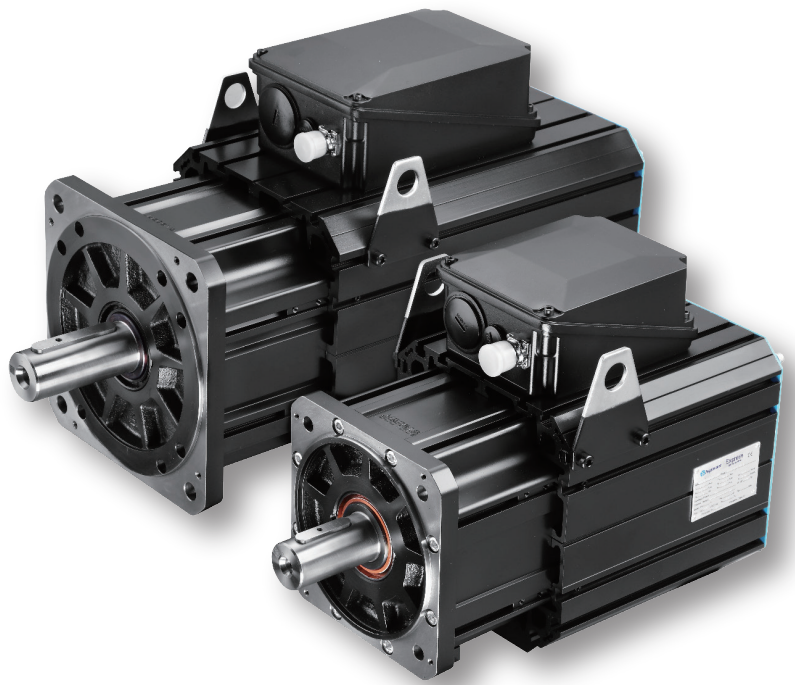


# Express Series Servo Motor

Express系列交流永磁同步伺服电机



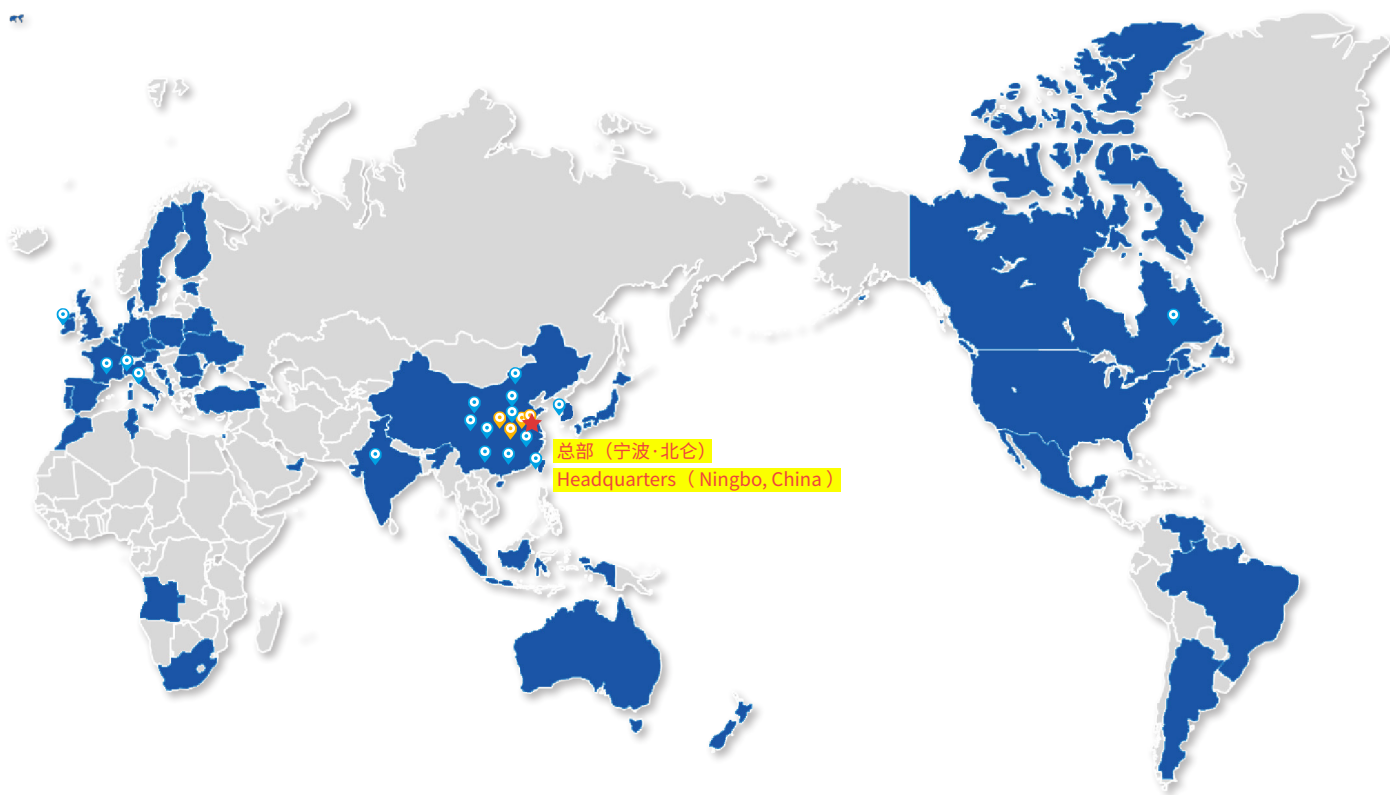


## Company Profile 企业简介

宁波菲仕技术股份有限公司（简称：菲仕技术）成立于 2001 年，由民营控股、先进制造产业投资基金和宁波通商集团等战略投资人参股，公司致力于以“高效节能、精准控制”电驱动技术为核心的创新及产业化，为运动控制和能量转换领域提供系统产品和综合解决方案，经过多年品牌沉淀，菲仕已成为一家集研发、生产、销售为一体，拥有国内外多家控股子公司的集团化创新型高科技企业。

Ningbo Physis Technology Co., Ltd. (hereinafter referred to as Physis) was founded in 2001. Physis always devotes to innovation and industrialization of electrical drive technology, provides servo products and solutions for the field of motion control & energy conversion. After years of brand development and accumulation, Physis becomes a collectivized & innovative high-tech enterprise, which collects together R&D, manufacturing and sales, and has a numbers of domestic and overseas subsidiaries.





