram:



当负载转矩在允许的转矩范围内时，电动机能够自扇冷却；当负载转矩超过所允许的转矩时，电动机需要强迫冷却。

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，必需按照特定的限值进行动平衡。

By usage with admissible torque and below, the motor can be operated with self cooling; by usage over the admissible torque line, the motor with forced ventilation is needed.

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.

INNOMOTICS 1LE8 电动机所允许的最大安全转速如下表

The allowed maximum safe operating speed of INNOMOTICS 1LE8 motors shows the diagram

机座号 Frame Size	2 极 2 pole		4 极 4 pole		6 极 6 pole		8 极 8 pole	
	最高转速 Max. rpm	最大频率 fmax	最高转速 Max. rpm	最大频率 fmax	最高转速 Max. rpm	最大频率 fmax	最高转速 Max. rpm	最大频率 fmax
400	3600	60	2200	73	2200	110	2200	146
450	3000	50	2100	70	2100	105	2100	140

电压承受值

绕组绝缘的电介质应力决定于：

- 电压峰值，上升时间以及变频器产生的脉冲频率；
- 变频器与电动机连接电缆的特性和长度；
- 绕组结构和其他系统参数，尤其是绝缘系统中不同绕组的对地电压（代表了绝缘系统的电介质应力）。

图表所示为 INNOMOTICS 1LE8 电动机标准绝缘能承受电压的峰值和上升时间：

Voltage withstand levels

The dielectric stress of the winding insulation is determined by:

- the peak voltage, rise time and frequency of the impulses produced by the converter.
- the characteristics and the length of the connection leads between the converter and motor.
- the winding construction and other system parameters, especially the voltages between the different parts of the winding and the ground represent dielectric stress at the insulation system.

The standard insulation of the INNOMOTICS 1LE8 motors is designed to withstand voltage peak and rise time which is showed in the diagram:

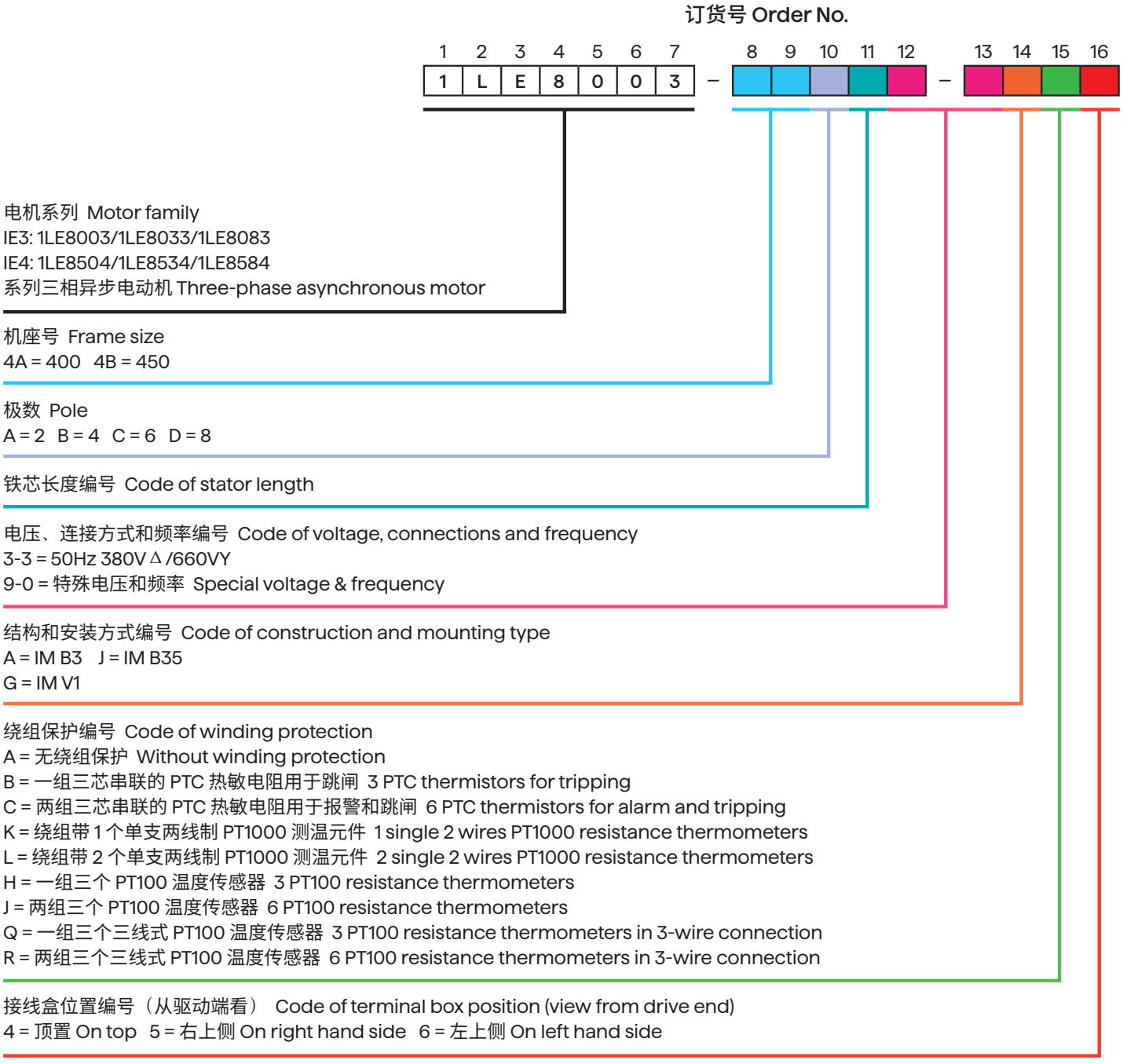
有限变频应用数据 Limited VSD application data

型号 Type	电机额定电压 Rated voltage	允许的电压峰值 Permitted voltage peaks		升压时间&最大压差 Rise time & Max dU
1LE8003&504	≤690 V DOL	U_{PG} = 2200 V_{PP}	U_{PP} = 3000 V_{PP}	0.1μs Max. dU=900V 0.2μs Max. dU=1050V 0.4μs Max. dU=1260V
	≤460 V Inverter			
1LE8033&534	500 V Inverter	$U_{Phase\text{-}Ground}$ = 2800 V_{PP}	$U_{Phase\text{-}Phase}$ = 3200 V_{PP}	
1LE8083&584	690 V Inverter	$U_{Phase\text{-}Ground}$ = 3000 V_{PP}	$U_{Phase\text{-}Phase}$ = 4400 V_{PP}	

注：表格中峰值电压为峰峰值电压

Note: Voltages specified are peak-peak values（Vpk/pk）

订货号 Order No.


