



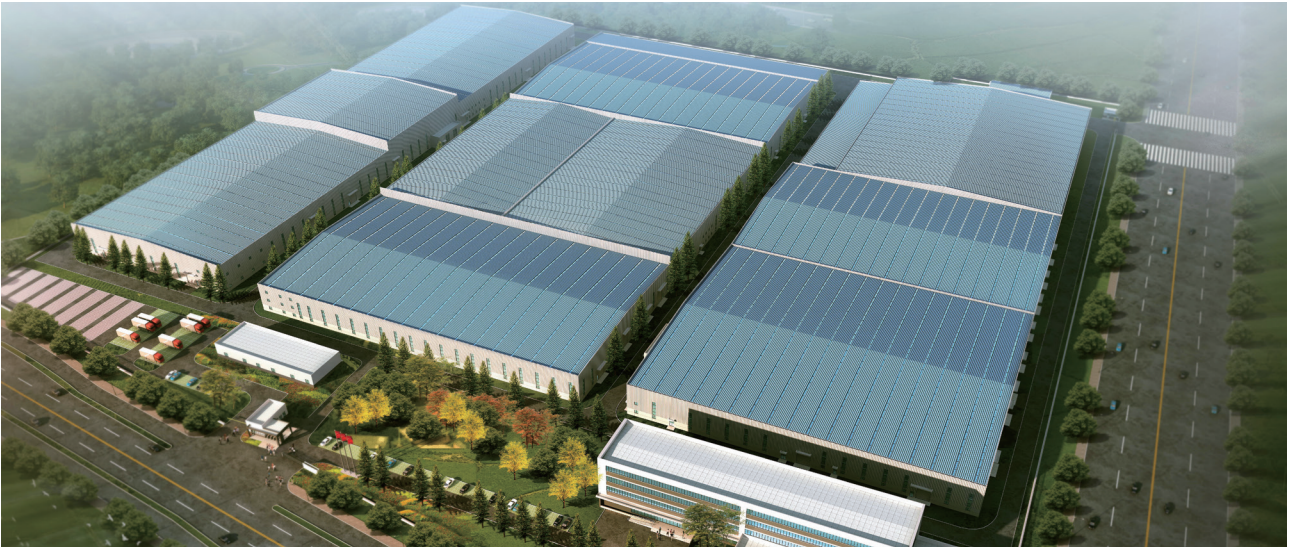
# 1TLO 铝壳系列低压三相异步电动机 1TLO Al Frame series Low-voltage Three-phase Asynchronous Motor

产品样本 Catalog  
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# 公司概况 Company Profile



## 西门子电机（中国）有限公司 Siemens Standard Motors Ltd. (SSML)

西门子电机（中国）有限公司是西门子在中国的独资企业，位于江苏省仪征市，公司主要致力于研发和生产中小型低压三相异步电动机。目前生产符合 IEC 标准的西门子品牌三相异步电动机、以及按中国标准设计的贝得品牌系列三相异步电动机。

作为西门子在全球中小型低压电机产品的重要生产基地之一，公司坚持秉承西门子 100 多年的电动机设计和生产经验和先进技术，拥有先进的生产设备和生产工艺，采用西门子特色的现代化管理模式，严格按照国际标准 ISO9001:2015 实施全面质量管理，竭诚为广大客户提供优质的产品和服务！

Siemens Standard Motors Ltd. (SSML) is a Siemens-owned company in China. SSML is located in Yizheng City, Jiangsu Province. The company focuses on developing and producing small and medium low-voltage motors. Currently, SSML mainly produce Siemens brand low voltage AC motors according to IEC standards, and Beide brand low voltage motors designed according to China local standards.

As one of Siemens main low-voltage motor production facilities worldwide, SSML uses the knowledge and experience of more than 100 years in motor design and manufacturing, owns the advanced manufacture equipment and process, adopts the SIEMENS modern management model, and implements comprehensive quality control according to ISO9001 2015. SSML will continuously serve customers with high quality products and good service.

# 公司概况 Company Profile



## 质量方针

- 质量从我做起，第一次把事情做对。
- 鼓励员工发现问题并勇于承担责任。
- 拒不接受不合格产品。
- 持续改进我们的流程，超越客户期望。

## 环境方针

西门子电机（中国）有限公司的环境、职业健康和安全管理方针是：

- 我们依据 ISO14001:2015 和 ISO 45001-2018 标准的要求，有效建立、实施环境和职业健康安全管理体系，不断提高，持续改进。
- 我们承诺遵守环境、职业健康安全相关的法律法规，履行环境保护及职业健康安全防护职责。
- 我们致力于履行应负的社会责任和义务，合理使用资源，保护环境，加强职业健康安全管理，实现安全生产零伤害。

## Quality Guideline

- Quality starts with me, Do it right in the first time.
- Encourage our employee to address problem openly and take responsibility.
- Refuse to accept defective product.
- Continuously improve our process to exceed customer's expectation.

## Environmental Guideline

EHS Policy of Siemens Standard Motors Ltd. is as follows:

- We institute and implement a continuously improving management system addressing our environment, occupational health and safety in compliance with the requirements of ISO14001:2015 and ISO 45001-2018 criteria.
- We commit ourselves to abiding by the environmental, occupational health and safety laws and regulations, and fulfilling our duties in environmental protecting and occupational health safeguarding.
- We commit ourselves to the fulfillment of our social responsibility and obligation, properly harnessing resources, protecting our environment, enhancing occupational health and safety management with the ultimate goal of zero harm in our production process.

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# 概述 Overview



铝壳电机 Al housing motor

额定功率：0.55 ~ 18.5 kW

机座号：80 ~ 160

电压与频率：支持多种电压与频率

冷却方式：标配 IC411，IC416 可选

注油装置：标配为永久润滑

防护等级：IP55

绝缘等级：F

环境温度：-15 ~ 40 °C

海拔高度：不超过 1000 m

Rated output: 0.55 ~ 18.5 kW

Frame size: 80 ~ 160

Voltage and Frequency: support multiple voltage and frequency

Cooling method: IC411 as standard, IC416 is optional

Oiling device: Permanent lubrication as standard

Degree of protection: IP55

Degree of insulation: F

Coolant temperature: -15 ~ 40 °C

Site altitude above sea level: not exceed 1000 m

1TLO 系列电动机是全新设计的高效低压三相异步电动机，机壳有铸铁和铸铝两种可选<sup>1)</sup>，适用于连续工作制(S1)工作运行。1TLO 系列电动机具有效率高、结构新颖、造型美观、噪音低、振动小、绝缘等级高等特点，可用于风机、泵、压缩机、纺织机械等多种工业应用领域。

通过采用 1TLO 系列电动机，客户可以节能达 10%，这有利于提升客户的行业地位，增强其产品的竞争力！

相对于铸铁机壳电机，铝壳电机质量更轻，外观表面质量更好。

<sup>1)</sup> 铸铁电机内容请单独见铸铁电机样本。

1TLO series of motors is the newly designed high efficiency low voltage three phase asynchronous motor, the housing material have two options, cast iron or aluminum<sup>1)</sup>, is designed for continuous duty operation(S1). 1TLO series of motors owns the features of high efficiency, novel structure, beautiful appearance, low noise, small vibration, high degree of insulation, etc, also can be used in the fields of fans, pump, compressors and textile machine.

By adopting the 1TLO series of motors, customer can save energy up to 10%, which contributes to upgrading the status of the industry and enhancing the competitive power of the products.

Compared with cast iron frame motor, the quality of aluminum motor is lighter and the surface quality is better.

<sup>1)</sup> Please find the cast iron frame motor content in another catalog.

## 安装结构型式 Construction and mounting type

结构型式 Construction type	机座带底脚，端盖无法兰 With feet and without flange on the end-shield (DE)					
安装型式 Mounting type	IM B3 FS <sup>3)</sup> 80 ~ 160	IM B6 FS 80 ~ 160	IM B7 FS80 ~ 160	IM B8 FS 80 ~ 160	IM V5 <sup>1)</sup> FS 80 ~ 160	IM V6 <sup>2)</sup> FS 80 ~ 160
示意图 Diagram						
结构型式 Construction type	机座不带底脚，端盖有法兰 Without feet and with flange on the end-shield (DE)			机座带底脚，端盖有法兰 With feet and with flange on the end-shield (DE)		
安装型式 Mounting type	IM B5 FS 80 ~ 160	IM V1 <sup>1)</sup> FS 80 ~ 160	IM V3 <sup>2)</sup> FS 80 ~ 160	IM B35 FS 80 ~ 160	IM V15 <sup>1)</sup> FS 80 ~ 160	IM V35 <sup>2)</sup> FS 80 ~ 160
示意图 Diagram						
结构型式 Construction type	机座不带底脚，端盖有标准小法兰 Without feet and with C-flange on the end-shield (DE)			机座带底脚，端盖有标准小法兰 With feet and with C-flange on the end-shield (DE)		
安装型式 Mounting type	IM B14 FS 80 ~ 112	IM V18 <sup>1)</sup> FS 80 ~ 112	IM V19 <sup>2)</sup> FS 80 ~ 112	IM B34 FS80 ~ 112		
示意图 Diagram						

<sup>1)</sup> 室外使用时推荐使用护罩（选件号 H00）；

<sup>2)</sup> 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。

<sup>3)</sup> FS – 机座号

<sup>1)</sup> At outdoor application, the using of protective cover (Option code H00) is recommended

<sup>2)</sup> At out door application the protection of shaft again jet-water is recommended

<sup>3)</sup> FS-frame size

## 铭牌样例 Nameplate

		THREE-PHASE ASYNCHRONOUS MOTOR		三相异步电动机		二极能效		GB18613-2012		
型号 0AV3082B	1TL0303-0DB23-3JA6-Z	80M	LMH-1107/800003888993/001							
380VΔ / 660VY	50 Hz	14.8/8.5 A	EFF. 90.4 %	IP 55	135 kg	QJ321081	KJA012-2017			
7.5 kW	IM B35	1470 r/min	COSφ 0.85	Th.Cl.155(F)						
驱动端: 6204 2RZ C3		润滑脂: 2#中小型电机润滑脂		油脂量: 驱动端45g / 非驱动端30g						
非驱动端: 6204 2RZ C3		润滑周期: 5000h								
西门子电机(中国)有限公司 Siemens Standard Motors Ltd.										

