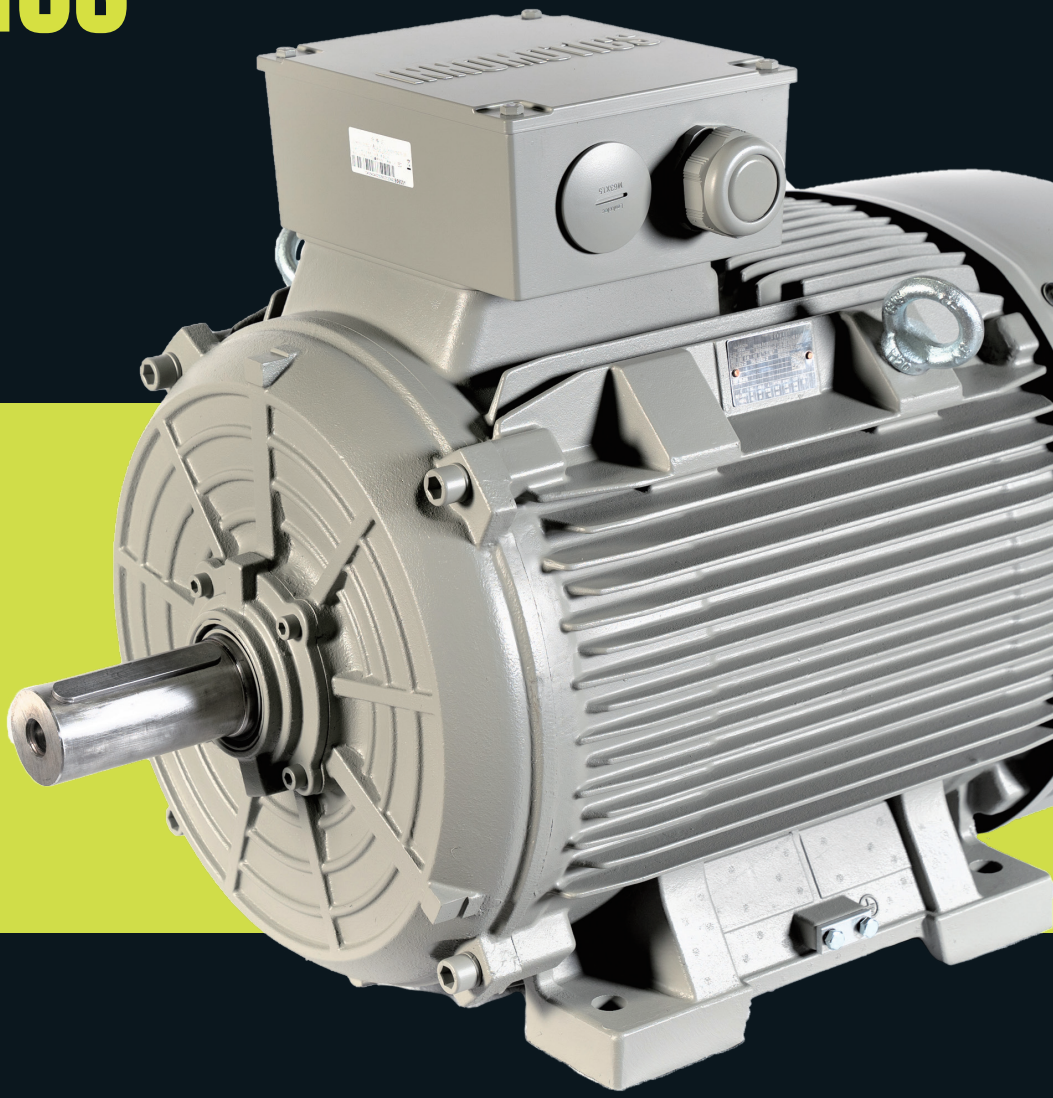
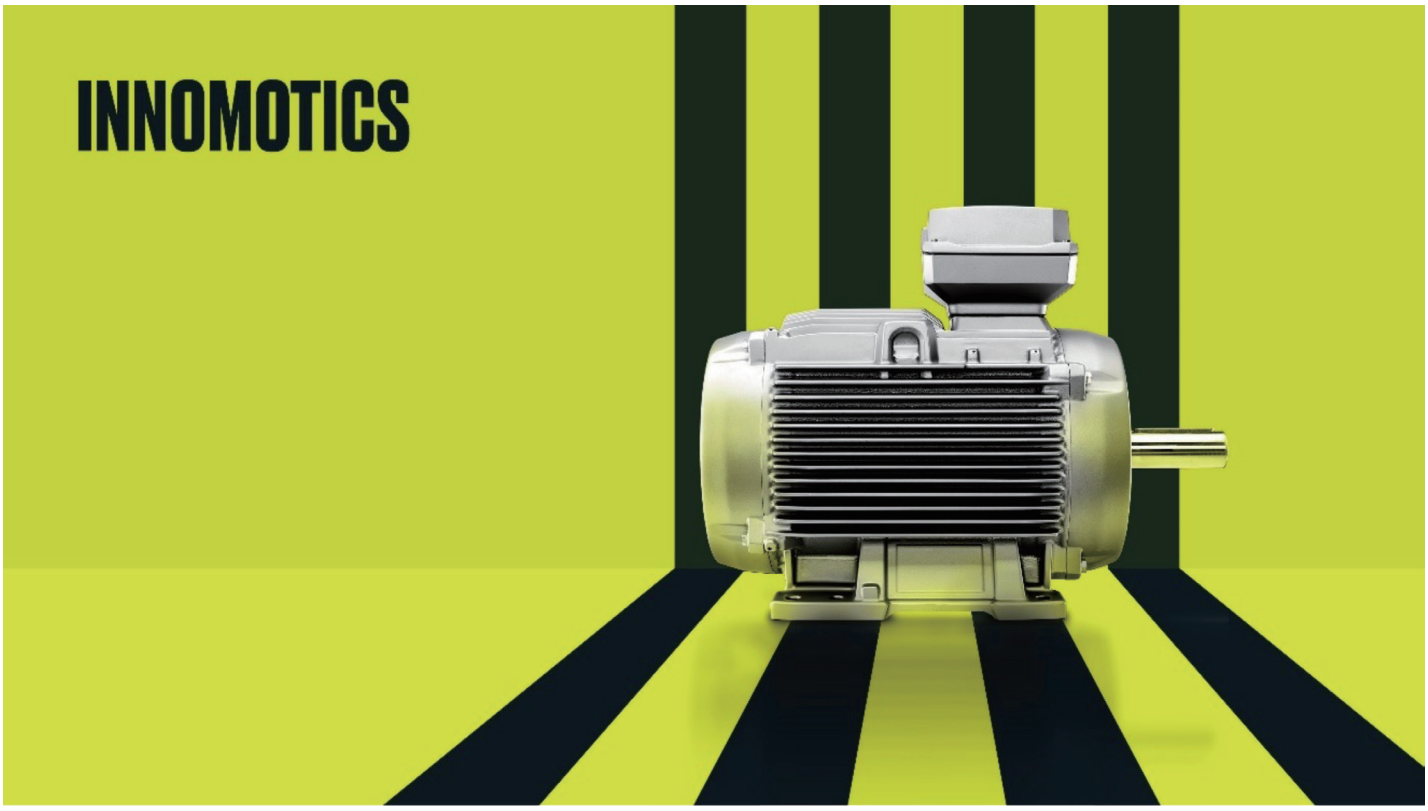
INNOMOTICS



INNOMOTICS 1LE8 IE5 能效
低压交流异步电动机
IE5 Low-voltage Motors

2023.09



2023年7月1日，茵梦达（Innomotics）作为独立运营的实体在德国成立。茵梦达（Innomotics）隶属于西门子集团，由西门子股份公司（Siemens AG）100% 控股。

茵梦达将覆盖此前西门子大型传动应用事业部、西门子数字化工业集团低压电机事业部，以及西门子法律上独立运营的 Sykatec 公司和 Weiss 主轴公司的相关业务。茵梦达在全球拥有约 15,000 名员工，作为电机和大型传动领域的开拓者，其致力于挖掘增长潜力，以确保公司在未来市场上取得成功。

电机和大型传动系统是茵梦达的核心业务和专业领域。

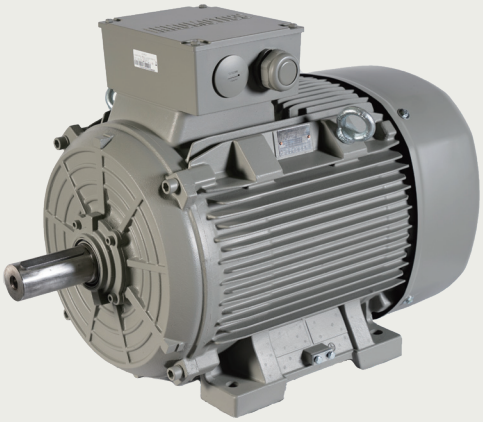
茵梦达在中国的运营公司包括：

- 西门子电机（中国）有限公司
- 西门子（上海）电气传动设备有限公司
- 西门子（天津）传动设备有限责任公司
- 西门子（数控）南京有限公司天津分公司

西门子电机（中国）有限公司于 2006 年 3 月 1 日正式运营，自 2009 年由西门子（中国）有限公司 100% 控股。

西门子电机（中国）有限公司致力于研发和生产符合 IEC 标准的茵梦达品牌、西门子品牌的三相异步电动机，以及按中国标准设计的贝得品牌系列三相异步电动机。电机产品供应国内、国际市场。

公司拥有员工约 2000 余人，占地面积 13.4 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。



铸铁壳电机

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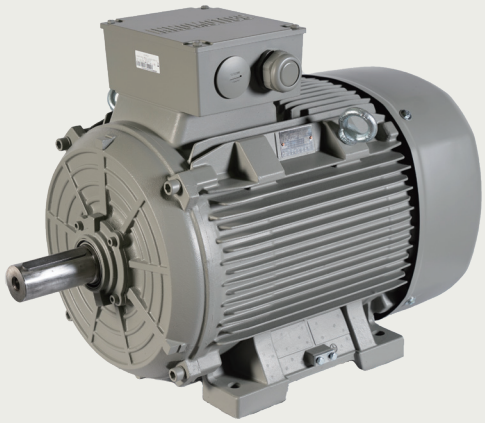


总体介绍 Overview

INNOMOTICS 1LE8 系列电动机是全新全球平台下一代通用型全封闭自扇冷却式三相异步电动机，其防护等级为 IP55，1LE8 系列电动机设计生产符合 ISO、IEC、GB 等相关标准的要求。

1LE8 系列电动机适用于连续工作制（S1）、恒转速或一定速度范围内的变频调速应用。

西门子 1LE8 系列电动机技术特性

- 机座材料：灰铸铁；
- 标准颜色：石头灰（RAL 7030）；
- 额定功率：37kW ~ 315kW（50 Hz）；
- 37 kW 及以上的 2、4、6 极电动机达到 GB18613-2020 标准能效等级 1 级，且 能满足 IEC 60034-30 标准中的 IE5 效率等级（50Hz）；
- 优化的紧凑型结构；
- 标准安装结构类型（符合 IEC 60034-7 标准规定）：IM B3、IM B5、IM B35 等；
- 所有的电动机设计防护等级为 IP55（IEC 60034-5）；
- FS[1] 280 ~ 355 标配再润滑装置；
- 对于 FS250 ~ 355 范围电动机，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；

[1] FS，机座的英文（Frame Size）缩写。

INNOMOTICS 1LE8 series of 3 phase asynchronous motors is next generation of global platform Totally Enclosed Fan Cooled (TEFC) with IP55 environmental protection, and applicable for general purpose use. These motors are designed and manufactured in accordance with ISO, IEC standards, GB standards.