订货号 Order No.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1 L E 8 0 0 3 – –
电机系列 Motor family
IE3: 1LE8003/1LE8033/1LE8083
IE4: 1LE8504/1LE8534/1LE8584
系列三相异步电动机 Three-phase asynchronous motor
机座号 Frame size
4A = 400 4B = 450
极数 Pole
A = 2 B = 4 C = 6 D = 8
铁芯长度编号 Code of stator length
电压、连接方式和频率编号 Code of voltage, connections and frequency
3-3 = 50Hz 380V Δ/660VY
9-0 = 特殊电压和频率 Special voltage & frequency
结构和安装方式编号 Code of construction and mounting type
A = IM B3 J = IM B35
G = IM V1
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
K = 绕组带 1 个单支两线制 PT1000 测温元件 1 single 2 wires PT1000 resistance thermometers
L = 绕组带 2 个单支两线制 PT1000 测温元件 2 single 2 wires PT1000 resistance thermometers
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
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 = 顶置 On top 5 = 右上侧 On right hand side 6 = 左上侧 On left hand side

选型技术数据表 Technical data table

铸铁壳系列电机，Cast Iron Motors
IE4，中国能效等级 2 级

机座号 Frame Size	订货号 MLFB	额定功率 Rated Output	额定转速 Rated Speed 50Hz	效率 Effeciency at (50HZ) 4/4 load	效率 Effeciency at (50HZ) 3/4 load	功率因数 Power factor at (50Hz) 4/4 load	额定电流 Rated current at 380V 50Hz	额定电流 Rated current at 660V 50Hz	额定转矩 Rated torque
		kW	rpm	%	%	–	A	A	Nm
	3000rpm 2-pole 380VD/660VY 50Hz								
400	1LE8504-4AA33-3□□□	560	2989	96.6	96.7	0.90	980	560	1790
400	1LE8504-4AA53-3□□□	630	2988	96.6	96.7	0.90	1100	630	2014
400	1LE8504-4AA74-6□□□[1)]	710	2989	96.7	96.8	0.90	-	730	2269
450	1LE8504-4BA34-6□□□[1)]	800	2989	96.7	96.7	0.90	-	800	2557
450	1LE8504-4BA54-6□□□[1)]	900	2988	96.8	96.8	0.91	-	890	2877
450	1LE8504-4BA74-6□□□[1)]	1000	2989	96.9	96.9	0.90	-	1000	3193
	1500rpm 4-pole 380VD/660VY 50Hz								
400	1LE8504-4AB33-3□□□	560	1492	96.7	96.8	0.87	1020	580	3584
400	1LE8504-4AB53-3□□□	630	1490	96.7	96.8	0.88	1120	650	4038
400	1LE8504-4AB73-3□□□	710	1492	96.7	96.8	0.87	1280	740	4544
450	1LE8504-4BB33-3□□□	800	1493	96.8	96.9	0.87	1440	830	5117
450	1LE8504-4BB54-6□□□[1)]	900	1493	96.9	96.9	0.87	-	930	5756
450	1LE8504-4BB74-6□□□[1)]	1000	1493	96.9	97.0	0.87	-	1040	6396
	1000rpm 6-pole 380VD/660VY 50Hz								
400	1LE8504-4AC33-3□□□	450	995	96.6	96.6	0.84	840	485	4319
400	1LE8504-4AC53-3□□□	500	995	96.6	96.7	0.84	940	540	4799
400	1LE8504-4AC73-3□□□	560	994	96.6	96.7	0.84	1040	600	5380
450	1LE8504-4BC33-3□□□	630	994	96.6	96.7	0.84	1180	680	6052
450	1LE8504-4BC53-3□□□	710	994	96.6	96.8	0.84	1320	770	6821
450	1LE8504-4BC74-6□□□	800	994	96.6	96.7	0.84	-	860	7686
	750rpm 8-pole 380VD/660VY 50Hz								
400	1LE8504-4AD33-3□□□	355	743	95.6	95.7	0.81	700	400	4563
400	1LE8504-4AD53-3□□□	400	744	95.7	95.8	0.81	780	450	5134
400	1LE8504-4AD73-3□□□	450	743	95.8	96.0	0.81	880	510	5784
450	1LE8504-4BD33-3□□□	500	744	96.0	96.2	0.80	990	570	6418
450	1LE8504-4BD53-3□□□	560	745	96.1	96.2	0.79	1120	650	7178
450	1LE8504-4BD73-3□□□	630	744	96.1	96.2	0.81	1220	710	8086