## 轴承系统

1TL0 系列铝壳电动机标准配置密封型深沟球轴承。电动机驱动端与非驱动端轴承浮动。

标准配置的轴承可以承受一定的悬臂力，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）。

## Bearing system

1TL0 series AL frame motors are supplied with the sealed ball bearing as standard. And the floating bearings are assembled.

The standard bearing can endure a maximum cantilever force, the increased cantilever bearing design (Option code: L22) should be considered.

## 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)		
		驱动端轴承 DE bearing	非驱动端轴承 (水平安装) NDE bearing (Horizontal 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 (Horizontal mounting)	非驱动端轴承 (立式安装) NDE bearing (Vertical mounting)
80	2, 4, 6	6204 2RZ C3	6204 2RZ C3	6204 2RZ C3	—	—	—
90	2, 4, 6	6205 2RZ C3	6205 2RZ C3	6205 2RZ C3	—	—	—
100	2, 4, 6	6206 2RZ C3	6206 2RZ C3	6206 2RZ C3	6306 2RZ C3	6206 2RZ C3	6206 2RZ C3
112	2, 4, 6	6206 2RZ C3	6206 2RZ C3	6206 2RZ C3	6306 2RZ C3	6206 2RZ C3	6206 2RZ C3
132	2, 4, 6, 8	6208 2RZ C3	6208 2RZ C3	6208 2RZ C3	6308 2RZ C3	6208 2RZ C3	6208 2RZ C3
160	2	6209 2RZ C3	6209 2RZ C3	6209 2RZ C3	6309 2RZ C3	6209 2RZ C3	6209 2RZ C3
	4, 6, 8						

注: DE 驱动端  
NDE 非驱动端  
— 不能满足  
O.R. 须要特殊询价

Note: DE Driven end  
NDE Non driven end  
— Not possible  
O.R. Possible on request

### 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。

### 润滑脂寿命和再润滑周期 (电动机水平安装)

#### Grease life (Horizontal installation)

机座号Frame size	极数 Poles	润滑脂寿命Grease lifetime up to CT 40 °C <sup>1)</sup>
持久润滑型轴承的润滑脂Grease for permanent lubrication bearing		
80 ~ 160	2, 4, 6, 8	20000 或 (or) 40000 <sup>2)</sup>

注:  
1) 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。  
2) 40000 小时适用于电动机水平安装, 且轴不受额外的轴向力影响;

Note:  
1) If the coolant temperature is increased by 10 K, the grease lifetime and regreasing interval are halved.  
2) 40000 h apply to horizontally installed motors with coupling output without additional axial loads.

当电动机在非正常的条件下运行时, 轴承的寿命会缩短。如下面几种情况:

- 当电动机的运行速度高于额定速度时, 由于电动机的振动增大, 使得轴承受到额外的径向力和轴向力, 导致其寿命减少;
- 当环境或设备等因素引起电动机振动加大时, 同样轴承也会因此受到额外的径向力和轴向力, 而导致其寿命减少;
- 当环境温度每升高 10°C, 润滑脂寿命以及再润滑时间缩短一半。

- When 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.

## 接线盒技术参数 Connection boxes technical data

机座号Frame size	接线螺钉螺纹 Contact screw thread	外接电缆直径 (mm) Outer cable diameter (sealing range)	进线孔尺寸Cable entry size
80 ~ 100	M4	10 ~ 14	M24 x 1.5
112 ~ 132	M5	13 ~ 18	M27 x 2 + M27 x 2
160	M5	18 ~ 25	M36 x 2 + M36 x 2



## 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。

振动等级	机座号	56 ≤ FS ≤ 132	FS = 160
		振动速度 (mm/s)	振动速度 (mm/s)
A	安装方式		
	自由悬置	1.6	2.2
	刚性安装	1.3	1.8

## Vibration

1TL0 rotors are dynamically balanced to severity grade A using a half key.

Table below contains the effective vibration values for unloaded motors.

## 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。

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。

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

机座号 Frame size	功率 Power (W)	电压 Voltage (V)
80 ~ 90	20	220
100 ~ 112	30	220
132 ~ 160	40	220

## Anti-condensation heater

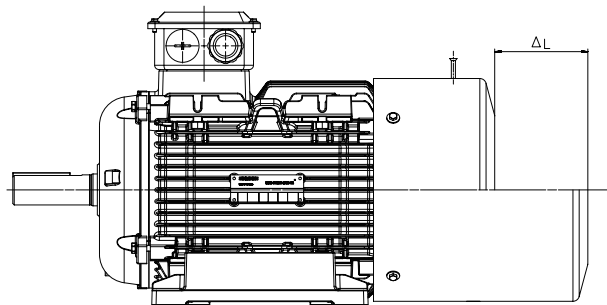
Motors whose windings are at risk of condensation due to the climatic conditions, e.g. inactive motors in humid atmospheres or motors that are subjected to widely fluctuating temperatures can be equipped with anti-condensation heaters (Option code: Q04).

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.

## 电磁制动器 Electro-Magnetic Brake

1TL0 系列电动机可附加圆盘型直流电磁制动器，适用于一切要求快速停止、准确定位、往复运转的各种机械。

Disc type DC electro-magnetic brake can be attached to the 1TL0 series of motors, the motors are suitable for all kinds of machines which require fast stop, accurate positioning and reciprocating operation.



制动器技术数据 The technical data for the brakes

机座号 Frame size	静制动力矩 (Nm) Static braking torque	空载制动时间 (s) No-load braking time	(开关在直流侧制动器电压) (V) Brake voltage when switch is on the DC side	励磁功率 (W) Excitation power	ΔL <sub>1</sub> (mm)
80	8	0.2	99	50	70
90	15	0.2	99	60	75
100	30	0.2	99	80	75
112	40	0.25	170	110	75
132	80	0.25	170	130	85
160	150	0.35	170	150	105

## 电气特性

### 额定输出

1TL0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  $-15\text{ }^{\circ}\text{C} \sim 40\text{ }^{\circ}\text{C}$ ，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  $\pm 5\%$ ，频率偏差  $\pm 2\%$ ）和 B 类（电压偏差  $\pm 10\%$ ，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。

## Electrical design

### Rated Output

1TL0 motors rated output powers means that the motor runs under continuous duty S1 (IEC 60034 - 1) operation when operated at ambient temperature from  $-15\text{ }^{\circ}\text{C}$  to  $40\text{ }^{\circ}\text{C}$  and at altitudes of up to 1000 m over sea.

### Voltage and Frequency

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

标准Standard 60034 - 1	类别Category A	类别Category B
电压偏差Voltage deviation	$\pm 5\%$	$\pm 10\%$
频率偏差Frequency deviation	$\pm 2\%$	$+3\% / -5\%$

根据标准，不推荐电动机在 B 类情况下长时间运行  
According to the standard, longer operation is not recommended for Category B.