The 1LE8 series motor is designed for constant or adjustable speed with continuous duty operation (S1) over a speed range.

Features of Siemens 1LE8 series

- Frame material: grey cast iron;
- Standard color: stone grey (RAL 7030);
- Rated power output: 37kW ~ 315kW at 50Hz;
- Available in 2, 4, 6 pole motor (37kW and up) with efficiency grade 1. according to GB18613-2020 and efficiency class IE5 (50Hz) according to IEC 60034-30;
- Optimized compact style construction;
- Standard mounting construction according to IEC 60034-7: IM B3, IM B5, IM B35 and etc;
- All motors are designed to IP55 degree of protection (IEC 60034-5);
- Re-greasing devices for FS[1] 280 ~ 355 as standard;
- Reinforced bearings for increased cantilever forces for FS250 ~ 355 as option;
- Winding protections with PTC, PT100 and PT1000 as option;

[1] FS, Frame Size.

- 接线盒标准位置处于机座顶端，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；
- 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；
- 铸铁电动机 FS250 ~ 355 都有 2 个吊环。

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}）：

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

- Terminal box on top, 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 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 IC 411 according to IEC 60034-6) as standard, forced air cool with external separately driven fans as option;
- For cast iron motor FS250 ~ 355 all motors have 2 eyebolts.

Environmental

- Degrees of motor protection IP55 (IEC 60034-5);
- Altitude shall not exceed 1000 m 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 see level	对应海拔高度的环境温度 Site altitude above see level Coolant temperature					
	< 30 °C	30 ~ 40 °C	45 °C	50 °C	55 °C	60 °C
1000 m	1.07	1.00	0.96	0.92	0.87	0.82
1500 m	1.04	0.97	0.93	0.89	0.84	0.79
2000 m	1.00	0.94	0.90	0.86	0.82	0.77
2500 m	0.96	0.90	0.86	0.83	0.78	0.74
3000 m	0.92	0.86	0.82	0.79	0.75	0.70
3500 m	0.88	0.82	0.79	0.75	0.71	0.67
4000 m	0.82	0.77	0.74	0.71	0.67	0.63

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
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	IEC 60034-9	GB 10069.3
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

噪声

噪声值

噪声值根据 DIN EN ISO 1680 标准在噪音室测得。表面声压级噪声 L_{pfa} 计算表示单位为 dB（A）。声压级噪声的空间平均值是在其测量面上测得的。测量面是距离电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）。下面给出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。

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 following specified values are only valid for totally enclosed fan cooling (cooling method: IC411) motor with no load at 50 Hz with no load, and the tolerance is +3 dB. While motor operating 60 Hz with no load, the values are approximately +4 dB (A) higher.

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

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

注：

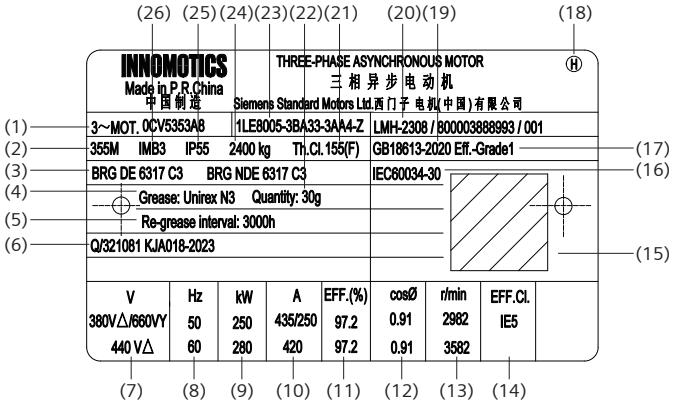
[1)] 该值为 GB/T 10068-2020 中定义的轴中心高 H>132 mm 的两极电机，当两倍电网频率占主导时的振动速度限值。

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

1LE8 铸铁系列电机铭牌 1LE8 Cast iron motor nameplate



1	三相异步电动机	Three-phase low-voltage motor	
2	机座号	Frame size	
3	轴承	Bearing	
4	润滑脂类型	Grease type	
5	再润滑周期	Re-grease interval	
6	执行标准	Standards	
7	额定电压	Rated voltage and Winding connections	
8	频率	Frequency	
9	额定功率	Rated output	
10	额定电流	Rated current	
11	效率	Efficiency	
12	功率因数	Power factor	
13	额定转速	Rated speed	
14	IEC能效等级	IEC efficiency class	
15	二维码	Scan code	
16	IEC标准	IEC standard	
17	中国能效等级	China efficiency class	
18	平衡方式	Balance method	
19	中国国家标准	GB standard	
20	产品序列号	Series number	
21	热分级	Thermal class	
22	加注润滑脂重量	Re-greasing quantity	
23	订货号	Order No.	
24	电机重量	Motor weight	
25	防护等级	Degree of protection	
26	安装结构形式	Type of construction	

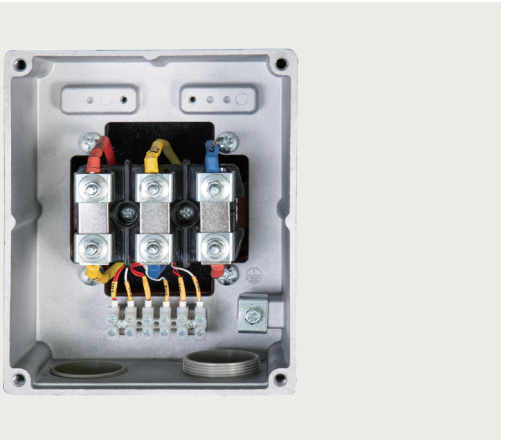
机械特性 Mechanical design

接线盒

接线盒标准位置处于机座顶端，且自身可 4 × 90° 旋转安装[1)]，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 on the top of motor housing as standard, and can be rotated by 4 × 90° 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)
250	6	14[1)]	M10	120	37 ~ 44	M63x1.5+M63x1.5
280	6	14[1)]	M10	120	37 ~ 44	M63x1.5+M63x1.5
315 2P/4P(S/M)/6P	6	16[1)]	M12	240	37 ~ 44	M63x1.5+M63x1.5
315 4P(L)	6	24[1)]	M12	240	37 ~ 44	M63x1.5+M63x1.5
355	6	24[1)]	M16	240	44 ~ 57	M72x2+M72x2

注：

[1)] 需要的辅助端子数若超过接线盒最多可容纳的辅助端子数时，须选择辅助接线盒（选件号：L97）。

Note:

[1)] An auxiliary connection box (option code: L97) is required when the total number of auxiliary terminals exceeds the number of allowable terminals in main connection box.

接线盒位置

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

接线盒的位置是指从电动机驱动端来看的位置。

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

当电动机的接线盒位置与其它部件冲突时，可以将接线盒从驱动端移到非驱动端（选件号：H08）。

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.

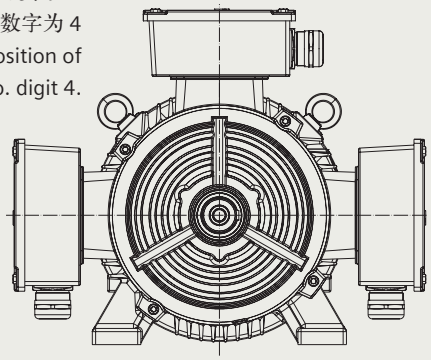
The position of connection box is described by viewed from drive end (DE).

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

If there is interfere between the connection box and other components, the connection box can be moved from the drive end (DE) to non-drive end (NDE) (Option code: H08).

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

在左边（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.



在右边（选配），电动机订货号的第 16 位数字为 5
On RHS, 16th position of Motor Order No. digit 5.

接线盒的进线孔

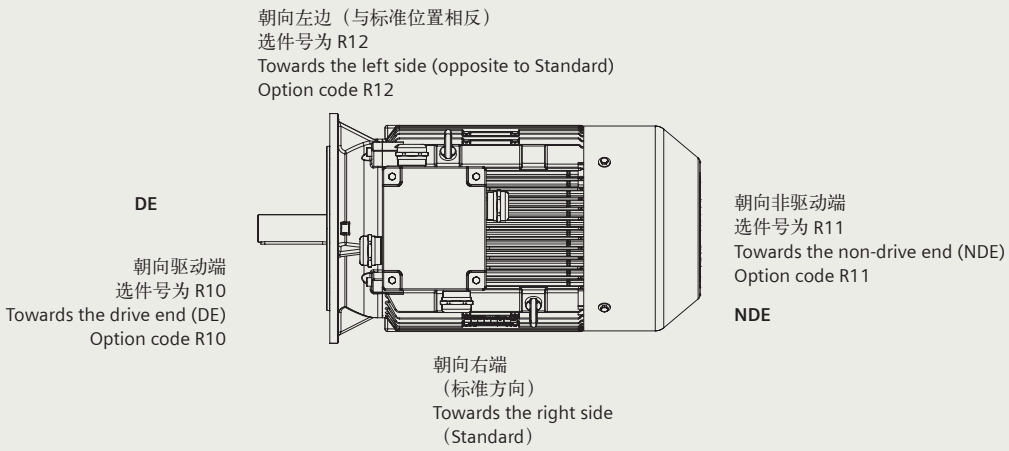
除非另作规定，否则进线孔的标准位置如下图所示。接线盒可以按照图示的位置旋转。

- 朝向驱动端
  接线盒旋转 90°，进线口朝向驱动端，选件号为 R10。
- 朝向非驱动端
  接线盒旋转 90°，进线口朝向非驱动端，选件号为 R11。
- 朝向左侧（与标准方向相反）
  接线盒旋转 180°，进线口位置相反，选件号为 R12。

Cable entry on connection box

Unless stated, otherwise the cable entry is located in the standard position as show in the following illustration. The connection box can also be rotated such that the cable entry is located.