[1)] 660VD。

机座号 Frame Size	订货号 MLFB	起动电流 Starting Current	起动转矩 Starting torqueStarting torque	最大转矩 Max torque	重量 Weight IMB3	转动惯量 Moment of inertia(J)	噪声 Noise LpfA	噪声 Noise LWA
		直接起动对额定转矩 (电流) 的倍数 For direct-on-line starting as multiple of the rated			kg	kgm^2	dB(A)	dB(A)
	3000rpm 2-pole 380VD/660VY 50Hz							
400	1LE8504-4AA33-3□□□	7.3	1.5	2.85	2800	8.6	79	94
400	1LE8504-4AA53-3□□□	7.0	1.4	2.70	3000	9.6	79	94
400	1LE8504-4AA74-6□□□[1)]	7.3	1.6	2.85	3200	11.0	79	94
450	1LE8504-4BA34-6□□□[1)]	7.0	0.7	2.80	4000	19.0	81	96
450	1LE8504-4BA54-6□□□[1)]	7.2	0.8	2.90	4200	21.0	81	96
450	1LE8504-4BA74-6□□□[1)]	7.3	0.9	3.00	4400	23.0	81	96
	1500rpm 4-pole 380VD/660VY 50Hz							
400	1LE8504-4AB33-3□□□	7.0	1.9	2.7	2800	15.0	78	93
400	1LE8504-4AB53-3□□□	7.0	1.8	2.5	3000	16.0	78	93
400	1LE8504-4AB73-3□□□	7.2	1.9	2.7	3200	17.0	78	93
450	1LE8504-4BB33-3□□□	7.0	1.6	2.7	4000	25.0	81	96
450	1LE8504-4BB54-6□□□[1)]	7.0	1.6	2.7	4200	27.0	81	96
450	1LE8504-4BB74-6□□□[1)]	7.0	1.6	2.7	4400	28.0	81	96
	1000rpm 6-pole 380VD/660VY 50Hz							
400	1LE8504-4AC33-3□□□	7.0	1.9	2.7	2800	23.0	73	88
400	1LE8504-4AC53-3□□□	7.0	1.9	2.7	3000	26.0	73	88
400	1LE8504-4AC73-3□□□	7.0	1.8	2.5	3200	27.0	73	88
450	1LE8504-4BC33-3□□□	7.0	1.9	2.6	4000	39.0	75	90
450	1LE8504-4BC53-3□□□	7.0	2.0	2.7	4200	41.0	75	90
450	1LE8504-4BC74-6□□□	7.0	2.0	2.6	4500	44.0	75	90
	750rpm 8-pole 380VD/660VY 50Hz							
400	1LE8504-4AD33-3□□□	6.5	1.9	2.6	2800	21.0	69	84
400	1LE8504-4AD53-3□□□	6.5	2.0	2.6	3000	24.0	69	84
400	1LE8504-4AD73-3□□□	6.6	2.1	2.6	3200	27.0	69	84
450	1LE8504-4BD33-3□□□	7.0	1.9	2.4	4000	35.0	71	86
450	1LE8504-4BD53-3□□□	7.0	2.0	2.4	4200	39.0	71	86
450	1LE8504-4BD73-3□□□	7.0	2.0	2.4	4500	44.0	71	86

选型技术数据表 Technical data table

铸铁壳系列电机，Cast Iron Motors
IE4，中国能效等级 2 级

机座号 Frame Size	订货号 MLFB	额定功率 Rated Output	额定转速 Rated Speed 50Hz	效率 Effeciency at (50HZ) 4/4 load	效率 Effeciency at (50HZ) 3/4 load	功率因数 Power factor at (50Hz) 4/4 load	额定电流 Rated current at 660V 50Hz	额定转矩 Rated torque
		kW	rpm	%	%	–	A	Nm
	3000rpm 2-pole 660VD 50Hz							
400	1LE8584-4AA34-6□□□	545	2988	96.6	96.7	0.90	550	1742
400	1LE8584-4AA54-6□□□	610	2986	96.6	96.6	0.91	610	1951
400	1LE8584-4AA74-6□□□	680	2986	96.6	96.7	0.92	670	2175
450	1LE8584-4BA34-6□□□	775	2989	96.6	96.6	0.90	790	2477
450	1LE8584-4BA54-6□□□	875	2989	96.7	96.7	0.91	870	2796
450	1LE8584-4BA74-6□□□	970	2987	96.8	96.8	0.91	960	3102
	1500rpm 4-pole 660VD 50Hz							
400	1LE8584-4AB34-6□□□	545	1491	96.7	96.8	0.88	560	3490
400	1LE8584-4AB54-6□□□	615	1492	96.7	96.7	0.87	640	3936
400	1LE8584-4AB74-6□□□	690	1492	96.7	96.8	0.87	720	4416
450	1LE8584-4BB34-6□□□	785	1492	96.8	96.9	0.87	820	5024
450	1LE8584-4BB54-6□□□	880	1493	96.8	96.9	0.87	910	5629
450	1LE8584-4BB74-6□□□	980	1493	96.8	96.9	0.88	1000	6268
	1000rpm 6-pole 660VD 50Hz							
400	1LE8584-4AC34-6□□□	405	995	96.6	96.6	0.86	425	3887
400	1LE8584-4AC54-6□□□	465	995	96.6	96.6	0.86	490	4463
400	1LE8584-4AC74-6□□□	545	994	96.6	96.7	0.84	590	5236
450	1LE8584-4BC34-6□□□	615	994	96.7	96.8	0.83	670	5908
450	1LE8584-4BC54-6□□□	690	993	96.8	96.9	0.84	740	6635
450	1LE8584-4BC74-6□□□	780	994	96.7	96.8	0.84	840	7493
	750rpm 8-pole 660VD 50Hz							
400	1LE8584-4AD34-6□□□	335	744	95.4	95.6	0.81	380	4300
400	1LE8584-4AD54-6□□□	375	744	95.5	95.7	0.80	430	4813
400	1LE8584-4AD74-6□□□	425	743	95.6	95.8	0.81	480	5463
450	1LE8584-4BD34-6□□□	485	745	96.0	96.1	0.78	570	6217
450	1LE8584-4BD54-6□□□	545	745	96.0	96.2	0.78	630	6986
450	1LE8584-4BD74-6□□□	600	744	96.0	96.2	0.80	680	7701

