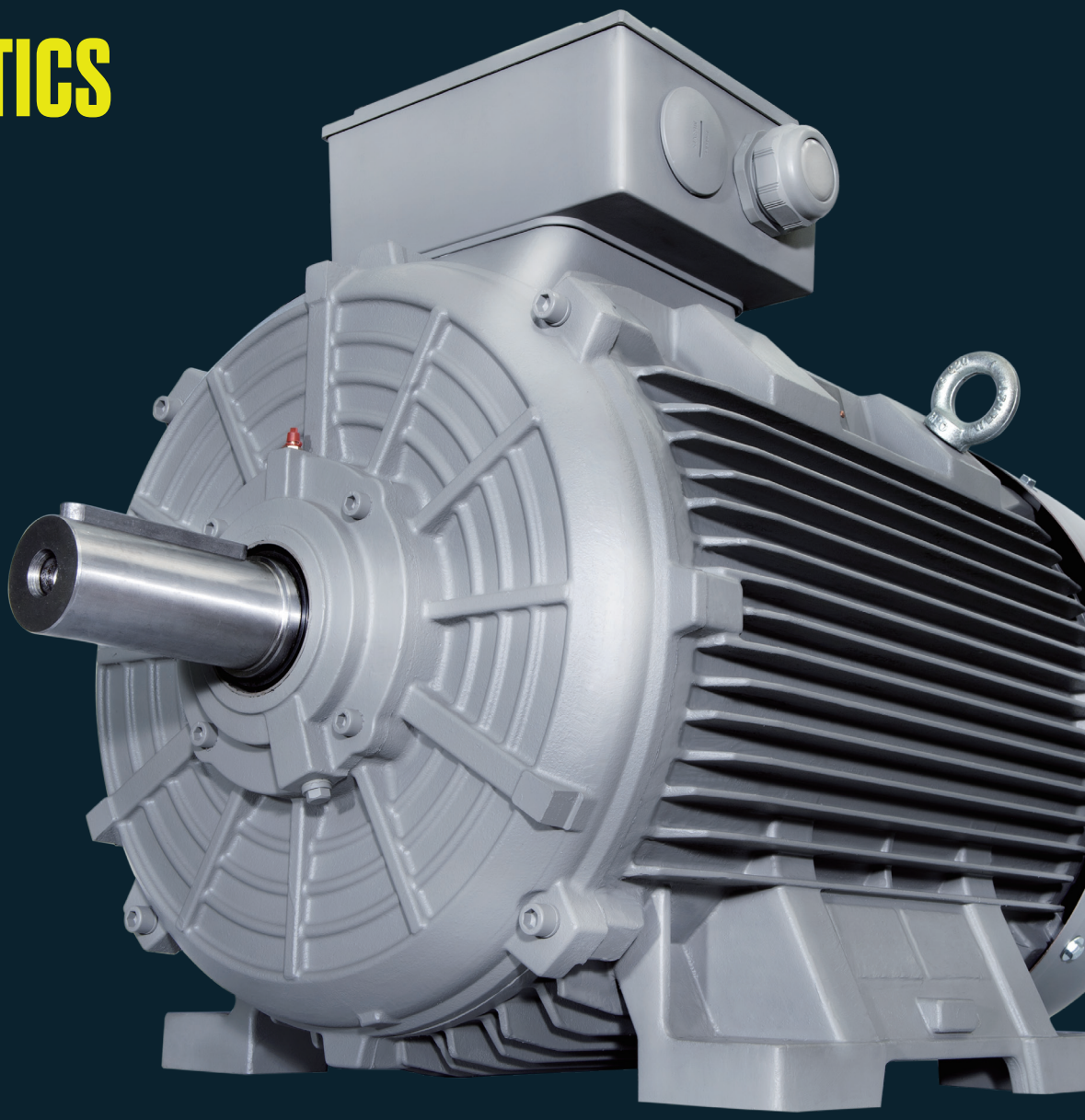
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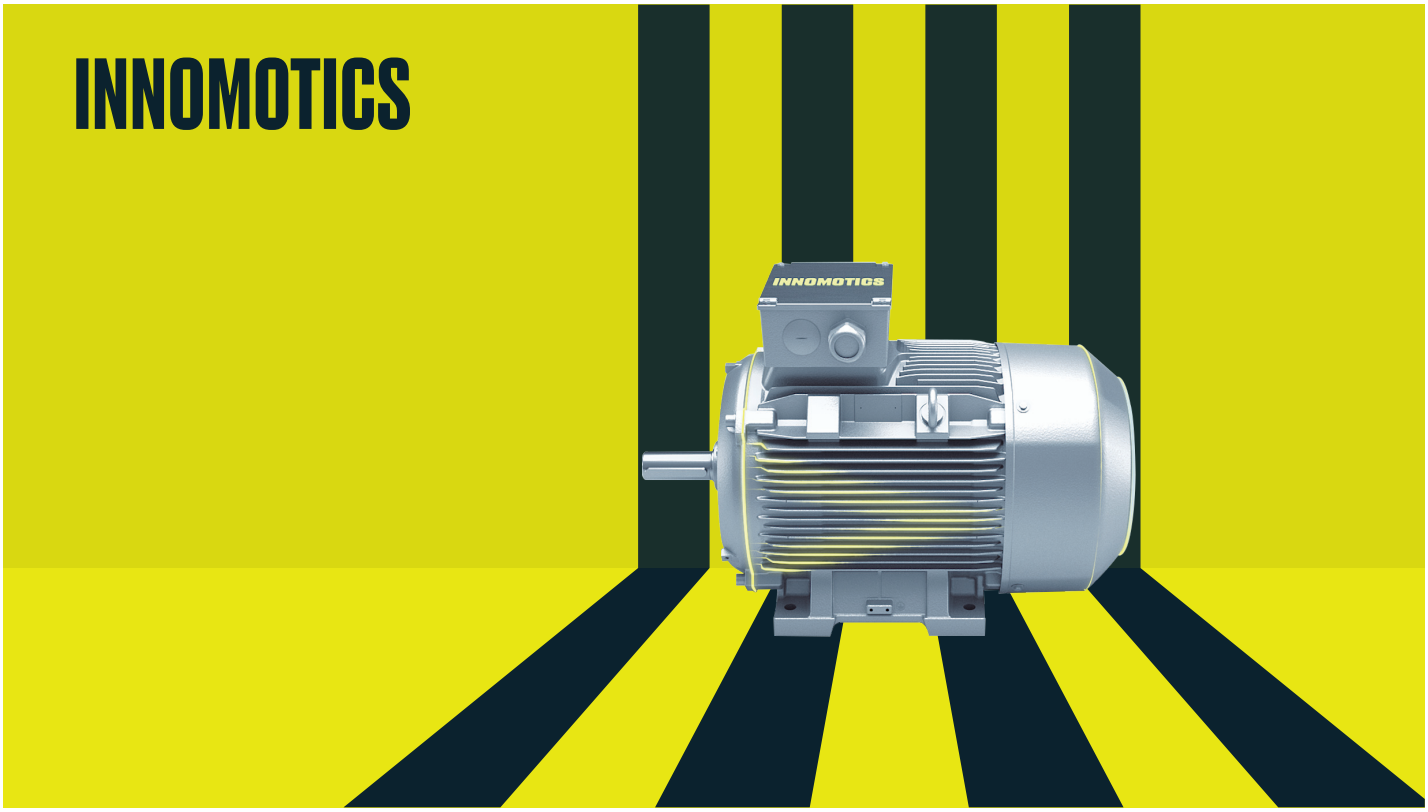
# Innomotics Moves!

## Low Voltage Motors IE5 1LE8005

## 一级能效低压交流异步电动机 1LE8005

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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。

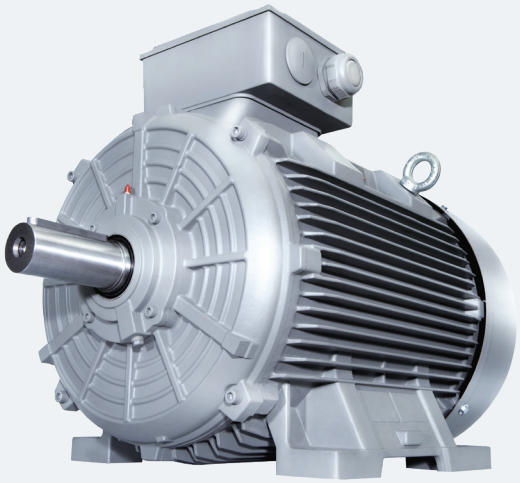
茵梦达在华拥有5家运营公司（包括一家区域总部和4家工厂），13家分公司和6家研发中心，其中在南京设立了“茵梦达低压电机事业部全球研发中心”，员工总数约3500人，是茵梦达在全球主要的研发和制造基地。




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

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

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



# 目录 Contents


总体介绍
Overview ..... 5

机械特性
Mechanical design ..... 10

电气特性
Electrical design ..... 20

变频应用
Converter fed application ..... 24

订货号和型号
Order No. and Motor Type ..... 26

选型技术数据表
Technical data table ..... 28

选件
Options ..... 34

外形尺寸
Dimension drawings ..... 38

认证
Certificates ..... 47

# 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。

## 茵梦达 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：0.55 kW ~315 kW（50 Hz）；
- 0.55 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 FS100 ~ 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 INNOMOTICS 1LE8 series

- Frame material: grey cast iron;
- Standard color: stone grey (RAL 7030);
- Rated power output: 0.55 kW ~ 315 kW at 50Hz;
- Available in 2, 4, 6 pole motor (0.55 kW 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 FS100 ~ 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 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<br>Site altitude above see level | 对应海拔高度的环境温度<br>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<br>Title | IEC 标准<br>IEC standard | 中国国家标准<br>Chinese standard |
|---|---|---|
| 旋转电动机定额和性能<br>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<br>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<br>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<br>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）<br>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<br>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<br>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<br>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<br>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<br>Safety requirements of small and medium size rotating electrical machines | | GB 14711 |
| 电气绝缘 耐热性和表示方法<br>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<br>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<br>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 | | FS >132 | |
|---|---|---|---|---|---|
| | 安装方式 Mounting | 位移 Vibration displacement/ ( μ m) | 速度 Vibration velocity/ (mm/s) | 位移 Vibration displacement/ ( μ m) | 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：

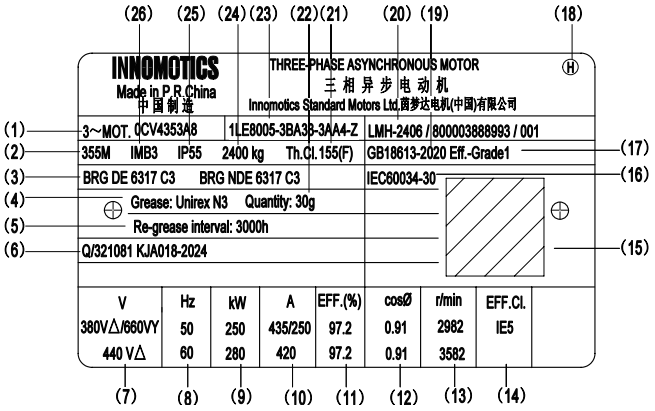
1) 该值为 GB/T 10068-2020 中定义的轴中心高 FS >132 mm 的两极电机，当两倍电网频率占主导时的振动速度限值。

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

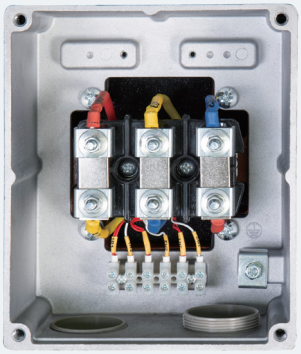
## 接线盒

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) |
|---|---|---|---|---|---|---|
| 80 | 6 | 12 | M4 | 1.5 | 13~18 | M25×1.5+M16×1.5 |
| 90 | 6 | 12 | M4 | 1.5 | 13~18 | M25×1.5+M16×1.5 |
| 100 | 6 | 12 | M4 | 4 | 18~25 | M32×1.5+M32×1.5 |
| 112 | 6 | 12 | M4 | 4 | 18~25 | M32×1.5+M32×1.5 |
| 132 | 6 | 12 | M4 | 6 | 18~25 | M32×1.5+M32×1.5 |
| 160 | 6 | 14 | M5 | 16 | 22~32 | M40×1.5+M40×1.5 |
| 180 | 6 | 14 | M5 | 16 | 22~32 | M40×1.5+M40×1.5 |
| 200 | 6 | 14[1)] | M6 | 25 | 32~38 | M50×1.5+M50×1.5 |
| 225 | 6 | 14[1)] | M8 | 35 | 32~38 | M50×1.5+M50×1.5 |
| 250 | 6 | 14[1)] | M10 | 120 | 37~44 | M63×1.5+M63×1.5 |
| 280 | 6 | 14[1)] | M10 | 120 | 37~44 | M63×1.5+M63×1.5 |
| 315 2P(S/M)/4P(S/M)/6P | 6 | 16[1)] | M12 | 240 | 37~44 | M63×1.5+M63×1.5 |
| 315 2P(L)/4P(L) | 6 | 24[1)] | M12 | 240 | 37~44 | M63×1.5+M63×1.5 |
| 355 | 6 | 24[1)] | M16 | 240 | 44~57 | M72×2+M72×2 |

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.

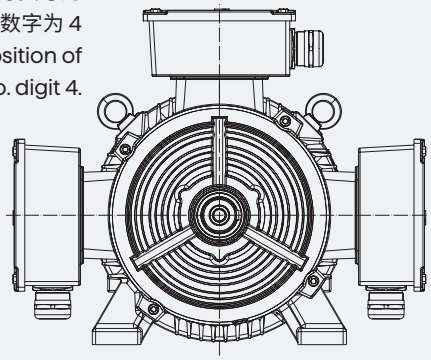
The position of connection box is described by viewed from drive end (DE).

- 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

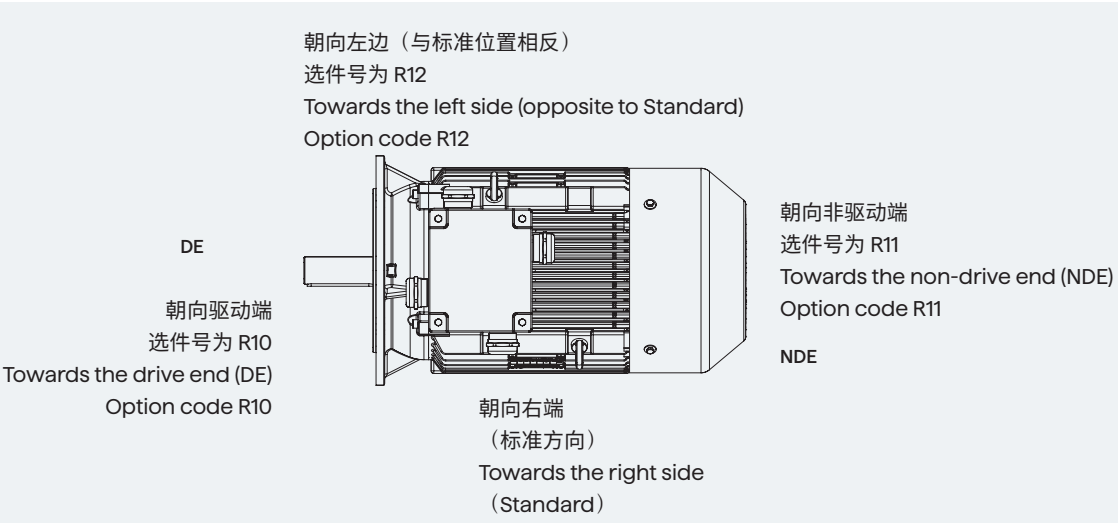
除非另作规定，否则进线孔的标准位置如下图所示。接线盒可以按照图示的位置旋转。

- 朝向驱动端
  接线盒旋转 90°，进线口朝向驱动端，选件号为 R10。
  对于 FS100 ~ 112 的带法兰（IM B5）电动机，只有接线盒在非驱动端（选件号：H08）时，才可以选择进线孔朝向驱动端。
- 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.
  For flange motor (IM B5) from FS100 to FS112, only possible with connection box on NDE (Option code H08).
- 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<br>Construction type | 机座带底脚，端盖无法兰<br>With feet and without flange on the end-shield (DE) | | | | | |
|---|---|---|---|---|---|---|
| 安装型式<br>Mounting type | IM B3<br>FS80 ~ 355 | IM B6<br>FS80 ~ 315 | IM B7<br>FS80 ~ 315 | IM B8<br>FS80 ~ 315 | IM V5 [1) 3)]<br>FS80 ~ 315 | IM V6 [2)3)]<br>FS80 ~ 315 |
| 示意图<br>Diagram |  |  |  |  |  |  |
| 电动机订货号第 14 位号上对应的字母<br>Letter, position 14th of Motor code | A | T | U | V | C | D |

| 结构型式<br>Construction type | 机座不带底脚，端盖有法兰<br>Without feet and with flange on the end-shield (DE) | | | 机座带底脚，端盖有法兰<br>With feet and with flange on the end-shield (DE) | | |
|---|---|---|---|---|---|---|
| 安装型式<br>Mounting type | IM B5<br>FS80 ~ 315 | IM V1 [1)3)]<br>FS80 ~ 355 | IM V3 [2)3)]<br>FS80 ~ 315 | IM B35<br>FS80 ~ 355 | IM V15 [1)3)]<br>FS80 ~ 315 | IM V35 [2)3)]<br>FS80 ~ 315 |
| 示意图<br>Diagram |  |  |  |  |  |  |
| 电动机订货号第 14 位号上对应的字母<br>Letter, position 14th of Motor code | F | G | H | J | W | Y |

| 结构型式<br>Construction type | 机座不带底脚，端盖有标准小法兰<br>Without feet and with C-flange on the end-shield (DE) | | | 机座带底脚，端盖有标准小法兰<br>With feet and with C-flange on the end-shield (DE) |
|---|---|---|---|---|
| 安装型式<br>Mounting type | IM B14<br>FS80 ~ 160 | IM V18 [1)3)]<br>FS80 ~ 160 | IM V19 [2)3)]<br>FS80 ~ 160 | IM B34<br>FS80 ~ 160 |
| 示意图<br>Diagram |  |  |  |  |
| 电动机订货号第 14 位号上对应的字母<br>Letter, position 14th of Motor code | K | M | L | N |

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

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

## 冷却与通风

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

对于某些应用，可以考虑配置独立驱动风扇，如，

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

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

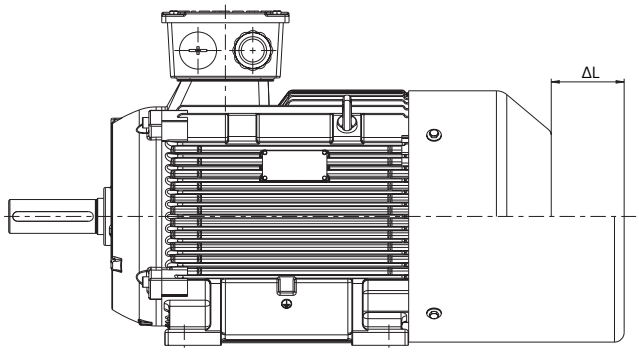
## Cooling and ventilation

The 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.