- Towards the drive end (DE)
  Rotation of connection box by 90°, entry from DE, Option code R10.
- Towards the non-drive end (NDE)
  Rotation of connection box by 90°, entry from NDE, Option code R11.
- Towards the left side (opposite to Standard)
  Rotation of connection box by 180°, entry from opposite end, Option code R12.



如果接线盒的位置改变时（如右侧或左侧），须要检查进线孔的位置是否方便进线。必要时，可以同时订购其它选件（R10，R11 和 R12）。

If the position of the connection box (connection box RHS or LHS) is changed, the position of the cable entry must be checked. If necessary, it can be ordered with the corresponding order codes (R10, R11 and R12).

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 FS250 ~ 355	IM B6 FS250 ~ 315	IM B7 FS250 ~ 315	IM B8 FS250 ~ 315	IM V5 [1) 3)] FS250 ~ 315	IM V6 [2)3)] FS250 ~ 315
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 FS250 ~ 315	IM V1 [1)3)] FS250 ~ 355	IM V3 [2)3)] FS250 ~ 315	IM B35 FS250 ~ 355	IM V15 [1)3)] FS250 ~ 315	IM V35 [2)3)] FS250 ~ 315
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

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。

[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，与西门子咨询；

Cooling and ventilation

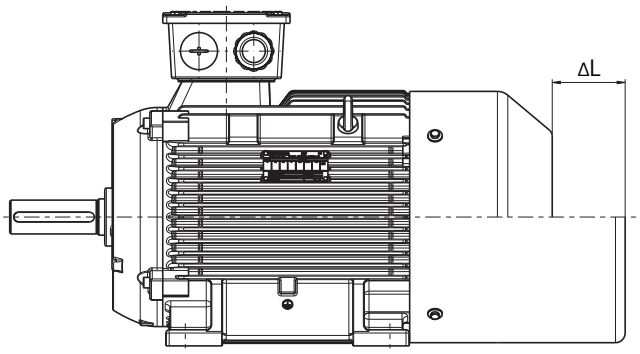
The 1LE8 standard motors are fitted with an radial flow fan for cooling in accordance with IEC 60034-6 cooling method.

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;
- 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.

[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 Siemens refer to actual operation conditions on site.



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)
250	220△/380Y	50	230	1.73/1.0	1400	75
280	220△/380Y	50	230	1.73/1.0	1400	110
315 (2P/4P(S/M)/6P)	220△/380Y	50	370	1.91/1.1	1250	95
315 (4P(L))	220△/380Y	50	1100	4.33/2.5	1350	180
355	220△/380Y	50	550	2.18/1.26	1350	90

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 Length decrease of motor Δl
250	130
280	130
315 (2P/4P(S/M)/6P)	175

对应电动机机座号 Motor frame size	F90 电机减少长度 Δl Length decrease of motor Δl
315 (4P(L))	145
355	175

轴承系统

1LE8 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。

FS250 ~ 355 电动机驱动端轴承浮动，非驱动端轴承固定。

标准配置的轴承可以承受一定的悬臂力，关于悬臂力可以参见第 14 页“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）。

FS280 ~ 355 范围的电动机标配可再润滑轴承，并标配再润滑装置。FS250电动机标配不带再润滑装置，FS250电机可选用可再润滑轴承和再润滑装置（选件号：L23）。

Bearing system

1LE8 series motors are supplied with the ball bearing as standard. These bearings are either of the sealed or regreasable type.

for FS250 ~ 355, floating bearing at DE, and fixed bearing at NDE assembled.

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

As standard, FS280 ~ 355 motors with regreasable bearing and regreasing device. FS250 motors are not with regreasing device, FS250 motor can be configured with regreasable bearing and regreasing device (Option code: L23)

轴承选配 Bearing Assignment

机座号 Frame size	极数 Pole	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)			再润滑轴承（选件号：L23） Re-greasing bearing (Option code:L23)	
		驱动端轴承 DE bearing	非驱动端轴承（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）	驱动端轴承 DE bearing	非驱动端轴承 NDE bearing
250	2,4,6	6214 C3	6214 C3	6214 C3	NU214	6214 C3	6214 C3	6214 C3	6214 C3
280	2	6315 C3	6315 C3	6315 C3	NU315	6315 C3	6315 C3	□	□
	4,6	6316 C3	6316 C3	6316 C3	NU316	6316 C3	6316 C3	□	□
315	2	6316 C3	6316 C3	6316 C3	NU316	6316 C3	6316 C3	□	□
	4(S/M),6	6319 C3	6319 C3	6319 C3	NU319	6319 C3	6319 C3	□	□
	4(L)	6319 C3	6319 C3	7319 B	NU319	6319 C3	O.R.	□	□
355	2	6317 C3	6317 C3	7317	NU317	6317 C3	O.R.	□	□
	4,6	6322 C3	6322 C3	7322	NU320	6322 C3	O.R.	□	□

注：

DE 驱动端　　NDE 非驱动端

– 不能满足　　□ 标准配置

O.R. 须要特殊询价

Note:

DE Driven end　　NDE Non driven end

– Not possible　　□ Standard

O.R. Possible on request

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。

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。

Bearing life time (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.

Grease life and re-greasing interval

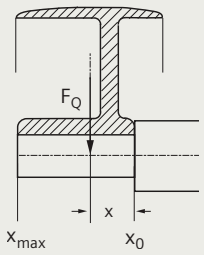
For permanent lubrication, the bearing grease lifetime is matched to the bearing lifetime. This can, however, only be achieved if the motor is operated in accordance with the catalog specifications.

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	极数 Poles	润滑脂寿命 Grease lifetime up to CT 40 °C
可再润滑型轴承的润滑脂 Grease for regreasable bearing		
250	2	4000h
	4，6	8000h
280	2	4000h
	4，6	5000h
315	2	3000h
	4，6	5000h
355	2	3000h
	4，6	4000h

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）

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.

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				增强悬臂力的轴向设计（编号 L22） Bearing design for increased cantilever forces Order code L22	
机座号 Frame size	极数 Number of poles	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}
250M	2	2970	2440	9800	5700
	4	3640	3000	11000	6500
	6	4300	3530	12500	7000
280S 280M	2	5810	4840	19900	8600
	4	7870	6670	25700	9800
	6	9240	7670	28800	9800
315S 315M 315L	2	5850	5070	21350	8900
	4	8930	7630	34240	13200
	6	10600	8930	38600	13100
355M 355L	2	6180	5490	22920	12000
	4	11200	10420	44450	20800
	6	13210	11440	49500	20800

[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 parallel to the mounting plane or towards the mounting plane 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

1LE8电动机的额定功率是指电动机在连续运行的情况下 S1（IEC 60034-1），此时周围环境温度为 -20 °C ~ 40 °C，海拔高度不超过 1000 m。

电压、频率

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

Rated Output

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
  $P_{rated} \leq 150$ 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
- 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，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。

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

绝缘系统

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。

1LE8 系列电动机标准设计温度等级为 155 （F）。当 1LE8 电动机直接供电，且输出额定功率时，其绝缘系统按 130（B）温度等级使用。

电动机保护

电动机过热保护

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

不同的电动机热保护方式可以在 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。

Insulation system

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

1LE8 series motors are designed for temperature class 155 (F). At rated output with line-fed operation, 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.

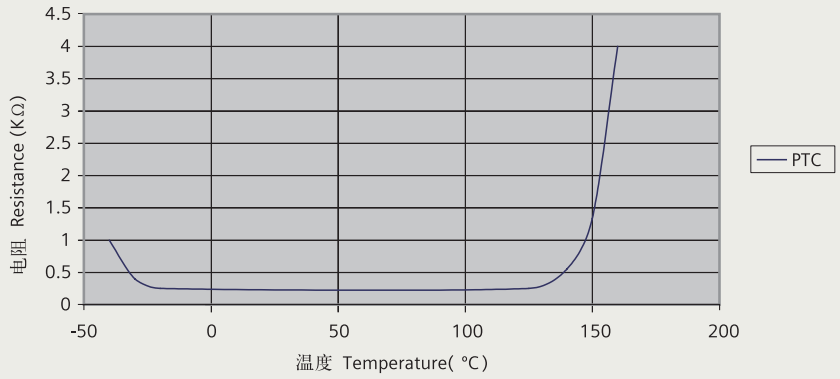
Winding protection

■ **PTC thermistors protection**

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

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

PTC 曲线图
The graph of PTC



两种 PTC 热敏电阻温度保护

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

■ PT100 热敏电阻传感器温度保护

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

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

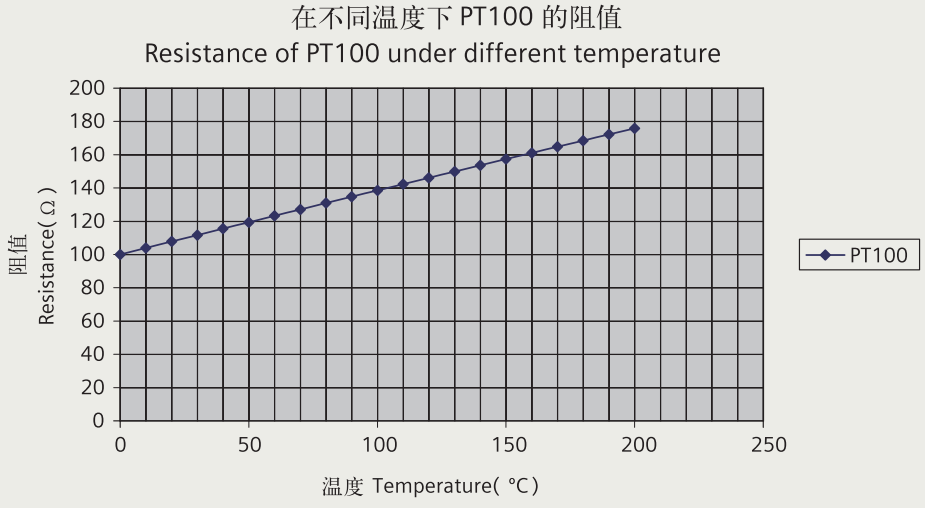
- Motor winding is protected with PTC thermistors with 3 embedded temperature sensors for tripping. Connection be done through 2 auxiliary terminals in the connection box. 15th position of Motor Order No. letter B.
- Motor winding is protected with two sets of three temperature sensors, one set is for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

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.