★ 总部  
Headquarters

📍 5 大生产基地  
Manufacturing Plant

📍 3 大研发中心  
R&D center

📍 17 个海内外分支机构  
Sales of subsidiaries and agency services

■ 销售产品及服务国家  
Countries in which products are sold and services are served

## Global presence 全球布局

### 立足全国 放眼全球

总部“永动谷”落户中国宁波北仑，在国内产业链完善的宁波、株洲、天津、赣州建立大型生产基地。建立国内外分子公司 17 家，合作伙伴百余家，形成覆盖全国、面向全球市场的营销服务网络，逐步落地国际化战略。

Physis has established large-scale production bases in Ningbo, Zhuzhou, Tianjin, and Guangzhou, which have a complete domestic industrial chain.

It has established 17 domestic and foreign subsidiaries and more than 100 partners, formed a marketing service network covering the whole country and facing the global market, and gradually implemented the internationalization strategy.

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# Products Introduction

## 产品介绍

菲仕研发的新一代高性能伺服电机，该系列电机拥有更高的功率密度，更好的伺服响应速度和过载输出特性，特别适合需要高速响应和短时过载要求高的应用场合，如高速节能注塑机、压铸机等。

额定功率范围：7.9kW~337.2kW

额定扭矩范围：150Nm~2200Nm

峰值扭矩范围：150Nm~3500Nm

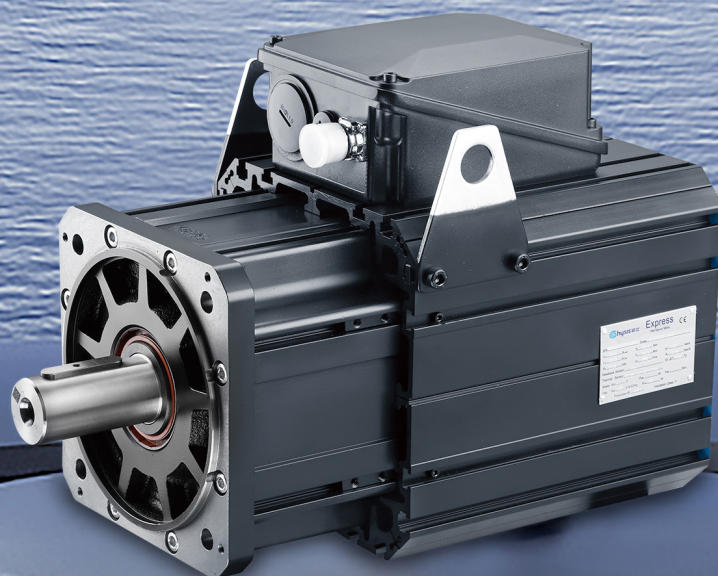
### Express Series Servo Motor

Express series servo motor is a new generation of high performance servo motor that has higher power density, higher response speed and good overload output characteristic. Specially suitable for some applications which need high requirements of high speed response and short-time overload, such as high speed energy-saving injection molding machine, die-casting machine, etc.

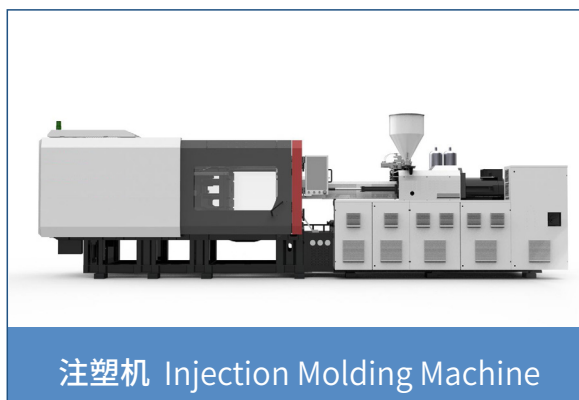
Rated power range : 7.9kW~337.2kW

Rated torque range : 150Nm~2200Nm

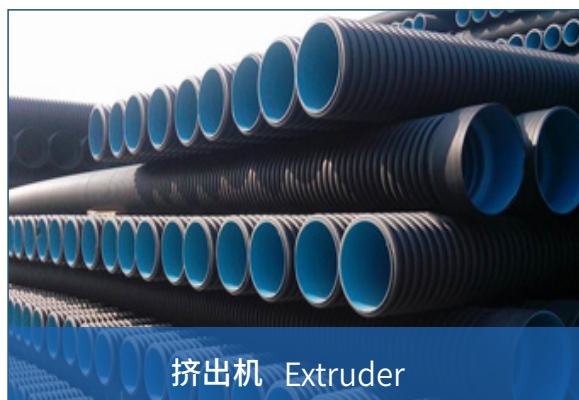
Peak torque range : 150Nm~3500Nm



## Application 应用领域



注塑机 Injection Molding Machine



挤出机 Extruder



钢铁冶金 Iron and steel



压铸机 Die Casting Machine



液压机 Hydraulic Press



折弯机 Bending Machine



## Express 系列伺服电机代码

| 电机类型            | 框号   | 冷却方式    | 额定转速        | 额定电压          | 编码器             | 制动器   | 接线方式       | 转轴    | 底板            | 接线盒位置                    | 出线孔方向                   |
|-----------------|------|---------|-------------|---------------|-----------------|-------|------------|-------|---------------|--------------------------|-------------------------|
| Series Identify | Size | Cooling | Rated Speed | Rated Voltage | Sensor Identify | Brake | Connection | Shaft | Mounting Feet | Position of Terminal Box | Direction of Cable Hole |