**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) |
|---|---|---|---|---|---|---|
| 80 | 220▲/380Y | 50 | 30 | 0.14/0.08 | 2800 | 60 |
| 90 | 220▲/380Y | 50 | 30 | 0.14/0.08 | 2800 | 70 |
| 100 | 220▲/380Y | 50 | 52 | 0.21/0.12 | 2800 | 65 |
| 112 | 220▲/380Y | 50 | 52 | 0.21/0.12 | 2800 | 75 |
| 132 | 220▲/380Y | 50 | 45 | 0.35/0.2 | 1400 | 85 |
| 160 | 220▲/380Y | 50 | 45 | 0.35/0.2 | 1400 | 55 |
| 180 | 220▲/380Y | 50 | 120 | 1.04/0.6 | 1400 | 65 |
| 200 | 220▲/380Y | 50 | 120 | 1.04/0.6 | 1400 | 70 |
| 225 | 220▲/380Y | 50 | 120 | 1.04/0.6 | 1400 | 75 |
| 250 | 220▲/380Y | 50 | 230 | 1.73/1.0 | 1400 | 75 |
| 280 | 220▲/380Y | 50 | 230 | 1.73/1.0 | 1400 | 110 |
| 315(2P(S/M) | 220▲/380Y | 50 | 1100 | 4.33/2.5 | 1350 | 145 |
| 315(4P(S/M)/6P) | 220▲/380Y | 50 | 370 | 1.91/1.1 | 1250 | 95 |
| 315(2P(L)/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<br>Motor frame size | F90 电机减少长度 ΔI（mm）<br>Length decrease of motor ΔI | 对应电动机机座号<br>Motor frame size | F90 电机减少长度 ΔI（mm）<br>Length decrease of motor ΔI |
|---|---|---|---|
| 80 | 50 | 200 | 110 |
| 90 | 55 | 225 | 115 |
| 100 | 75 | 250 | 130 |
| 112 | 70 | 280 | 130 |
| 132 | 70 | 315(2P(S/M)/4P(S/M)/6P) | 175 |
| 160 | 85 | 315(2P(L)/4P(L)) | 145 |
| 180 | 105 | 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。

FS80 ~ 160 范围的 1LE8 电动机驱动端与非驱动端轴承浮动；FS180 ~ 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 17 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）。

FS80 ~ 250 范围电动机标配不带再润滑装置；FS280 ~ 355 范围的电动机标配可再润滑轴承，并标配再润滑装置。如果需要，FS100 ~ 250 范围的电动机也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 FS80 ~ 160, the floating bearings are assembled; for FS180 ~ 355, floating bearing at DE, and fixed bearing at NDE assembled.

The standard bearing can endure a maximum cantilever force, referred to page 17 - Permissible cantilever forces. If higher cantilever force on the shaft required, the increased cantilever bearing design (Option code: L22) should be considered.

As standard, FS80 ~ 250 motors are not with regreasing device, but FS280 ~ 355 motors with regreasable bearing and regreasing device. If necessary, FS100 ~ 250 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 |
| 80 | 2,4,6 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | - | - | - | - | - |
| 90 | 2,4,6 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | - | - | - | - | - |
| 100 | 2,4,6 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 C3 | 6206 C3 |
| 112 | 2,4,6 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 C3 | 6206 C3 |
| 132 | 2,4,6 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 C3 | 6208 C3 |
| 160 | 2,4,6 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 C3 | 6209 C3 |
| 180 | 2,4,6 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | NU210 | 6210 Z C3 | 6210 Z C3 | 6210 C3 | 6210 C3 |
| 200 | 2,4,6 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | NU212 | 6212 Z C3 | 6212 Z C3 | 6212 C3 | 6212 C3 |
| 225 | 2,4,6 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | NU213 | 6213 Z C3 | 6213 Z C3 | 6213 C3 | 6213 C3 |
| 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(S/M) | 6316 C3 | 6316 C3 | 6316 C3 | NU316 | 6316 C3 | 6316 C3 | □ | □ |
| | 2(L) | 6316 C3 | 6316 C3 | 7316 B | NU316 | 6316 C3 | O.R. | □ | □ |
| | 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 | NU322 | 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**

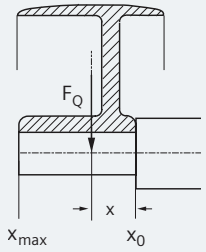
For permanent lubrication, the bearing grease lifetime is matched to the bearing lifetime. This can, however, only be achieved if the motor is operated in accordance with the catalog specifications.

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<br>Frame size | 极数<br>Poles | 润滑脂寿命<br>Grease lifetime up to CT 40 °C |
|---|---|---|
| 持久润滑型轴承的润滑脂<br>Grease for permanent lubrication bearing | | |
| 80 ~ 250 | 2,4,6 | 20000h |
| 可再润滑型轴承的润滑脂<br>Grease for regreasable bearing | | |
| 100 ~ 160 | 2,4,6 | 8000h |
| 180 ~ 250 | 2 | 4000h |
| | 4,6 | 8000h |
| 280 ~ 315 | 2 | 4000h |
| | 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<br>Admissible cantilever forces for standard version | | | | 增强悬臂力的轴向设计（编号 L22）<br>Bearing design for increased cantilever forces Order code L22 | |
|---|---|---|---|---|---|
| 机座号<br>Frame size | 极数<br>Number of poles | 悬臂力范围 [1]<br>Admissible cantilever force [1] | | 悬臂力范围 [1]<br>Admissible cantilever force [1] | |
| | | for $x_0$<br>N | for $x_{max}$<br>N | for $X_0$ | for $X_{max}$ |
| 80 | 2 | 630 | 540 | - | - |
| | 4 | 710 | 620 | - | - |
| | 6 | 850 | 730 | - | - |
| 90 | 2 | 630 | 550 | - | - |
| | 4 | 780 | 670 | - | - |
| | 6 | 890 | 770 | - | - |
| 100 | 2 | 1000 | 850 | 1520 | 1300 |
| | 4 | 1040 | 890 | 1740 | 1480 |
| | 6 | 1300 | 1100 | 2050 | 1750 |
| 112 | 2 | 980 | 840 | 1500 | 1270 |
| | 4 | 1150 | 970 | 1780 | 1510 |
| | 6 | 1300 | 1100 | 2060 | 1740 |
| 132 | 2 | 1500 | 1205 | 2190 | 1750 |
| | 4 | 1780 | 1460 | 2650 | 2170 |
| | 6 | 1955 | 1605 | 2960 | 2420 |
| 160 | 2 | 1670 | 1345 | 2880 | 2325 |
| | 4 | 1930 | 1560 | 3470 | 2790 |
| | 6 | 2070 | 1670 | 3810 | 3060 |
| 180 | 2 | 1665 | 1365 | 5100 | 3750 |
| | 4 | 2000 | 1640 | 6100 | 3700 |
| | 6 | 2280 | 1870 | 6950 | 3710 |
| 200 | 2 | 2580 | 2160 | 7700 | 5800 |
| | 4 | 3200 | 2680 | 9470 | 5780 |
| | 6 | 3530 | 2960 | 10500 | 5750 |
| 225 | 2 | 2800 | 2370 | 8800 | 6050 |
| | 4 | 3400 | 2780 | 10600 | 7350 |
| | 6 | 3780 | 3030 | 11800 | 8400 |
| 250 | 2 | 2970 | 2440 | 9800 | 5700 |
| | 4 | 3640 | 3000 | 11000 | 6500 |
| | 6 | 4300 | 3530 | 12500 | 7000 |
| 280 | 2 | 5810 | 4840 | 19900 | 8600 |
| | 4 | 7870 | 6670 | 25700 | 9800 |
| | 6 | 9240 | 7670 | 28800 | 9800 |
| 315 | 2 | 5850 | 5070 | 21350 | 8900 |
| | 4 | 8930 | 7630 | 34240 | 13200 |
| | 6 | 10600 | 8930 | 38600 | 13100 |
| 355 | 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<br>60034 - 1 | 类别 Category<br>A | 类别 Category<br>B |
|---|---|---|
| 电压偏差<br>Voltage deviation | ±5 % | ±10 % |
| 频率偏差<br>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<br>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，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
  - 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, 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.

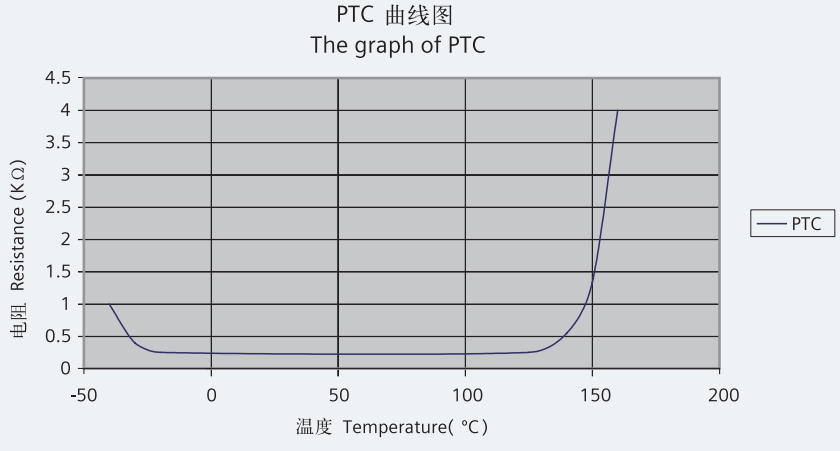
The order variants for motor protection are coded with letters in the 15th position of the Motor Order No., or ordered with Option code. Some protection method about winding protection and bearing protection are shown in the following.

#### 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.



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

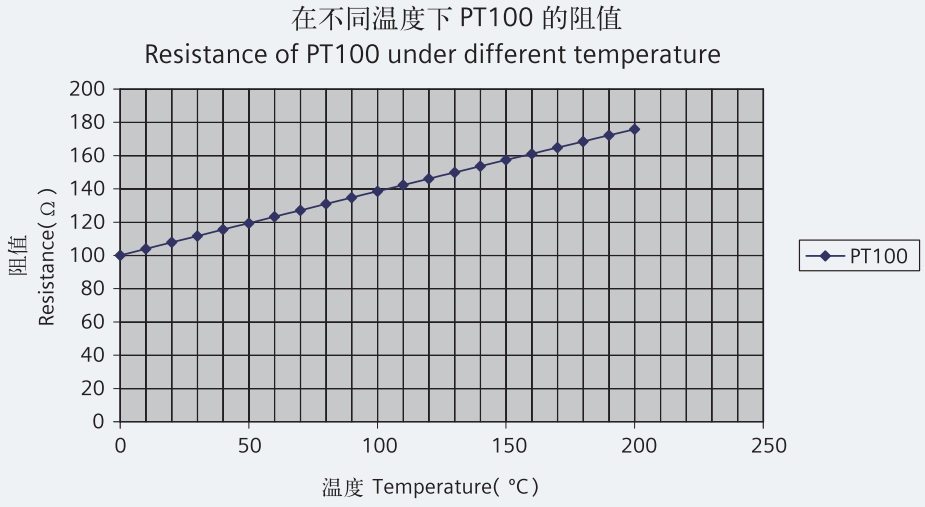
- Motor winding is protected with PTC thermistors with 3 embedded temperature sensors for tripping. Connection be done through 2 auxiliary terminals in the connection box. 15th position of Motor Order No. letter B.
- Motor winding is protected with two sets of three temperature sensors, one set is for 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<br>Frame size | 功率<br>Power（W） | 电压<br>Voltage（V） |
|---|---|---|
| 80 | 20 | 220V |
| 90 | 20 | 220V |
| 100 | 30 | 220V |
| 112 | 30 | 220V |
| 132 | 40 | 220V |
| 160 | 40 | 220V |
| 180 | 50 | 220V |
| 200 | 50 | 220V |
| 225 | 60 | 220V |
| 250 ~ 280 | 60 | 220V |
| 315(2P(S/M)/4P(S/M)/6P) | 80 | 220V |
| 315(2P(L)/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。请向茵梦达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，FS80-355 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.

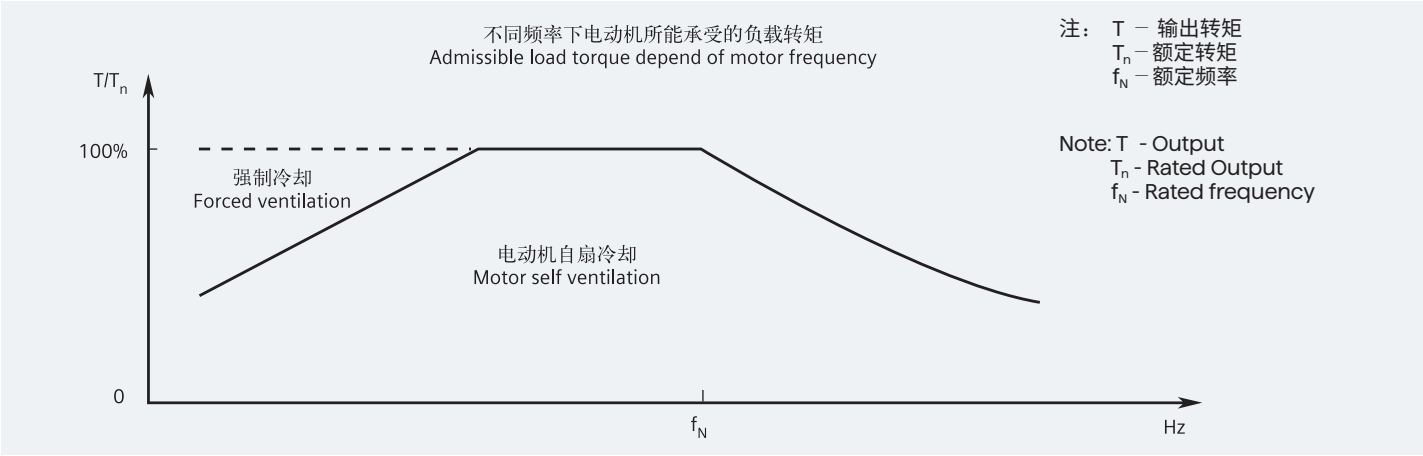
In application where the motor is driven by a converter, the degree of electrical interference depends on the type of converter used (type, number of IGBTs, interference suppression measures, and manufacturer), cabling, distance and application requirements.The installation guidelines of the converter 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 INNOMOTICS 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 converter at main voltage up to 480V for FS80-355.

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<br>Frame Size | 2 极<br>2 pole | | 4 极<br>4 pole | | 6 极<br>6 pole | |
|---|---|---|---|---|---|---|
| | 最高转速<br>Max. rpm | 最大频率<br>fmax | 最高转速<br>Max. rpm | 最大频率<br>fmax | 最高转速<br>Max. rpm | 最大频率<br>fmax |
| 80 | 5200 | 60 | 3600 | 80 | 2400 | 120 |
| 90 | 5200 | 60 | 3600 | 90 | 2400 | 120 |
| 100 | 5200 | 87 | 3600 | 120 | 2400 | 120 |
| 112 | 5200 | 87 | 3600 | 120 | 2400 | 120 |
| 132 | 4500 | 75 | 3000 | 100 | 2400 | 120 |
| 160 | 4500 | 75 | 3000 | 100 | 2400 | 120 |
| 180 | 4500 | 75 | 3000 | 100 | 2400 | 120 |
| 200 | 4500 | 75 | 3000 | 100 | 2400 | 120 |
| 225 | 3600 | 60 | 3000 | 100 | 2400 | 120 |
| 250 | 3600 | 60 | 3000 | 100 | 2400 | 120 |
| 280 | 3600 | 60 | 3000 | 100 | 2400 | 120 |
| 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；
- 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）。

1LE8电机端子处允许的电压峰 - 峰值为：

- $U_{相间}$：3000V
- $U_{相对地}$：2200V

## Voltage withstand levels

The dielectric stress of the winding insulation is determined by:

- the peak voltage, rise time;
- 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 allowed voltage peak-peak at 1LE8 motor terminals:

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

数值参照 IEC 60034-18-41，GB/T 22720.1 标准。

The values refer to standard IEC 60034-18-41 and GB/T 22720.1.