机座号 Frame Size	订货号 MLFB	起动电流 Starting Current	起动转矩 Starting torqueStarting torque	最大转矩 Max torque	重量 Weight IMB3	转动惯量 Moment of inertia(J)	噪声 Noise LpfA	噪声 Noise LWA
		直接起动对额定转矩 (电流) 的倍数 For direct-on-line starting as multiple of the rated			kg	kgm^2	dB(A)	dB(A)
	3000rpm 2-pole 660VD 50Hz							
400	1LE8584-4AA34-6□□□	7.0	1.5	2.8	2800	8.6	79	94
400	1LE8584-4AA54-6□□□	6.9	1.4	2.7	3000	9.6	79	94
400	1LE8584-4AA74-6□□□	7.0	1.6	2.8	3200	11.0	79	94
450	1LE8584-4BA34-6□□□	7.0	0.7	2.8	4000	19.0	81	96
450	1LE8584-4BA54-6□□□	7.0	0.8	2.9	4200	21.0	81	96
450	1LE8584-4BA74-6□□□	7.0	0.7	2.7	4400	23.0	81	96
	1500rpm 4-pole 660VD 50Hz							
400	1LE8584-4AB34-6□□□	7.0	1.8	2.7	2800	15.0	78	93
400	1LE8584-4AB54-6□□□	7.0	1.8	2.7	3000	16.0	78	93
400	1LE8584-4AB74-6□□□	7.2	1.9	2.8	3200	17.0	78	93
450	1LE8584-4BB34-6□□□	7.0	1.6	2.7	4000	25.0	81	96
450	1LE8584-4BB54-6□□□	7.1	1.6	2.7	4200	27.0	81	96
450	1LE8584-4BB74-6□□□	7.2	1.7	2.8	4400	28.0	81	96
	1000rpm 6-pole 660VD 50Hz							
400	1LE8584-4AC34-6□□□	7.2	2.0	2.9	2800	23.0	73	88
400	1LE8584-4AC54-6□□□	7.2	2.0	2.9	3000	26.0	73	88
400	1LE8584-4AC74-6□□□	7.0	1.8	2.7	3200	27.0	73	88
450	1LE8584-4BC34-6□□□	7.2	2.0	2.7	4000	39.0	75	90
450	1LE8584-4BC54-6□□□	7.2	2.1	2.8	4200	41.0	75	90
450	1LE8584-4BC74-6□□□	7.0	2.0	2.7	4500	44.0	75	90
	750rpm 8-pole 660VD 50Hz							
400	1LE8584-4AD34-6□□□	6.6	1.9	2.6	2800	21.0	69	84
400	1LE8584-4AD54-6□□□	6.9	1.9	2.7	3000	24.0	69	84
400	1LE8584-4AD74-6□□□	6.8	1.9	2.7	3200	27.0	69	84
450	1LE8584-4BD34-6□□□	7.0	2.0	2.4	4000	35.0	71	86
450	1LE8584-4BD54-6□□□	7.0	2.0	2.4	4200	39.0	71	86
450	1LE8584-4BD74-6□□□	7.0	2.0	2.4	4500	44.0	71	86

选型技术数据表 Technical data table

铸铁壳系列电机，Cast Iron Motors
IE3，中国能效等级 3 级

机座号 Frame Size	订货号 MLFB	额定功率 Rated Output	额定转速 Rated Speed 50Hz	效率 Effeciency at (50HZ) 4/4 load	效率 Effeciency at (50HZ) 3/4 load	功率因数 Power factor at (50Hz) 4/4 load	额定电流 Rated current at 380V 50Hz	额定电流 Rated current at 660V 50Hz	额定转矩 Rated torque
		kW	rpm	%	%	–	A	A	Nm
	3000rpm 2-pole 380VD/660VY 50Hz								
400	1LE8003-4AA33-3□□□	560	2988	96.0	96.1	0.90	980	570	1790
400	1LE8003-4AA53-3□□□	630	2988	96.0	96.1	0.91	1100	630	2014
400	1LE8003-4AA74-6□□□[1)]	710	2988	96.1	96.2	0.91	-	710	2269
450	1LE8003-4BA34-6□□□[1)]	800	2989	96.1	96.2	0.91	-	800	2556
450	1LE8003-4BA54-6□□□[1)]	900	2988	96.1	96.2	0.92	-	890	2877
450	1LE8003-4BA74-6□□□[1)]	1000	2990	96.2	96.2	0.92	-	990	3194
	1500rpm 4-pole 380VD/660VY 50Hz								
400	1LE8003-4AB33-3□□□	560	1492	96.0	96.0	0.87	1020	590	3584
400	1LE8003-4AB53-3□□□	630	1492	96.1	96.2	0.87	1140	660	4033
400	1LE8003-4AB73-3□□□	710	1492	96.2	96.3	0.88	1280	730	4545
450	1LE8003-4BB33-3□□□	800	1493	96.2	96.2	0.87	1460	840	5117
450	1LE8003-4BB53-3□□□	900	1493	96.2	96.3	0.87	1640	940	5757
450	1LE8003-4BB73-3□□□	1000	1494	96.3	96.4	0.87	1820	1040	6392
	1000rpm 6-pole 380VD/660VY 50Hz								
400	1LE8003-4AC33-3□□□	450	994	96.0	96.1	0.85	840	480	4323
400	1LE8003-4AC53-3□□□	500	994	96.0	96.3	0.85	930	540	4804
400	1LE8003-4AC73-3□□□	560	993	96.1	96.3	0.86	1020	590	5386
450	1LE8003-4BC33-3□□□	630	993	96.2	96.4	0.85	1180	670	6059
450	1LE8003-4BC53-3□□□	710	993	96.3	96.5	0.83	1340	780	6828
450	1LE8003-4BC74-6□□□[1)]	800	994	96.3	96.5	0.84	-	870	7686
	750rpm 8-pole 380VD/660VY 50Hz								
400	1LE8003-4AD33-3□□□	355	743	95.4	95.6	0.81	700	400	4563
400	1LE8003-4AD53-3□□□	400	744	95.4	95.6	0.81	790	455	5134
400	1LE8003-4AD73-3□□□	450	743	95.4	95.7	0.81	880	510	5784
450	1LE8003-4BD33-3□□□	500	744	95.4	95.8	0.80	1000	570	6418
450	1LE8003-4BD53-3□□□	560	745	95.4	95.8	0.79	1120	650	7178
450	1LE8003-4BD73-3□□□	630	744	95.4	95.9	0.81	1240	710	8086