轴伸方向看  
Look from the direction  
of shaft  
T= 接线盒在上  
Terminal box on top  
L= 接线盒在左  
Terminal box on the  
left  
R= 接线盒在右  
Terminal box on the  
right



| 电机型号<br>Motor Code             |                            | E01004F |      |       | E01005F |       |       | E01007F |       |       | E01008F |      |       | E01010F |       |       | E01012F |       |       | E01013F |       |       |
|--------------------------------|----------------------------|---------|------|-------|---------|-------|-------|---------|-------|-------|---------|------|-------|---------|-------|-------|---------|-------|-------|---------|-------|-------|
| 额定转速<br>Rated Speed            | wn<br>[rpm]                | 1500    | 1700 | 2000  | 1500    | 1700  | 2000  | 1500    | 1700  | 2000  | 1500    | 1700 | 2000  | 1500    | 1700  | 2000  | 1500    | 1700  | 2000  | 1500    | 1700  | 2000  |
| 额定频率<br>Rated Freq             | Fn<br>[Hz]                 | 100     | 113  | 133   | 100     | 113   | 133   | 100     | 113   | 133   | 100     | 113  | 133   | 100     | 113   | 133   | 100     | 113   | 133   | 100     | 113   | 133   |
| 极数<br>Number of poles          | 2p                         | 8       |      |       |         |       |       |         |       |       |         |      |       |         |       |       |         |       |       |         |       |       |
| 最大速度<br>Max Speed              | wmax<br>[rpm]              | 3500    |      |       |         |       |       |         |       |       |         |      |       |         |       |       |         |       |       |         |       |       |
| 最大频率<br>Max Freq               | Fmax<br>[Hz]               | 233     |      |       |         |       |       |         |       |       |         |      |       |         |       |       |         |       |       |         |       |       |
| 堵转电流<br>Stall Current          | Io<br>[A]                  | 15      | 18   | 20    | 24      | 28    | 31    | 31      | 35    | 42    | 42      | 45   | 52    | 48      | 57    | 62    | 56      | 62    | 77    | 61      | 68    | 77    |
| 额定电流<br>Rated Current          | In<br>[A]                  | 15      | 17   | 19    | 23      | 26    | 29    | 29      | 32    | 38    | 39      | 41   | 47    | 45      | 52    | 56    | 52      | 57    | 69    | 57      | 62    | 69    |
| 堵转扭矩<br>Stall Torque           | To<br>[Nm]                 | 53      |      |       | 78      |       |       | 106     |       |       | 132     |      |       | 158     |       |       | 183     |       |       | 208     |       |       |
| 额定扭矩<br>Rated Torque           | Tn<br>[Nm]                 | 50      | 50   | 50    | 75      | 74    | 73    | 100     | 99    | 97    | 124     | 123  | 121   | 148     | 146   | 143   | 171     | 168   | 165   | 193     | 190   | 187   |
| 额定功率<br>Rated Power            | Pn<br>[kW]                 | 7.9     | 9.0  | 10    | 12      | 13    | 15    | 16      | 18    | 20    | 20      | 22   | 25    | 23      | 26    | 30    | 27      | 30    | 34    | 30      | 34    | 39    |
| 扭矩常数<br>Torque Constant        | Kt<br>[Nm/A]               | 3.43    | 2.91 | 2.57  | 3.38    | 2.86  | 2.60  | 3.46    | 3.12  | 2.60  | 3.25    | 3.03 | 2.60  | 3.38    | 2.86  | 2.60  | 3.33    | 3.03  | 2.42  | 3.46    | 3.12  | 2.77  |
| 反电动势<br>Back EMF               | EMF<br>[V/krpm]            | 208     | 176  | 156   | 204     | 173   | 157   | 210     | 189   | 157   | 197     | 183  | 157   | 204     | 173   | 157   | 202     | 183   | 147   | 210     | 189   | 168   |
| 绕组线电阻<br>Winding Resistance    | Rw<br>[ohm]                | 1.67    | 1.13 | 0.892 | 0.825   | 0.546 | 0.465 | 0.543   | 0.451 | 0.322 | 0.37    | 0.31 | 0.233 | 0.319   | 0.216 | 0.179 | 0.244   | 0.200 | 0.133 | 0.222   | 0.176 | 0.145 |
| 直轴线电感<br>Direct Inductance     | Ld<br>[mH]                 | 18.2    | 13.1 | 10.2  | 11.5    | 8.2   | 6.8   | 9.1     | 7.4   | 5.1   | 6.4     | 5.6  | 4.1   | 5.8     | 4.1   | 3.4   | 4.8     | 4.0   | 2.5   | 4.5     | 3.7   | 2.9   |
| 交轴线电感<br>Quadrature Inductance | Lq<br>[mH]                 | 42.7    | 30.9 | 24.0  | 27.1    | 19.4  | 16.0  | 21.4    | 17.3  | 12.0  | 15.0    | 13.1 | 9.6   | 13.5    | 9.7   | 8.0   | 11.3    | 9.3   | 6.0   | 10.7    | 8.6   | 6.8   |
| 最大电流<br>Max Current            | Imax<br>[A]                | 50      | 59   | 66    | 80      | 91    | 100   | 100     | 112   | 135   | 135     | 144  | 170   | 155     | 182   | 200   | 183     | 200   | 250   | 200     | 222   | 250   |
| 最大扭矩<br>Max Torque             | Tmax<br>[Nm]               | 145     |      |       | 222     |       |       | 297     |       |       | 371     |      |       | 445     |       |       | 520     |       |       | 594     |       |       |
| 转动惯量<br>Rotor Inertia          | Jm<br>[kgcm <sup>2</sup> ] | 56      |      |       | 80      |       |       | 103     |       |       | 126     |      |       | 150     |       |       | 173     |       |       | 196     |       |       |
| 电机重量<br>Weight                 | M<br>[kg]                  | 40      |      |       | 47      |       |       | 54      |       |       | 61      |      |       | 68      |       |       | 75      |       |       | 82      |       |       |