■ 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，电机的铭牌编号 15 位数为 K，需 2 个辅助接线端子。

轴承保护

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。

1LE8 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。

■ 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.

Bearing protection

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.

Installation of 2 PT100 screwed-in resistance thermometers for 1LE8 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 Vlotage
250 ~ 280	60	220V
315 2P/4P(S/M)/6P	80	220V
315 4P(L)	100	220V
355	100	220V

变频应用 Converter fed application

1LE8 电动机适于变转速、恒转速的各种应用，如风机、泵、压缩机、纺织机械等。

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

当 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，推荐 FS250 ~ 355 电动机使用绝缘轴承。请向西门子咨询关于绝缘轴承的详细信息。

变频器驱动运行

1LE8 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。

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：

1LE8 motors are suitable for pumps, fans, compressors, texitle machine and mechanical machine applications where variable or constant speed is required.

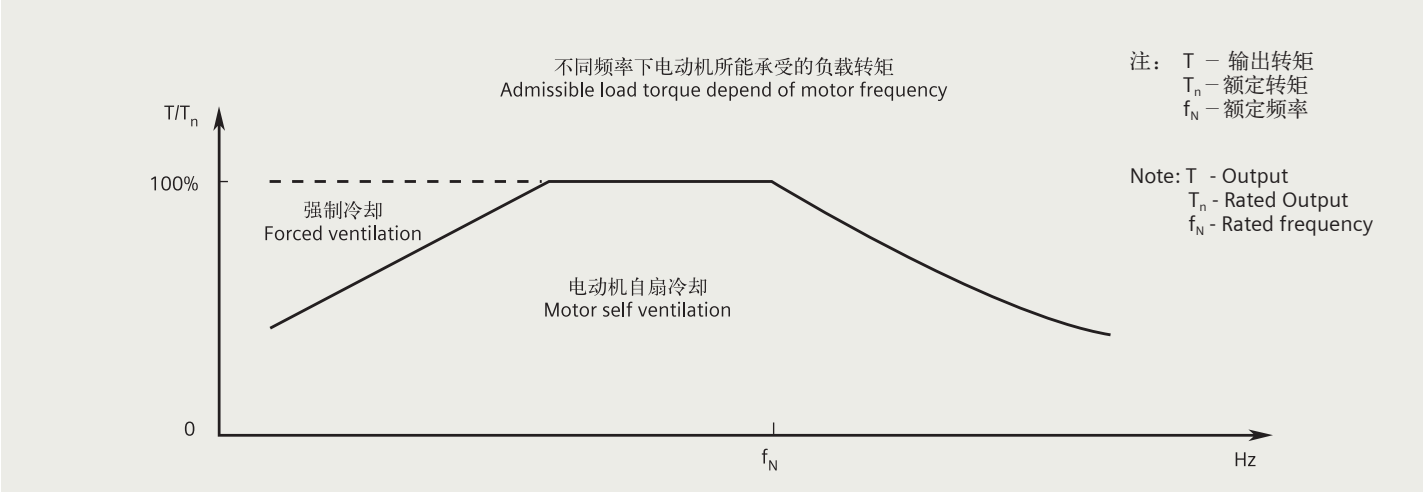
In application where the motor is driven by a converter, the degree of electrical interference depends on the type of converter used (type, number of IGBTs, interference suppression measures, and manufacturer), cabling, distance and application requirements. The installation guidelines of the converter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

At rated output with converter fed operation, the motors will be used in temperature class 155 (F). To prevent damage as a result of bearing currents, insulated bearings are recommended to be assembled for frame size 250 and above. Please inquire Siemens about the detailed information of insulated bearing.

Converter-fed operation

The standard insulation of the 1LE8 motors is designed such that operation is possible on the converter at main voltage up to 480V.

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.

1LE8 电动机所允许的最大安全转速如下表

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

机座号 Frame Size	2 极 2 pole		4 极 4 pole		6 极 6 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
250	3600	60	2300	77	1800	90
280	3600	60	2300	77	1800	90
315	3600	60	2300	77	1800	90
355	3600	60	2300	77	1800	90

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）。

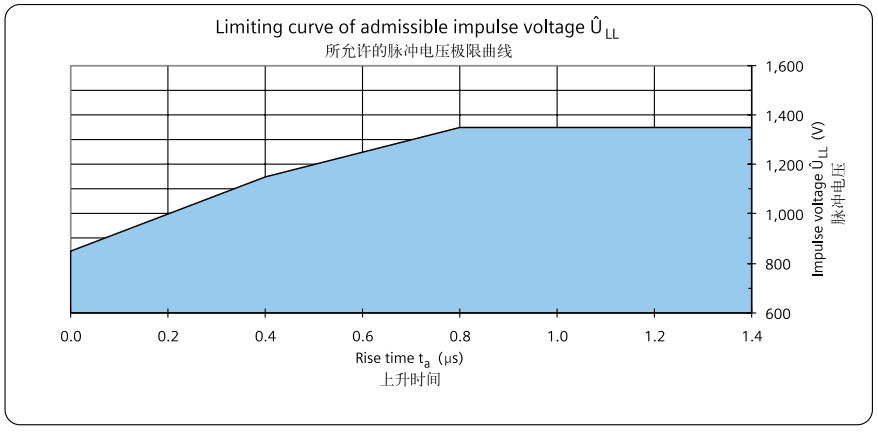
图表所示为 1LE8 电动机标准绝缘能承受电压的峰值和上升时间：

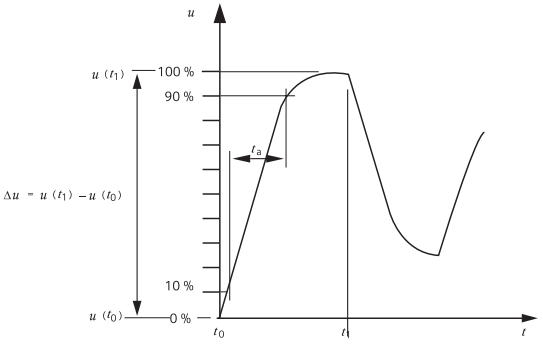
Voltage withstand levels

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 1LE8 motors is designed to withstand voltage peak and rise time which is showed in the diagram:



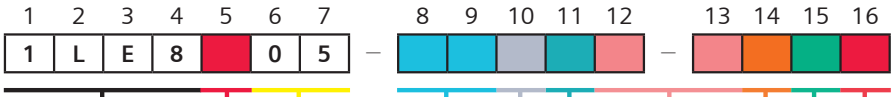


数值参照 IEC 60034-17，GB/T 20161-2008 标准。

The values refer to standard IEC 60034-17 and GB/T 20161-2008.

订货号和型号 Order No. and Motor Type

订货号 Order No.



低压系列电动机 Low-voltage 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
2C = 250；2D = 280
3A = 315；3B = 355

极数编号 Code of poles
A = 2；B = 4；C = 6

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）

电压，连接方式和频率编号 Code of voltage, connections and frequency

	22 = 230 VD/400 VY 50Hz	35 = 415 VD 50 Hz
21 = 220 VD/380 VY 50Hz	23 = 240 VD/415 VY 50Hz	90[1] = 特殊电压与频率
33 = 380 VD/660 VY 50Hz	34 = 400 VD/690 VY 50Hz	special voltage & frequency

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

	T[2] = IM B6		
A[2] = IM B3	U[2] = IM B7		
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 = 绕组带一组三芯串联的 PTC 热敏电阻用于跳闸 3 PTC thermistors for tripping
C = 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
K = 绕组带 1 个单支两线制 PT1000 测温元件 1single 2 wires PT1000 resistance thermometers
H = 绕组带 3 个 Pt100 测温元件 3 resistance thermometers Pt100
J = 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

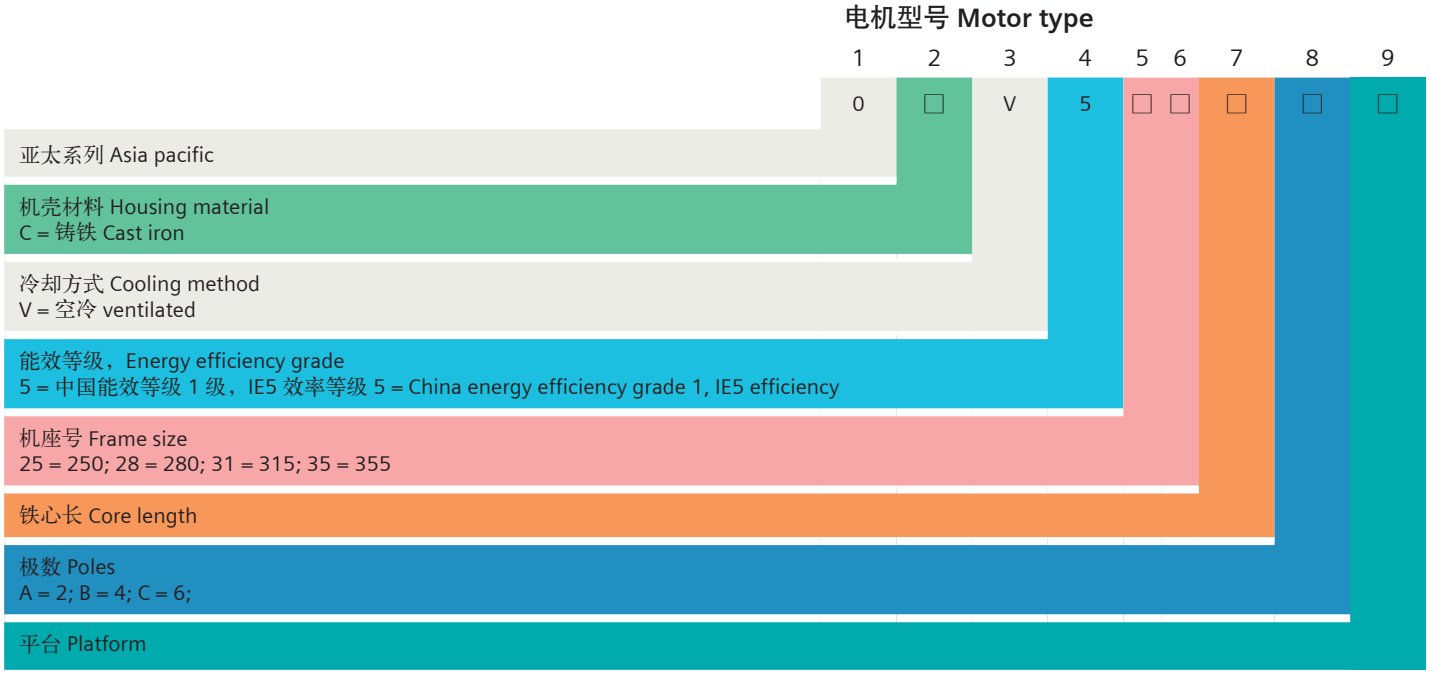
接线盒位置编号（从驱动端看） Code of connection box location (view from drive end)
4 = 置顶 on top；5 = 右侧 on RHS；6 = 左侧 on LHS

附注：

[1] 用电压编号 90 及相应选件号来定制其它电压（参见选项描述）；
[2] 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；

Foot note:

[1] Order other voltages with voltage code 90 and the corresponding Option code (see under "Option") ;
[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.