### 电气数据公差

#### ■ 效率 $\eta$

Prated  $\leq 150\text{ kW}$ :  $-0.15 \times (1 - \eta)$

Prated  $> 150\text{ kW}$ :  $-0.10 \times (1 - \eta)$

效率  $\eta$  为小于 1 的值

#### ■ 功率因数: $(1 - \cos \phi) / 6$

最小绝对值: 0.02

最大绝对值: 0.07

#### ■ 转差率: $\pm 20\%$ (电动机的偏差 $< 1\text{ kW} \pm 30\%$ 时是允许的)

#### ■ 堵转电流: $+20\%$

#### ■ 堵转转矩: $-15\% \sim +25\%$

#### ■ 最大转矩: $-10\%$

#### ■ 转动惯量: $\pm 10\%$

### Tolerance for electrical data

#### ■ Efficiency $\eta$ at

Prated  $\leq 150\text{ kW}$ :  $-0.15 \times (1 - \eta)$

Prated  $> 150\text{ kW}$ :  $-0.10 \times (1 - \eta)$

With  $\eta$  being a decimal number

#### ■ Power factor - $(1 - \cos \phi) / 6$

Minimum absolute value: 0.02

Maximum absolute value: 0.07

#### ■ Slip $\pm 20\%$ (for motors $< 1\text{ kW} \pm 30\%$ is admissible)

#### ■ Locked-rotor current $+20\%$

#### ■ Locked-rotor torque $-15\%$ to $+25\%$

#### ■ Breakdown torque $-10\%$

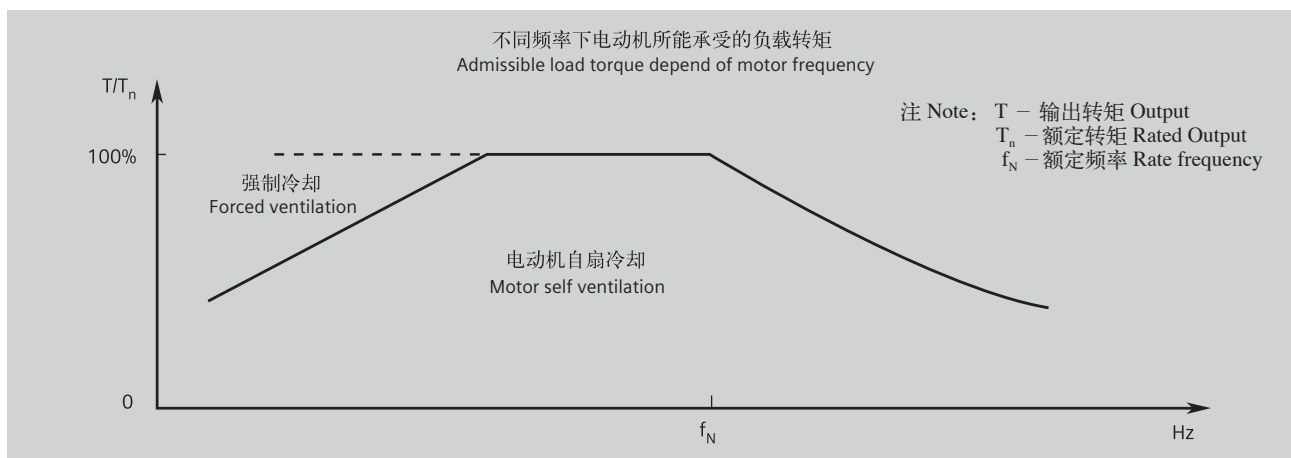
#### ■ Moment of inertia $\pm 10\%$

# 变频应用

1TL0 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。

1TL0 电动机的标准绝缘系统设计要求，能够保证其在变频器供电电压不超过 460 V 时正常运行。

1TL0 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：



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 1TL0 电动机变频应用（变频器供电），且输出额定功率时，电动机的使用温度等级为 155 (F)。为了避免杂散电流对电动机轴承的损坏，推荐 FS250 ~ 355 电动机使用绝缘轴承。请向西门子咨询关于绝缘轴承的详细信息。

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

# Converter fed application

1TL0 motors are suitable for pumps, fans, compressors, textile machine and mechanical machine applications where variable or constant speed is required.

The standard insulation of the 1TL0 motors is designed such that operation is possible on the converter at mains voltage up to 460 V.

1TL0 motors are capable for converter-fed operation with certain characteristics load, of which the load torque characteristics is referred in the following diagram:

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

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

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.

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。

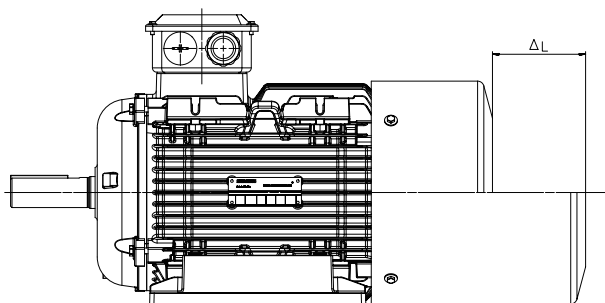
At operating speeds above rated speed the noise and vibration levels increase and the bearing life time reduce. Attention should be paid to the re-greasing intervals and the grease service life.

### 1TL0 电动机所允许的最大安全转速如下表

The allowed maximum safe operating speed of 1TL0 motors shows the diagram

机座号 Frame size	2 极 2 pole		4 极 4 pole		6 极 6 pole		8 极 8 pole	
	最高转速 Max.rpm	最大频率 fmax	最高转速 Max.rpm	最大频率 fmax	最高转速 Max.rpm	最大频率 fmax	最高转速 Max.rpm	最大频率 fmax
80	5200	87	3600	120	2400	120	1800	120
90	5200	87	3600	120	2400	120	1800	120
100	5200	87	3600	120	2400	120	1800	120
112	5200	87	3600	120	2400	120	1800	120
132	4500	75	2700	90	2400	120	1800	120
160	4500	75	2700	90	2400	120	1800	120

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



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

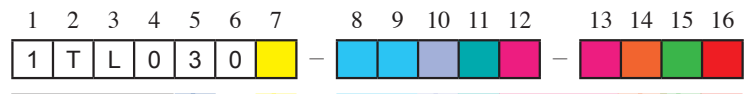
对应电动机机座号 Motor frame size	额定电压 (V) rated voltage	额定频率 (Hz) Rated frequency	功率 (W) Rated output	电流 (A) Current	转速 (r/min) Speed	ΔL
80	220D/380Y	50	30	0.14/0.08	2800	60
90	220D/380Y	50	30	0.14/0.08	2800	70
100	220D/380Y	50	52	0.21/0.12	2800	80
112	220D/380Y	50	52	0.21/0.12	2800	90
132	220D/380Y	50	45	0.35/0.2	1400	75
160	220D/380Y	50	45	0.35/0.2	1400	55

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

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

# 型号与订货号 Motor Type and Order No.

电动机订货号<sup>11)</sup>



低压系列电动机 Low-voltage motor series

3 = 铝壳  
3 = Aluminum

效率等级 Efficiency Grade

1 = IE2, 中国能效等级 3 级 China Energy Efficiency Grade3  
3 = IE3, 中国能效等级 2 级 China Energy Efficiency Grade2

机座号编号 Code of frame size

0D = 080 / 0E = 090  
1A = 100 / 1B = 112 / 1C = 132 / 1D = 160

极数编号 Code of poles

A = 2 / B = 4 / C = 6 / D = 8

机座长度编号 Code of frame length

0 or 1 = S (short) / 2 or 3 = M (medium) / 4 or 5 or 6 or 7 = L (long)

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

04 = 400VD 50Hz  
22 = 230VD / 400VY 50Hz 35 = 415VD 50Hz  
21 = 220VD / 380VY 50Hz 23 = 240VD / 415VY 50Hz 90<sup>1)</sup> = 特殊电压与频率 special voltage & frequenc  
33 = 380VD / 660VY 50Hz 34 = 400VD / 690VY 50Hz

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

T<sup>3)</sup> = IM B6  
A<sup>2) 3)</sup> = IM B3 U<sup>3)</sup> = IM B7 W<sup>3) 8)</sup> = IM V15 M<sup>3) 6) 7) 8)</sup> = IM V18  
J<sup>3)</sup> = IM B35 V<sup>3)</sup> = IM B8 Y<sup>3)</sup> = IM V35 L<sup>3) 8)</sup> = IM V19  
F<sup>3) 4) 6)</sup> = IM B5 C<sup>3) 8)</sup> = IM V5 G<sup>3) 6) 8)</sup> = IM V1 N<sup>3) 7)</sup> = IM B34  
K<sup>3) 5) 6) 7)</sup> = IM B14 D<sup>3)</sup> = IM V6 H<sup>3) 6)</sup> = IM V3

绕组保护编号 Code of winding protection

A = 无绕组保护 without winding protection  
B<sup>9)</sup> = 绕组带 3 个 PTC 热敏电阻用于跳闸 3 PTC thermistors for tripping  
C<sup>9)</sup> = 绕组带 6 个 PTC 热敏电阻用于报警和跳闸 6 PTC thermistors for alarm and tripping  
H<sup>9)10)</sup> = 绕组带 3 个 Pt100 测温元件 3 resistance thermometers Pt100  
J<sup>9)10)</sup> = 绕组带 6 个 Pt100 测温元件 6 resistance thermometers Pt100

接线盒位置编号 (从驱动端看) Code location of connection box (view from drive end)

4 = 顶端出线 top / 5<sup>12)</sup> = 右端出线 on RHS / 6<sup>12)</sup> = 左端出线 on LHS



附注:

- 1) 用电压编号 90 及相应选件号来定制其它电压 (参见选件描述) ;
- 2) 当电动机不要求带冷凝水排放孔 (订货号: H03) 时, IM B3 安装结构型式也可适用于 IM B6/7/8 (机座号 80 ~ 160) 、不带防护罩的 IM V6 和 IM V5 安装结构型式 (机座号 80 ~ 160) , 但电动机铭牌上只标示 IM B3 安装结构型式, 不标示其他安装结构型式;
- 3) 铭牌上标有指定的安装结构型式;
- 4) 当电动机不要求带冷凝水排放孔, IM B5 安装型式也可适用于不带防护罩的 IM V1 和 IM V3 安装结构型式 (机座号 80~160) , 但电动机铭牌上只标示 IM B5 安装结构型式, 不标示其他安装结构型式;
- 5) 当电动机不要求带冷凝水排放孔 (订货号: H03) 时, IM B14 安装结构型式也可适用于不带防护罩的 IM V18 和 IM V19 安装结构型式, 但电动机铭牌上只标示 IM B14 安装结构型式, 不标示其他安装结构型式;
- 6) 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" ;
- 7) 只适用于 FS80 ~ 112;
- 8) 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;
- 9) 选择此选件, 接线盒将更改为铸铁壳。
- 10) 仅适用于机座号 100-160。
- 11) 请向西门子另行咨询
- 12) 当接线盒位于电机左侧或右侧时, 出线口方向默认朝底脚。

Foot note:

- 1) Order other voltages with voltage code 90 and the corresponding Option code (see under "Option") .
- 2) The types of construction IM B6/7/8(FS80~160), IM V6 and IM V5(FS80~160) without protective cover are also possible as long as no condensation drainage holes (Order code: H03) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate.
- 3) The type of mounting construction is stamped on the rating plate.
- 4) The types of construction IM V1 and IM V3 without protective cover(FS80~160) are also possible as long as no condensation drainage holes and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate.
- 5) The types of construction IM V18 and IM V19 without protective cover are also possible as long as no condensation drainage holes (Order code: H03) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate.
- 6) 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";
- 7) Only for FS80 ~ 112.
- 8) Without canopy, for protective cover with canopy needed Option code H00.
- 9) Choose this option, the connection box will be changed to cast iron.
- 10) Only applicable for frame size 100-160.
- 11) Please specially consult with Siemens.
- 12) When connection box on the right or left side of motor, the cable entry from below as default.

订货号样例:

IE2 效率等级低压三相异步电动机  
 4 极, 15 kW, IM B3, 380VD / 660VY 50 Hz, IP55, 接线盒位置处于右侧, 进线孔向下 (从驱动端看)。  
 电动机订货号: 1TL0301-1DB43-3AA5

Order No. example:

Low voltage three phase asynchronous motor  
 4-pole, 15 kW, IM B3, 380VD/660VY 50 Hz, IP55, connection box at right side and cable entry at bottom (view from DE)  
 Motor order code: 1TL0301-1DB43-3AA5

1	T	L	0	3	0	1	-	1	D	B	4	3	-	3	A	A	5
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

IE2 效率等级铝壳低压三相异步电动机 Efficiency Grade IE2 Al Frame Low-voltage Three-phase Motor																	
机座号 Frame size: 160																	
极数 Poles: 4																	
铁心长度 Iron core length: 长机座 (L)																	
电压, 连接方式和频率 Voltage, connection method and frequency: 380VD/660VY 50Hz																	
结构型式 Construction: IM B3																	
绕组保护 Winding protection None: 无																	
接线盒位置 Connection box position at right side: 右侧																	

	电动机型号 <sup>1)</sup>			Motor type				
	1	2	3	4	5	6	7	8
	0	A	V	3	□	□	□	□
亚太系列 Asia pacific								
机壳材料 Housing material A = 铸铝 Cast Aluminium								
冷却方式 Cooling method V = 空冷 ventilated								
能效等级, Energy efficiency grade 3 = 中国能效等级 2 级, IE3 效率等级 3 = China energy efficiency grade 2, IE3 efficiency								
机座号 Frame size 08 = 80; 09 = 90; 10 = 100; 11 = 112; 13 = 132; 16 = 160								
铁心长 Core length								
极数 Poles A = 2; B = 4; C = 6;								

注:

<sup>1)</sup> 电动机型号用于证书申请等。

Note:

<sup>1)</sup> Motor type used to apply certificates and etc.

# 选型技术数据表 Technical data table

## 铝壳系列电机 AI Frame Motors

中国能效等级3级, IE2

机座号 Frame Size	额定功率 Rate Output 50 Hz	型号 Order No.	额定转速 Rated Speed	效率 — 参照 GB18613-2012 效率等级 3 Efficiency is in accordance with the efficiency level 3 of GB18613-2012				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 / Rated torque	转动惯量 Moment of Inertia	重量 IMB3 Weight	噪声 Noise
				效率 (100% 负载) Efficiency at (50 HZ) 4/4 load	效率 (75% 负载) Efficiency at (50 HZ) 3/4 load	功率因数 Power factor	额定电流 Rated current							
	kW		rpm	%	%		A	Nm	直接起动对额定转矩 (电流) 的倍数 Direct start to rated torque (current) multiples			kgm <sup>2</sup>	kg	L <sub>pA</sub>
3000rpm 2 极 2- pole														
220VD/380VY 50HZ														
80M	0.75	1TL0301-0DA22-1 □□□□	2795	77.4	78.5	0.84	1.75	2.6	5.6	2.4	2.4	0.00100	10.0	53
80M	1.1	1TL0301-0DA32-1 □□□□	2835	79.6	80.6	0.84	2.50	3.7	6	2.8	3.2	0.0013	12.0	53
90S	1.5	1TL0301-0EA02-1 □□□□	2890	81.3	81.7	0.84	3.35	5.0	6.5	2.4	3.1	0.0022	15.0	64
90L	2.2	1TL0301-0EA42-1 □□□□	2890	83.2	83.7	0.85	4.75	7.3	7.2	2.6	3.5	0.0027	18.5	64
100L	3	1TL0301-1AA42-1 □□□□	2885	84.6	85.1	0.84	6.4	9.9	7.5	4	4.5	0.0038	25	62
3000rpm 2 级 2- pole														
380VD/660VY 50HZ														
112M	4	1TL0301-1BA23-3 □□□□	2930	85.8	86.6	0.86	8.2	13	7.5	2.2	2.9	0.0066	30	69
132S	5.5	1TL0301-1CA03-3 □□□□	2930	87.0	87.6	0.87	11.0	17.9	7.5	2.2	2.9	0.014	42	70
132S	7.5	1TL0301-1CA13-3 □□□□	2930	88.1	88.8	0.89	14.5	24.4	7.5	2.3	2.9	0.018	49	70
160M	11	1TL0301-1DA23-3 □□□□	2935	89.4	90.1	0.86	21.5	35.8	7.5	2.2	2.9	0.032	71	75
160M	15	1TL0301-1DA33-3 □□□□	2935	90.3	91.0	0.86	29.5	48.8	7.5	2.4	3.2	0.040	82	75
160L	18.5	1TL0301-1DA43-3 □□□□	2935	90.9	91.7	0.89	34.5	60.2	7.5	2.4	3.2	0.048	95	75
1500rpm 4 级 4- pole														
220VD/380VY 50HZ														
80M	0.55	1TL0301-0DB22-1 □□□□	1425	74.0	74.7	0.8	1.40	3.7	6	2	2.7	0.0017	11.0	45
80M	0.75	1TL0301-0DB32-1 □□□□	1440	79.6	79.6	0.75	1.90	5.0	6.5	2.8	3.5	0.0020	12.5	45
90S	1.1	1TL0301-0EB02-1 □□□□	1440	81.4	81.4	0.75	2.75	7.3	7	2.8	3.5	0.0031	15.5	47
90L	1.5	1TL0301-0EB42-1 □□□□	1435	82.8	82.8	0.76	3.60	9.9	7	3	3.8	0.0039	18.0	47
100L	2.2	1TL0301-1AB42-1 □□□□	1435	84.3	85.0	0.79	5.0	14.6	7	3	3.2	0.0085	24	55
100L	3	1TL0301-1AB52-1 □□□□	1435	85.5	86.3	0.77	6.7	20.0	7	3	3.2	0.0093	27	55

注:

<sup>1)</sup> 关于其他电压与频率、绕组保护及接线盒位置的编码, 请见第 13 页“订货号”部分;

<sup>2)</sup> 噪声值仅适用于电动机在 50 Hz 电源直接供电且空载运行时的情况, 容差为 +3 dB。

Note:

<sup>1)</sup> About the code of other voltage and frequency, winding protection and connection box position, please refer to Orde No. in page 13.

<sup>2)</sup> Noise value is only applicable to the direct power supply of the motor in 50Hz power supply and the condition of no-load operation, the tolerance is +3dB.