驱动器电压 Vdrive: 380Vac

直流母线电压 Vdcbus : 537Vdc

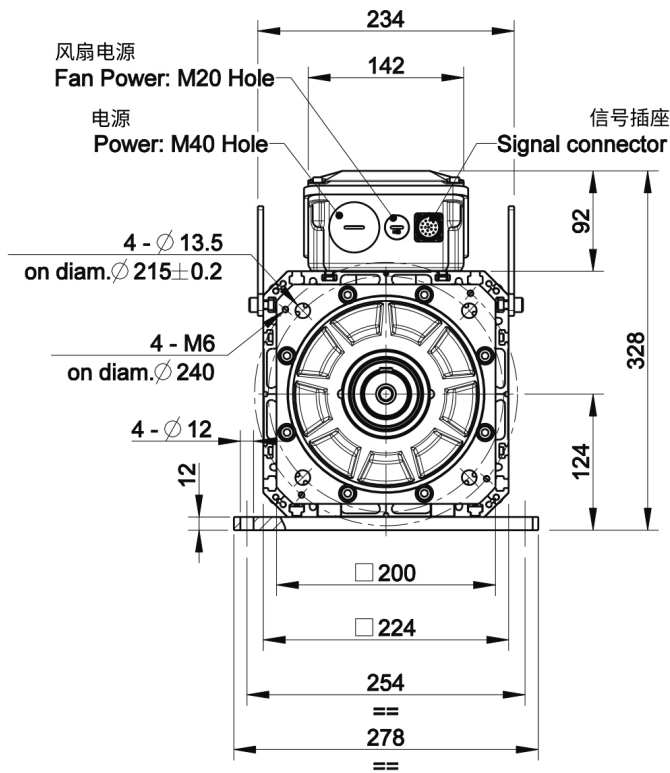
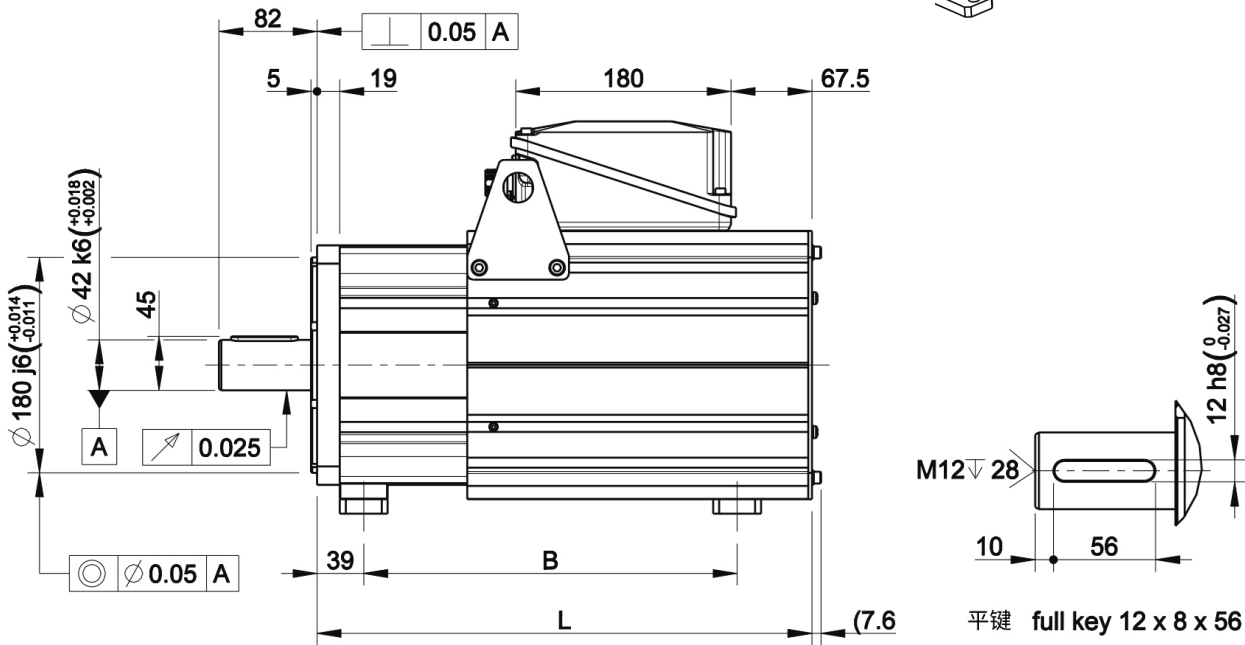
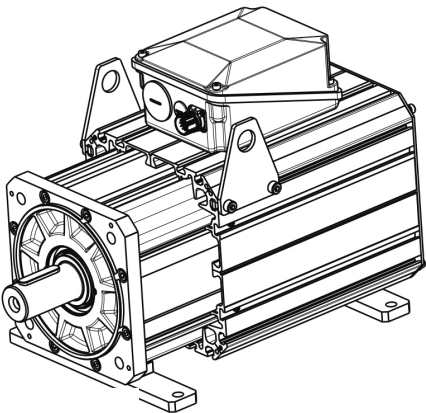
载波频率 PWM frequency:  $\geq 4\text{kHz}$

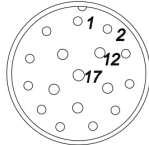
温升 DT : 100K

环境温度 Tamb : 30°C

| 制动器的机械参数 / Technical Data of the Holding Brake |                             |     |
|------------------------------------------------|-----------------------------|-----|
| 制动扭矩<br>Holding Torque                         | MBr<br>[Nm]                 | 140 |
| 额定电压 (± 10%)<br>Rated Voltage (± 10%)          | Ubr<br>[Vdc]                | 24  |
| 额定电流<br>Rated Current                          | Ibr<br>[A]                  | 2.3 |
| 重量<br>Mass                                     | MBr<br>[Kg]                 | 11  |
| 惯量<br>nertia                                   | JBr<br>[Kgcm <sup>2</sup> ] | 56  |
| 电机增加的长度<br>Additional Motor Length             | Length<br>[mm]              | 65  |

|         | B   | L   |
|---------|-----|-----|
| E01004F | 267 | 342 |
| E01005F | 285 | 378 |
| E01007F | 312 | 414 |
| E01008F | 354 | 450 |
| E01010F | 396 | 486 |
| E01012F | 400 | 527 |
| E01013F | 471 | 558 |