# 订货号和型号 Order No. and Motor Type

订货号 Order No.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | 10 | 11 | 12 | | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | L | E | 8 | | 0 | 5 | – | | | | | | – | | | | |

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

极数编号 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) 5)] = IM V5 | W[2) 5)] = IM V15 | G[2) 3) 5)] = IM V1 | M[2) 3) 4) 5)] = IM V18 |
| K[2) 3) 4)] = IM B14 | D[2)] = IM V6 | Y[2)] = IM V35 | H[2) 3)] = IM V3 | L[2) 3) 4)] = IM V19 |
| | | | | N[2) 4)] = IM B34 |

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

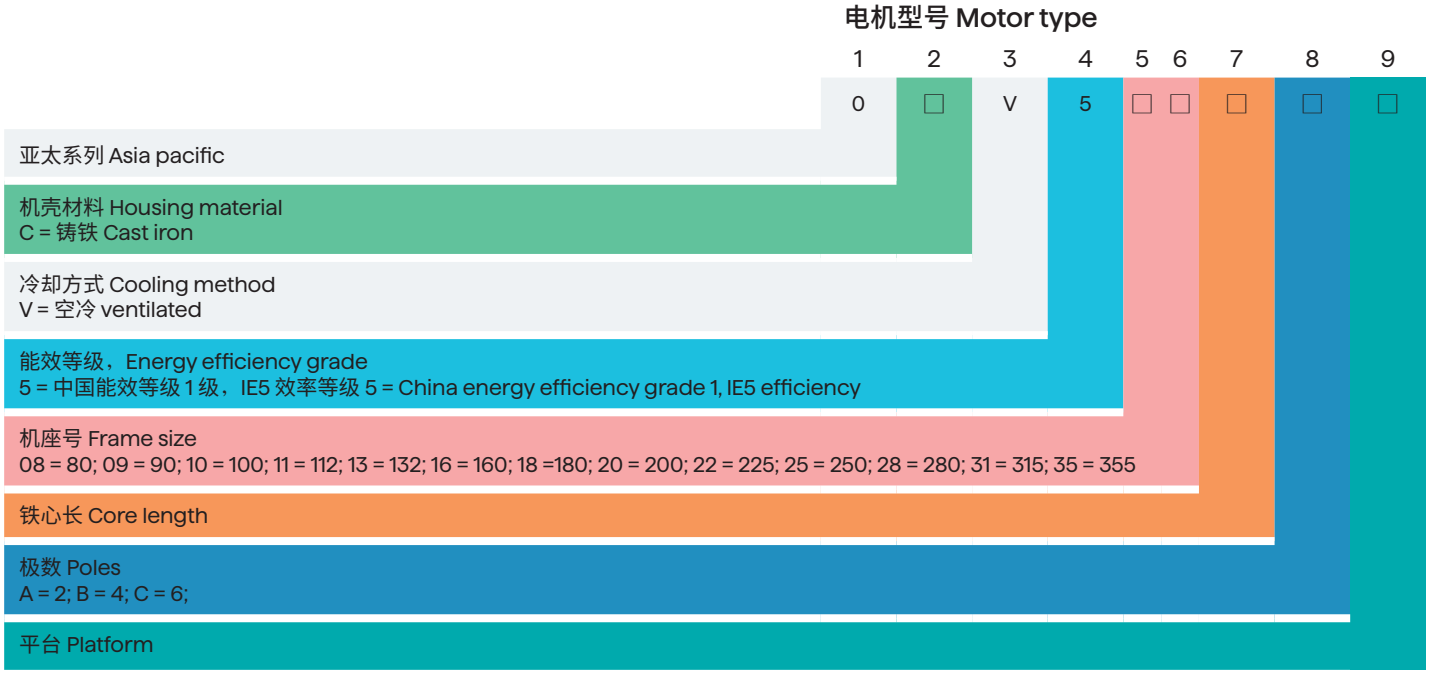
接线盒位置编号（从驱动端看） Code of connection box location (view from drive end)
4 = 置顶 on top；5[6)] = 右侧 on RHS；6[6)] = 左侧 on LHS

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、IM B14、IM V18 和 IM V19 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] 只针对FS80 ~ 160；
[5] 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；
[6] FS80 ~ 132 进线孔的方向朝向非驱动端。

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, IM B14, IM V18 and IM V19 construction and mounting type, the 16th digit of motor order No. must be "4";
[4] Only for FS80 ~ 160;
[5] Without canopy, for protective cover with canopy needed Option code H00;
[6] Cable entry on connection box towards the non-drive FS80 ~ 132.




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 | 额定电流 Rated current |
|---|---|---|---|---|---|---|---|---|---|
| | | | kW | kW | r/m | % | % | | A |
| 3000rpm 2 极 2- pole 220VD/380VY 50HZ | | | | | | | | | |
| 80M | 0CV5082A8 | 1LE8005-0DA22-1□□□ | 0.75 | 0.86 | 2885 | 86.3 | 87 | 0.83 | 1.59 |
| 80M | 0CV5083A8 | 1LE8005-0DA32-1□□□ | 1.1 | 1.30 | 2880 | 87.8 | 88.6 | 0.83 | 2.30 |
| 90S | 0CV5090A8 | 1LE8005-0EA02-1□□□ | 1.5 | 1.75 | 2905 | 88.9 | 90.2 | 0.85 | 3.00 |
| 90L | 0CV5094A8 | 1LE8005-0EA42-1□□□ | 2.2 | 2.55 | 2900 | 90.2 | 91.6 | 0.86 | 4.30 |
| 100L | 0CV5104A8 | 1LE8005-1AA42-1□□□ | 3 | 3.45 | 2930 | 91.1 | 91.9 | 0.87 | 5.8 |
| 3000rpm 2 极 2- pole 380VD/660VY 50HZ | | | | | | | | | |
| 112M | 0CV5112A8 | 1LE8005-1BA23-3□□□ | 4 | 4.55 | 2935 | 91.8 | 92.7 | 0.88 | 7.5 |
| 132S | 0CV5130A8 | 1LE8005-1CA03-3□□□ | 5.5 | 6.3 | 2950 | 92.6 | 93.3 | 0.88 | 10.3 |
| 132S | 0CV5131A8 | 1LE8005-1CA13-3□□□ | 7.5 | 8.6 | 2950 | 93.3 | 94.1 | 0.89 | 13.7 |
| 160M | 0CV5162A8 | 1LE8005-1DA23-3□□□ | 11 | 12.6 | 2955 | 94.0 | 94.5 | 0.89 | 20 |
| 160M | 0CV5163A8 | 1LE8005-1DA33-3□□□ | 15 | 17.3 | 2960 | 94.5 | 95.0 | 0.89 | 27 |
| 160L | 0CV5164A8 | 1LE8005-1DA43-3□□□ | 18.5 | 21.3 | 2960 | 94.9 | 95.4 | 0.89 | 33.5 |
| 180M | 0CV5182A8 | 1LE8005-1EA23-3□□□ | 22 | 24.5 | 2975 | 95.1 | 95.2 | 0.88 | 40 |
| 200L | 0CV5204A8 | 1LE8005-2AA43-3□□□ | 30 | 33.5 | 2975 | 95.5 | 95.6 | 0.88 | 54 |
| 200L | 0CV5205A8 | 1LE8005-2AA53-3□□□ | 37 | 41.5 | 2984 | 95.8 | 95.7 | 0.88 | 67 |
| 225M | 0CV5222A8 | 1LE8005-2BA23-3□□□ | 45 | 51 | 2982 | 96.0 | 96.0 | 0.89 | 80 |
| 250M | 0CV5252A8 | 1LE8005-2CA23-3□□□ | 55 | 62 | 2982 | 96.2 | 96.2 | 0.89 | 98 |
| 280S | 0CV5280A8 | 1LE8005-2DA03-3□□□ | 75 | 84 | 2982 | 96.5 | 96.5 | 0.89 | 133 |
| 280M | 0CV5282A8 | 1LE8005-2DA23-3□□□ | 90 | 101 | 2980 | 96.6 | 96.7 | 0.89 | 159 |
| 315S | 0CV5310A8 | 1LE8005-3AA03-3□□□ | 110 | 123 | 2986 | 96.8 | 96.8 | 0.90 | 192 |
| 315M | 0CV5312A8 | 1LE8005-3AA23-3□□□ | 132 | 148 | 2986 | 96.9 | 97.0 | 0.90 | 230 |
| 315L | 0CV5315A8 | 1LE8005-3AA53-3□□□ | 160 | 180 | 2986 | 97.0 | 97.1 | 0.90 | 280 |
| 315L | 0CV5316A8 | 1LE8005-3AA63-3□□□ | 185 | 207 | 2984 | 97.1 | 97.3 | 0.90 | 320 |
| 315L | 0CV5317A8 | 1LE8005-3AA73-3□□□ | 200 | 224 | 2984 | 97.2 | 97.4 | 0.90 | 345 |
| 355M | 0CV5352A8 | 1LE8005-3BA23-3□□□ | 220 | 246 | 2988 | 97.2 | 97.1 | 0.91 | 380 |
| 355M | 0CV5353A8 | 1LE8005-3BA33-3□□□ | 250 | 280 | 2988 | 97.2 | 97.2 | 0.91 | 430 |
| 355L | 0CV5355A8 | 1LE8005-3BA53-3□□□ | 280 | 314 | 2986 | 97.2 | 97.2 | 0.91 | 480 |
| 355L | 0CV5356A8 | 1LE8005-3BA63-3□□□ | 315 | 353 | 2984 | 97.2 | 97.3 | 0.91 | 540 |

| 机座号 Frame Size | 电动机型号 Motor Type | 订货号 Order No. | 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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 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 220VD/380VY 50HZ | | | | | | | | | |
| 80M | 0CV5082A8 | 1LE8005-0DA22-1□□□ | 2.5 | 8.7 | 4.2 | 4.4 | 0.0014 | 20 | 58/69 |
| 80M | 0CV5083A8 | 1LE8005-0DA32-1□□□ | 3.6 | 8.7 | 4.6 | 4.4 | 0.0016 | 21 | 58/69 |
| 90S | 0CV5090A8 | 1LE8005-0EA02-1□□□ | 4.9 | 9 | 3 | 4 | 0.0035 | 28 | 60/72 |
| 90L | 0CV5094A8 | 1LE8005-0EA42-1□□□ | 7.2 | 9 | 3.4 | 4 | 0.0045 | 33 | 60/72 |
| 100L | 0CV5104A8 | 1LE8005-1AA42-1□□□ | 9.8 | 9.5 | 3.3 | 3.5 | 0.0075 | 44 | 61/73 |
| 3000rpm 2 极 2- pole 380VD/660VY 50HZ | | | | | | | | | |
| 112M | 0CV5112A8 | 1LE8005-1BA23-3□□□ | 13 | 8.5 | 2.4 | 3.2 | 0.012 | 56 | 62/74 |
| 132S | 0CV5130A8 | 1LE8005-1CA03-3□□□ | 17.8 | 9.5 | 2.9 | 4 | 0.023 | 71 | 66/78 |
| 132S | 0CV5131A8 | 1LE8005-1CA13-3□□□ | 24.3 | 9 | 3 | 4 | 0.027 | 79 | 66/78 |
| 160M | 0CV5162A8 | 1LE8005-1DA23-3□□□ | 35.5 | 8.5 | 2.9 | 3.2 | 0.066 | 138 | 66/79 |
| 160M | 0CV5163A8 | 1LE8005-1DA33-3□□□ | 48.4 | 9 | 3.1 | 3.5 | 0.074 | 153 | 66/79 |
| 160L | 0CV5164A8 | 1LE8005-1DA43-3□□□ | 59.7 | 9 | 3.1 | 3.5 | 0.080 | 159 | 66/79 |
| 180M | 0CV5182A8 | 1LE8005-1EA23-3□□□ | 70.6 | 9 | 2.8 | 3.2 | 0.191 | 218 | 67/80 |
| 200L | 0CV5204A8 | 1LE8005-2AA43-3□□□ | 96.3 | 9.5 | 2.9 | 3.5 | 0.314 | 310 | 71/84 |
| 200L | 0CV5205A8 | 1LE8005-2AA53-3□□□ | 118 | 10.5 | 3 | 3.5 | 0.354 | 316 | 71/84 |
| 225M | 0CV5222A8 | 1LE8005-2BA23-3□□□ | 144 | 10 | 3.3 | 3.5 | 0.591 | 411 | 72/85 |
| 250M | 0CV5252A8 | 1LE8005-2CA23-3□□□ | 176 | 8.5 | 3 | 3.5 | 0.804 | 450 | 75/89 |
| 280S | 0CV5280A8 | 1LE8005-2DA03-3□□□ | 240 | 8.5 | 3.3 | 3.3 | 0.919 | 580 | 75/89 |
| 280M | 0CV5282A8 | 1LE8005-2DA23-3□□□ | 288 | 8.5 | 3.3 | 3.3 | 1.01 | 590 | 75/89 |
| 315S | 0CV5310A8 | 1LE8005-3AA03-3□□□ | 352 | 8.5 | 3.5 | 3 | 1.95 | 900 | 77/92 |
| 315M | 0CV5312A8 | 1LE8005-3AA23-3□□□ | 422 | 8.5 | 3.5 | 3 | 2.15 | 925 | 77/92 |
| 315L | 0CV5315A8 | 1LE8005-3AA53-3□□□ | 512 | 8.5 | 3.8 | 3 | 2.47 | 1010 | 77/92 |
| 315L | 0CV5316A8 | 1LE8005-3AA63-3□□□ | 592 | 8.5 | 3.8 | 3 | 2.55 | 1080 | 77/92 |
| 315L | 0CV5317A8 | 1LE8005-3AA73-3□□□ | 640 | 8.5 | 3.8 | 3 | 2.85 | 1130 | 77/92 |
| 355M | 0CV5352A8 | 1LE8005-3BA23-3□□□ | 703 | 9 | 3.3 | 3.5 | 3.52 | 1700 | 83/98 |
| 355M | 0CV5353A8 | 1LE8005-3BA33-3□□□ | 799 | 9 | 3.3 | 3.5 | 3.52 | 1700 | 83/98 |
| 355L | 0CV5355A8 | 1LE8005-3BA53-3□□□ | 896 | 9 | 3.3 | 3.5 | 3.5 | 1700 | 83/98 |
| 355L | 0CV5356A8 | 1LE8005-3BA63-3□□□ | 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 | 额定电流 Rated current |
|---|---|---|---|---|---|---|---|---|---|
| | | | kW | kW | r/m | % | % | | A |
| 1500rpm 4 极 4-pole 220VD/380VY 50HZ | | | | | | | | | |
| 80M | 0CV5082B8 | 1LE8005-0DB22-1 □□□ | 0.55 | 0.63 | 1455 | 86.7 | 87 | 0.75 | 1.29 |
| 80M | 0CV5083B8 | 1LE8005-0DB32-1 □□□ | 0.75 | 0.86 | 1465 | 88.2 | 88.6 | 0.75 | 1.72 |
| 90S | 0CV5090B8 | 1LE8005-0EB02-1 □□□ | 1.1 | 1.3 | 1460 | 89.5 | 90.2 | 0.75 | 2.50 |
| 90L | 0CV5094B8 | 1LE8005-0EB42-1 □□□ | 1.5 | 1.75 | 1470 | 90.4 | 91 | 0.76 | 3.30 |
| 100L | 0CV5104B8 | 1LE8005-1AB42-1 □□□ | 2.2 | 2.55 | 1470 | 91.4 | 91.7 | 0.79 | 4.65 |
| 100L | 0CV5105B8 | 1LE8005-1AB52-1 □□□ | 3 | 3.45 | 1480 | 92.1 | 92.4 | 0.79 | 6.3 |
| 1500rpm 4 极 4-pole 380VD/660VY 50HZ | | | | | | | | | |
| 112M | 0CV5112B8 | 1LE8005-1BB23-3 □□□ | 4 | 4.55 | 1482 | 92.8 | 93 | 0.78 | 8.4 |
| 132S | 0CV5130B8 | 1LE8005-1CB03-3 □□□ | 5.5 | 6.3 | 1480 | 93.4 | 93.9 | 0.81 | 11 |
| 132M | 0CV5132B8 | 1LE8005-1CB23-3 □□□ | 7.5 | 8.6 | 1484 | 94.0 | 94.3 | 0.81 | 15 |
| 160M | 0CV5162B8 | 1LE8005-1DB23-3 □□□ | 11 | 12.6 | 1484 | 94.6 | 94.9 | 0.82 | 21.5 |
| 160L | 0CV5164B8 | 1LE8005-1DB43-3 □□□ | 15 | 17.3 | 1488 | 95.1 | 95.4 | 0.82 | 29 |
| 180M | 0CV5182B8 | 1LE8005-1EB23-3 □□□ | 18.5 | 21.3 | 1480 | 95.3 | 95.8 | 0.82 | 36 |
| 180L | 0CV5184B8 | 1LE8005-1EB43-3 □□□ | 22 | 25.3 | 1488 | 95.5 | 95.8 | 0.81 | 43 |
| 200L | 0CV5205B8 | 1LE8005-2AB53-3 □□□ | 30 | 34.5 | 1488 | 95.9 | 96.2 | 0.81 | 59 |
| 225S | 0CV5220B8 | 1LE8005-2BB03-3 □□□ | 37 | 42.5 | 1486 | 96.1 | 96.5 | 0.84 | 70 |
| 225M | 0CV5222B8 | 1LE8005-2BB23-3 □□□ | 45 | 52 | 1488 | 96.3 | 96.6 | 0.85 | 84 |
| 250M | 0CV5252B8 | 1LE8005-2CB23-3 □□□ | 55 | 63 | 1488 | 96.5 | 96.9 | 0.86 | 101 |
| 280S | 0CV5280B8 | 1LE8005-2DB03-3 □□□ | 75 | 86 | 1490 | 96.7 | 97.0 | 0.86 | 137 |
| 280M | 0CV5282B8 | 1LE8005-2DB23-3 □□□ | 90 | 104 | 1490 | 96.9 | 97.2 | 0.88 | 160 |
| 315S | 0CV5310B8 | 1LE8005-3AB03-3 □□□ | 110 | 123 | 1492 | 97.0 | 97.2 | 0.86 | 200 |
| 315M | 0CV5312B8 | 1LE8005-3AB23-3 □□□ | 132 | 148 | 1492 | 97.1 | 97.3 | 0.86 | 240 |
| 315L | 0CV5315B8 | 1LE8005-3AB53-3 □□□ | 160 | 180 | 1493 | 97.2 | 97.4 | 0.87 | 285 |
| 315L | 0CV5316B8 | 1LE8005-3AB63-3 □□□ | 185 | 207 | 1492 | 97.3 | 97.5 | 0.87 | 330 |
| 315L | 0CV5317B8 | 1LE8005-3AB73-3 □□□ | 200 | 224 | 1492 | 97.4 | 97.6 | 0.87 | 360 |
| 355M | 0CV5352B8 | 1LE8005-3BB23-3 □□□ | 220 | 246 | 1493 | 97.4 | 97.6 | 0.87 | 395 |
| 355M | 0CV5353B8 | 1LE8005-3BB33-3 □□□ | 250 | 280 | 1492 | 97.4 | 97.6 | 0.87 | 450 |
| 355L | 0CV5355B8 | 1LE8005-3BB53-3 □□□ | 280 | 314 | 1491 | 97.4 | 97.7 | 0.88 | 495 |
| 355L | 0CV5356B8 | 1LE8005-3BB63-3 □□□ | 315 | 353 | 1492 | 97.4 | 97.6 | 0.87 | 560 |