[1)] 660VD。

机座号 Frame Size	订货号 MLFB	起动电流 Starting Current	起动转矩 Starting torqueStarting torque	最大转矩 Max torque	重量 Weight IMB3	转动惯量 Moment of inertia(J)	噪声 Noise LpfA	噪声 Noise LWA
		直接起动对额定转矩 (电流) 的倍数 For direct-on-line starting as multiple of the rated			kg	kgm²	dB(A)	dB(A)
	3000rpm 2-pole 380VD/660VY 50Hz							
400	1LE8003-4AA33-3□□□	7.0	1.5	2.8	2800	8.6	79	94
400	1LE8003-4AA53-3□□□	7.0	1.6	2.8	3000	9.6	79	94
400	1LE8003-4AA74-6□□□[1)]	7.0	1.7	2.8	3200	11.0	79	94
450	1LE8003-4BA34-6□□□[1)]	7.0	0.9	3.0	4000	19.0	81	96
450	1LE8003-4BA54-6□□□[1)]	7.0	0.9	2.9	4200	21.0	81	96
450	1LE8003-4BA74-6□□□[1)]	7.0	0.9	2.9	4400	23.0	81	96
	1500rpm 4-pole 380VD/660VY 50Hz							
400	1LE8003-4AB33-3□□□	7.0	1.9	2.8	2800	13.0	78	93
400	1LE8003-4AB53-3□□□	7.0	1.9	2.8	3000	14.0	78	93
400	1LE8003-4AB73-3□□□	7.0	1.9	2.8	3200	16.0	78	93
450	1LE8003-4BB33-3□□□	7.0	1.6	2.6	4000	23.0	81	96
450	1LE8003-4BB53-3□□□	7.0	1.6	2.6	4200	26.0	81	96
450	1LE8003-4BB73-3□□□	7.0	1.6	2.6	4400	28.0	81	96
	1000rpm 6-pole 380VD/660VY 50Hz							
400	1LE8003-4AC33-3□□□	6.9	2.1	2.7	2800	21.0	73	88
400	1LE8003-4AC53-3□□□	6.8	2.2	2.7	3000	24.0	73	88
400	1LE8003-4AC73-3□□□	6.5	2.1	2.6	3200	27.0	73	88
450	1LE8003-4BC33-3□□□	6.5	2.0	2.6	4000	35.0	75	90
450	1LE8003-4BC53-3□□□	7.0	2.0	2.7	4200	39.0	75	90
450	1LE8003-4BC74-6□□□[1)]	7.0	2.1	2.6	4500	44.0	75	90
	750rpm 8-pole 380VD/660VY 50Hz							
400	1LE8003-4AD33-3□□□	6.5	1.9	2.6	2800	21.0	69	84
400	1LE8003-4AD53-3□□□	6.5	2.0	2.6	3000	24.0	69	84
400	1LE8003-4AD73-3□□□	6.6	2.1	2.6	3200	27.0	69	84
450	1LE8003-4BD33-3□□□	6.6	1.9	2.4	4000	35.0	71	86
450	1LE8003-4BD53-3□□□	7.0	2.0	2.4	4200	39.0	71	86
450	1LE8003-4BD73-3□□□	6.8	1.9	2.4	4500	44.0	71	86

选型技术数据表 Technical data table

铸铁壳系列电机，Cast Iron Motors
IE3，中国能效等级 3 级

机座号 Frame Size	订货号 MLFB	额定功率 Rated Output	额定转速 Rated Speed 50Hz	效率 Effeciency at (50HZ) 4/4 load	效率 Effeciency at (50HZ) 3/4 load	功率因数 Power factor at (50Hz) 4/4 load	额定电流 Rated current at 660V 50Hz	额定转矩 Rated torque
		kW	rpm	%	%	–	A	Nm
	3000rpm 2-pole 660VD 50Hz							
400	1LE8083-4AA34-6□□□	545	2989	96.0	96.1	0.90	550	1741
400	1LE8083-4AA54-6□□□	610	2989	96.0	96.1	0.91	610	1949
400	1LE8083-4AA74-6□□□	680	2989	96.1	96.2	0.91	680	2173
450	1LE8083-4BA34-6□□□	775	2989	96.1	96.2	0.91	780	2476
450	1LE8083-4BA54-6□□□	875	2988	96.1	96.2	0.92	870	2797
450	1LE8083-4BA74-6□□□	970	2990	96.2	96.2	0.92	970	3098
	1500rpm 4-pole 660VD 50Hz							
400	1LE8083-4AB34-6□□□	545	1492	96.0	96.0	0.87	570	3488
400	1LE8083-4AB54-6□□□	615	1492	96.1	96.2	0.88	640	3946
400	1LE8083-4AB74-6□□□	690	1492	96.2	96.3	0.89	700	4417
450	1LE8083-4BB34-6□□□	785	1493	96.2	96.2	0.87	820	5021
450	1LE8083-4BB54-6□□□	880	1493	96.2	96.3	0.87	920	5629
450	1LE8083-4BB74-6□□□	980	1494	96.3	96.4	0.89	1000	6273
	1000rpm 6-pole 660VD 50Hz							
400	1LE8083-4AC34-6□□□	435	993	96.0	96.1	0.85	465	4184
400	1LE8083-4AC54-6□□□	485	993	96.0	96.3	0.85	510	4664
400	1LE8083-4AC74-6□□□	545	993	96.1	96.3	0.86	580	5241
450	1LE8083-4BC34-6□□□	615	994	96.2	96.4	0.85	670	5909
450	1LE8083-4BC54-6□□□	690	994	96.3	96.5	0.83	740	6629
450	1LE8083-4BC74-6□□□	780	994	96.3	96.5	0.84	830	7494
	750rpm 8-pole 660VD 50Hz							
400	1LE8083-4AD34-6□□□	335	744	95.2	95.5	0.81	380	4300
400	1LE8083-4AD54-6□□□	375	744	95.3	95.6	0.80	430	4813
400	1LE8083-4AD74-6□□□	425	744	95.3	95.7	0.81	495	5455
450	1LE8083-4BD34-6□□□	485	745	95.4	95.7	0.78	570	6217
450	1LE8083-4BD54-6□□□	545	745	95.4	95.7	0.79	630	6986
450	1LE8083-4BD74-6□□□	600	744	95.4	95.7	0.80	690	7701