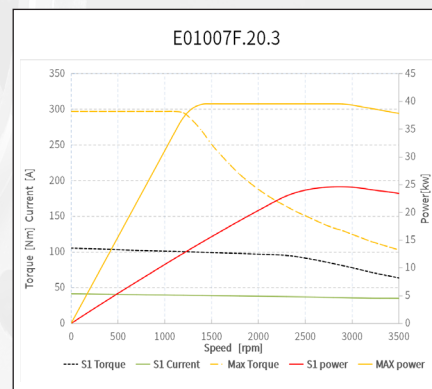
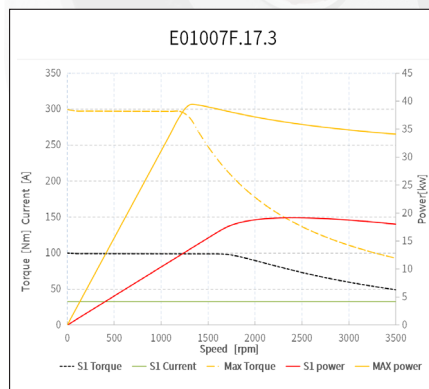
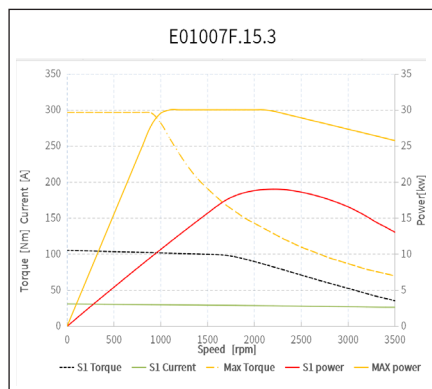
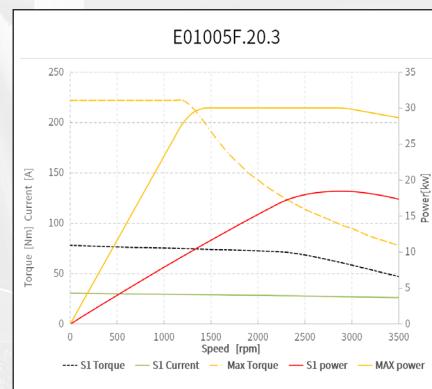
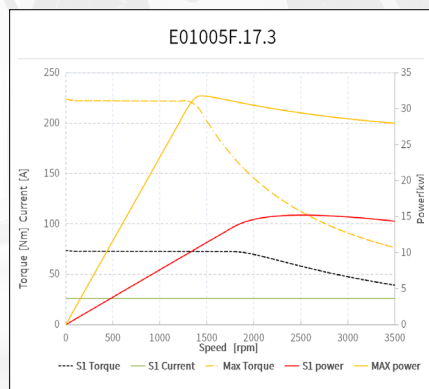
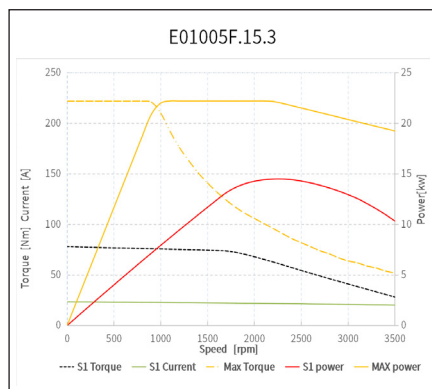
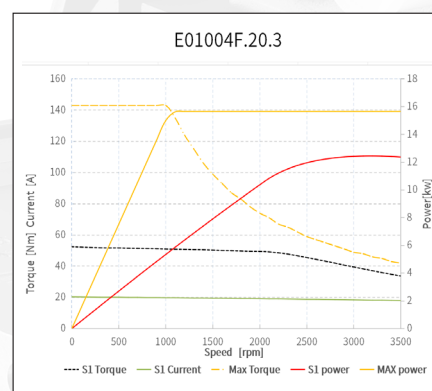
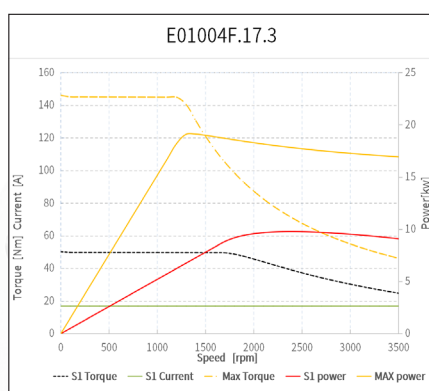
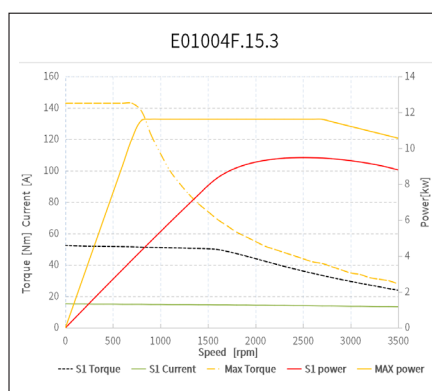
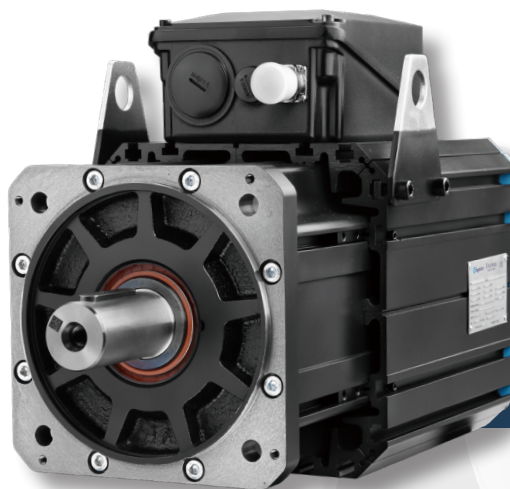


|  <div> 信号插座<br/>Signal Connector<br/>M23 Size 1-17 Pin </div> |                      |                |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| 针脚号<br>PIN                                                                                                                                         | 线色<br>WIRE COLOR     | 定义<br>FUNCTION |
| 1                                                                                                                                                  | n.c.                 | n.c.           |
| 2                                                                                                                                                  | n.c.                 | n.c.           |
| 3                                                                                                                                                  | n.c.                 | n.c.           |
| 4                                                                                                                                                  | YELLOW 黄             | SIN-           |
| 5                                                                                                                                                  | RED 红                | COS+           |
| 6                                                                                                                                                  | BLACK 黑              | COS-           |
| 7                                                                                                                                                  | RED / WHITE 红 / 白    | RESX+          |
| 8                                                                                                                                                  | BROWN 棕              | KTY+           |
| 9                                                                                                                                                  | WHITE 白              | KTY-           |
| 10                                                                                                                                                 | YELLOW / WHITE 黄 / 白 | RESX-          |
| 11                                                                                                                                                 | n.c.                 | n.c.           |
| 12                                                                                                                                                 | n.c.                 | n.c.           |
| 13                                                                                                                                                 | n.c.                 | n.c.           |
| 14                                                                                                                                                 | BLUE 蓝               | SIN+           |
| 15                                                                                                                                                 | n.c.                 | n.c.           |
| 16                                                                                                                                                 | BLUE 蓝               | PTC+           |
| 17                                                                                                                                                 | BLUE 蓝               | PTC-           |
| 旋转变压器 Resolver : 1X-BRX                                                                                                                            |                      |                |