| 机座号 Frame Size | 电动机型号 Motor Type | 订货号 Order No. | 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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 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 220VD/380VY 50HZ | | | | | | | | | |
| 80M | 0CV5082B8 | 1LE8005-0DB22-1 □□□ | 3.6 | 8.5 | 3.4 | 4.2 | 0.0039 | 23.0 | 48/59 |
| 80M | 0CV5083B8 | 1LE8005-0DB32-1 □□□ | 4.9 | 8.5 | 2.7 | 4 | 0.0053 | 25.0 | 48/59 |
| 90S | 0CV5090B8 | 1LE8005-0EB02-1 □□□ | 7.2 | 8.5 | 3 | 4 | 0.0057 | 29.0 | 51/63 |
| 90L | 0CV5094B8 | 1LE8005-0EB42-1 □□□ | 9.7 | 8.8 | 3 | 4 | 0.0089 | 34.0 | 51/63 |
| 100L | 0CV5104B8 | 1LE8005-1AB42-1 □□□ | 14.3 | 10 | 2.7 | 4 | 0.0200 | 53 | 55/67 |
| 100L | 0CV5105B8 | 1LE8005-1AB52-1 □□□ | 19.4 | 10.5 | 2.4 | 4.2 | 0.0243 | 56 | 55/67 |
| 1500rpm 4 极 4-pole 380VD/660VY 50HZ | | | | | | | | | |
| 112M | 0CV5112B8 | 1LE8005-1BB23-3 □□□ | 25.8 | 10.5 | 2.9 | 4.4 | 0.0291 | 59 | 53/65 |
| 132S | 0CV5130B8 | 1LE8005-1CB03-3 □□□ | 35.5 | 9 | 3 | 4 | 0.0560 | 91 | 56/68 |
| 132M | 0CV5132B8 | 1LE8005-1CB23-3 □□□ | 48.3 | 9.5 | 3 | 4 | 0.0732 | 99 | 56/68 |
| 160M | 0CV5162B8 | 1LE8005-1DB23-3 □□□ | 70.8 | 9.5 | 3.3 | 4 | 0.1356 | 145 | 58/71 |
| 160L | 0CV5164B8 | 1LE8005-1DB43-3 □□□ | 96.3 | 10.5 | 3.8 | 3.8 | 0.1880 | 169 | 58/71 |
| 180M | 0CV5182B8 | 1LE8005-1EB23-3 □□□ | 119 | 8.5 | 2.8 | 3.4 | 0.2763 | 226 | 61/74 |
| 180L | 0CV5184B8 | 1LE8005-1EB43-3 □□□ | 141 | 9.5 | 2.7 | 3 | 0.3210 | 233 | 61/74 |
| 200L | 0CV5205B8 | 1LE8005-2AB53-3 □□□ | 193 | 10 | 3.5 | 3.5 | 0.5891 | 306 | 61/74 |
| 225S | 0CV5220B8 | 1LE8005-2BB03-3 □□□ | 238 | 8.5 | 3 | 3.2 | 0.9361 | 399 | 63/76 |
| 225M | 0CV5222B8 | 1LE8005-2BB23-3 □□□ | 289 | 9 | 3 | 3.2 | 1.0553 | 431 | 63/76 |
| 250M | 0CV5252B8 | 1LE8005-2CB23-3 □□□ | 353 | 8.5 | 2.5 | 3.3 | 1.545 | 505 | 65/79 |
| 280S | 0CV5280B8 | 1LE8005-2DB03-3 □□□ | 481 | 9 | 3.5 | 3 | 1.986 | 635 | 66/80 |
| 280M | 0CV5282B8 | 1LE8005-2DB23-3 □□□ | 577 | 9 | 3.5 | 3 | 2.484 | 750 | 66/80 |
| 315S | 0CV5310B8 | 1LE8005-3AB03-3 □□□ | 704 | 8.5 | 3.2 | 3 | 4.64 | 1190 | 69/84 |
| 315M | 0CV5312B8 | 1LE8005-3AB23-3 □□□ | 845 | 8.5 | 3.2 | 3 | 4.92 | 1230 | 69/84 |
| 315L | 0CV5315B8 | 1LE8005-3AB53-3 □□□ | 1023 | 9 | 3.2 | 3 | 5.5 | 1530 | 71/86 |
| 315L | 0CV5316B8 | 1LE8005-3AB63-3 □□□ | 1184 | 9 | 3.2 | 3 | 6 | 1610 | 71/86 |
| 315L | 0CV5317B8 | 1LE8005-3AB73-3 □□□ | 1280 | 9 | 3.2 | 3 | 6.2 | 1650 | 71/86 |
| 355M | 0CV5352B8 | 1LE8005-3BB23-3 □□□ | 1407 | 9 | 2.7 | 3.2 | 5.92 | 1700 | 76/91 |
| 355M | 0CV5353B8 | 1LE8005-3BB33-3 □□□ | 1600 | 9 | 2.7 | 3 | 5.92 | 1700 | 76/91 |
| 355L | 0CV5355B8 | 1LE8005-3BB53-3 □□□ | 1793 | 8.5 | 2.5 | 3 | 6.19 | 1800 | 76/91 |
| 355L | 0CV5356B8 | 1LE8005-3BB63-3 □□□ | 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 | 额定电流 Rated current |
|---|---|---|---|---|---|---|---|---|---|
| | | | kW | kW | r/m | % | % | | A |
| 1000rpm 6极6-pole 220VD/380VY 50HZ | | | | | | | | | |
| 80M | 0CV5083C8 | 1LE8005-0DC32-1□□□ | 0.55 | 0.63 | 965 | 84.2 | 84.4 | 0.67 | 1.48 |
| 90S | 0CV5090C8 | 1LE8005-0EC02-1□□□ | 0.75 | 0.86 | 965 | 85.7 | 86.4 | 0.7 | 1.90 |
| 90L | 0CV5094C8 | 1LE8005-0EC42-1□□□ | 1.1 | 1.3 | 975 | 87.2 | 87.7 | 0.7 | 2.75 |
| 100L | 0CV5104C8 | 1LE8005-1AC42-1□□□ | 1.5 | 1.75 | 970 | 88.4 | 88.8 | 0.71 | 3.65 |
| 112M | 0CV5112C8 | 1LE8005-1BC22-1□□□ | 2.2 | 2.55 | 965 | 89.7 | 90.4 | 0.71 | 5.2 |
| 132S | 0CV5130C8 | 1LE8005-1CC02-1□□□ | 3 | 3.45 | 982 | 90.6 | 91.3 | 0.72 | 7 |
| 1000rpm 6极6-pole 380VD/660VY 50HZ | | | | | | | | | |
| 132M | 0CV5132C8 | 1LE8005-1CC23-3□□□ | 4 | 4.55 | 982 | 91.4 | 91.9 | 0.72 | 9.2 |
| 132M | 0CV5133C8 | 1LE8005-1CC33-3□□□ | 5.5 | 6.3 | 982 | 92.2 | 92.6 | 0.72 | 12.6 |
| 160M | 0CV5162C8 | 1LE8005-1DC23-3□□□ | 7.5 | 8.6 | 986 | 92.9 | 93.3 | 0.77 | 15.9 |
| 160L | 0CV5164C8 | 1LE8005-1DC43-3□□□ | 11 | 12.6 | 990 | 93.7 | 94.1 | 0.77 | 23 |
| 180L | 0CV5184C8 | 1LE8005-1EC43-3□□□ | 15 | 18 | 986 | 94.3 | 94.8 | 0.8 | 30 |
| 200L | 0CV5204C8 | 1LE8005-2AC43-3□□□ | 18.5 | 22 | 988 | 94.6 | 95.0 | 0.8 | 37 |
| 200L | 0CV5205C8 | 1LE8005-2AC53-3□□□ | 22 | 26.5 | 988 | 94.9 | 95.3 | 0.81 | 43.5 |
| 225M | 0CV5222C8 | 1LE8005-2BC23-3□□□ | 30 | 36 | 990 | 95.3 | 95.7 | 0.82 | 58 |
| 250M | 0CV5252C8 | 1LE8005-2CC23-3□□□ | 37 | 44.5 | 991 | 95.6 | 95.9 | 0.81 | 73 |
| 280S | 0CV5280B8 | 1LE8005-2DC03-3□□□ | 45 | 54 | 991 | 95.8 | 96.2 | 0.83 | 86 |
| 280M | 0CV5282B8 | 1LE8005-2DC23-3□□□ | 55 | 66 | 992 | 96.0 | 96.3 | 0.84 | 104 |
| 315S | 0CV5310C8 | 1LE8005-3AC03-3□□□ | 75 | 84 | 992 | 96.3 | 96.7 | 0.82 | 144 |
| 315M | 0CV5312C8 | 1LE8005-3AC23-3□□□ | 90 | 101 | 992 | 96.5 | 96.9 | 0.83 | 171 |
| 315L | 0CV5315C8 | 1LE8005-3AC53-3□□□ | 110 | 123 | 992 | 96.6 | 97.0 | 0.83 | 210 |
| 315L | 0CV5316C8 | 1LE8005-3AC63-3□□□ | 132 | 148 | 993 | 96.8 | 97.2 | 0.83 | 250 |
| 355M | 0CV5352C8 | 1LE8005-3BC23-3□□□ | 160 | 180 | 994 | 96.9 | 97.0 | 0.84 | 300 |
| 355M | 0CV5353C8 | 1LE8005-3BC33-3□□□ | 185 | 207 | 994 | 97.0 | 97.2 | 0.84 | 345 |
| 355M | 0CV5354C8 | 1LE8005-3BC43-3□□□ | 200 | 224 | 994 | 97.0 | 97.2 | 0.84 | 375 |
| 355L | 0CV5355C8 | 1LE8005-3BC53-3□□□ | 220 | 246 | 994 | 97.0 | 97.3 | 0.84 | 410 |
| 355L | 0CV5356C8 | 1LE8005-3BC63-3□□□ | 250 | 280 | 994 | 97.0 | 97.2 | 0.84 | 465 |

| 机座号 Frame Size | 电动机型号 Motor Type | 订货号 Order No. | 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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 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 220VD/380VY 50HZ | | | | | | | | | |
| 80M | 0CV5083C8 | 1LE8005-0DC32-1□□□ | 5.4 | 7 | 3 | 3.4 | 0.0061 | 25 | 44/55 |
| 90S | 0CV5090C8 | 1LE8005-0EC02-1□□□ | 7.4 | 7 | 2.6 | 3.2 | 0.0072 | 29.0 | 48/60 |
| 90L | 0CV5094C8 | 1LE8005-0EC42-1□□□ | 10.8 | 7 | 2.6 | 3.2 | 0.0110 | 35.0 | 48/60 |
| 100L | 0CV5104C8 | 1LE8005-1AC42-1□□□ | 14.8 | 7.8 | 3.2 | 3.5 | 0.0183 | 51 | 49/61 |
| 112M | 0CV5112C8 | 1LE8005-1BC22-1□□□ | 21.8 | 7.8 | 3.5 | 4 | 0.0231 | 57 | 51/63 |
| 132S | 0CV5130C8 | 1LE8005-1CC02-1□□□ | 29.2 | 8.5 | 3.2 | 4 | 0.0572 | 79 | 55/67 |
| 1000rpm 6极6-pole 380VD/660VY 50HZ | | | | | | | | | |
| 132M | 0CV5132C8 | 1LE8005-1CC23-3□□□ | 38.9 | 9 | 3.3 | 4 | 0.0710 | 92 | 55/67 |
| 132M | 0CV5133C8 | 1LE8005-1CC33-3□□□ | 53.5 | 9.5 | 3.7 | 4.5 | 0.0932 | 97 | 55/67 |
| 160M | 0CV5162C8 | 1LE8005-1DC23-3□□□ | 72.6 | 8.5 | 3.5 | 3 | 0.1570 | 142 | 56/69 |
| 160L | 0CV5164C8 | 1LE8005-1DC43-3□□□ | 106 | 9 | 3.7 | 3.2 | 0.2289 | 175 | 56/69 |
| 180L | 0CV5184C8 | 1LE8005-1EC43-3□□□ | 145 | 9 | 3.2 | 3.2 | 0.3326 | 215 | 57/70 |
| 200L | 0CV5204C8 | 1LE8005-2AC43-3□□□ | 179 | 9.5 | 3.2 | 3.2 | 0.6121 | 271 | 59/72 |
| 200L | 0CV5205C8 | 1LE8005-2AC53-3□□□ | 213 | 9.5 | 3.2 | 3.2 | 0.7094 | 296 | 59/72 |
| 225M | 0CV5222C8 | 1LE8005-2BC23-3□□□ | 289 | 9.5 | 3.4 | 3.2 | 1.2194 | 399 | 61/74 |
| 250M | 0CV5252C8 | 1LE8005-2CC23-3□□□ | 357 | 9 | 3.3 | 3.5 | 1.642 | 470 | 62/76 |
| 280S | 0CV5280B8 | 1LE8005-2DC03-3□□□ | 434 | 8.5 | 3.8 | 3.3 | 2.023 | 570 | 62/76 |
| 280M | 0CV5282B8 | 1LE8005-2DC23-3□□□ | 529 | 8.5 | 3.8 | 3.3 | 2.411 | 600 | 62/76 |
| 315S | 0CV5310C8 | 1LE8005-3AC03-3□□□ | 722 | 8 | 2.6 | 2.5 | 3.95 | 855 | 66/81 |
| 315M | 0CV5312C8 | 1LE8005-3AC23-3□□□ | 866 | 8 | 2.7 | 2.5 | 4.52 | 915 | 66/81 |
| 315L | 0CV5315C8 | 1LE8005-3AC53-3□□□ | 1059 | 8 | 2.7 | 2.5 | 5.02 | 990 | 66/81 |
| 315L | 0CV5316C8 | 1LE8005-3AC63-3□□□ | 1269 | 8 | 2.9 | 2.5 | 6.07 | 1185 | 66/81 |
| 355M | 0CV5352C8 | 1LE8005-3BC23-3□□□ | 1537 | 8.5 | 2.8 | 3.2 | 10.52 | 1690 | 76/91 |
| 355M | 0CV5353C8 | 1LE8005-3BC33-3□□□ | 1777 | 8.5 | 3 | 3.2 | 10.52 | 1690 | 76/91 |
| 355M | 0CV5354C8 | 1LE8005-3BC43-3□□□ | 1922 | 8.5 | 3 | 3.2 | 11.11 | 1770 | 76/91 |
| 355L | 0CV5355C8 | 1LE8005-3BC53-3□□□ | 2114 | 8.5 | 3 | 3.2 | 11.36 | 1860 | 76/91 |
| 355L | 0CV5356C8 | 1LE8005-3BC63-3□□□ | 2402 | 8.5 | 3 | 3.2 | 13.02 | 1970 | 76/91 |