机座号 Frame Size	订货号 MLFB	起动电流 Starting Current	起动转矩 Starting torqueStarting torque	最大转矩 Max torque	重量 Weight IMB3	转动惯量 Moment of inertia(J)	噪声 Noise LpfA	噪声 Noise LWA
		直接起动对额定转矩 (电流) 的倍数 For direct-on-line starting as multiple of the rated			kg	kgm^2	dB(A)	dB(A)
	3000rpm 2-pole 660VD 50Hz							
400	1LE8083-4AA34-6□□□	7.0	1.5	3.0	2800	8.6	79	94
400	1LE8083-4AA54-6□□□	7.0	1.6	3.1	3000	9.6	79	94
400	1LE8083-4AA74-6□□□	7.0	1.7	3.0	3200	11.0	79	94
450	1LE8083-4BA34-6□□□	7.0	0.9	2.8	4000	19.0	81	96
450	1LE8083-4BA54-6□□□	7.0	0.9	2.8	4200	21.0	81	96
450	1LE8083-4BA74-6□□□	7.0	0.9	2.8	4400	23.0	81	96
	1500rpm 4-pole 660VD 50Hz							
400	1LE8083-4AB34-6□□□	7.0	1.9	2.6	2800	13.0	78	93
400	1LE8083-4AB54-6□□□	7.0	1.9	2.7	3000	14.0	78	93
400	1LE8083-4AB74-6□□□	7.0	1.9	2.7	3200	16.0	78	93
450	1LE8083-4BB34-6□□□	7.0	1.6	2.6	4000	23.0	81	96
450	1LE8083-4BB54-6□□□	7.0	1.6	2.6	4200	26.0	81	96
450	1LE8083-4BB74-6□□□	7.0	1.6	2.5	4400	28.0	81	96
	1000rpm 6-pole 660VD 50Hz							
400	1LE8083-4AC34-6□□□	7.0	2.2	2.7	2800	21.0	73	88
400	1LE8083-4AC54-6□□□	7.0	2.2	2.7	3000	24.0	73	88
400	1LE8083-4AC74-6□□□	7.0	2.0	2.6	3200	27.0	73	88
450	1LE8083-4BC34-6□□□	7.0	2.0	2.7	4000	35.0	75	90
450	1LE8083-4BC54-6□□□	7.0	2.1	2.6	4200	39.0	75	90
450	1LE8083-4BC74-6□□□	7.0	2.0	2.6	4500	44.0	75	90
	750rpm 8-pole 660VD 50Hz							
400	1LE8083-4AD34-6□□□	6.8	1.9	2.6	2800	21.0	69	84
400	1LE8083-4AD54-6□□□	6.9	2.0	2.7	3000	24.0	69	84
400	1LE8083-4AD74-6□□□	7	2.1	2.7	3200	27.0	69	84
450	1LE8083-4BD34-6□□□	7.0	2.0	2.5	4000	35.0	71	86
450	1LE8083-4BD54-6□□□	7.0	2.0	2.4	4200	39.0	71	86
450	1LE8083-4BD74-6□□□	7.0	2.0	2.4	4500	44.0	71	86

选件 Options

电动机订货号 [10)] 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			
1LE8003-□□□□3-3□□□	–	380VD / 660VY 50Hz [2)]	FS400-450
1LE8003-□□□□4-6□□□	–	660VD 50Hz	FS400-450
1LE8003-□□□□3-4□□□	–	400VD / 690VY 50Hz	FS400-450
1LE8003-□□□□4-7□□□	–	690VD 50Hz	FS400-450
绕组保护和轴承保护 Winding protection and bearing protection			
1LE8003-□□□□□-□□A□	A (15th digit)	无绕组保护 Without motor protection	FS400-450
1LE8003-□□□□□-□□B□	B (15th digit)	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	FS400-450
1LE8003-□□□□□-□□C□ 1LE8033-□□□□□-□□C□ 1LE8083-□□□□□-□□C□	C (15th digit) [3)]	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	FS400-450
1LE8003-□□□□□-□□K□ 1LE8033-□□□□□-□□K□ 1LE8083-□□□□□-□□K□	K (15th digit)	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	FS400-450
1LE8003-□□□□□-□□L□ 1LE8033-□□□□□-□□L□ 1LE8083-□□□□□-□□L□	L (15th digit)	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	FS400-450
1LE8003-□□□□□-□□Q□ 1LE8033-□□□□□-□□Q□ 1LE8083-□□□□□-□□Q□	Q (15th digit)	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 3 PT100 resistance thermometers in stator winding, 3-wire circuit	FS400-450
1LE8003-□□□□□-□□R□ 1LE8033-□□□□□-□□R□ 1LE8083-□□□□□-□□R□	R (15th digit)	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 6 PT100 resistance thermometers in stator winding, 3-wire circuit	FS400-450
1LE8003-□□□□□-□□H□ 1LE8033-□□□□□-□□H□ 1LE8083-□□□□□-□□H□	H (15th digit)	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 three PT100 resistance thermometers	FS400-450
1LE8003-□□□□□-□□J□ 1LE8033-□□□□□-□□J□ 1LE8083-□□□□□-□□J□	J (15th digit)	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 six PT100 resistance thermometers	FS400-450