订货号样例：

中国能效等级一级、铸铁低压三相交流电动机
4-极，90 kW，IM B5，380 VD/660 VY 50 Hz，IP55 ，接线盒位置处于顶端，进线孔右侧（从驱动端看），带独立驱动风扇。

电动机订货号：1LE8005-2DB23-3FA4-Z F70

Order No. example:

IE5, Low voltage three phase cast iron motor
4-pole, 90 kW, IM B5, 380 VD/660 VY 50 Hz, IP55, connection box on top and cable entry at right side (view from DE), with separately driven fan.

Motor order code: 1LE8005-2DB23-3FA4-Z F70

选型技术数据表 Technical data table

铸铁壳系列电机，Cast Iron Motors
INNOMOTICS 1LE8 IE5 能效

机座号 Frame Size	电动机型号 Motor Type	订货号 Order No.	额定功率 Rated Output	额定功率 (60Hz) Rated Output (60Hz)	额定转速 Rated Speed	效率 (100% 负载) Effeciency at (50HZ) 4/4 load	效率 (75% 负载) Effeciency at (50HZ) 3/4 load	功率因数 Power factor
			kW	kW	r/m	%	%	
3000rpm 2 极 2-pole 380VD/660VY 50HZ								
250M	0VC5252A8	1LE8005-2CA23-3 □□□	55	62	2982	96.2	96.2	0.89
280S	0VC5280A8	1LE8005-2DA03-3 □□□	75	84	2982	96.5	96.5	0.89
280M	0VC5282A8	1LE8005-2DA23-3 □□□	90	101	2980	96.6	96.7	0.89
315S	0VC5310A8	1LE8005-3AA03-3 □□□	110	123	2986	96.8	96.8	0.90
315M	0VC5312A8	1LE8005-3AA23-3 □□□	132	148	2986	96.9	97.0	0.90
315L	0VC5315A8	1LE8005-3AA53-3 □□□	160	180	2986	97.0	97.1	0.90
315L	0VC5316A8	1LE8005-3AA63-3 □□□	185	207	2984	97.1	97.3	0.90
315L	0VC5317A8	1LE8005-3AA73-3 □□□	200	224	2984	97.2	97.4	0.90
355M	0VC5352A8	1LE8005-3BA23-3 □□□	220	246	2988	97.2	97.1	0.91
355M	0VC5353A8	1LE8005-3BA33-3 □□□	250	280	2988	97.2	97.2	0.91
355L	0VC5355A8	1LE8005-3BA53-3 □□□	280	314	2986	97.2	97.2	0.91
355L	0VC5356A8	1LE8005-3BA63-3 □□□	315	353	2984	97.2	97.3	0.91

	额定电流 Rated current	额定转矩 Rated torque	起动电流 / 额定电流 Starting Current/ Rated current	起动转矩 / 额定转矩 Starting torque/ Rated torque	最大转矩 / 额定转矩 Max torque/Reted torque	转动惯量 Moment of inertia (J)	重量 Weight IMB3	噪声 Noise
	A	Nm	I_{LR}/I_{rated}	T_{LR}/T_{rated}	T_{max}/T_{rated}	kgm^2	kg	L_{pfa}/L_{WA}
3000rpm 2 极 2-pole 380VD/660VY 50HZ								
	98	176	8.5	3	3.5	0.804	450	75/89
	133	240	8.5	3.3	3.3	0.919	580	75/89
	159	288	8.5	3.3	3.3	1.01	590	75/89
	192	352	8.5	3.5	3	1.95	900	77/92
	230	422	8.5	3.5	3	2.15	925	77/92
	280	512	8.5	3.8	3	2.47	1010	77/92
	320	592	8.5	3.8	3	2.55	1080	77/92
	345	640	8.5	3.8	3	2.85	1130	77/92
	380	703	9	3.3	3.5	3.52	1700	83/98
	430	799	9	3.3	3.5	3.52	1700	83/98
	480	896	9	3.3	3.5	3.5	1700	83/98
	540	1008	9	3.3	3.5	3.5	1700	83/98

选型技术数据表 Technical data table

铸铁壳系列电机，Cast Iron Motors
INNOMOTICS 1LE8 IE5 能效

机座号 Frame Size	电动机型号 Motor Type	订货号 Order No.	额定功率 Rated Output	额定功率 (60Hz) Rated Output (60Hz)	额定转速 Rated Speed	效率 (100% 负载) Effeciency at (50HZ) 4/4 load	效率 (75% 负载) Effeciency at (50HZ) 3/4 load	功率因数 Power factor
			kW	kW	r/m	%	%	
1500rpm 4 极 4-pole 380VD/660VY 50HZ								
250M	0VC5252B8	1LE8005-2CB23-3 □□□	55	63	1488	96.5	96.9	0.86
280S	0VC5280B8	1LE8005-2DB03-3 □□□	75	86	1490	96.7	97.0	0.86
280M	0VC5282B8	1LE8005-2DB23-3 □□□	90	104	1490	96.9	97.2	0.88
315S	0VC5310B8	1LE8005-3AB03-3 □□□	110	123	1492	97.0	97.2	0.86
315M	0VC5312B8	1LE8005-3AB23-3 □□□	132	148	1492	97.1	97.3	0.86
315L	0VC5315B8	1LE8005-3AB53-3 □□□	160	180	1493	97.2	97.4	0.87
315L	0VC5316B8	1LE8005-3AB63-3 □□□	185	207	1492	97.3	97.5	0.87
315L	0VC5317B8	1LE8005-3AB73-3 □□□	200	224	1492	97.4	97.6	0.87
355M	0VC5352B8	1LE8005-3BB23-3 □□□	220	246	1493	97.4	97.6	0.87
355M	0VC5353B8	1LE8005-3BB33-3 □□□	250	280	1492	97.4	97.6	0.87
355L	0VC5355B8	1LE8005-3BB53-3 □□□	280	314	1491	97.4	97.7	0.88
355L	0VC5356B8	1LE8005-3BB63-3 □□□	315	353	1492	97.4	97.6	0.87

	额定电流 Rated current	额定转矩 Rated torque	起动电流 / 额定电流 Starting Current/ Rated current	起动转矩 / 额定转矩 Starting torque/ Rated torque	最大转矩 / 额定转矩 Max torque/Reted torque	转动惯量 Moment of inertia (J)	重量 Weight IMB3	噪声 Noise
	A	Nm	I_{LR}/I_{rated}	T_{LR}/T_{rated}	T_{max}/T_{rated}	kgm^2	kg	L_{pfa}/L_{WA}
1500rpm 4 极 4-pole 380VD/660VY 50HZ								
	101	353	8.5	2.5	3.3	1.545	505	65/79
	137	481	9	3.5	3	1.986	635	66/80
	160	577	9	3.5	3	2.484	750	66/80
	200	704	8.5	3.2	3	4.64	1190	69/84
	240	845	8.5	3.2	3	4.92	1230	69/84
	285	1023	9	3.2	3	5.5	1530	71/86
	330	1184	9	3.2	3	6	1610	71/86
	360	1280	9	3.2	3	6.2	1650	71/86
	395	1407	9	2.7	3.2	5.92	1700	76/91
	450	1600	9	2.7	3	5.92	1700	76/91
	495	1793	8.5	2.5	3	6.19	1800	76/91
	560	2016	8.5	2.5	3	6.67	1880	76/91

选型技术数据表 Technical data table

铸铁壳系列电机，Cast Iron Motors
INNOMOTICS 1LE8 IE5 能效

机座号 Frame Size	电动机型号 Motor Type	订货号 Order No.	额定功率 Rated Output	额定功率 (60Hz) Rated Output (60Hz)	额定转速 Rated Speed	效率 (100% 负载) Effeciency at (50HZ) 4/4 load	效率 (75% 负载) Effeciency at (50HZ) 3/4 load	功率因数 Power factor
			kW	kW	r/m	%	%	
1000rpm 6 极 6-pole 380VD/660VY 50HZ								
250M	0VC5252C8	1LE8005-2CC23-3 □□□	37	44.5	991	95.6	95.9	0.81
280S	0VC5280C8	1LE8005-2DC03-3 □□□	45	54	991	95.8	96.2	0.83
280M	0VC5282C8	1LE8005-2DC23-3 □□□	55	66	992	96.0	96.3	0.84
315S	0VC5310C8	1LE8005-3AC03-3 □□□	75	84	992	96.3	96.7	0.82
315M	0VC5312C8	1LE8005-3AC23-3 □□□	90	101	992	96.5	96.9	0.83
315L	0VC5315C8	1LE8005-3AC53-3 □□□	110	123	992	96.6	97.0	0.83
315L	0VC5316C8	1LE8005-3AC63-3 □□□	132	148	993	96.8	97.2	0.83
355M	0VC5352C8	1LE8005-3BC23-3 □□□	160	180	994	96.9	97.0	0.84
355M	0VC5353C8	1LE8005-3BC33-3 □□□	185	207	994	97.0	97.2	0.84
355M	0VC5354C8	1LE8005-3BC43-3 □□□	200	224	994	97.0	97.2	0.84
355L	0VC5355C8	1LE8005-3BC53-3 □□□	220	246	994	97.0	97.3	0.84
355L	0VC5356C8	1LE8005-3BC63-3 □□□	250	280	994	97.0	97.2	0.84