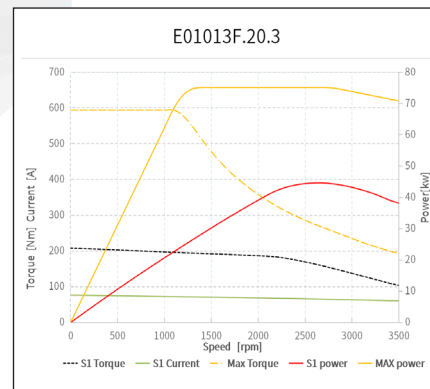
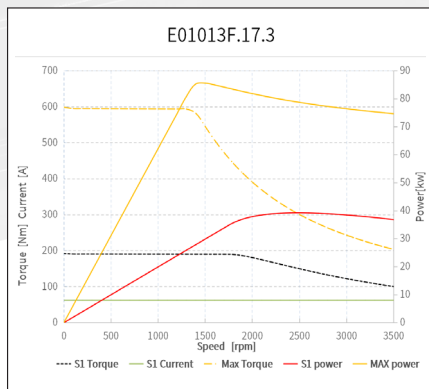
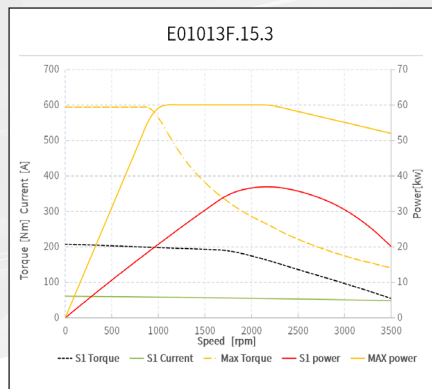
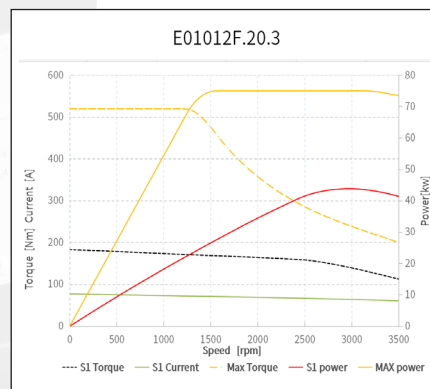
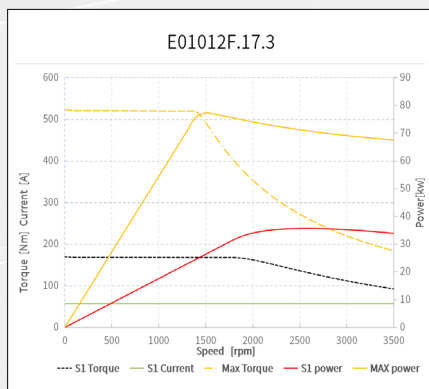
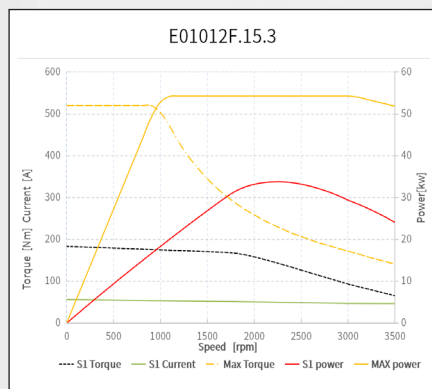
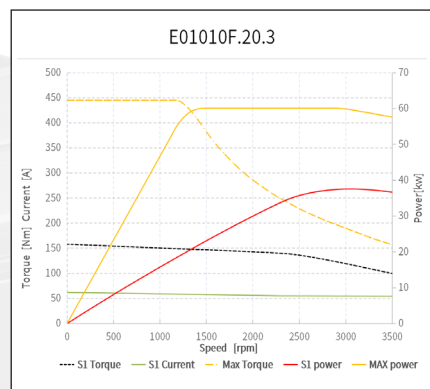
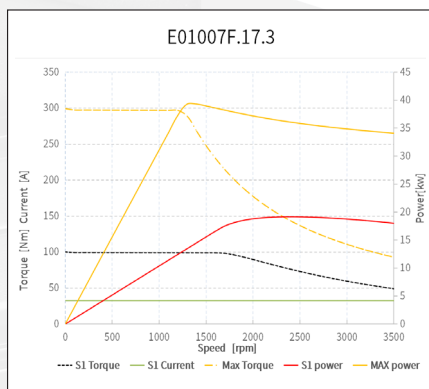
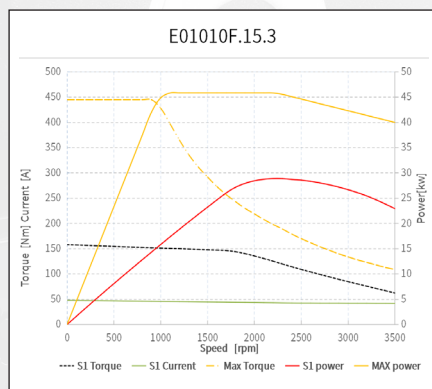
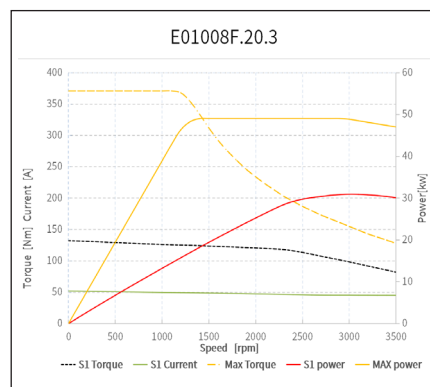
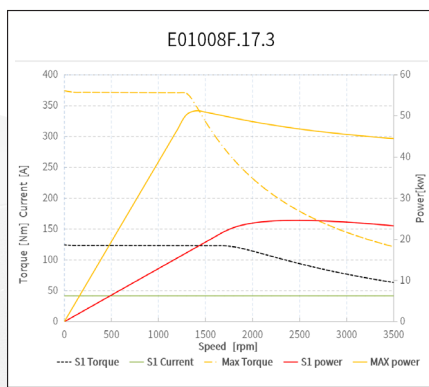
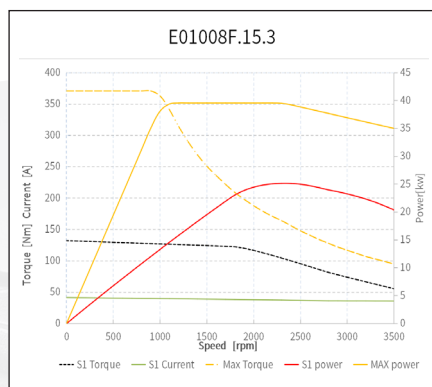
# Performance Curve