# 选型技术数据表 Technical data table

## 铝壳系列电机 AI Frame Motors

### 中国能效等级3级, IE2

机座号 Frame Size	额定功率 Rate Output 50 Hz	型号 Order No.	额定转速 Rated Speed	效率 — 参照 GB18613-2012 效率等级 3 Efficiency is in accordance with the efficiency level 3 of GB18613-2012				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 / Rated torque	转动惯量 Moment of Inertia	重量 IMB3 Weight	噪声 Noise
				效率 (100% 负载) Efficiency at (50 HZ) 4/4 load	效率 (75% 负载) Efficiency at (50 HZ) 3/4 load	功率因数 Power factor	额定电流 Rated current							
	kW		rpm	%	%		A	Nm	直接起动对额定转矩 (电流) 的倍数 Direct start to rated torque (current) multiples			kgm <sup>2</sup>	kg	L <sub>plA</sub>
1500rpm 4 级 4- pole														
380VD/660VY 50HZ														
112M	4	1TL0301-1BB23-3 □□□□	1445	86.6	87.1	0.79	8.9	26.4	7.1	2.7	3.1	0.011	34	55
132S	5.5	1TL0301-1CB03-3 □□□□	1460	87.7	88.2	0.79	12.1	36.0	7.5	2.5	3.1	0.022	48	57
132M	7.5	1TL0301-1CB23-3 □□□□	1460	88.7	89.4	0.82	15.7	49.1	7.7	2.7	3.2	0.029	57	57
160M	11	1TL0301-1DB23-3 □□□□	1465	89.8	90.4	0.83	22.5	71.7	7.5	2.5	3.1	0.052	77	60
160L	15	1TL0301-1DB43-3 □□□□	1465	90.6	91.3	0.85	29.5	97.8	7.8	2.7	3.2	0.068	94	60
1000rpm 6 级 6- pole														
220VD/380VY 50HZ														
80M	0.55	1TL0301-0DC32-1 □□□□	895	71.0	72.0	0.76	1.55	5.9	4.5	2.3	2.3	0.0024	13.0	44
90S	0.75	1TL0301-0EC02-1 □□□□	935	75.9	76.5	0.71	2.10	7.7	5	2.1	2.6	0.0030	15.5	48
90L	1.1	1TL0301-0EC42-1 □□□□	945	78.1	78.1	0.70	3.05	11.1	5.5	2.4	2.8	0.0043	19.5	48
100L	1.5	1TL0301-1AC42-1 □□□□	945	79.8	80.1	0.74	3.85	15.2	5.5	2.4	2.9	0.0082	25	52
112M	2.2	1TL0301-1BC22-1 □□□□	950	81.8	82.5	0.73	5.6	22.1	5.5	2.6	3.3	0.012	34	54
132S	3	1TL0301-1CC02-1 □□□□	960	83.3	84.3	0.73	7.5	29.8	6	2	2.2	0.019	43	56
1000rpm 6 级 6- pole														
380VD/660VY 50HZ														
132M	4	1TL0301-1CC23-3 □□□□	960	84.6	85.4	0.73	9.8	39.8	6.2	2.2	2.5	0.025	50	56
132M	5.5	1TL0301-1CC33-3 □□□□	960	86.0	86.6	0.75	13.0	54.7	6.4	2.4	2.6	0.032	60	56
160M	7.5	1TL0301-1DC23-3 □□□□	975	87.2	87.9	0.77	17.0	73.5	6.4	2.1	2.6	0.1069	82	60
160L	11	1TL0301-1DC43-3 □□□□	975	88.7	89.4	0.78	24.0	108	6.4	2.1	2.6	0.14	96	60
750rpm 8 极 8-pole														
380VD/660VY 50HZ														
132S	2.2	1TL0301-1CD02-1 □□□□	720	77.6	78.3	0.60	6.2	29.2	4.6	1.9	3	0.029	41	51
132M	3	1TL0301-1CD22-1 □□□□	720	80.0	80.3	0.60	7.6	40	4.8	2	3	0.038	48	51
160M	4	1TL0301-1DD23-3 □□□□	730	81.9	82.1	0.66	11.2	52	4.9	1.8	2.8	0.052	77	59
160M	5.5	1TL0301-1DD33-3 □□□□	720	83.8	84.1	0.68	14.7	73	4.6	1.5	2	0.052	78	59
160L	7.5	1TL0301-1DD43-3 □□□□	725	85.3	85.5	0.67	19.9	99	5	1.7	2.3	0.076	102	59

注:

<sup>1)</sup> 关于其他电压与频率、绕组保护及接线盒位置的编码, 请见第 13 页“订货号”部分;

<sup>2)</sup> 噪声值仅适用于电动机在 50 Hz 电源直接供电且空载运行时的情况, 容差为 +3 dB。

Note:

<sup>1)</sup> About the code of other voltage and frequency, winding protection and connection box position, please refer to Orde No. in page 13.

<sup>2)</sup> Noise value is only applicable to the direct power supply of the motor in 50Hz power supply and the condition of no-load operation, the tolerance is +3dB.

# 选型技术数据表 Technical data table

## 铝壳系列电机 AI Frame Motors

### 中国能效等级2级, IE3

机座号 Frame Size	额定 功率 Rate Output 50 Hz	电动机 型号	订货号 Order No.	额定 转速 Rated Speed	效率 — 参照 GB18613-2012 效率等级 2 Efficiency is in accordance with the efficiency level 2 of GB18613-2012				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 / Rated torque	转动 惯量 Moment of Inertia	重量 IMB3 Weight	噪声 Noise
					效率 (100% 负载) Effeciency at (50 Hz) 4/4 load	效率 (75% 负载) Effeciency at (50 Hz) 3/4 load	功率 因数 Power factor	额定 电流 Rated current							
	kW			rpm	%	%		A	Nm	直接起动对额定转矩 (电流) 的倍数		kgm <sup>2</sup>	kg	L <sub>p(A)</sub>	
3000rpm 2 极 2- pole															
220VD/380VY 50HZ															
80M	0.75	0AV3082A	1TL0303-0DA22-1 □□□□	2835	80.7	82.9	0.86	1.64	2.5	6.0	2.4	3.0	0.00208	11.5	51
80M	1.1	0AV3083A	1TL0303-0DA32-1 □□□□	2870	82.7	84.0	0.83	2.45	3.7	6.5	2.4	3.4	0.00154	13.5	51
90S	1.5	0AV3090A	1TL0303-0EA02-1 □□□□	2900	84.2	84.8	0.86	3.15	4.9	6.5	2.0	3.4	0.00276	17.5	58
90L	2.2	0AV3094A	1TL0303-0EA42-1 □□□□	2910	85.9	87.2	0.88	4.4	7.2	7.5	2.3	3.6	0.00356	22	58
100L	3	0AV3104A	1TL0303-1AA42-1 □□□□	2875	87.1	88.3	0.87	6	10.0	7.8	2.6	3.6	0.00462	29	62
3000rpm 2 级 2- pole															
380VD/660VY 50HZ															
112M	4	0AV3112A	1TL0303-1BA23-3 □□□□	2925	88.1	89.6	0.90	7.7	13.1	7.8	2.6	3.6	0.0088	35	65
132S	5.5	0AV3130A	1TL0303-1CA03-3 □□□□	2930	89.2	90.2	0.89	10.5	17.9	7.5	2.3	3.6	0.0185	49	67
132S	7.5	0AV3131A	1TL0303-1CA13-3 □□□□	2925	90.1	91.5	0.90	14.1	24.5	7.5	2.3	3.6	0.0232	56	67
160M	11	0AV3162A	1TL0303-1DA23-3 □□□□	2935	91.2	92.0	0.89	20.5	35.8	7.5	2.3	2.5	0.0390	80	69
160M	15	0AV3163A	1TL0303-1DA33-3 □□□□	2930	91.9	92.6	0.89	28	48.9	7.5	2.4	3.4	0.0472	90	69
160L	18.5	0AV3164A	1TL0303-1DA43-3 □□□□	2940	92.4	93.0	0.89	34	60.1	7.8	2.4	3.4	0.0577	104	69
1500rpm 4 级 4- pole															
220VD/380VY 50HZ															
80M	0.55	0AV3082B	1TL0303-0DB22-1 □□□□	1440	80.8	81.8	0.76	1.36	3.6	5.5	2.2	3.2	0.00216	12.5	45
80M	0.75	0AV3083B	1TL0303-0DB32-1 □□□□	1445	82.5	82.9	0.75	1.84	5.0	6.0	2.7	3.7	0.00250	13.5	45
90S	1.1	0AV3090B	1TL0303-0EB02-1 □□□□	1430	84.1	85.1	0.79	2.5	7.3	6.5	2.7	3.7	0.00389	17.5	47
90L	1.5	0AV3094B	1TL0303-0EB42-1 □□□□	1440	85.3	86.0	0.79	3.4	9.9	6.5	2.7	3.8	0.00499	21	47
100L	2.2	0AV3104B	1TL0303-1AB42-1 □□□□	1445	86.7	87.1	0.81	4.75	14.5	8.3	3.7	4.6	0.01125	32	52
100L	3	0AV3105B	1TL0303-1AB52-1 □□□□	1450	87.7	88.1	0.81	6.4	19.8	8.3	3.7	4.6	0.01313	35	52

注:

<sup>1)</sup> 关于其他电压与频率、绕组保护及接线盒位置的编码, 请见第 13 页“订货号”部分;

<sup>2)</sup> 噪声值仅适用于电动机在 50 Hz 电源直接供电且空载运行时的情况, 容差为 +3 dB。

Note:

<sup>1)</sup> About the code of other voltage and frequency, winding protection and connection box position, please refer to Orde No. in page 13.

<sup>2)</sup> Noise value is only applicable to the direct power supply of the motor in 50Hz power supply and the condition of no-load operation, the tolerance is +3dB.