# 选件 Options

| 电动机订货号<br>Motor order code | 选件号<br>Option Code [1] | 描述<br>Description | 应用范围<br>Application Scope |
|---|---|---|---|
| **电压与频率<br>Voltages and frequency** | | | |
| 1LE8□05-□□□□2-1□□□ | – | 220 VD / 380 VY 50 Hz（1.5 kW ~ 3 kW [2]） | FS80 ~ 280 |
| 1LE8□05-□□□□3-3□□□ | – | 380 VD / 660 VY 50 Hz（4 kW ~ 315 kW [2]） | FS80 ~ 355 |
| 1LE8□05-□□□□2-2□□□ | – | 230 VD / 400 VY 50 Hz | FS80 ~ 280 |
| 1LE8□05-□□□□3-4□□□ | – | 400 VD / 690 VY 50 Hz | FS80 ~ 355 |
| 1LE8□05-□□□□2-3□□□ | – | 240 VD / 415 VY 50 Hz | FS80 ~ 280 |
| 1LE8□05-□□□□3-5□□□ | – | 415 VD 50 Hz | FS80 ~ 355 |
| 1LE8□05-□□□□9-0□□□ | M2A | 220 VD/380 VY 60 Hz （50 Hz output，50 Hz 功率输出） | FS80 ~ 280 |
| 1LE8□05-□□□□9-0□□□ | M2B | 380 VD/660 VY 60 Hz （50 Hz output，50 Hz 功率输出） | FS80 ~ 355 [16] |
| 1LE8□05-□□□□9-0□□□ | M2C | 440 VY 60 Hz（50 Hz output，50 Hz 功率输出） | FS80 ~ 280 |
| 1LE8□05-□□□□9-0□□□ | M2D | 440 VD 60 Hz（50 Hz output，50 Hz 功率输出） | FS80 ~ 355 [16] |
| 1LE8□05-□□□□9-0□□□ | M2E | 460 VY 60 Hz（50 Hz output，50 Hz 功率输出） | FS80 ~ 280 |
| 1LE8□05-□□□□9-0□□□ | M2F | 460 VD 60 Hz（50 Hz output，50 Hz 功率输出） | FS80 ~ 355 [16] |
| **绕组保护<br>Motor protection** | | | |
| 1LE8□05-□□□□□-□□A□ [2] | – | 无绕组保护<br>Without motor protection | FS80 ~ 355 |
| 1LE8□05-□□□□□-□□B□ | – | 绕组带一组三芯串联的 PTC 热敏电阻用于跳闸<br>Motor protection with PTC thermistors with three embedded temperature sensors for tripping | FS80 ~ 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<br>Motor protection with PTC thermistors with six embedded temperature sensors for alarm & tripping | FS80 ~ 355 |
| 1LE8□05-□□□□□-□□K□ | – | 绕组带 1 个单支两线制 PT1000 测温元件<br>Installation of 1 single 2 wires PT1000 resistance thermometers | FS100 ~ 355 |
| 1LE8□05-□□□□□-□□H□ | – | 绕组带 3 个 Pt100 测温元件<br>Installation of three PT100 resistance thermometers | FS80 ~ 355 |
| 1LE8□05-□□□□□-□□J□ | – | 绕组带 6 个 Pt100 测温元件<br>Installation of six PT100 resistance thermometers | FS80 ~ 355 |
| **线圈和绝缘<br>Windings and insulation** | | | |
| – | N01 | 温度等级 155（F），使用 155（F），带有服务系数（SF1.15）<br>Temperature class 155 (F), used according to 155 (F), with service factor (SF1.15) | FS80 ~ 355 |
| – | N10 | 180（H）度温度等级绝缘<br>Temperature class 180（H） | FS80 ~ 355 |
| – | Q04 | 绕组带 220 V 防潮加热带<br>Anti-condensation heater for 220 V AC (spaces heater) | FS80 ~ 355 |

| 电动机订货号<br>Motor order code | 选件号<br>Option Code [1] | 描述<br>Description | 应用范围<br>Application Scope |
|---|---|---|---|
| **电动机接线盒<br>Motor connection box** | | | |
| 1LE8□0□-□□□□□□-□□□4 [2] | – | 接线盒在顶端<br>Connection box on top<br>进线孔在右侧（从驱动端看）（标准电动机）<br>cable entry on right (view from DE) (Standard version) | FS80 ~ 355 |
| 1LE8□0□-□□□□□□-□□□5 | – | 接线盒在右边（从驱动端看）<br>Connection box on RHS (view from DE) | FS80 ~ 355 |
| 1LE8□0□-□□□□□□-□□□6 | – | 接线盒在左边（从驱动端看）<br>Connection box on LHS (view from DE) | FS80 ~ 355 |
| – | R10 [3] | 接线盒直接旋转 90°，进线口朝向驱动端<br>Rotation of the connection box through 90°, entry from DE | FS80 ~ 355 |
| – | R11 | 接线盒直接旋转 90°，进线口朝向非驱动端<br>Rotation of the connection box through 90°, entry from NDE | FS80 ~ 355 |
| – | R12 | 接线盒直接旋转 180°<br>Rotation of the connection box through 180° | FS80 ~ 355 |
| – | H08 | 接线盒在非驱动端<br>Connection box on NDE | FS80 ~ 355 |
| – | L97 | 辅助接线盒<br>Additional connection box | FS200 ~ 355 |
| **轴承<br>Bearings** | | | |
| – | L80 | SKF 轴承<br>SKF Bearing | FS80 ~ 355 |
| – | L22 [4] | 增强悬臂力轴承设计<br>Bearing design for increased cantilever forces | FS100 ~ 355 |
| – | L20 | 驱动端轴承固定<br>Located bearing at DE | FS80 ~ 160 |
| – | L23 [5] | 再润滑装置<br>Regreasing device | FS100 ~ 250 |
| – | 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<br>Installation of 2 single 2 wires PT100 resistance thermometers for bearings, need 4 terminals | FS180 ~ 355 |
| – | L27 [6] | 绝缘轴承<br>Insulated bearing | FS250 ~ 355 |
| – | L51 | 非驱动端轴承绝缘<br>Bearing insulation NDE | FS250 ~ 355 |

# 选件 Options

| 电动机订货号<br>Motor order code | 选件号<br>Option Code [1] | 描述<br>Description | 应用范围<br>Application Scope |
|---|---|---|---|
| **机械设计和防护等级<br>Mechanical design and degrees of protection** | | | |
| – | L72 [7] [8] | 第二标准轴伸<br>Second standard shaft extension | FS80 ~ 355 |
| – | H00 [9] | 电动机带防护罩<br>Motor with protective cover | FS80 ~ 355 |
| – | H03 [10] | 冷凝水排放孔<br>Condensation drainage holes | FS80 ~355 |
| – | H04 | 外部接地<br>External earthing | FS80 ~ 280 |
| – | H22 | IP56 防护等级（非高海况）<br>IP56 degree of protection (non-heavy-sea) | FS80 ~ 355 |
| – | H20 | IP65防护等级<br>IP65degree of protection | FS80 ~ 355 |
| **模块化技术<br>Modular technology** | | | |
| – | F70 [11] | IC 416 冷却方式（非自冷），电动机带独立驱动风扇<br>Mounting of separately driven fan | FS80 ~ 355 |
| – | F90 [12] | 风机电机（无风扇和风扇罩，非驱动端全封闭）<br>Fan motor (Without fan and fan cover, NDE closed) | FS80 ~355 |
| – | F76 | 金属风扇<br>Metal Fan | FS80 ~ 355 |
| – | X05 | 预留安装 LL861900220 编码器位置<br>Prepared for of LL861900220 encoder | FS112 ~ 355 |
| – | G04 | 安装编码器 LL861900200<br>Mounting of LL861900220 rotary pulse encoder | FS112 ~ 355 |
| – | X50 [13] | 安装欧姆龙编码器（E6B2-CWZ6C-1024）和独立驱动风扇<br>Mounting of Omron rotary pulse encoder (E6B2-CWZ6C-1024) and separately driven fan | FS80 ~ 355 |
| – | W74 [14] | 安装欧姆龙编码器（E6B2-CWZ1X-1024）和独立驱动风扇<br>Mounting of Omron encoder (E6B2-CWZ1X-1024) and separated driven fan | FS80 ~ 355 |
| **铭牌和测试证书<br>Rating plate and test certificates** | | | |
| – | B02 | 出厂检验报告<br>Acceptance test certificate 3.1 in accordance with EN 10204 | FS80 ~ 355 |

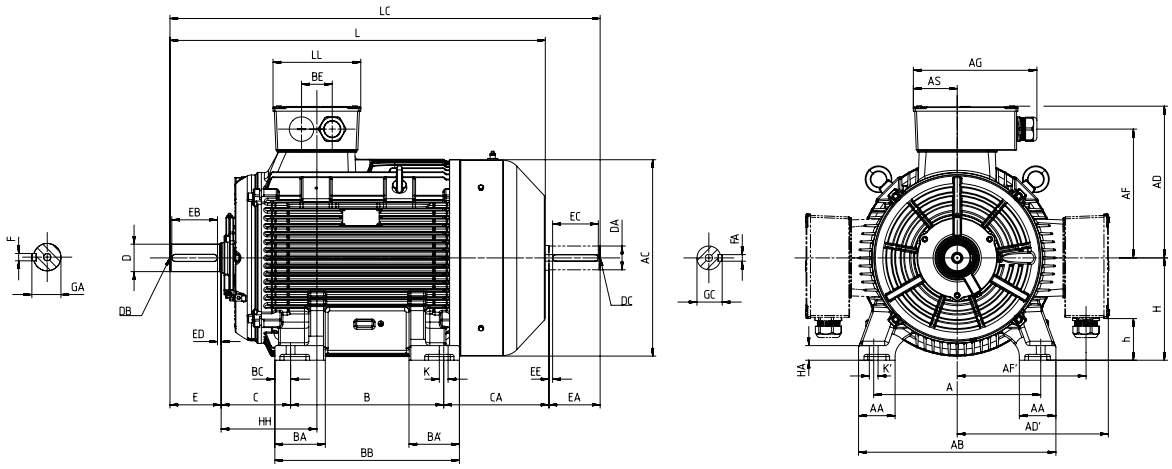
| 电动机订货号<br>Motor order code | 选件号<br>Option Code [1] | 描述<br>Description | 应用范围<br>Application Scope |
|---|---|---|---|
| **喷漆<br>Paint finish** | | | |
| – | S01 | 不喷漆，只带底漆<br>Unpainted, only primed | FS80 ~ 355 |
| – | S80 | 标准喷漆，颜色为 RAL 7032<br>Standard finish in RAL 7032 | FS80 ~ 355 |
| – | S81 | 标准喷漆，颜色为 RAL 9006<br>Standard finish in RAL 9006 | FS80 ~ 355 |
| – | W88 [15] | 适用TH，W，F1，WF1 以及海洋性气候环境用电机<br>Design for TH, W, F1, WF1 and Sea air resistant | FS80 ~ 355 |
| **环境温度<br>Coolant temperature** | | | |
| – | D03 | 用于环境温度 -40 °C ~ +40 °C 下使用的电机<br>Coolant temperature -40 °C to +40 °C | FS80 ~ 355 |

[1] 订货时，电动机订货号需带“-Z”，另外附带上选件号；
[2] 无需附加费用；
[3] 对于 FS80 ~ 112 电动机只有接线盒在非驱动端（选件号：H08）时，才可以选此选件；
[4] 对于立式安装的 FS250 ~ FS355 电动机，需要特殊咨询；
[5] 对于 FS280，FS315 和 FS355，加排油装置是标配；
[6] 只有当 FS355 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；
[7] 带防雨罩或独立驱动风扇的电动机不能选此选件；
[8] 非驱动端上的第二轴尺寸与驱动端轴伸一致；
[9] 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；
[10] 适用于水平安装电机；对于立式安装的电机，请向茵梦达咨询。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；
[11] 当安装独立风机时，电动机的长度将增加 ΔL。具体的增加尺寸和技术数据请查看独立驱动风扇技术参数表；
[12] 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；
[13] SINAMICS 变频器联结 Omron 编码器（E6B2-CWZ6C-1024）时，变频器 需要一些特殊配置。详细信息，请咨询茵梦达热线；
[14] SINAMICS 变频器可以直接与 Omron 编码器（E6B2-CWZ1X-1024）联结；
[15] 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；
[16] FS315 2 极 160kW，185kW，200kW 需 DOL 60Hz 运行时，请先咨询。

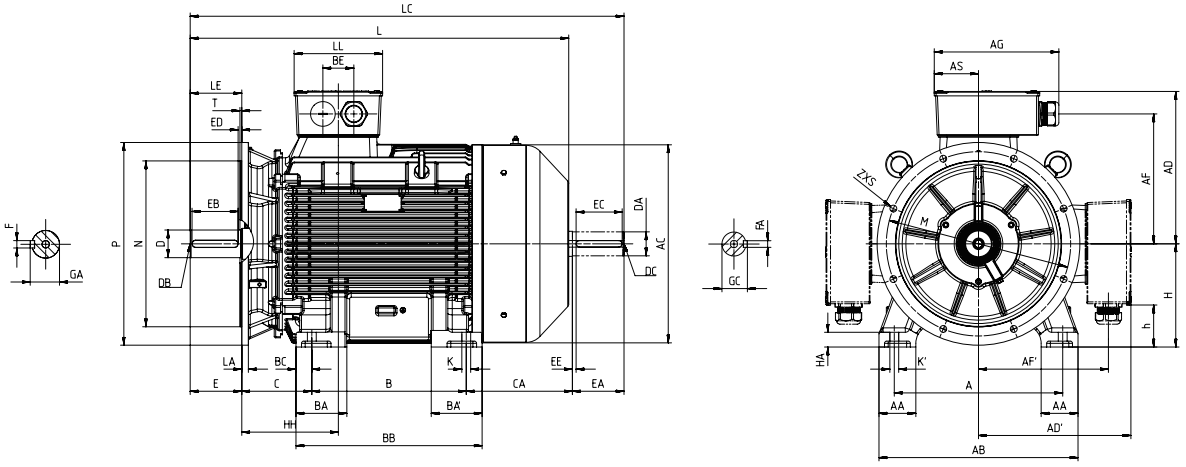
[1] Order No. supplement Z with option code when ordering;
[2] Without additional charge;
[3] For FS80 ~ 112 motor, R10 only in combination with Option code H08 (Connection box on NDE) possible;
[4] For vertical mounting of FS250~FS355 motor, please specially consult first;
[5] FS280, FS315 and FS355 motor with the regrease device as standard;
[6] Only for FS355 with vertical mounting, insulated bearing located at DE.Otherwise insulated bearing located at NDE;
[7] Not possible in combination with canopy or separately driven fan (Order code: F70);
[8] Second standard shaft extension on NDE has same dimension on DE side;
[9] Only applicable for the construction type IM V5, IM V1, IM V15 and IM V18. Not possible in combination with Option code L72;
[10] Applicable to motor of horizontal mounting. If vertical mounting motor required to be with condensation drainage holes, please inquiry INNOMOTICS specially. If condensation drainage holes are required, it is necessary to order the motors in their respective type of construction;
[11] When the separately driven fan is mounted, the length of the motor increase by ΔL. For an explanation of the additional dimension please refer to technical data for separately fan;
[12] 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;
[13] When SINAMICS inverter is connected with Omron encoder (E6B2-CWZ6C-1024), additional configuration on inverter is needed. For detailed information, please contact with INNOMOTICS hotline;
[14] Omron encoder (E6B2-CWZ1X-1024) can be directly connected with SINAMICS inverter;
[15] Recommended for indoor or outdoor installations exposed to direct weather conditions. Industrial environment with moderate SO2, inshore maritime climate but not offshore;
[16] for FS315 2 pole motor 160kW, 185kW, 200kW at DOL 60Hz, please consult first.