	额定电流 Rated current	额定转矩 Rated torque	起动电流 / 额定电流 Starting Current/ Rated current	起动转矩 / 额定转矩 Starting torque/ Rated torque	最大转矩 / 额定转矩 Max torque/Reted torque	转动惯量 Moment of inertia (J)	重量 Weight IMB3	噪声 Noise
	A	Nm	I_{LR}/I_{rated}	T_{LR}/T_{rated}	T_{max}/T_{rated}	kgm^2	kg	L_{pfa}/L_{WA}
1000rpm 6 极 6-pole 380VD/660VY 50HZ								
	73	357	9	3.3	3.5	1.642	470	62/76
	86	434	8.5	3.8	3.3	2.023	570	62/76
	104	529	8.5	3.8	3.3	2.411	600	62/76
	144	722	8	2.6	2.5	3.95	855	66/81
	171	866	8	2.7	2.5	4.52	915	66/81
	210	1059	8	2.7	2.5	5.02	990	66/81
	250	1269	8	2.9	2.5	6.07	1185	66/81
	300	1537	8.5	2.8	3.2	10.52	1690	76/91
	345	1777	8.5	3	3.2	10.52	1690	76/91
	375	1922	8.5	3	3.2	11.11	1770	76/91
	410	2114	8.5	3	3.2	11.36	1860	76/91
	465	2402	8.5	3	3.2	13.02	1970	76/91

选件 Options

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
电压与频率 Voltages and frequency			
1LE8□05-□□□□2-1□□□	–	220 VD / 380 VY 50 Hz	FS250 ~ 280
1LE8□05-□□□□3-3□□□	–	380 VD / 660 VY 50 Hz（37 kW ~ 315 kW [2]）	FS250 ~ 355
1LE8□05-□□□□2-2□□□	–	230 VD / 400 VY 50 Hz	FS250 ~ 280
1LE8□05-□□□□3-4□□□	–	400 VD / 690 VY 50 Hz	FS250 ~ 355
1LE8□05-□□□□2-3□□□	–	240 VD / 415 VY 50 Hz	FS250 ~ 280
1LE8□05-□□□□3-5□□□	–	415 VD 50 Hz	FS250 ~ 355
1LE8□05-□□□□9-0□□□	M2A	220 VD/380 VY 60 Hz （50 Hz output，50 Hz 功率输出）	FS250 ~ 280
1LE8□05-□□□□9-0□□□	M2B	380 VD/660 VY 60 Hz （50 Hz output，50 Hz 功率输出）	FS250 ~ 355
1LE8□05-□□□□9-0□□□	M2C	440 VY 60 Hz（50 Hz output，50 Hz 功率输出）	FS250 ~ 280
1LE8□05-□□□□9-0□□□	M2D	440 VD 60 Hz（50 Hz output，50 Hz 功率输出）	FS250 ~ 355
1LE8□05-□□□□9-0□□□	M2E	460 VY 60 Hz（50 Hz output，50 Hz 功率输出）	FS250 ~ 280
1LE8□05-□□□□9-0□□□	M2F	460 VD 60 Hz（50 Hz output，50 Hz 功率输出）	FS250 ~ 355
绕组保护 Motor protection			
1LE8□05-□□□□□-□□**A**□ [2]	–	无绕组保护 Without motor protection	FS250 ~ 355
1LE8□05-□□□□□-□□**B**□	–	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	FS250 ~ 355
1LE8□05-□□□□□-□□**C**□	–	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	FS250 ~ 355
1LE8□05-□□□□□-□□**K**□	–	绕组带 1 个单支两线制 PT1000 测温元件 Installation of 1 single 2 wires PT1000 resistance thermometers	FS250 ~ 355
1LE8□05-□□□□□-□□**H**□	–	绕组带 3 个 Pt100 测温元件 Installation of three PT100 resistance thermometers	FS250 ~ 355
1LE8□05-□□□□□-□□**J**□	–	绕组带 6 个 Pt100 测温元件 Installation of six PT100 resistance thermometers	FS250 ~ 355
线圈和绝缘 Windings and insulation			
–	N01	温度等级 155（F），使用 155（F），带有服务系数（SF1.15） Temperature class 155 (F), used according to 155 (F), with service factor (SF1.15)	FS250 ~ 355
–	N10	180（H）度温度等级绝缘 Temperature class 180（H）	FS250 ~ 355
–	Q04	绕组带 220 V 防潮加热带 Anti-condensation heater for 220 V AC (spaces heater)	FS250 ~ 355

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
电动机接线盒 Motor connection box			
1LE8□0□-□□□□□□-□□□**4** [2]	–	接线盒在顶端 Connection box on top 进线孔在右侧（从驱动端看）（标准电动机） cable entry on right（view from DE）(Standard version)	FS250 ~ 355
1LE8□0□-□□□□□□-□□□**5**	–	接线盒在右边（从驱动端看） Connection box on RHS（view from DE)	FS250 ~ 355
1LE8□0□-□□□□□□-□□□**6**	–	接线盒在左边（从驱动端看） Connection box on LHS（view from DE)	FS250 ~ 355
–	R10	接线盒直接旋转 90°，进线口朝向驱动端 Rotation of the connection box through 90°, entry from DE	FS250 ~ 355
–	R11	接线盒直接旋转 90°，进线口朝向非驱动端 Rotation of the connection box through 90°, entry from NDE	FS250 ~ 355
–	R12	接线盒直接旋转 180° Rotation of the connection box through 180°	FS250 ~ 355
–	H08	接线盒在非驱动端 Connection box on NDE	FS250 ~ 355
–	L97	辅助接线盒 Additional connection box	FS250 ~ 355
轴承 Bearings			
–	L80	SKF 轴承 SKF Bearing	FS250 ~ 355
–	L22 [3]	增强悬臂力轴承设计 Bearing design for increased cantilever forces	FS250 ~ 355
–	L23 [4]	再润滑装置 Regreasing device	FS250
–	Q72	轴承带 2 个单支双线制 PT100 测温元件，需用 4 个辅助接线端子 Installation of 2 single 2 wires PT100 resistance thermometers for bearings, need 4 terminals	FS250 ~ 355
–	L27 [5]	绝缘轴承 Insulated bearing	FS250 ~ 355
–	L51	非驱动端轴承绝缘 Insulation bearing NDE	FS250 ~ 355

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
机械设计和防护等级 Mechanical design and degrees of protection			
–	L72 [6] [7]	第二标准轴伸 Second standard shaft extension	FS250 ~ 355
–	H00 [8]	电动机带防护罩 Motor with protective cover	FS250 ~ 355
–	H03 [9]	冷凝水排放孔 Condensation drainage holes	FS250 ~ 355
–	H04	外部接地 External earthing	FS250 ~ 280
–	H22	IP56 防护等级（非高海况） IP56 degree of protection (non-heavy-sea)	FS250 ~ 355
–	H20	IP65防护等级 IP65degree of protection	FS250 ~ 355
模块化技术 Modular technology			
–	F70 [10]	IC 416 冷却方式（非自冷），电动机带独立驱动风扇 Mounting of separately driven fan	FS250 ~ 355
–	F90 [11]	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)	FS250 ~ 355
–	F76	金属风扇 Metal Fan	FS250 ~ 355
–	X05	预留安装 LL861900220 编码器位置 Prepared for of LL861900220 encoder	FS250 ~ 355
–	G04	安装编码器 LL861900200 Mounting of LL861900220 rotary pulse encoder	FS250 ~ 355
–	X50 [12]	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	FS250 ~ 355
–	W74 [13]	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	FS250 ~ 355
铭牌和测试证书 Rating plate and test certificates			
–	B02	出厂检验报告 Acceptance test certificate 3.1 in accordance with EN 10204	FS250 ~ 355

电动机订货号 Motor order code	选件号 Option Code [1]	描述 Description	应用范围 Application Scope
喷漆 Paint finish			
–	S01	不喷漆，只带底漆 Unpainted, only primed	FS250 ~ 355
–	S80	标准喷漆，颜色为 RAL 7032 Standard finish in RAL 7032	FS250 ~ 355
–	S81	标准喷漆，颜色为 RAL 9006 Standard finish in RAL 9006	FS250 ~ 355
–	W88 [14]	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	FS250 ~ 355
环境温度 Coolant temperature			
–	D03	用于环境温度 -40 °C ~ +40 °C 下使用的电机 Coolant temperature -40 °C to +40 °C	FS250 ~ 355

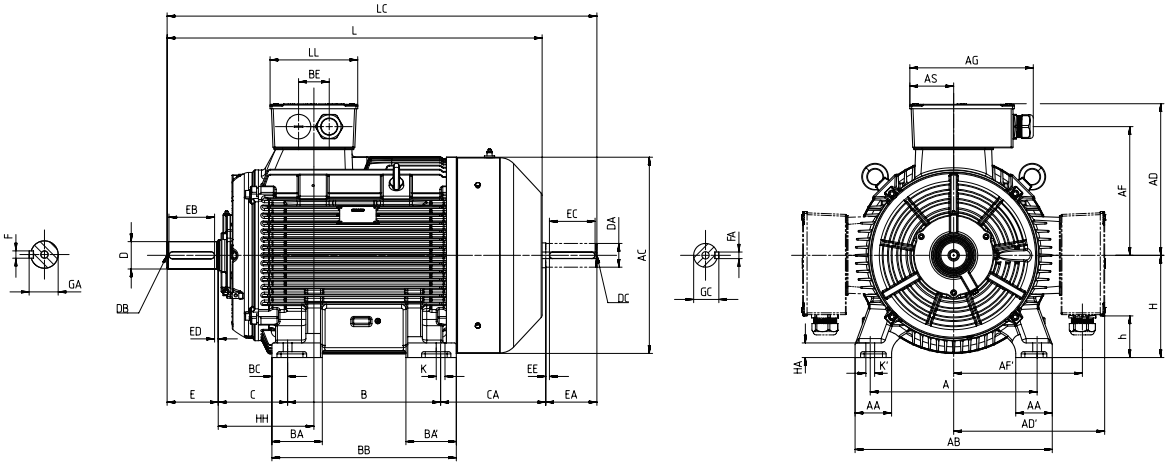
[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号；
[2] 无需附加费用；
[3] 对于立式安装的 FS250 ~ FS355 电动机，需要特殊咨询西门子；
[4] 对于 FS280，FS315 和 FS355，加排油装置是标配；
[5] 只有当 FS355 或 FS315L（4 极）立式安装，后端是角接触轴承时，绝缘轴承放置在驱动端；其他情况均在非驱动端；
[6] 带防雨罩或独立驱动风扇的电动机不能选此选件；
[7] 非驱动端上的第二轴尺寸与驱动端轴伸是一致的；
[8] 仅适用于 IM V5、IM V1、IMV15 以及 IM V18 安装结构型式。无法与选件号 L72 并用；
[9] 适用于水平安装电机；对于立式安装的电机，请向西门子咨询。电动机安装排水孔时，须在购买电动机时注明其具体安装方式；
[10] 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；
[11] 无风扇和风罩时，电动机的长度将减小 ΔI。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；
[12] 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，请咨询西门子热线；
[13] SINAMICS 变频器可以直接与 Omron 编码器（E6B2-CWZ1X-1024）联结；
[14] 可用于可用于室内、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。