# 选型技术数据表 Technical data table

## 铝壳系列电机 AI Frame Motors

### 中国能效等级2级, IE3

机座号 Frame Size	额定 功率 Rate Output 50 Hz	电动机 型号	订货号 Order No.	额定 转速 Rated Speed	效率 — 参照 GB18613-2012 效率等级 2 Efficiency is in accordance with the efficiency level 2 of GB18613-2012				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 / Rated torque	转动 惯量 Moment of Inertia	重量 IMB3 Weight	噪声 Noise
					效率 (100% 负载) Efficiency at (50 HZ) 4/4 load	效率 (75% 负载) Efficiency at (50 HZ) 3/4 load	功率 因数 Power factor	额定 电流 Rated current							
	kW			rpm	%	%		A	Nm	直接起动对额定转矩（电 流）的倍数		kgm <sup>2</sup>	kg	L <sub>p</sub> dBA	
1500rpm 4 级 4- pole															
380VD/660VY 50HZ															
112M	4	0AV3112B	1TL0303-1BB23-3 □□□□	1450	88.6	89.6	0.81	8.5	26.3	8.3	3.7	4.6	0.0149	40	53
132S	5.5	0AV3130B	1TL0303-1CB03-3 □□□□	1455	89.6	90.9	0.84	11.1	36.1	7.8	2.4	3.8	0.0285	55	59
132M	7.5	0AV3132B	1TL0303-1CB23-3 □□□□	1455	90.4	91.7	0.85	14.8	49.2	7.8	2.4	3.8	0.0356	66	59
160M	11	0AV3162B	1TL0303-1DB23-3 □□□□	1460	91.4	92.4	0.86	21.5	72.0	7.8	2.4	3.8	0.0648	90	61
160L	15	0AV3164B	1TL0303-1DB43-3 □□□□	1460	92.1	92.9	0.86	29	98.1	7.8	2.6	3.8	0.0811	107	61
1000rpm 6 级 6- pole															
220VD/380VY 50HZ															
80M	0.55	0AV3083C	1TL0303-0DC32-1 □□□□	935	77.2	77.5	0.67	1.62	5.6	5.0	2.7	3.4	0.00310	15.0	44
90S	0.75	0AV3090C	1TL0303-0EC02-1 □□□□	940	78.9	80.3	0.70	2.05	7.6	5.0	2.4	3.2	0.00436	19.0	45
90L	1.1	0AV3094C	1TL0303-0EC42-1 □□□□	945	81.0	81.6	0.69	3	11.1	5.5	2.7	3.5	0.00513	22	45
100L	1.5	0AV3104C	1TL0303-1AC42-1 □□□□	945	82.5	84.1	0.74	3.75	15.2	5.5	2.7	3.5	0.01136	32	49
112M	2.2	0AV3112C	1TL0303-1BC22-1 □□□□	945	84.3	86.1	0.74	5.4	22.2	6.0	2.7	3.4	0.01451	38	53
132S	3	0AV3130C	1TL0303-1CC02-1 □□□□	965	85.6	86.6	0.75	7.1	29.7	6.0	2.7	4.0	0.02666	52	57
1000rpm 6 级 6- pole															
380VD/660VY 50HZ															
132M	4	0AV3132C	1TL0303-1CC23-3 □□□□	955	86.8	88.5	0.75	9.3	40.0	6.0	2.3	3.4	0.0305	58	57
132M	5.5	0AV3133C	1TL0303-1CC33-3 □□□□	960	88.0	89.2	0.76	12.5	54.7	6.5	2.3	4.0	0.0413	71	57
160M	7.5	0AV3162C	1TL0303-1DC23-3 □□□□	980	89.1	90.4	0.78	16.4	73.1	6.5	2.3	3.6	0.126	92	61
160L	11	0AV3164C	1TL0303-1DC43-3 □□□□	980	90.3	90.3	0.77	24	107	7.0	2.3	3.6	0.1717	115	61

注:

<sup>1)</sup> 关于其他电压与频率、绕组保护及接线盒位置的编码, 请见第 13 页“订货号”部分;

<sup>2)</sup> 噪声值仅适用于电动机在 50 Hz 电源直接供电且空载运行时的情况, 容差为 +3 dB.

Note:

<sup>1)</sup> About the code of other voltage and frequency, winding protection and connection box position, please refer to Orde No. in page 13.

<sup>2)</sup> Noise value is only applicable to the direct power supply of the motor in 50Hz power supply and the condition of no-load operation, the tolerance is +3dB.

# 选件 Options

电动机订货号 Motor order code	选件号 <sup>1)</sup> Option Code	描述 Description	应用范围 Application Scope
<b>电压与频率 Voltages and frequency</b>			
1TL030 □ - □□□□ 9-0 □□□ -Z	M2A <sup>2)15)</sup>	220VD/380VY 60Hz, 50Hz 功率输出 power output	FS80 ~ 160
	M2B <sup>3)15)</sup>	380VD/660VY 60Hz, 50Hz 功率输出 power output	FS80 ~ 160
	M2C <sup>2)15)</sup>	440VY 60Hz, 50Hz 功率输出 power output	FS80 ~ 160
	M2D <sup>3)15)</sup>	440VD 60Hz, 50Hz 功率输出 power output	FS80 ~ 160
	M2E <sup>2)15)</sup>	460VY 60Hz, 50Hz 功率输出 power output	FS80 ~ 160
	M2F <sup>3)15)</sup>	460VD 60Hz, 50Hz 功率输出 power output	FS80 ~ 160
<b>线圈和绝缘 Windings and insulation</b>			
—	N01	温度等级 155 (F), 使用 155 (F), 带有服务系数 (SF1.15) Temperature class 155 (F), used according to 155 (F), with service factor (SF1.15)	FS80 ~ 160
—	N10	180 (H) 度温度等级绝缘 Temperature class 180 (H)	FS80 ~ 160
—	Q04 <sup>4)</sup>	绕组带 220 V 防潮加热带 Anti-condensation heater for 220 VAC (spaces heater)	FS80 ~ 160
<b>电动机接线盒 Motor connection box</b>			
—	R10 <sup>5)16)</sup>	接线盒直接旋转 90°, 进线口朝向驱动端 Rotation of the connection box through 90°, entry from DE	FS80 ~ 160
—	R11 <sup>6)16)</sup>	接线盒直接旋转 90°, 进线口朝向非驱动端 Rotation of the connection box through 90°, entry from NDE	FS80 ~ 160
—	R12 <sup>16)</sup>	接线盒直接旋转 180° Rotation of the connection box through 180°	FS80 ~ 160
—	H04	外部接地 external earthing	FS80 ~ 160
—	X07	铸铁接线盒 cast iron connection box	FS80 ~ 160
—	X47	电机接线盒标配 2 个自锁葛兰 Connection boxes of the motors include 2 self-locking cable gland	FS112 ~ 160
<b>轴承 Bearings</b>			
—	L80	SKF 轴承 SKF Bearing	FS80 ~ 160
—	L81	其他进口品牌轴承 Other import brand bearing	FS80 ~ 160
—	L20	驱动端轴承固定 Located bearing at DE	FS80 ~ 160
—	L22	增强悬臂力 Increased cantilever forces	FS100 ~ 160
<b>机械设计和防护等级 Mechanical design and degrees of protection</b>			
—	X17 <sup>7)8)</sup>	第二标准轴伸 Second standard shaft extension	FS80 ~ 160
—	L82 <sup>9)</sup>	驱动端轴带螺纹孔 DE shaft with threaded hole	FS80 ~ 160

<sup>1)</sup> 订货时, 电动机订货号需带“-Z”, 另外附上选件号;

<sup>2)</sup> 一般适用于 3kW 及以下功率的电机;

<sup>3)</sup> 一般适用于 3kW 以上功率的电机;

<sup>4)</sup> 选择此选件, 接线盒将更改为铸铁壳

<sup>5)</sup> 不适用 FS80-100 法兰安装电机, 且不能与选件 H08 共同使用;

<sup>6)</sup> 不适用于顶出线;

<sup>7)</sup> H00、F70 均不能与此选件并用;

<sup>8)</sup> 非驱动端上的第二轴伸尺寸见外形尺寸;

<sup>9)</sup> 螺纹孔尺寸参见“外形尺寸”部分中 DB 尺寸;

<sup>1)</sup> Order No. supplement Z with option code when ordering;

<sup>2)</sup> Only applicable to the motor whose power is 3kW and below;

<sup>3)</sup> Only applicable to the motor whose power is 3kW and above;

<sup>4)</sup> When choose these options, the connection boxes will be changed to cast iron shell;

<sup>5)</sup> Not applicable to the FS80~10 flange mounted motors, and can't be used with the option H08;

<sup>6)</sup> Not applicable to the outlet on top;

<sup>7)</sup> H00、F70 can't be used with this option;

<sup>8)</sup> Second standard shaft extension on NDE is shown in the dimension drawings;

<sup>9)</sup> Threaded hole size is shown in the DB size of the section of dimension drawings;