电动机订货号 [10)] Motor order code	选件号 Option Code [1)]	描述 Description	应用范围 Application Scope
–	Q72	前后轴承各带 1 个单支两线制 PT100 测温元件，需用 4 个辅助接线端子 1 PT100 resistance thermometer - 2-wire input (4 terminals), at each position of DE and NDE bearing	FS400-450
–	Q78	前后轴承各带 1 个单支三线制 PT100 测温元件，需用 6 个辅助接线端子 1 PT100 resistance thermometer - 3-wire inpu (6 terminals), at each position of DE and NDE bearing	FS400-450
–	Q79	前后轴承各带 1 个双支三线制 PT100 测温元件，需用 12 个辅助接线端子 2 PT100 resistance thermometers - 3-wire input (12 terminals), at each position of DE and NDE bearing	FS400-450
电动机接线盒 Motor connection box			
1LE8003-□□□□□-□□□4 1LE8033-□□□□□-□□□4 1LE8083-□□□□□-□□□4	4 (16th digit)	接线盒在顶端 Connection box on top 进线孔在右侧（从驱动端看） cable entry on right (view from DE)	FS400-450
1LE8003-□□□□□-□□□5 1LE8033-□□□□□-□□□5 1LE8083-□□□□□-□□□5	5 (16th digit) [2)]	接线盒在右边（从驱动端看） Connection box on RHS (view from DE)	FS400-450
1LE8003-□□□□□-□□□6 1LE8033-□□□□□-□□□6 1LE8083-□□□□□-□□□6	6 (16th digit)	接线盒在左边（从驱动端看） Connection box on LHS (view from DE)	FS400-450
–	R15	带一个金属葛兰 One metal cable gland	FS400-450
–	R10 [4)]	接线盒顺时针旋转 90° Clockwise rotate the connection box through 90°	FS400-450
–	R11 [4)]	接线盒逆时针旋转 90° Counter-clockwise rotate the connection box through 90°	FS400-450
–	R12 [4)]	接线盒直接旋转 180° Rotation of the connection box through 180°	FS400-450
–	L97	辅助接线盒 Auxiliary terminal box	FS400-450
–	R50	加大接线盒 Larger terminal box	FS400-450

选件 Options

电动机订货号 [10] Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
绕组与绝缘 Windings and insulation			
–	N01 [9]	耐热等级155(F)，按照155(F)使用，服务系数 Temperature class 155 (F), used according to 155 (F), with service factor (SF)	1LE8003&504 FS400-450
–	N10	耐热等级180(H) Temperature class 180(H)	FS400-450
–	Q02	绕组带230V防潮加热带 Anti-condensation heating for 230V	FS400-450
轴承 bearing			
–	L27 [5] [3]	非驱动端使用绝缘轴承 Bearing insulation NDE	FS400-450
–	L80 [3]	使用SKF轴承 SKF Bearing	FS400-450 O.R
–	L22 [5]	增强悬臂力轴承设计 Bearing design for increased cantilever forces	FS400-450 O.R
–	Q01	预留 SPM 测量接头 Measuring nipple for SPM shock pulse measurement	FS400-450
平衡 Balance and Vibration quantity			
–	L00	B 级振动等级 Vibration quantity level B	FS400-450

电动机订货号 [10] Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
机械设计和防护等级 Mechanical design and degrees of protection			
–	H20	防护等级IP65 IP65 degree of protection	FS400-450
–	H22	防护等级IP56（非高海拔） IP56 degree of protection (non-high altitude)	FS400-450
–	H70	第二接地 Second external grounding	FS400-450
–	L05 [6]	第二标准轴伸 Second standard shaft extension	FS400-450
–	H00 [7]	防雨罩 Motor with protective cover	FS400-450
–	H03	冷凝水排放孔 Condensation drainage holes	FS400-450 标配 Standard option
–	F70 [8]	独立风机 Mounting of separately driven fan	FS400-450
–	X05	用于使用LL861900220编码器 Prepared for of LL861900220 encoder	FS400-450
–	G04	安装LL861900220编码器 Mounting of LL861900220 rotary pulse encoder	FS400-450
–	G05	安装HOG 10 D 1024 I编码器 Mounting of HOG 10 D 1024 I rotary pulse encoder	FS400-450

选件 Options

电动机订货号 [10)] Motor order code	选件号 Option Code [1)]	描述 Description	应用范围 Application Scope
颜色和喷漆 Colors and Paint finish			
–	S01	不喷漆，只带底漆 Unpainted, only primed	FS400-450
–	X84	RAL 9005 外观漆 Standard finish in RAL 9005	FS400-450
–	X86	RAL 5015 外观漆 Standard finish in RAL 5015	FS400-450
–	X80	RAL 7035 外观漆 Standard finish in RAL 7035	FS400-450
–	X90	RAL 9010 外观漆 Standard finish in RAL 9010	FS400-450
–	S80	RAL 7032 外观漆 Standard finish in RAL 7032	FS400-450
–	S81	RAL 9006 外观漆 Standard finish in RAL 9006	FS400-450
–	W88	适用于防腐蚀环境TH、W、F1、WF1和海洋气候环境 Design for TH, W, F1, WF1 and Sea air resistant	FS400-450
–	S02	特殊设计应用于如下环境：带有低腐蚀的盐分户外应用（腐蚀等级为C3） Outdoor installation with low salt load (corrosivity category C3)	FS400-450

电动机订货号 [10] Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
测试证书 Test certificates			
–	B02	出厂检验报告3.1，按照EN10204标准 Acceptance test certificate 3.1 in accordance with EN 10204	FS400-450
环境温度 Coolant temperature			
–	D03	环境温度-40 °C ~ 40 °C Ambient temperature - 40 °C to 40 °C	FS400-450