## 电机性能曲线 (E010\_\_F)

驱动器电压 Vdrive : 380Vac  
 直流母线电压 Vdcbus: 537Vdc  
 载波频率 PWM frequency:  $\geq 4$ kHz  
 温升 DT: 100K  
 环境温度 Tamb: 30°C







| 电机型号<br>Motor Code             |                            | E01005C |        |       | E01007C |        |        | E01008C |       |        | E01010C |        |        | E01012C |        |        | E01013C |       |        |
|--------------------------------|----------------------------|---------|--------|-------|---------|--------|--------|---------|-------|--------|---------|--------|--------|---------|--------|--------|---------|-------|--------|
| 额定转速<br>Rated Speed            | wn<br>[rpm]                | 1500    | 1700   | 2000  | 1500    | 1700   | 2000   | 1500    | 1700  | 2000   | 1500    | 1700   | 2000   | 1500    | 1700   | 2000   | 1500    | 1700  | 2000   |
| 额定频率<br>Rated Freq             | Fn<br>[Hz]                 | 100     | 113.3  | 113.3 | 100     | 113.3  | 133    | 100     | 113.3 | 133    | 100     | 113.3  | 133    | 100     | 113.3  | 133    | 100     | 113.3 | 133    |
| 极数<br>Number of poles          | 2p                         | 8       |        |       |         |        |        |         |       |        |         |        |        |         |        |        |         |       |        |
| 最大速度<br>Max Speed              | wmax<br>[rpm]              | 3500    |        |       |         |        |        |         |       |        |         |        |        |         |        |        |         |       |        |
| 最大频率<br>Max Freq               | Fmax<br>[Hz]               | 233     |        |       |         |        |        |         |       |        |         |        |        |         |        |        |         |       |        |
| 堵转电流<br>Stall Current          | Io<br>[A]                  | 33.39   | 37.275 | 42.21 | 138.6   | 48.51  | 54.915 | 52.5    | 59.85 | 69.3   | 65.1    | 76.125 | 84     | 76.65   | 84     | 103.95 | 85.575  | 94.5  | 111.3  |
| 额定电流<br>Rated Current          | In<br>[A]                  | 31.8    | 35.5   | 40.2  | 42      | 46.2   | 52.3   | 50      | 57    | 66     | 62      | 72.5   | 80     | 73      | 80     | 99     | 81.5    | 90    | 106    |
| 堵转扭矩<br>Stall Torque           | To<br>[Nm]                 | 103.4   | 101.9  | 99.8  | 138.6   | 136.5  | 136.5  | 52.5    | 173.3 | 171.7  | 210     | 207.9  | 207.9  | 244.7   | 243.6  | 241.5  | 283.5   | 278.3 | 277.2  |
| 额定扭矩<br>Rated Torque           | Tn<br>[Nm]                 | 98.5    | 97     | 95    | 132     | 130    | 130    | 165.5   | 165   | 163.5  | 200     | 198    | 198    | 233     | 232    | 230    | 270     | 265   | 264    |
| 额定功率<br>Rated Power            | Pn<br>[kW]                 | 15.5    | 17.3   | 19.9  | 20.7    | 23.1   | 27.2   | 26      | 29.4  | 34.2   | 31.4    | 35.2   | 41.5   | 36.6    | 41.3   | 48.2   | 42.4    | 47.2  | 55.3   |
| 冷却水流量<br>Minimum Flow Rate     | Flow<br>[L/min]            | 10      |        |       | 12      |        |        | 15      |       |        | 17      |        |        | 20      |        |        | 25      |       |        |
| 扭矩常数<br>Torque Constant        | Kt<br>[Nm/A]               | 3.18    | 2.79   | 2.41  | 3.22    | 2.88   | 2.54   | 3.39    | 2.96  | 2.54   | 3.3     | 2.79   | 2.54   | 3.26    | 2.96   | 2.37   | 3.4     | 3.05  | 2.55   |
| 反电动势<br>Back EMF               | EMF<br>[V/krpm]            | 192.5   | 169    | 146   | 195     | 174.5  | 154    | 205.4   | 179.5 | 154    | 200     | 169    | 154    | 197.7   | 179.5  | 143.5  | 205.4   | 184.5 | 154    |
| 绕组线电阻<br>Winding Resistance    | Rw<br>[ohm]                | 0.6958  | 0.5683 | 0.4   | 0.4748  | 0.3897 | 0.2982 | 0.3974  | 0.3   | 0.2185 | 0.2971  | 0.2133 | 0.1724 | 0.2388  | 0.1975 | 0.1243 | 0.2136  | 0.173 | 0.1202 |
| 直轴线电感<br>Direct Inductance     | Ld<br>[mH]                 | 8.18    | 6.33   | 4.73  | 6.27    | 5.02   | 3.91   | 5.55    | 4.25  | 3.12   | 4.39    | 3.14   | 2.6    | 3.66    | 3.01   | 1.93   | 3.46    | 2.8   | 1.94   |
| 交轴线电感<br>Quadrature Inductance | Lq<br>[mH]                 | 16.82   | 13.03  | 9.73  | 12.91   | 10.34  | 8.05   | 11.45   | 8.76  | 6.44   | 9.05    | 6.47   | 5.36   | 7.58    | 6.23   | 4      | 7.18    | 5.79  | 4.02   |
| 最大电流<br>Max Current            | Imax<br>[A]                | 80      | 91     | 100   | 100     | 112    | 135    | 135     | 144   | 170    | 155     | 182    | 200    | 183     | 200    | 250    | 200     | 222   | 250    |
| 最大扭矩<br>Max Torque             | Tmax<br>[Nm]               | 222     |        |       | 297     |        |        | 371     |       |        | 445     |        |        | 520     |        |        | 594     |       |        |
| 转动惯量<br>Rotor Inertia          | Jm<br>[kgcm <sup>2</sup> ] | 80      |        |       | 103     |        |        | 126     |       |        | 150     |        |        | 173     |        |        | 196     |       |        |
| 电机重量<br>Weight                 | M<br>[kg]                  | 48      |        |       | 56      |        |        | 63      |       |        | 70      |        |        | 79      |        |        | 86      |       |        |