# 选件 Options

电动机订货号 Motor order code	选件号 <sup>1)</sup> Option Code	描述 Description	应用范围 Application Scope
—	H00 <sup>10)</sup>	电动机带防护罩 Motor with protective cover	FS80 ~ 160
—	H03 <sup>11)</sup>	排水孔 Drainage holes	FS80 ~ 160
—	F90 <sup>12)</sup>	风机电机（无风扇风罩，非驱动端全封闭） Fan motor (no fan cover, NDE fully enclosed)	FS80 ~ 160
—	X50 <sup>13)</sup>	安装欧姆龙编码器（E6B2-CWZ6C-1024）和独立驱动风扇 Install OMRON encoder (E6B2-CWZ6C-1024) and independent drive fan	FS80 ~ 160
—	F01	安装电磁制动器 Install the electro-magnetic brake	FS80 ~ 160
—	W74 <sup>14)</sup>	安装欧姆龙编码器（E6B2-CWZ1X-1024）和独立驱动风扇 Install the OMRON encoder (E6B2-CWZ1X-1024) and independent drive fan	FS80 ~ 160
—	F70 <sup>10)</sup>	电动机带独立驱动风扇 Motors with the independent drive fan	FS80 ~ 160
—	W03	电机轴驱动端带油封 Motor shaft DE with oil seal	FS80 ~ 132
<b>铭牌和测试证书 Rating plate and test certificates</b>			
—	B80	出厂检验报告 Acceptance test certificate 3.1 in accordance with EN 10204	FS80 ~ 160
<b>喷漆 Paint finish</b>			
—	W88	适用 TH, W, F1, WF1 以及海洋性气候环境用电机 Design for TH, W, F1, WF1 and Sea air resistant	FS80 ~ 160
<b>包装 Packing</b>			
—	B90	包装（FS80 ~ 132 电动机采用纸箱包装，FS160 电动机采用木箱包装） Packing (FS80~132 motors adopt the carton packaging, FS160 motors adopt the wooden cases packaging)	FS80 ~ 160

<sup>10)</sup> 无法与选件号 X17 并用；

<sup>11)</sup> 仅适用于水平安装的电动机。对于 IM B5 和 IM B14 安装结构型式的电动机，选择此选件时，必须确保接线盒处于机座顶端。对于其它安装结构型式的电机请咨询西门子；

<sup>12)</sup> 无风扇和风罩时，电动机的长度将减小  $\Delta 1$ 。如需要按照铭牌上功率数值输出时电动机需要外部冷却。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；

<sup>13)</sup> SINAMICS 变频器联结 Omron 编码器（E6B2-CWZ6C）时，变频器需要一些特殊配置。详细信息，请咨询西门子热线；

<sup>14)</sup> SINAMICS 变频器可以直接与 Omron 编码器（E6B2-CWZ1X）联结。

<sup>15)</sup> 根据国标要求，60Hz 频率下不考核能效要求。

<sup>16)</sup> 当接线盒位于电机左侧或右侧时，出线口方向默认朝底脚。

<sup>10)</sup> Unable to be used with the option X17;

<sup>11)</sup> Only applicable to the vertical mounting motors. For the construction type of IM B5 and IM B14, when choose this option, it is necessary to ensure the connection box is on top of the frame. For other construction types, please specially consult with SIEMENS.

<sup>12)</sup> When without the fans or the shells, the motor length will be decreased by  $\Delta 1$ . If it is necessary to output according to the nameplate power, the motor requires external cooling. Customers are supposed to adopt the right cooling method, without or wrong cooling methods will decrease the service life for the motors. even damage the motors;

<sup>13)</sup> When the SINAMICS frequency converter is coupled with the Omron encoder (E6B2-CWZ6C), the frequency converter requires some special configuration. For more information, please consult the SIEMENS hotline;

<sup>14)</sup> SINAMICS frequency converter can be directly coupled with the Omron encoder (E6B2-CWZ1X).

<sup>15)</sup> According to the requirements of the GB, the energy efficiency requirement is not evaluated under the frequency of 60Hz.

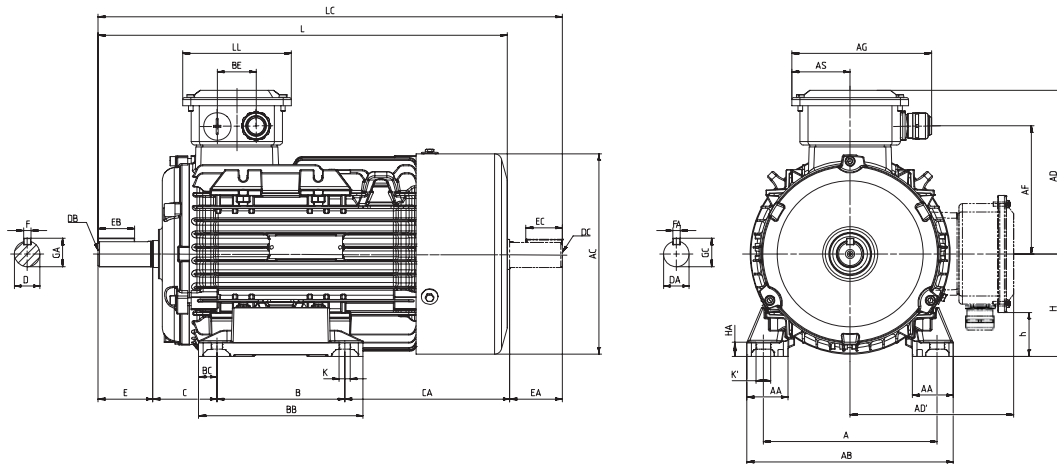
<sup>16)</sup> When connection box on the right or left side of motor, the cable entry from below as default.

# 外形尺寸 Dimension drawings

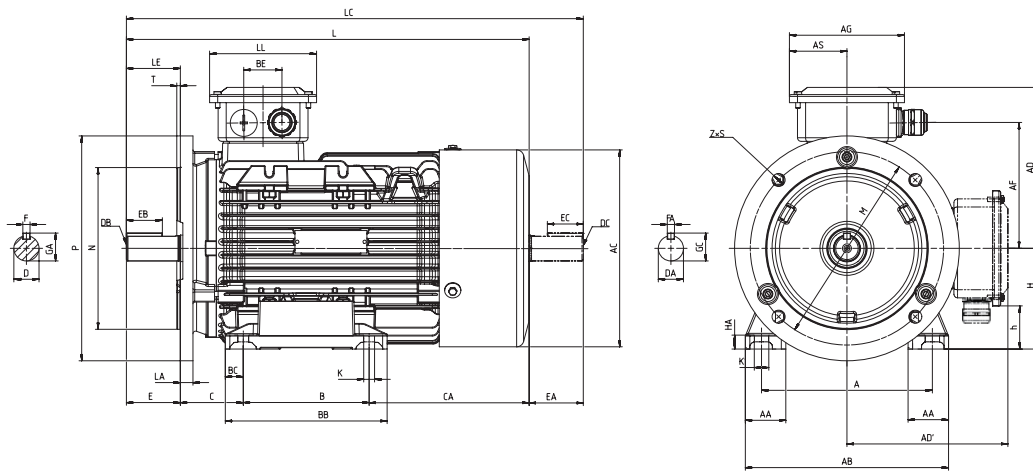
1TL0301、1TL0303 铝壳系列电机 AL Frame series motor 1TL0301、1TL0303

机座号从 80M 至 160L Frame sizes 80 M to 160 L

IM B3 安装结构型式 Type of construction IMB3



IM B35 安装结构型式 Type of construction IMB35

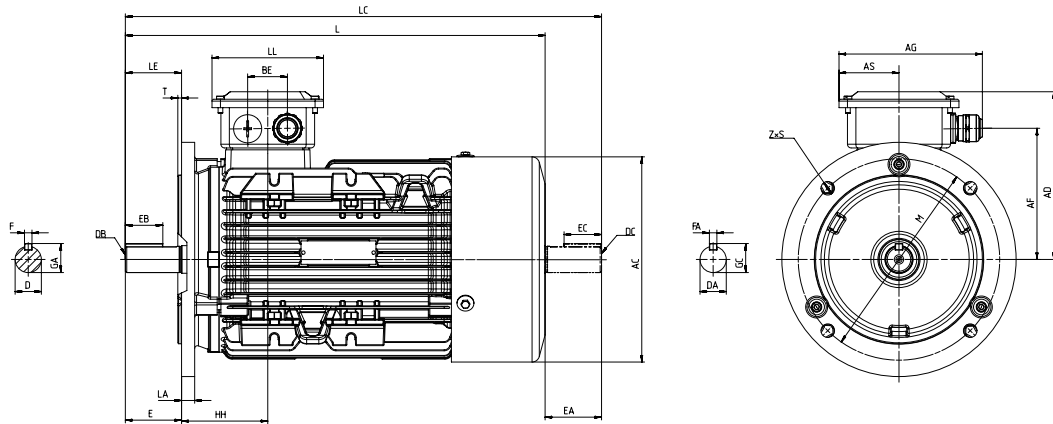


机座号 Frame size	类型 Type 1TL0001-	极数 Number of poles	尺寸图依据 IEC 标准 Dimension designation according to IEC standards												
			A	AA	AB	AC <sup>1)</sup>	AD / AD'	AF	AG	AS	B <sup>2)</sup>	BB	BC	BE	C
80 M	0D□2	2, 4, 6	125	36	160	160	135	102	120	52	100	135	18	—	50
	0D□3		125	36	160	160	135	102	120	52	100	135	18	—	50
90 S	0E□0	2, 4, 6	140	36	176	180	145	109	135	55	100	140	20	—	56
90 L	0E□4		140	36	176	180	145	109	135	55	125	165	20	—	56
100 L	1A□4	2, 4, 6	160	40	200	200	160	124	135	55	140	176	18	—	63
	1A□5		160	40	200	200	160	124	135	55	140	176	18	—	63
112 M	1B□2	2, 4, 6	190	45	226	225	180	145	150	64	140	180	20	42	70
132 S	1C□0	2, 4, 6, 8	216	50	256	265	200	170	150	64	140	186	23	42	89
	1C□1		216	50	256	265	200	170	150	64	140	186	23	42	89
132 M	1C□2	4, 6, 8	216	50	256	265	200	170	150	64	178	224	23	42	89
	1C□3		216	50	256	265	200	170	150	64	178	224	23	42	89
160 M	1D□2	2, 4, 6, 8	254	60	314	315	250	201	195	83	210	258	24	60	108
	1D□3		254	60	314	315	250	201	195	83	210	258	24	60	108
160 L	1D□4	2, 4, 6, 8	254	60	314	315	250	201	195	83	254	302	24	60	108