# 外形尺寸 Dimension drawings

**1LE8005 系列电机**
**机座号从 80M ~ 132M  Frame sizes 80M to 132M**
IM B3 安装结构方式 Type of construction IM B3



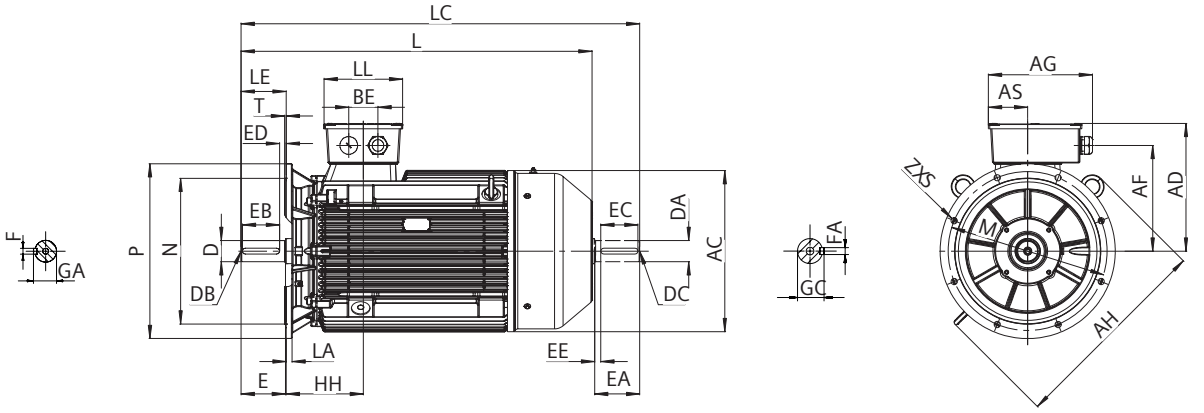

IM B35 安装结构方式 Type of construction IM B35



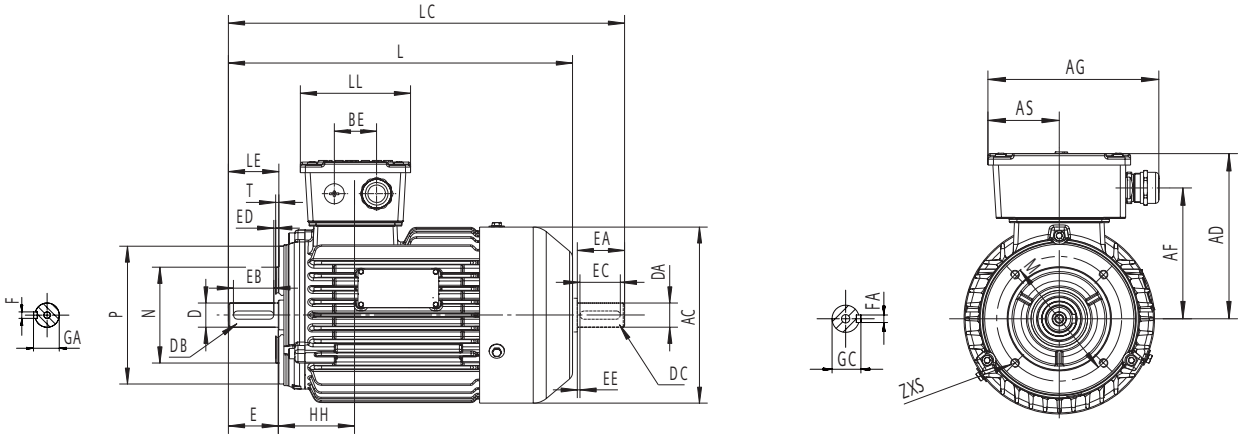

| 机座号 Frame size | 类型 Type 1LE8005 | 极数 poles | 尺寸图依据 IEC 标准 Dimension designation according to IEC standards | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | AA | AB | AC[1] | AD/AD' | AF/AF' | AG | AH | AS | B[2] | BA | BA' | BB | BC | BE | C | CA[2] | H | h |
| 80M | 0D□2 | 2,4 | 125 | 33.5 | 155 | 156 | 155 | 113.5 | 150 | 204 | 66.5 | 100 | 45 | 46 | 130 | 14.5 | 42 | 50/129[3] | 195 | 80 | 24.5 |
| | 0D□3 | 2,4,6 | 125 | 33.5 | 155 | 156 | 155 | 113.5 | 150 | 204 | 66.5 | 100 | 45 | 46 | 130 | 14.5 | 42 | 50/129[3] | 195 | 80 | 24.5 |
| 90S | 0E□0 | 2,4,6 | 140 | 33.5 | 170 | 174 | 165 | 123.5 | 150 | 220 | 66.5 | 100 | 45 | 48 | 128 | 12.5 | 42 | 56/135[3] | 211 | 90 | 34.5 |
| 90L | 0E□4 | 2,4,6 | 140 | 33.5 | 170 | 174 | 165 | 123.5 | 150 | 220 | 66.5 | 125 | 45 | 73 | 153 | 12.5 | 42 | 56/150[3] | 226 | 90 | 35.5 |
| 100L | 1A□4 | 2,4,6 | 160 | 45 | 196 | 198 | 190 | 145 | 167 | 290 | 71 | 140 | 50 | 78 | 200 | 16 | 54 | 63/195[3] | 269 | 100 | 43 |
| | 1A□5 | 4 | 160 | 45 | 196 | 198 | 190 | 145 | 167 | 290 | 71 | 140 | 50 | 78 | 200 | 16 | 54 | 63/195[3] | 269 | 100 | 43 |
| 112M | 1B□2 | 2,4,6 | 190 | 45 | 226 | 222 | 198 | 154 | 167 | 310 | 71 | 140 | 54 | 56 | 174 | 16 | 54 | 70/164[3] | 240 | 112 | 55 |
| 132S | 1C□0 | 2,6 | 216 | 50 | 256 | 262 | 223 | 177 | 167 | 376 | 71 | 140 | 55 | 93 | 218 | 20 | 54 | 89/144[3] | 221 | 132 | 75 |
| | 1C□0 | 4 | 216 | 50 | 256 | 262 | 223 | 177 | 167 | 376 | 71 | 140 | 55 | 93 | 218 | 20 | 54 | 89/184[3] | 263 | 132 | 75 |
| | 1C□1 | 2 | 216 | 50 | 256 | 262 | 223 | 177 | 167 | 376 | 71 | 140 | 55 | 93 | 218 | 20 | 54 | 89/144[3] | 221 | 132 | 75 |
| 132M | 1C□2 | 4,6 | 216 | 50 | 256 | 262 | 223 | 177 | 167 | 376 | 71 | 178 | 55 | 93 | 218 | 20 | 54 | 89/146[3] | 225 | 132 | 75 |
| | 1C□3 | 6 | 216 | 50 | 256 | 262 | 223 | 177 | 167 | 376 | 71 | 178 | 55 | 93 | 218 | 20 | 54 | 89/146[3] | 225 | 132 | 75 |

[1] 包含螺栓头的尺寸。
[2] 该尺寸为 DIN EN 50347 标准所列机座号对应尺寸。
[3] 仅适用于配置 H08 选件的电机。

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




IM B14 安装方式 Type of construction IM B14



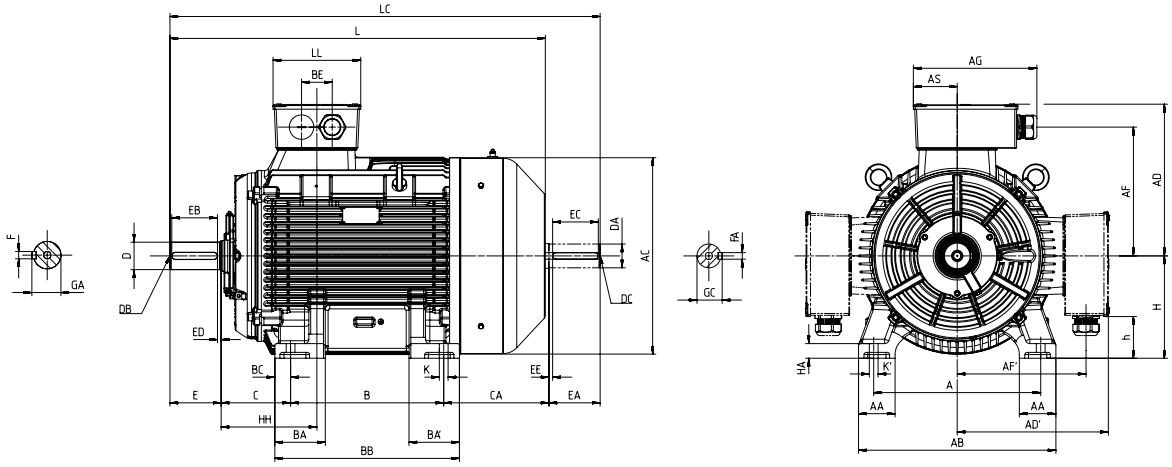

| 机座号 Frame size | 类型 Type 1LE8005 | 极数 poles | 尺寸图依据 IEC 标准 Dimension designation according to IEC standards | | | | | | 驱动端轴伸直径 DE shaft extensiion | | | | | | | 非驱动端轴伸（选件号为 L72) NDE shaft extension (option code L72) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | HA | HH | K/K' | L | LC | LL | D | DB | E | EB | ED | F | GA | DA | DC | EA | EC | EE | FA | GC |
| 80M | 0D□2 | 2,4 | 9 | 82.5 | 10 | 385 | 425 | 111 | 19 | M6×16 | 40 | 32 | 4 | 6 | 21.5 | 19 | M6×16 | 40 | 32 | 4 | 6 | 21.5 |
| | 0D□3 | 2,4,6 | 9 | 82.5 | 10 | 385 | 425 | 111 | 19 | M6×16 | 40 | 32 | 4 | 6 | 21.5 | 19 | M6×16 | 40 | 32 | 4 | 6 | 21.5 |
| 90S | 0E□0 | 2,4,6 | 10 | 91 | 10 | 415 | 467 | 111 | 24 | M8×19 | 50 | 40 | 5 | 8 | 27 | 24 | M8×19 | 50 | 40 | 5 | 8 | 27 |
| 90L | 0E□4 | 2,4,6 | 10 | 91 | 10 | 455 | 507 | 111 | 24 | M8×19 | 50 | 40 | 5 | 8 | 27 | 24 | M8×19 | 50 | 40 | 5 | 8 | 27 |
| 100L | 1A□4 | 2,4,6 | 12 | 98.5 | 12 | 530 | 592 | 120 | ø28 | M10×22 | 60 | 50 | 5 | 8 | 31 | ø28 | M10×22 | 60 | 50 | 5 | 8 | 31 |
| | 1A□5 | 4 | 12 | 98.5 | 12 | 530 | 592 | 120 | ø28 | M10×22 | 60 | 50 | 5 | 8 | 31 | ø28 | M10×22 | 60 | 50 | 5 | 8 | 31 |
| 112M | 1B□2 | 2,4,6 | 12 | 105.5 | 12 | 505 | 570 | 120 | ø28 | M10×22 | 60 | 50 | 5 | 8 | 31 | ø28 | M10×22 | 60 | 50 | 5 | 8 | 31 |
| 132S | 1C□0 | 2,6 | 15 | 122.5 | 12 | 525 | 610 | 120 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 |
| | 1C□0 | 4 | 15 | 122.5 | 12 | 565 | 652 | 120 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 |
| | 1C□1 | 2 | 15 | 122.5 | 12 | 525 | 610 | 120 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 |
| 132M | 1C□2 | 4,6 | 15 | 122.5 | 12 | 565 | 652 | 120 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 |
| | 1C□3 | 6 | 15 | 122.5 | 12 | 565 | 652 | 120 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 | ø38 | M12×28 | 80 | 70 | 5 | 10 | 41 |

[1] Measured across the bolt heads.
[2] This dimension is assigned in DIN EN 50347 to the frame size listed.
[3] Only for the motor configured with H08 option.

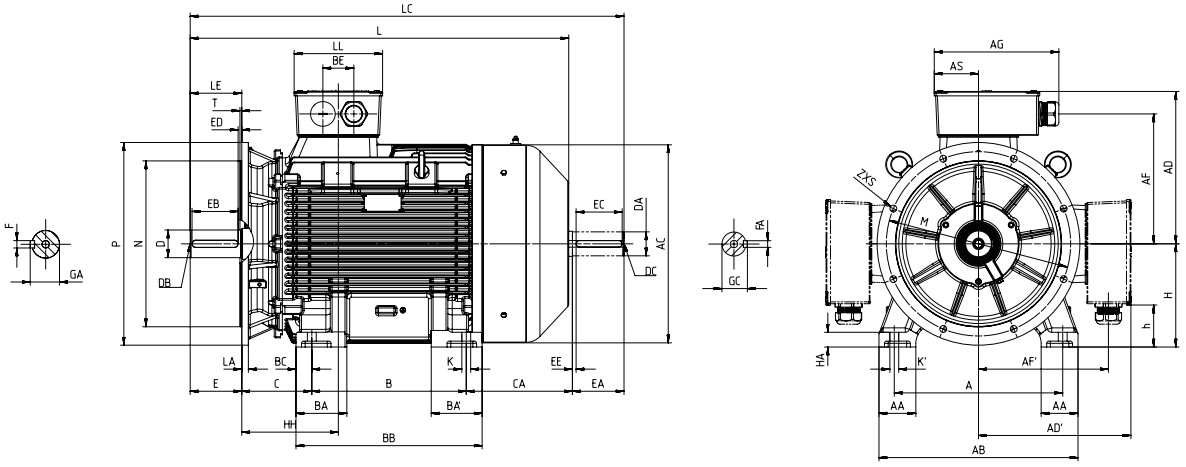
# 外形尺寸 Dimension drawings

**1LE8005 系列电机**
**机座号从 160 ~ 225M  Frame sizes 160 ~ 225M**

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



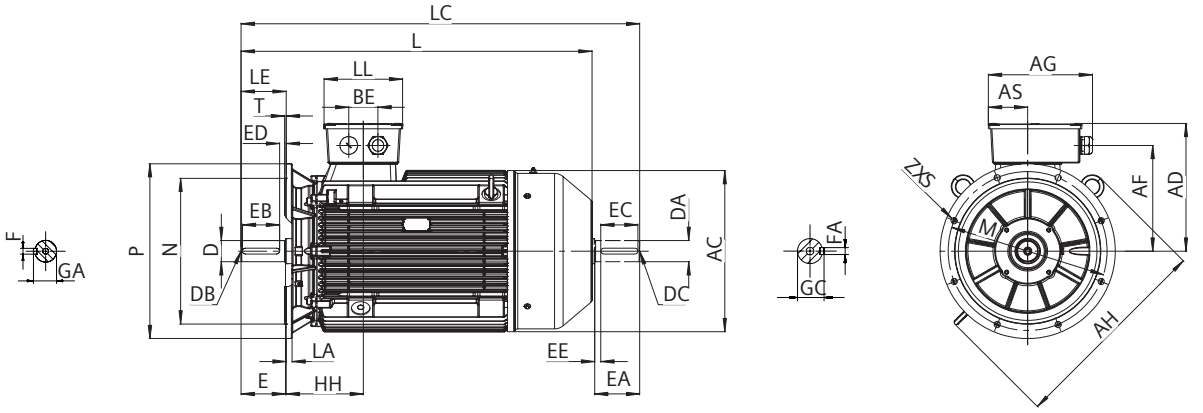

IM B35 安装结构方式 Type of construction IM B35



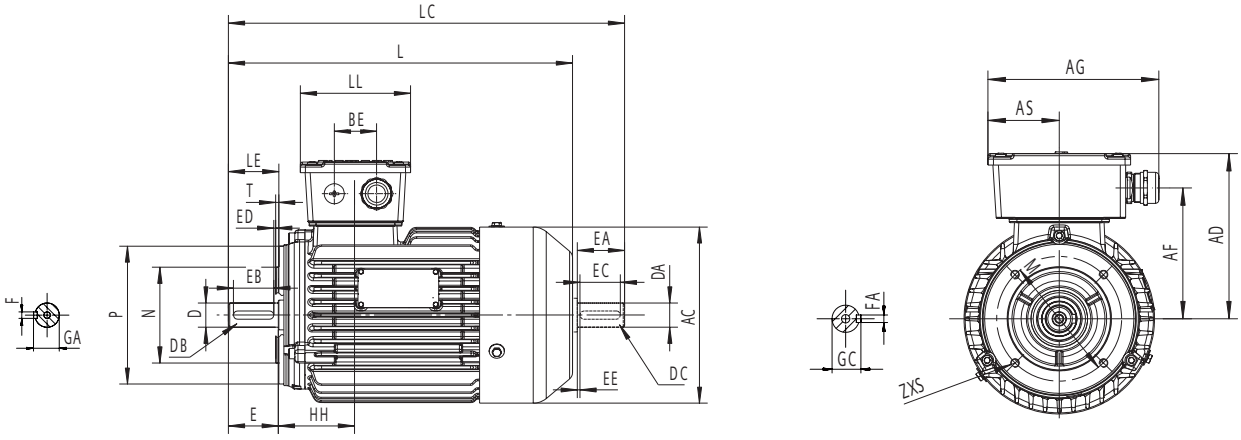

| 机座号 Frame size | 类型 Type 1LE8005 | 极数 poles | 尺寸图依据 IEC 标准 Dimension designation according to IEC standards | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | AA | AB | AC[1] | AD/AD' | AF/AF' | AG | AH | AS | B[2] | BA | BA' | BB | BC | BE | C | CA[2] | H | h |
| 160M | 1D□2 | 2, 4, 6 | 254 | 60 | 300 | 314 | 260 | 201 | 227 | 454 | 93 | 210 | 77 | 121 | 256 | 23 | 68 | 108/158[3] | 247 | 160 | 66 |
| | 1D□3 | 2 | 254 | 60 | 300 | 314 | 260 | 201 | 227 | 454 | 93 | 210 | 77 | 77 | 300 | 23 | 68 | 108/193[3] | 282 | 160 | 66 |
| 160L | 1D□4 | 2, 4, 6 | 254 | 60 | 300 | 314 | 260 | 201 | 227 | 454 | 93 | 254 | 77 | 121 | 300 | 23 | 68 | 108/150[3] | 238 | 160 | 66 |
| 180M | 1E□2 | 2,4 | 279 | 60 | 339 | 354 | 285 | 224 | 227 | 496 | 93 | 241 | 91 | 129 | 328 | 24.5 | 68 | 121/198[3] | 308 | 180 | 86 |
| 180L | 1E□4 | 4,6 | 279 | 60 | 339 | 354 | 285 | 224 | 227 | 496 | 93 | 279 | 91 | 129 | 328 | 24.5 | 68 | 121/160[3] | 270 | 180 | 86 |
| 200 | 2A□4 | 2,6 | 318 | 70 | 378 | 393 | 315 | 252 | 280 | 560 | 104 | 305 | 100 | 100 | 355 | 25 | 85 | 133/169[3] | 304 | 200 | 67.5 |
| | 2A□5 | 2,4,6 | 318 | 70 | 378 | 393 | 315 | 252 | 280 | 560 | 104 | 305 | 100 | 100 | 355 | 25 | 85 | 133/169[3] | 304 | 200 | 67.5 |
| 225 | 2B□0 | 4 | 356 | 80 | 436 | 443 | 355 | 289 | 280 | 612 | 104 | 286 | 100 | 123 | 361 | 25 | 85 | 149/207[3] | 327 | 225 | 92.5 |
| | 2B□2 | 2 | 356 | 80 | 436 | 443 | 355 | 289 | 280 | 612 | 104 | 311 | 100 | 123 | 361 | 25 | 85 | 149/222[3] | 342 | 225 | 92.5 |
| | | 4 | 356 | 80 | 436 | 443 | 355 | 289 | 280 | 612 | 104 | 311 | 100 | 123 | 361 | 25 | 85 | 149/222[3] | 342 | 225 | 92.5 |
| | | 6 | 356 | 80 | 436 | 443 | 355 | 289 | 280 | 612 | 104 | 311 | 100 | 123 | 361 | 25 | 85 | 149/182[3] | 302 | 225 | 92.5 |