[1] Order No. supplement Z with option code when ordering;
[2] Without additional charge;
[3] For vertical mounting of FS250~FS355 motor, please specially consult with Siemens;
[4] FS280, FS315 and FS355 motor with the regrease device as standard;
[5] Only for FS355 with vertical mounting, insulated bearing located at DE.Otherwise insulated bearing located at NDE;
[6] Not possible in combination with canopy or separately driven fan (Order code: F70);
[7] Second standard shaft extension on NDE has allowed output from the next smaller frame size;
[8] Only applicable for the construction type IM V5, IM V1, IM V15 and IM V18. Not possible in combination with Option code L72;
[9] Applicable to motor of horizontal mounting. If vertical mounting motor required to be with condensation drainage holes, please inquiry Siemens specially. If condensation drainage holes are required, it is necessary to order the motors in their respective type of construction;
[10] 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;
[11] Without fan and fan cover, the length of the motor is decrease by ΔI. 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;
[12] When SINAMICS inverter is connected with Omron encoder (E6B2-CWZ6C-1024), additional configuration on inverter is needed. For detailed information, please contact with Siemens hotline;
[13] Omron encoder (E6B2-CWZ1X-1024) can be directly connected with SINAMICS inverter;
[14] Recommended for indoor or outdoor installations exposed to direct weather conditions. Industrial environment with moderate SO2, inshore maritime climate but not offshore.

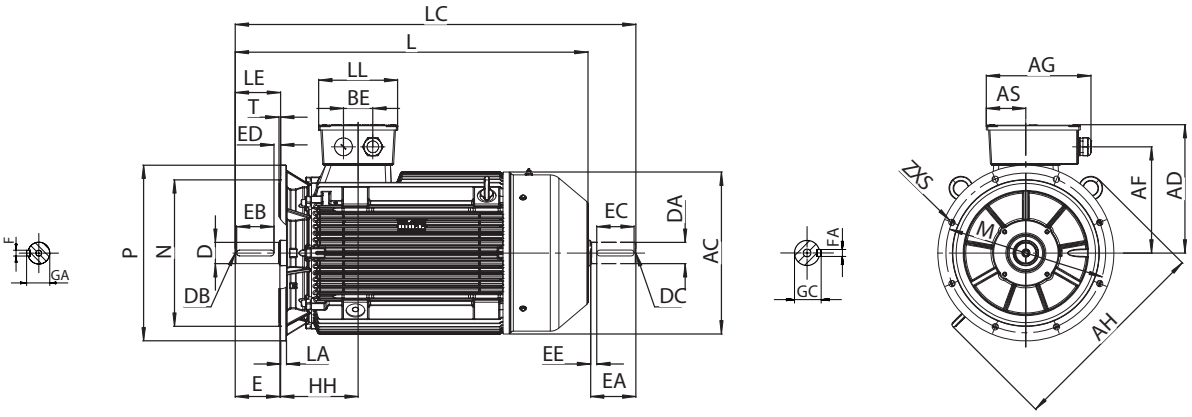
外形尺寸 Dimension drawings

1LE8005 系列电机
机座号从 250M ~ 280M Frame sizes 250M to 280M

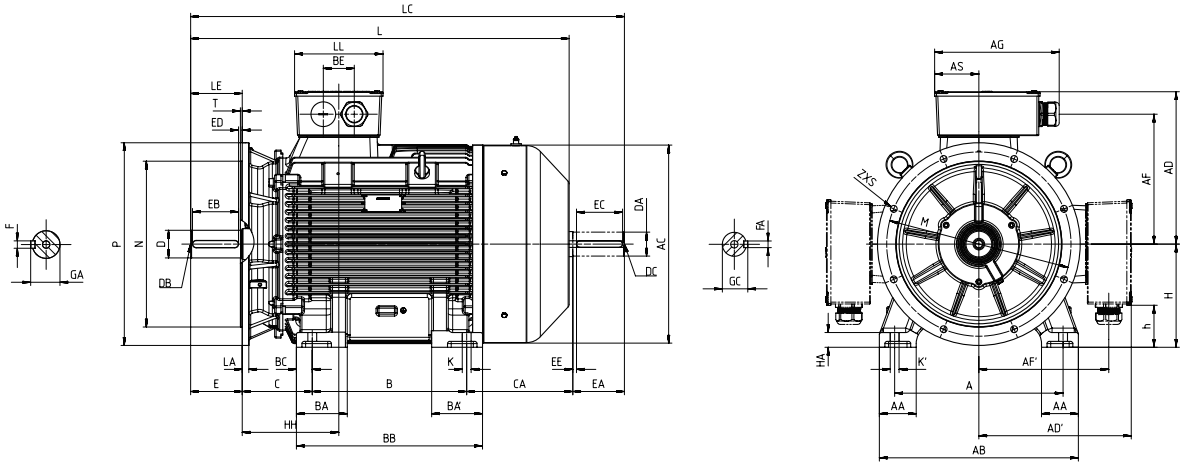
IM B3 安装结构方式 Type of construction IM B3



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



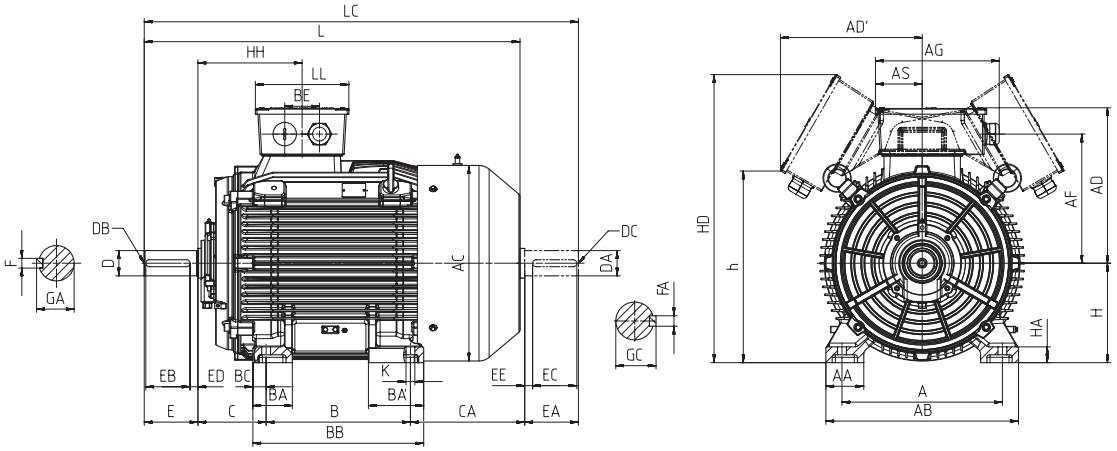
IM B35 安装结构方式 Type of construction IM B35