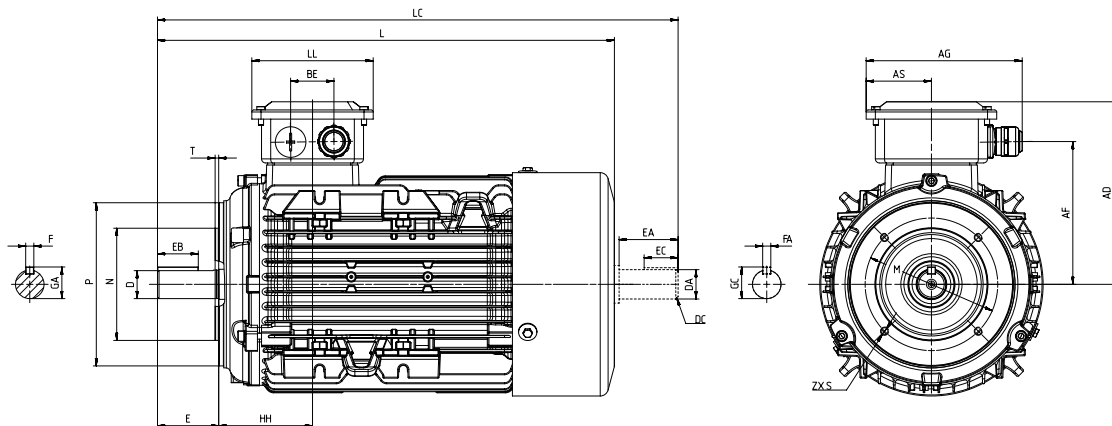
<sup>1)</sup> 含螺钉头测量尺寸 Measured across the bolt heads;

<sup>2)</sup> 该尺寸为 DIN EN 50347 标准所列机座号对应尺寸 This dimension is assigned in DIN EN 50347 to the frame size listed;

IM B5 以及 IM V1 安装结构型式 Type of construction IMB5 and IMV1



IM B14 安装结构型式 Type of construction IMB14



尺寸图依据 IEC 标准 Dimension designation according to IEC standards								驱动端轴伸直径 DE shaft extension						非驱动端轴伸 (选件号为 X17) NDE shaft extension (option code X17)							
	CA	H	h	HA	HH	K / K'	L	LC	LL	D	DB	E	EB	F	GA	DA	DC	EA	EC	FA	GC
	148	80	28	10	76	10/14	335	378	103	19	M6	40	22	6	21.5	19	M6	40	22	6	21.5
	148	80	28	10	76	10/14	335	378	103	19	M6	40	22	6	21.5	19	M6	40	22	6	21.5
	169	90	35	10	81	10/14	370	425	110	24	M8	50	32	8	27	24	M8	50	32	8	27
	169	90	35	10	81	10/14	395	450	110	24	M8	50	32	8	27	24	M8	50	32	8	27
	204 <sup>4)</sup> /134 <sup>3)</sup>	100	45	12	94	12/16	465 <sup>4)</sup> /395 <sup>3)</sup>	527 <sup>4)</sup> /457 <sup>3)</sup>	110	28	M10	60	40	8	31	28	M10	60	40	8	31
	204 <sup>4)</sup> /134 <sup>3)</sup>	100	45	12	94	12/16	465 <sup>4)</sup> /395 <sup>3)</sup>	527 <sup>4)</sup> /457 <sup>3)</sup>	110	28	M10	60	40	8	31	28	M10	60	40	8	31
	187	112	48	15.5	92	12/16	455	517	119	28	M10	60	40	8	31	28	M10	60	40	8	31
	209	132	68	15	122	12/16	505	598	119	38	M12	80	56	10	41	38	M12	80	56	10	41
	209	132	68	15	122	12/16	505	598	119	38	M12	80	56	10	41	38	M12	80	56	10	41
	218 <sup>4)</sup> /183 <sup>3)</sup>	132	68	15	122	12/16	550 <sup>4)</sup> /515 <sup>3)</sup>	645 <sup>4)</sup> /610 <sup>3)</sup>	119	38	M12	80	56	10	41	38	M12	80	56	10	41
	218 <sup>4)</sup> /183 <sup>3)</sup>	132	68	15	122	12/16	550 <sup>4)</sup> /515 <sup>3)</sup>	645 <sup>4)</sup> /610 <sup>3)</sup>	119	38	M12	80	56	10	41	38	M12	80	56	10	41
	192	160	77	20	157	15/19	620	727	157	42	M16	110	80	12	45	42	M16	110	80	12	45
	192	160	77	20	157	15/19	620	727	157	42	M16	110	80	12	45	42	M16	110	80	12	45
	208	160	77	20	157	15/19	680	790	157	42	M16	110	80	12	45	42	M16	110	80	12	45

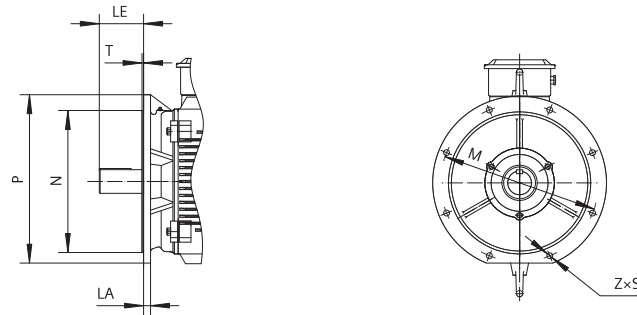
<sup>3)</sup> 此尺寸仅适用于 1TL0301 This dimension only for 1TL0301.

<sup>4)</sup> 此尺寸适用于 1TL0303 The dimension for 1TL0303.



法兰尺寸 Flange dimension

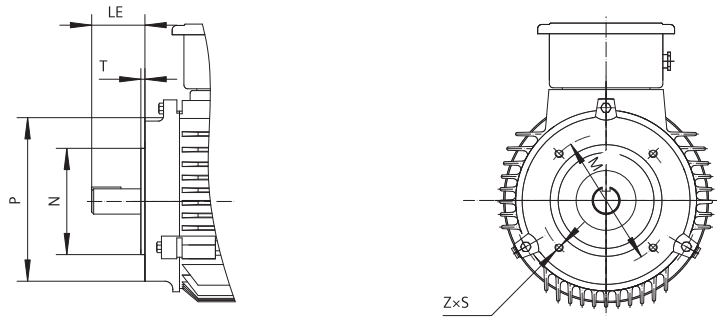
IM B5、IM B35、IM V1、IM V3 安装结构型式 Type of construction IM B5, IM B35, IM V1, IM V3



机座号 Frame size	安装结构形式 Type of construction	法兰带通孔 (FF / A) / 法兰带内螺纹孔 (FT / C) Flange with through holes (FF/A) / tapped holes (FT/C) 按 DIN / EN 50 347 标准 According to DIN EN 50347
80	IM B5, IM B35, IMV1, IM V3 IM B14, IM V18, IM V19	FF 165 FT 100
90	IM B5, IM B35, IMV1, IM V3 IM B14, IM V18, IM V19	FF 165 FT 115
100	IM B5, IM B35, IMV1, IM V3 IM B14, IM V18, IM V19	FF 215 FT 130
112	IM B5, IM B35, IMV1, IM V3 IM B14, IM V18, IM V19	FF 215 FT 130
132	IM B5, IM B35, IMV1, IM V3	FF 265
160	IM B5, IM B35, IMV1, IM V3	FF 300

法兰尺寸 Flange dimension

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



尺寸图依据 Dimension designation according to IEC standards

	LA	LE	M	N	P	S	T	Z
12		40	165	130	200	12	3.5	4
—		40	100	80	120	M 6	3	4
12		50	165	130	200	12	3.5	4
—		50	115	95	140	M 8	3	4
13		60	215	180	250	14.5	4	4
—		60	130	110	160	M 8	3.5	4
14		60	215	180	250	14.5	4	4
—		60	130	110	160	M 8	3.5	4
14		80	265	230	300	14.5	4	4
14		110	300	250	350	18.5	5	4

# 证书 Certificate





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