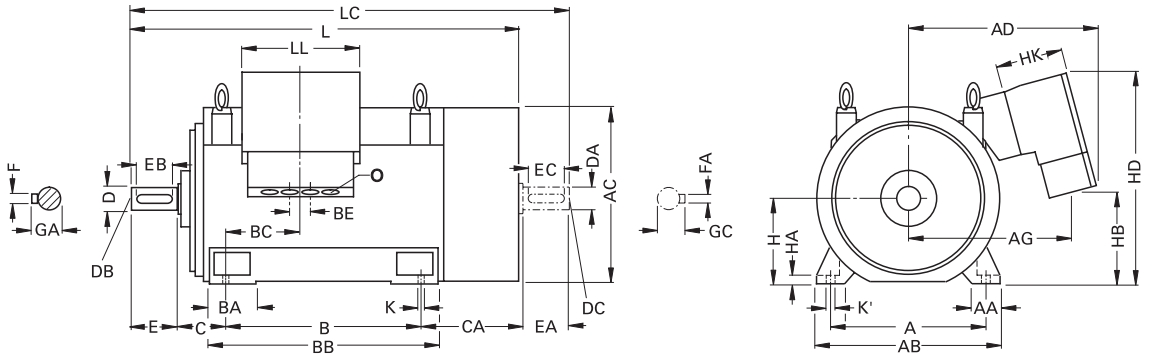
[1] 订货时，电动机订货号需带“-Z”，然后再附带上选件号；
[2] 无需附加费用；
[3] 1LE8033&083 标配；
[4] 接线盒旋转方向为从接线盒盖正上方观察时的方向；
[5] 水平安装时，绝缘轴承在非驱动端；竖直安装时，绝缘轴承在驱动端；
[6] 带防雨罩或独立驱动风扇的电机不能选此选件，第二标准轴伸尺寸与驱动端不一致，详见外形尺寸图；
[7] 不可与选件 L05 并用；
[8] 当安装独立风机时，电机长度会增加。具体增加尺寸和风机技术参数见第 12 页；
[9] 400 和 450 机座服务系数为 1.1 倍；
[10] 选件规则IE4与IE3相同。

[1] When ordering, need supplement "-Z" after order number. Add option code after that.
[2] Without additional charge.
[3] 1LE8033&083 standard configuration.
[4] The direction of rotation of the terminal box is viewed directly above the terminal box cover.
[5] Insulated bearing locate at NDE side for horizontal mounting; insulated bearing locate at DE side for vertical mounting.
[6] Not possible in combination with canopy or separately driven fan. The second standard shaft extension dimension is not same with DE shaft.
[7] Not possible in combination with Option code L05.
[8] When the separately driven fan is mounted, the length of the motor increase by ΔL. For an explanation of the additional dimension and technical data see from page 12.
[9] All the motors frame sizes 400and 450 have a service factor of 1.1 at rated power.
[10] The option rules for IE4 are the same as those for IE3.

外形尺寸 Dimension drawings

INNOMOTICS 1LE8 系列电机
机座号 315-355 Frame size 400-450

IM B3 安装结构方式 Type of constructions IM B3

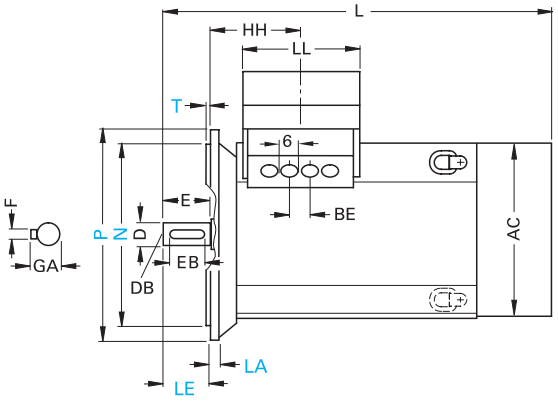


机座号 Frame size	极数 Poles	尺寸及公差 Dimension and tolerance																				
		A	AA	AB	AC	AD	AD*	AG	AG*	AQ	B	BA	BB	BC	BE	C	CA	H	HA	HB	HB*	HD
400	2	710	150	860	880	865	925	775	795	850	900	220	1080	186	100	224	506	400	35	440	395	1025
400	4至8																					
450	2	800	180	980	970	900	975	810	845	950	1000	260	1220	170	100	250	540	450	42	525	395	1110
450	4至8																					

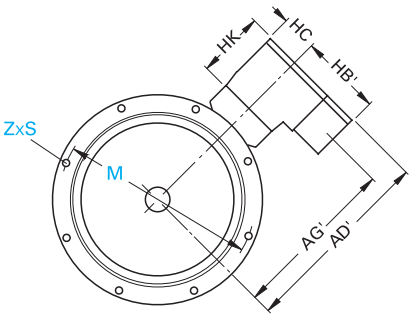
外形尺寸 Dimension drawings

法兰尺寸 Flange dimension

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



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



机座号 Frame size	极数 Poles	尺寸及公差 Dimension and tolerance																		
		HK	K	K*	L	LC*	LL	LM	O	D	DB	E	EB	F	GA	DA*	DC*	EA*	EC*	FA*	GC*
400	2	320	33	40	1795	1940	550	1945	M80×2	80	M 20	170	140	22	85	70	M 20	140	125	20	74.5
400	4至8				1835	2010		1985		110	M 24	210	180	28	116	90	M 24	170	140	25	95
450	2	320	39	47	1955	2100	550	2105	M80×2	90	M 24	170	140	25	95	75	M 20	140	125	20	79.5
450	4至8				1995	2210		2145		120		210	180	32	127	100	M 24	210	180	28	106

INNOMOTICS

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如有变动，恕不事先通知

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