[1] 包含螺栓头的尺寸。 [2] 该尺寸为 DIN EN 50347 标准所列机座号对应尺寸。
[3] 仅适用于配置 H08 选件的电机。

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




IM B14 安装方式 Type of construction IM B14



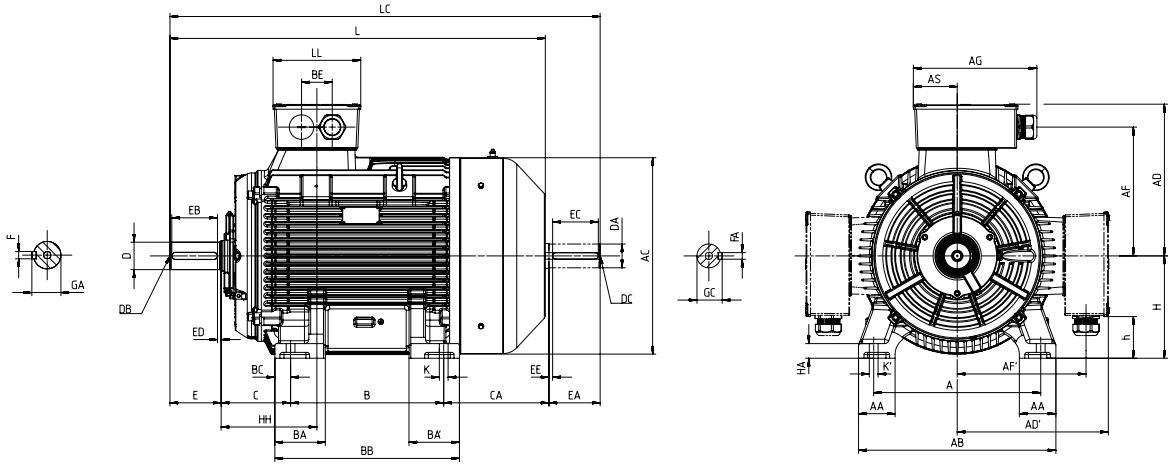

| 机座号 Frame size | 类型 Type 1LE8005 | 极数 poles | 尺寸图依据 IEC 标准 Dimension designation according to IEC standards | | | | | | 驱动端轴伸直径 DE shaft extensiion | | | | | | | 非驱动端轴伸（选件号为 L72) NDE shaft extension (option code L72) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | HA | HH | K/K' | L | LC | LL | D | DB | E | EB | ED | F | GA | DA | DC | EA | EC | EE | FA | GC |
| 160M | 1D □ 2 | 2, 4, 6 | 18 | 160 | 15 | 670 | 785 | 155 | ø42 | M16×36 | 110 | 90 | 10 | 12 | 45 | ø42 | M16×36 | 110 | 90 | 10 | 12 | 45 |
| | 1D □ 3 | 2 | 18 | 160 | 15 | 705 | 820 | 155 | ø42 | M16×36 | 110 | 90 | 10 | 12 | 45 | ø42 | M16×36 | 110 | 90 | 10 | 12 | 45 |
| 160L | 1D □ 4 | 2, 4, 6 | 18 | 160 | 15 | 705 | 820 | 155 | ø42 | M16×36 | 110 | 90 | 10 | 12 | 45 | ø42 | M16×36 | 110 | 90 | 10 | 12 | 45 |
| 180M | 1E □ 2 | 2,4 | 20 | 166 | 15 | 775 | 890 | 155 | ø48 | M16×36 | 110 | 100 | 5 | 14 | 51.5 | ø48 | M16×36 | 110 | 100 | 5 | 14 | 51.5 |
| 180L | 1E □ 4 | 4,6 | 20 | 166 | 15 | 775 | 890 | 155 | ø48 | M16×36 | 110 | 100 | 5 | 14 | 51.5 | ø48 | M16×36 | 110 | 100 | 5 | 14 | 51.5 |
| 200 | 2A □ 4 | 2,6 | 25 | 207 | 19 | 850 | 962 | 213 | ø55 | M20×42 | 110 | 100 | 5 | 16 | 59 | ø55 | M20×42 | 110 | 100 | 5 | 16 | 59 |
| | 2A □ 5 | 2,4,6 | 25 | 207 | 19 | 850 | 962 | 213 | ø55 | M20×42 | 110 | 100 | 5 | 16 | 59 | ø55 | M20×42 | 110 | 100 | 5 | 16 | 59 |
| 225 | 2B □ 0 | 4 | 34 | 208 | 19 | 895 | 1042 | 213 | ø60 | M20×42 | 140 | 125 | 7.5 | 18 | 64 | ø60 | M20×42 | 140 | 125 | 7.5 | 18 | 64 |
| | 2B □ 2 | 2 | 34 | 208 | 19 | 905 | 1022 | 213 | ø55 | M20×42 | 110 | 100 | 5 | 16 | 59 | ø55 | M20×42 | 110 | 100 | 5 | 16 | 59 |
| | | 4 | 34 | 208 | 19 | 935 | 1082 | 213 | ø60 | M20×42 | 140 | 125 | 7.5 | 18 | 64 | ø60 | M20×42 | 140 | 125 | 7.5 | 18 | 64 |
| | | 6 | 34 | 208 | 19 | 895 | 1042 | 213 | ø60 | M20×42 | 140 | 125 | 7.5 | 18 | 64 | ø60 | M20×42 | 140 | 125 | 7.5 | 18 | 64 |

[1] Measured across the bolt heads.
[2] This dimension is assigned in DIN EN 50347 to the frame size listed.
[3] Only for the motor configured with H08 option.

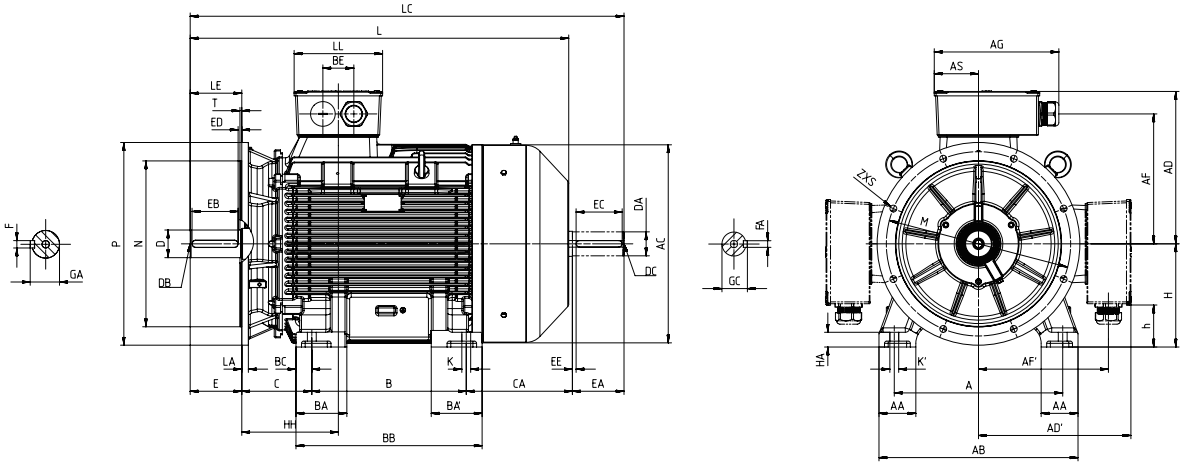
# 外形尺寸 Dimension drawings

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

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



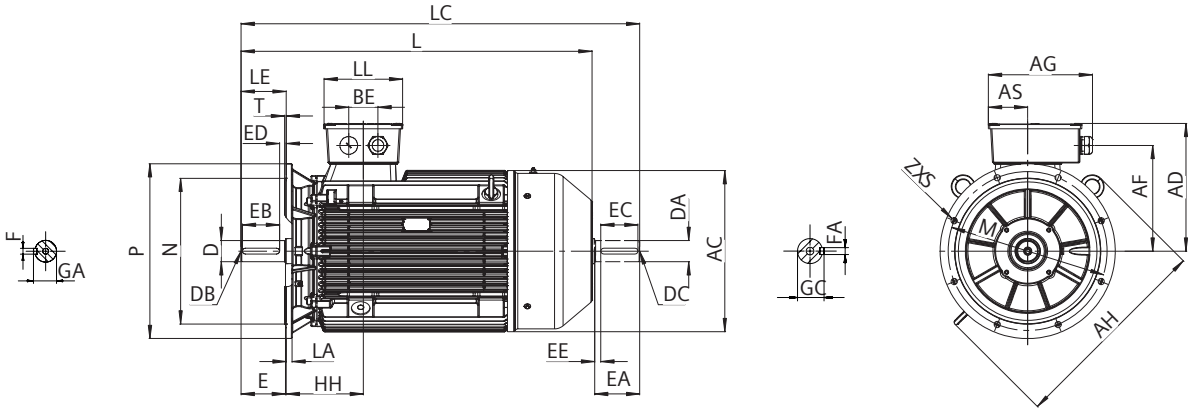

IM B35 安装结构方式 Type of construction IM B35



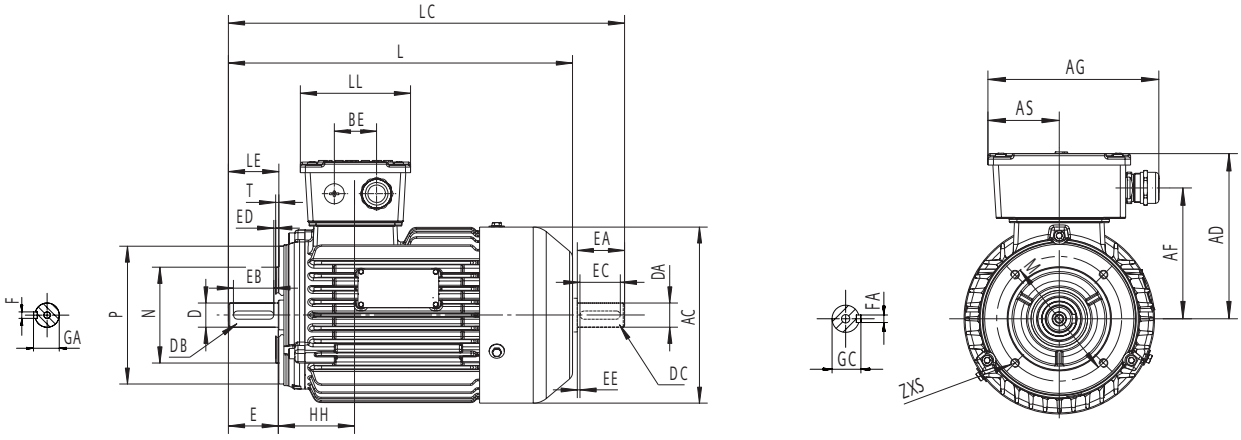

| 机座号 Frame size | 类型 Type 1LE8005 | 极数 poles | 尺寸图依据 IEC 标准 Dimension designation according to IEC standards | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | AA | AB | AC[1] | AD/AD' | AF/AF' | AG | AH | AS | B[2] | BA | BA' | BB | BC | BE | C | CA[2] | H | h |
| 250M | 2C □ 2 | 2 | 406 | 100 | 490 | 484 | 410 | 334 | 341 | 682 | 119 | 349 | 111 | 111 | 409 | 30 | 84 | 168/183[3] | 315 | 250 | 84 |
| | | 4,6 | 406 | 100 | 490 | 484 | 410 | 334 | 341 | 682 | 119 | 349 | 111 | 111 | 409 | 30 | 84 | 168/183[3] | 315 | 250 | 84 |
| 280 S | 2D □ 0 | 2 | 457 | 100 | 540 | 557 | 420 | 346 | 341 | 700 | 119 | 368 | 114 | 165 | 479 | 30 | 84 | 190/197[3] | 327 | 280 | 114 |
| | | 4,6 | 457 | 100 | 540 | 557 | 420 | 346 | 341 | 700 | 119 | 368 | 114 | 165 | 479 | 30 | 84 | 190/197[3] | 327 | 280 | 114 |
| 280 M | 2D □ 2 | 2 | 457 | 100 | 540 | 557 | 420 | 346 | 341 | 700 | 119 | 419 | 114 | 165 | 479 | 30 | 84 | 190/146[3] | 276 | 280 | 114 |
| | | 4 | 457 | 100 | 540 | 557 | 420 | 346 | 341 | 700 | 119 | 419 | 114 | 114 | 479 | 30 | 84 | 190/201[3] | 366 | 280 | 114 |
| | | 6 | 457 | 100 | 540 | 557 | 420 | 346 | 341 | 700 | 119 | 419 | 114 | 165 | 479 | 30 | 84 | 190/146[3] | 276 | 280 | 114 |

[1] 包含螺栓头的尺寸。
[2] 该尺寸为 DIN EN 50347 标准所列机座号对应尺寸。
[3] 仅适用于配置 H08 选件的电机。

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




IM B14 安装方式 Type of construction IM B14

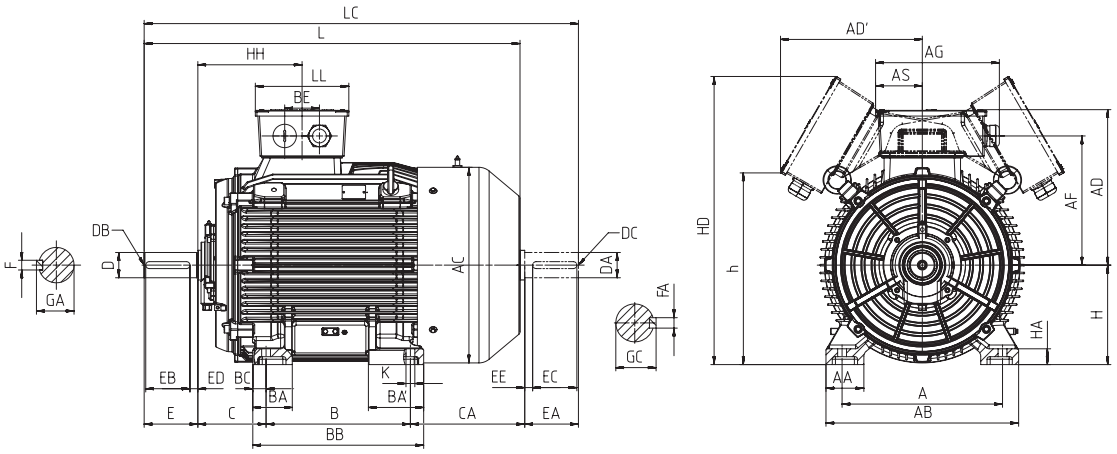



| 机座号 Frame size | 类型 Type 1LE8005 | 极数 poles | 尺寸图依据 IEC 标准 Dimension designation according to IEC standards | | | | | | 驱动端轴伸直径 DE shaft extensiion | | | | | | | 非驱动端轴伸（选件号为 L72) NDE shaft extension (option code L72) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | HA | HH | K/K' | L | LC | LL | D | DB | E | EB | ED | F | GA | DA | DC | EA | EC | EE | FA | GC |
| 250M | 2C □ 2 | 2 | 40 | 248 | 24 | 965 | 1115 | 246 | ø60 | M20×42 | 140 | 125 | 7.5 | 18 | 64 | ø60 | M20×42 | 140 | 125 | 7.5 | 18 | 64 |
| | | 4,6 | 40 | 248 | 24 | 965 | 1115 | 246 | ø65 | M20×42 | 140 | 125 | 7.5 | 18 | 69 | ø65 | M20×42 | 140 | 125 | 7.5 | 18 | 69 |
| 280 S | 2D □ 0 | 2 | 40 | 264 | 24 | 1020 | 1165 | 246 | ø65 | M20×42 | 140 | 125 | 7.5 | 18 | 69 | ø65 | M20×42 | 140 | 125 | 7.5 | 18 | 69 |
| | | 4,6 | 40 | 264 | 24 | 1020 | 1165 | 246 | ø75 | M20×42 | 140 | 125 | 7.5 | 20 | 79.5 | ø75 | M20×42 | 140 | 125 | 7.5 | 20 | 79.5 |
| 280 M | 2D □ 2 | 2 | 40 | 264 | 24 | 1020 | 1165 | 246 | ø65 | M20×42 | 140 | 125 | 7.5 | 18 | 69 | ø65 | M20×42 | 140 | 125 | 7.5 | 18 | 69 |
| | | 4 | 40 | 264 | 24 | 1110 | 1255 | 246 | ø75 | M20×42 | 140 | 125 | 7.5 | 20 | 79.5 | ø75 | M20×42 | 140 | 125 | 7.5 | 20 | 79.5 |
| | | | 40 | 264 | 24 | 1020 | 1165 | 246 | ø75 | M20×42 | 140 | 125 | 7.5 | 20 | 79.5 | ø75 | M20×42 | 140 | 125 | 7.5 | 20 | 79.5 |

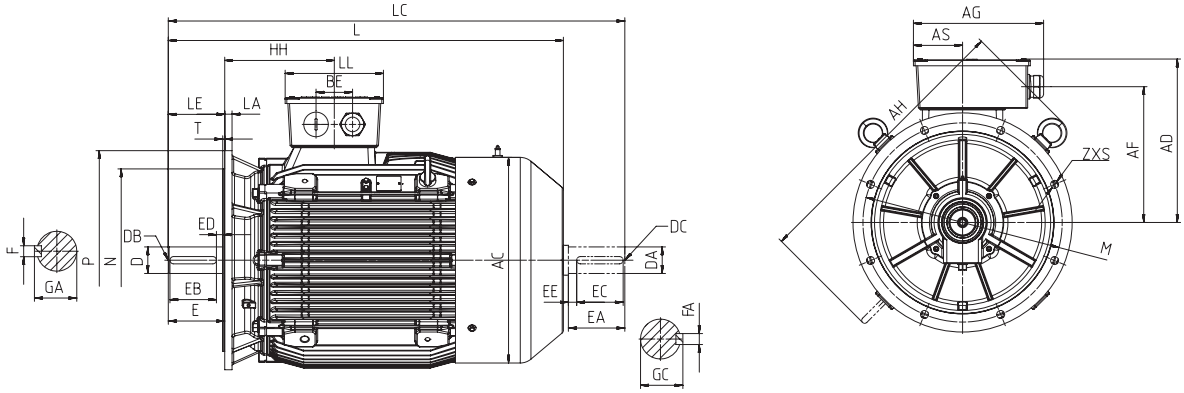
[1] Measured across the bolt heads.
[2] This dimension is assigned in DIN EN 50347 to the frame size listed.
[3] Only for the motor configured with H08 option.