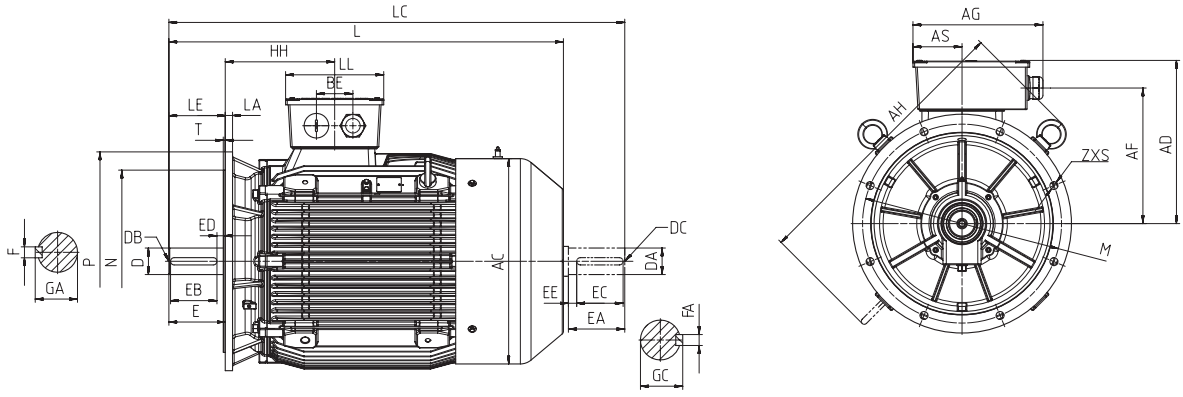
1LE8005 系列电机

机座号从 315S ~ 355L Frame sizes 315S to 355L

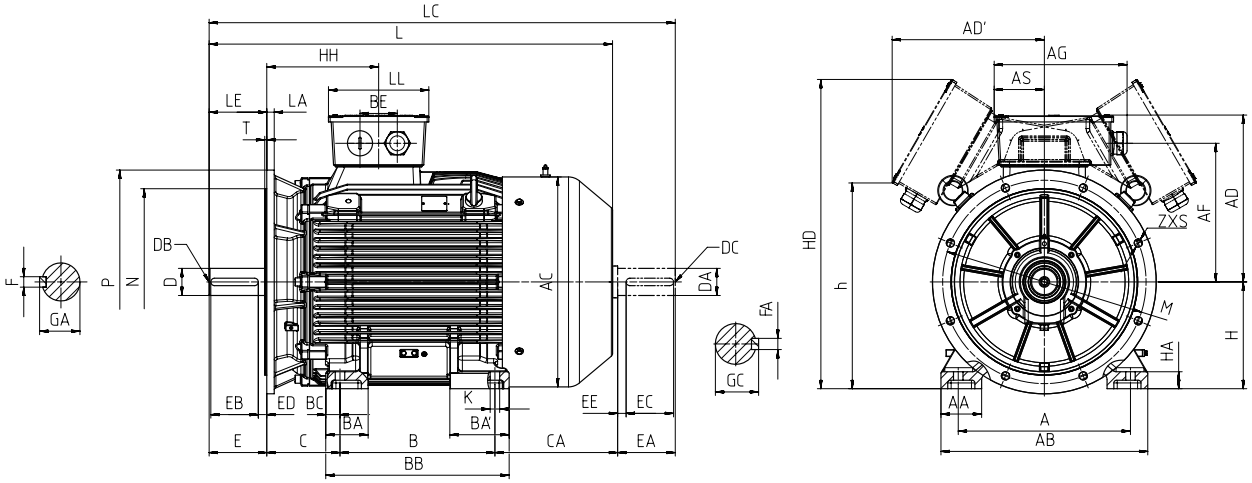
IM B3 安装结构方式 Type of construction IM B3



IM B5/IMV1 安装结构方式 Type of construction IM B5/IMV1



IM B35 安装方式 Type of construction IM B35



外形尺寸 Dimension drawings

机座号 Frame size	类型 Type 1LE8005-	极数 poles	尺寸图依据 IEC 标准 Dimension designation according to IEC standards																	
			A	AA	AB	AC[1]	AD	AD'	AF	AG	AH	AS	B[2]	BA	BA'	BB	BC	BE	C	CA
250M	2C □ 2	2	406	100	490	490	400	400	329.5	338	685	120	349	111	111	409	30	84	168/183[3]	315
		4,6	406	100	490	490	400	400	329.5	338	685	120	349	111	111	409	30	84	168/183[3]	315
280S	2D □ 0	2	457	100	540	557	410	410	341.5	338	700	120	368	114	165	479	30	84	190/197[3]	327
		4,6	457	100	540	557	410	410	341.5	338	700	120	368	114	165	479	30	84	190/197[3]	327
280M	2D □ 2	2	457	100	540	557	410	410	341.5	338	700	120	419	114	165	479	30	84	190/146[3]	276
		4	457	100	540	557	410	410	341.5	338	700	120	419	114	114	479	30	84	190/201[3]	366
		6	457	100	540	557	410	410	341.5	338	700	120	419	114	165	479	30	84	190/146[3]	276
315S	3A □ 0	2	508	120	610	640	495	455	409	392	860	148	406/457	125	175	541	42	110	216/235[3]	413
		4	508	120	610	640	495	455	409	392	860	148	406/457	125	175	541	42	110	216/380[3]	456
		6	508	120	610	640	495	455	409	392	860	148	406/457	125	175	541	42	110	216/235[3]	413
315M	3A □ 2	2	508	120	610	640	495	455	409	392	860	148	406/457	125	175	541	42	110	216/184[3]	362
		4	508	120	610	640	495	455	409	392	860	148	406/457	125	175	541	42	110	216/329[3]	456
		6	508	120	610	640	495	455	409	392	860	148	406/457	125	175	541	42	110	216/184[3]	362
315L	3AA5	2	508	120	610	640	495	455	409	392	860	148	508	125	125	592	42	110	216/183[3]	361
	3AA6 / 3AA7	2	508	120	610	640	495	455	409	392	860	148	508	125	125	592	42	110	216/278[3]	456
	3AB5 / 3AB6 / 3AB7	4	508	120	610	622	570	430	488	423	898	199	508	177	302	770	70	140	216/468[3]	494
	3AC5	6	508	120	610	640	495	455	409	392	860	148	508	125	125	592	42	110	216/183[3]	361
	3AC6	6	508	120	610	640	495	455	409	392	860	148	508	125	125	592	42	110	216/278[3]	456
355M	3BA2 / 3BA3	2	610	120	730	710	650	535	542	464	935	174	560/630	153	207	750	68	130	254/258[3]	566
	3B □ 2 / 3B □ 3	4,6	610	120	730	710	640	535	530	464	975	174	560	153	153	696	68	130	254/318[3]	506
	3BC4	6	610	120	730	710	640	535	530	464	975	174	560	153	153	696	68	130	254/328[3]	506
355 L	3B □ 5 / 3B □ 6	2	610	120	730	710	640	535	530	464	975	174	630	153	153	750	68	130	254/328[3]	516
		4,6	610	120	730	710	640	535	530	464	975	174	630	153	153	750	68	130	254/328[3]	516

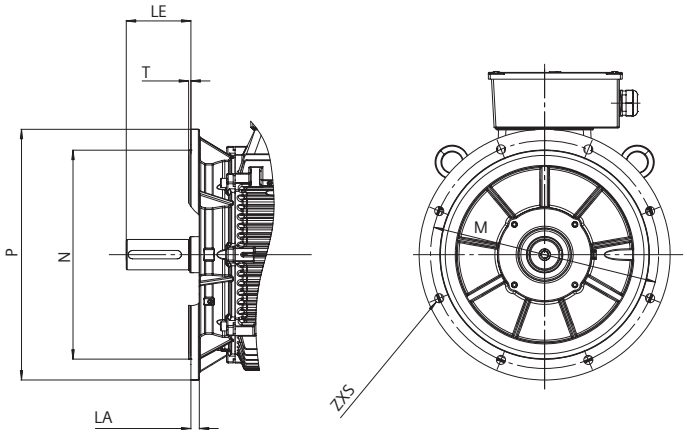
[1] 包含螺栓头的尺寸 Measured across the bolt heads
[2] 该尺寸为 DIN EN 50347 标准所列机座号对应尺寸 This dimension is assigned in DIN EN 50347 to the frame size listed
[3] 仅适用于配置 H08 选件的电机 Only for the motor configured with H08 option

	尺寸图依据 IEC 标准 Dimension designation according to IEC standards									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)						
	H	h	HA	HD	HH	K	L	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
	250	84	40	650	248	ø24	965	1112	240	ø60	M20x42	140	125	7.5	18	64	ø60	M20x42	140	125	7.5	18	64
	250	84	40	650	248	ø24	965	1112	240	ø65	M20x42	140	125	7.5	18	69	ø65	M20x42	140	125	7.5	18	69
	280	114	40	690	264	ø24	1020	1165	240	ø65	M20x42	140	125	7.5	18	69	ø65	M20x42	140	125	7.5	18	69
	280	114	40	690	264	ø24	1020	1165	240	ø75	M20x42	140	125	7.5	20	79.5	ø75	M20x42	140	125	7.5	20	79.5
	280	114	40	690	264	ø24	1020	1165	240	ø65	M20x42	140	125	7.5	18	69	ø65	M20x42	140	125	7.5	18	69
	280	114	40	690	264	ø24	1110	1255	240	ø75	M20x42	140	125	7.5	20	79.5	ø75	M20x42	140	125	7.5	20	79.5
	280	114	40	690	264	ø24	1020	1165	240	ø75	M20x42	140	125	7.5	20	79.5	ø75	M20x42	140	125	7.5	20	79.5
	315	607	50	915	330	ø28	1165	1315	296	ø65	M20 × 42	140	125	10	18	69	ø65	M20 × 42	140	125	10	18	69
	315	607	50	915	330	ø28	1340	1520	296	ø80	M20 × 42	170	140	25	22	85	ø80	M20 × 42	170	140	25	22	85
	315	607	50	915	330	ø28	1195	1375	296	ø80	M20 × 42	170	140	25	22	85	ø80	M20 × 42	170	140	25	22	85
	315	607	50	915	330	ø28	1165	1315	296	ø65	M20 × 42	140	125	10	18	69	ø65	M20 × 42	140	125	10	18	69
	315	607	50	915	330	ø28	1340	1520	296	ø80	M20 × 42	170	140	25	22	85	ø80	M20 × 42	170	140	25	22	85
	315	607	50	915	330	ø28	1195	1375	296	ø80	M20 × 42	170	140	25	22	85	ø80	M20 × 42	170	140	25	22	85
	315	607	50	915	330	ø28	1215	1365	296	ø65	M20 × 42	140	125	10	18	69	ø65	M20 × 42	140	125	10	18	69
	315	607	50	915	330	ø28	1310	1460	296	ø65	M20 × 42	140	125	10	18	69	ø65	M20 × 42	140	125	10	18	69
	315	675	50	915	382	ø28	1505	1680	296	ø80	M20 × 42	170	140	25	22	85	ø80	M20 × 42	170	140	25	22	85
	315	607	50	915	330	ø28	1245	1425	296	ø80	M20 × 42	170	140	25	22	85	ø80	M20 × 42	170	140	25	22	85
	315	607	50	915	330	ø28	1340	1520	296	ø80	M20 × 42	170	140	25	22	85	ø80	M20 × 42	170	140	25	22	85
	355	758	53	1107	281	ø28	1500	1660	348	ø75	M20 × 42	140	125	10	20	79.5	ø75	M20 × 42	140	125	10	20	79.5
	355	746	53	1095	322	ø28	1470	1660	348	ø95	M24 × 50	170	140	25	25	100	ø95	M24 × 50	170	140	25	25	100
	355	746	53	1095	322	ø28	1470	1660	348	ø95	M24 × 50	170	140	25	25	100	ø95	M24 × 50	170	140	25	25	100
	355	746	53	1095	322	ø28	1520	1680	348	ø75	M20 × 42	140	125	10	20	79.5	ø75	M20 × 42	140	125	10	20	79.5
	355	746	53	1095	322	ø28	1550	1740	348	ø95	M24 × 50	170	140	25	25	100	ø95	M24 × 50	170	140	25	25	100

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
250	IM B5, IM B35, IM V1, IM V3	FF 500	18	140	500	450	550	18.5	5	8
280	IM B5, IM B35, IM V1, IM V3	FF 500	18	140	500	450	550	18.5	5	8
315	IM B5, IM B35, IM V1, IM V3	FF 600	22	140/170 [3]	600	550	660	24	6	8
355	IM B35, IM V1	FF 740	22	140/170 [3]	740	680	800	24	6	8

[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；

[3] 适用于 4 极及 6 极电机。

[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;

[3] Applied for 4 poles and 6 poles.

认证 Certificates

环境管理体系认证证书

证书编号：00120E32715R4L/3200

兹证明

西门子电机（中国）有限公司

中国江苏省仪征市众鑫路99号

建立的环境管理体系符合标准：

GB/T 24001-2016 / ISO 14001:2015

通过认证范围如下：

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中国・北京・南四环西路188号9区　100070

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