# 外形尺寸 Dimension drawings

**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



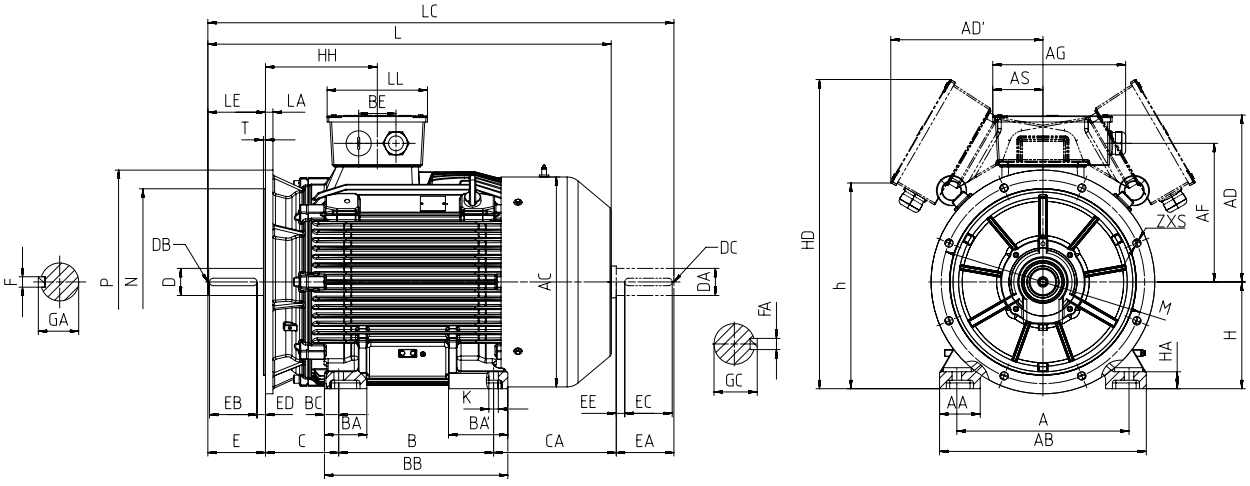

IM B5/IMV1 安装结构方式 Type of construction IM B5/IMV1




| 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[2] | H | h | HA |
| 315 S | 3A□0 | 2 | 508 | 120 | 610 | 640 | 500 | 455 | 409 | 392 | 860 | 148 | 406 | 125 | 175 | 541 | 42 | 110 | 216/235[3] | 413 | 315 | 607 | 50 |
| | | 4 | 508 | 120 | 610 | 640 | 500 | 455 | 409 | 392 | 860 | 148 | 406 | 125 | 175 | 541 | 42 | 110 | 216/380[3] | 558 | 315 | 607 | 50 |
| | | 6 | 508 | 120 | 610 | 640 | 500 | 455 | 409 | 392 | 860 | 148 | 406 | 125 | 175 | 541 | 42 | 110 | 216/235[3] | 413 | 315 | 607 | 50 |
| 315 M | 3A□2 | 2 | 508 | 120 | 610 | 640 | 500 | 455 | 409 | 392 | 860 | 148 | 457 | 125 | 175 | 541 | 42 | 110 | 216/184[3] | 362 | 315 | 607 | 50 |
| | | 4 | 508 | 120 | 610 | 640 | 500 | 455 | 409 | 392 | 860 | 148 | 457 | 125 | 175 | 541 | 42 | 110 | 216/329[3] | 507 | 315 | 607 | 50 |
| | | 6 | 508 | 120 | 610 | 640 | 500 | 455 | 409 | 392 | 860 | 148 | 457 | 125 | 175 | 541 | 42 | 110 | 216/184[3] | 362 | 315 | 607 | 50 |
| 315 L | 3A□5 / □6 / □7 | 2 | 508 | 120 | 610 | 622 | 570 | 430 | 488 | 483 | 898 | 199 | 508 | 177 | 302 | 770 | 70 | 140 | 216/468[3] | 616 | 315 | 672 | 50 |
| | | 4 | 508 | 120 | 610 | 622 | 570 | 430 | 488 | 483 | 898 | 199 | 508 | 177 | 302 | 770 | 70 | 140 | 216/468[3] | 616 | 315 | 672 | 50 |
| | 3AC5 | 6 | 508 | 120 | 610 | 640 | 570 | 455 | 488 | 392 | 860 | 199 | 508 | 125 | 125 | 592 | 42 | 110 | 216/183[3] | 361 | 315 | 607 | 50 |
| | 3AC6 | 6 | 508 | 120 | 610 | 640 | 570 | 455 | 488 | 392 | 860 | 199 | 508 | 125 | 125 | 592 | 42 | 110 | 216/278[3] | 456 | 315 | 607 | 50 |
| 355 M | 3B□2 | 2 | 610 | 120 | 730 | 712 | 640 | 535 | 533 | 464 | 935 | 174 | 560 | 153 | 207 | 750 | 68 | 130 | 254/378[3] | 566 | 355 | 758 | 53 |
| | | 4,6 | 610 | 120 | 730 | 712 | 640 | 535 | 533 | 464 | 975 | 174 | 560 | 153 | 153 | 696 | 68 | 130 | 254/318[3] | 506 | 355 | 746 | 53 |
| | 3B□3 | 2 | 610 | 120 | 730 | 712 | 640 | 535 | 533 | 464 | 935 | 174 | 560 | 153 | 207 | 750 | 68 | 130 | 254/378[3] | 566 | 355 | 758 | 53 |
| | | 4,6 | 610 | 120 | 730 | 712 | 640 | 535 | 533 | 464 | 975 | 174 | 560 | 153 | 153 | 696 | 68 | 130 | 254/318[3] | 506 | 355 | 746 | 53 |
| | 3B□4 | 6 | 610 | 120 | 730 | 712 | 640 | 535 | 533 | 464 | 975 | 174 | 560 | 153 | 153 | 696 | 68 | 130 | 254/318[3] | 506 | 355 | 746 | 53 |
| 355 L | 3B□5 / 3B□6 | 2 | 610 | 120 | 730 | 712 | 640 | 535 | 533 | 464 | 975 | 174 | 630 | 153 | 153 | 750 | 68 | 130 | 254/328[3] | 516 | 355 | 746 | 53 |
| | | 4,6 | 610 | 120 | 730 | 712 | 640 | 535 | 533 | 464 | 975 | 174 | 630 | 153 | 153 | 750 | 68 | 130 | 254/328[3] | 516 | 355 | 746 | 53 |

[1] 包含螺栓头的尺寸。 [2] 该尺寸为 DIN EN 50347 标准所列机座号对应尺寸。 [3] 仅适用于配置 H08 选件的电机。

IM B35 安装方式 Type of construction IM B35



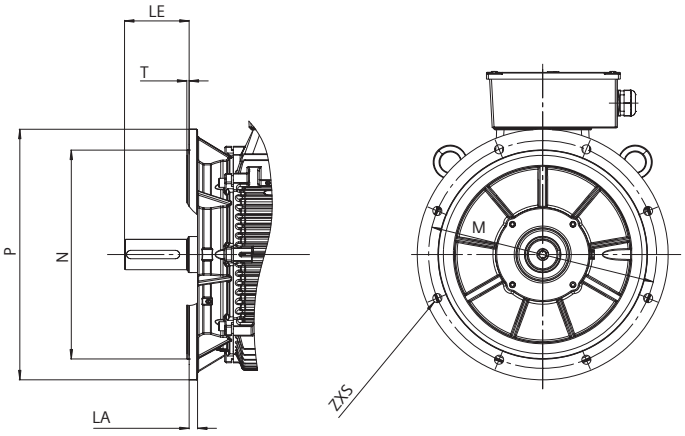

| 机座号 Frame size | 类型 Type 1LE8005 | 极数 poles | 尺寸图依据 IEC 标准 Dimension designation according to IEC standards | | | | | | 驱动端轴伸直径 DE shaft extensiion | | | | | | | 非驱动端轴伸（选件号为 L72) NDE shaft extension (option code L72) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | HD | HH | K | L | LC | LL | D | DB | E | EB | ED | F | GA | DA | DC | EA | EC | EE | FA | GC |
| 315 S | 3A□0 | 2 | 915 | 330 | ø28 | 1165 | 1315 | 296 | ø65 | M20×42 | 140 | 125 | 10 | 18 | 69 | ø65 | M20×42 | 140 | 125 | 10 | 18 | 69 |
| | | 4 | 915 | 330 | ø28 | 1340 | 1520 | 296 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 |
| | | 6 | 915 | 330 | ø28 | 1195 | 1375 | 296 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 |
| 315 M | 3A□2 | 2 | 915 | 330 | ø28 | 1165 | 1315 | 296 | ø65 | M20×42 | 140 | 125 | 10 | 18 | 69 | ø65 | M20×42 | 140 | 125 | 10 | 18 | 69 |
| | | 4 | 915 | 330 | ø28 | 1340 | 1520 | 296 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 |
| | | 6 | 915 | 330 | ø28 | 1195 | 1375 | 296 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 |
| 315 L | 3A□5 / □6 / □7 | 2 | 965 | 382 | ø28 | 1475 | 1620 | 380 | ø65 | M20×42 | 140 | 125 | 10 | 18 | 69 | ø65 | M20×42 | 140 | 125 | 10 | 18 | 69 |
| | | 4 | 965 | 382 | ø28 | 1505 | 1680 | 380 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 |
| | 3AC5 | 6 | 915 | 330 | ø28 | 1245 | 1425 | 296 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 |
| | 3AC6 | 6 | 915 | 330 | ø28 | 1340 | 1520 | 296 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 | ø80 | M20×42 | 170 | 140 | 25 | 22 | 85 |
| 355 M | 3B□2 | 2 | 1107 | 281 | ø28 | 1500 | 1660 | 347 | ø75 | M20×42 | 140 | 125 | 10 | 20 | 79.5 | ø75 | M20×42 | 140 | 125 | 10 | 20 | 79.5 |
| | | 4,6 | 1095 | 322 | ø28 | 1470 | 1660 | 347 | ø95 | M24×50 | 170 | 140 | 25 | 25 | 100 | ø95 | M24×50 | 170 | 140 | 25 | 25 | 100 |
| | 3B□3 | 2 | 1107 | 281 | ø28 | 1500 | 1660 | 347 | ø75 | M20×42 | 140 | 125 | 10 | 20 | 79.5 | ø75 | M20×42 | 140 | 125 | 10 | 20 | 79.5 |
| | | 4,6 | 1095 | 322 | ø28 | 1470 | 1660 | 347 | ø95 | M24×50 | 170 | 140 | 25 | 25 | 100 | ø95 | M24×50 | 170 | 140 | 25 | 25 | 100 |
| | 3B□4 | 6 | 1095 | 322 | ø28 | 1470 | 1660 | 347 | ø95 | M24×50 | 170 | 140 | 25 | 25 | 100 | ø95 | M24×50 | 170 | 140 | 25 | 25 | 100 |
| 355 L | 3B□5 / 3B□6 | 2 | 1095 | 322 | ø28 | 1520 | 1680 | 347 | ø75 | M20×42 | 140 | 125 | 10 | 20 | 79.5 | ø75 | M20×42 | 140 | 125 | 10 | 20 | 79.5 |
| | | 4,6 | 1095 | 322 | ø28 | 1550 | 1740 | 347 | ø95 | M24×50 | 170 | 140 | 25 | 25 | 100 | ø95 | M24×50 | 170 | 140 | 25 | 25 | 100 |

[1] Measured across the bolt heads. [2] This dimension is assigned in DIN EN 50347 to the frame size listed. [3] Only for the motor configured with H08 option.

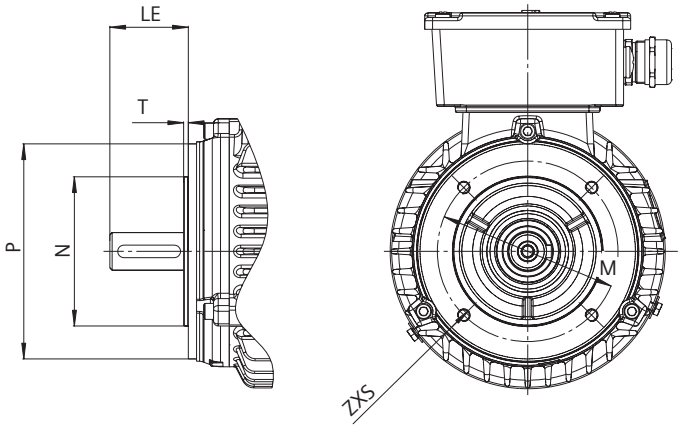
# 外形尺寸 Dimension drawings

## 法兰尺寸 Flange dimension

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




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




| 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 |
| 80 | IM B5, IM B35, IM V1, IM V3 | FF165 | 10 | 40 | 165 | 130 | 200 | 12 | 3.5 | 4 |
| | IM B14, IM V18, IM V19 | FT100 | - | 40 | 100 | 80 | 120 | M6 | 3 | 4 |
| 90 | IM B5, IM B35, IM V1, IM V3 | FF165 | 10 | 50 | 165 | 130 | 200 | 12 | 3.5 | 4 |
| | IM B14, IM V18, IM V19 | FT130 | - | 50 | 115 | 95 | 140 | M8 | 3 | 4 |
| 100 | IM B5, IM B35, IM V1, IM V3 | FF215 | 11 | 60 | 215 | 180 | 250 | 14.5 | 4 | 4 |
| | IM B14, IM V18, IM V19 | FT130 | - | 60 | 130 | 110 | 160 | M8 | 3.5 | 4 |
| 112 | IM B5, IM B35, IM V1, IM V3 | FF215 | 11 | 60 | 215 | 180 | 250 | 14.5 | 4 | 4 |
| | IM B14, IM V18, IM V19 | FT130 | - | 60 | 130 | 110 | 160 | M8 | 3.5 | 4 |
| 132 | IM B5, IM B35, IM V1, IM V3 | FF265 | 12 | 80 | 265 | 230 | 300 | 14.5 | 4 | 4 |
| | IM B14, IM V18, IM V19 | FF165 | - | 80 | 165 | 130 | 200 | M10 | 3.5 | 4 |
| 160 | IM B5, IM B35, IM V1, IM V3 | FF300 | 13 | 110 | 300 | 250 | 350 | 18.5 | 5 | 4 |
| | IM B14, IM V18, IM V19 | FT215 | - | 110 | 215 | 180 | 250 | M12 | 4 | 4 |
| 180 | IM B5, IM B35, IM V1, IM V3 | FF300 | 13 | 110 | 300 | 250 | 350 | 18.5 | 5 | 4 |
| 200 | IM B5, IM B35, IM V1, IM V3 | FF350 | 15 | 110 | 350 | 300 | 400 | 18.5 | 5 | 4 |
| 225 | IM B5, IM B35, IM V1, IM V3 | FF400 | 16 | 110/140 [3] | 400 | 350 | 450 | 18.5 | 5 | 8 |
| 250 | IM B5, IM B35, IM V1, IM V3 | FF500 | 18 | 140 | 500 | 450 | 550 | 18.5 | 5 | 8 |
| 280 | IM B5, IM B35, IM V1, IM V3 | FF500 | 18 | 140 | 500 | 450 | 550 | 18.5 | 5 | 8 |
| 315 | IM B5, IM B35, IM V1, IM V3 | FF600 | 22 | 140/170 [3] | 600 | 550 | 660 | 24 | 6 | 8 |
| 355 | IM B35, IM V1 | FF740 | 25 | 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.

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环境管理体系认证证书

证书编号：00123E33506R5L/3200

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