驱动器电压 Vdrive: 380Vac

直流母线电压 Vdcbus : 537Vdc

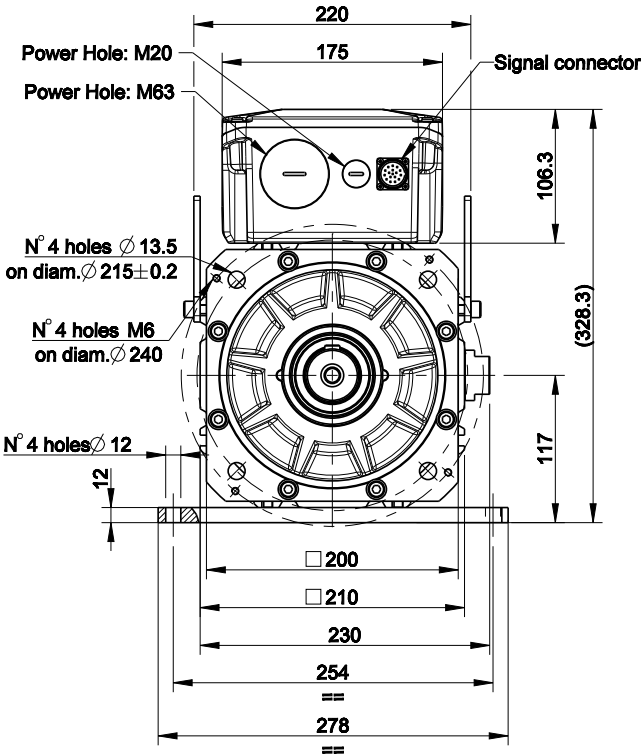
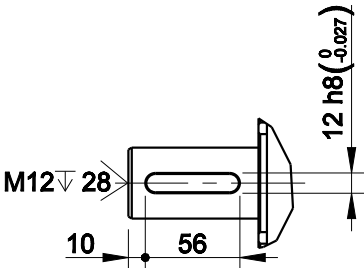
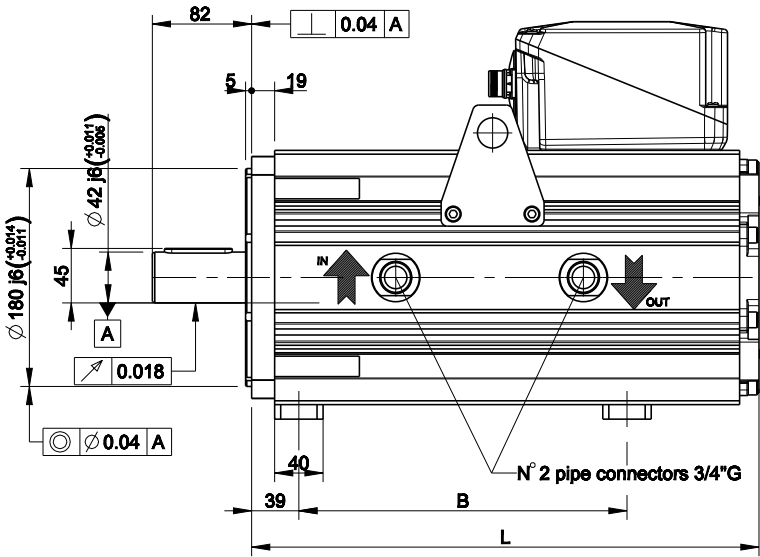
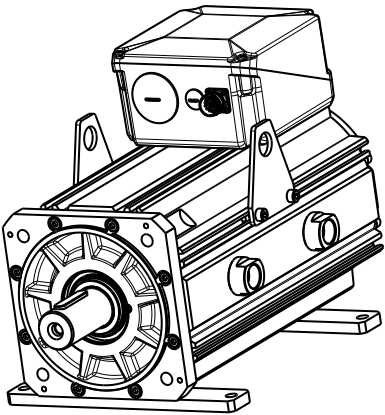
载波频率 PWM frequency: ≥ 4kHz

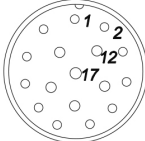
温升 DT : 100K

环境温度 Tamb : 30°C

| 制动器的机械参数 / Technical Data of the Holding Brake |                             |     |
|------------------------------------------------|-----------------------------|-----|
| 制动转矩<br>Holding Torque                         | MBr<br>[Nm]                 | 140 |
| 额定电压 (± 10%)<br>Rated Voltage(±10%)            | Ubr<br>[Vdc]                | 24  |
| 额定电流<br>Rated Current                          | Ibr<br>[A]                  | 2.3 |
| 重量<br>Mass                                     | MBr<br>[Kg]                 | 11  |
| 惯量<br>nertia                                   | JBr<br>[Kgcm <sup>2</sup> ] | 56  |
| 电机增加的长度<br>Additional Motor Length             | Length<br>[mm]              | 65  |

|         | B   | L     |
|---------|-----|-------|
| E01005C | 200 | 311   |
| E01007C | 200 | 347   |
| E01008C | 236 | 383   |
| E01010C | 271 | 419   |
| E01012C | 306 | 460   |
| E01013C | 306 | 495.5 |



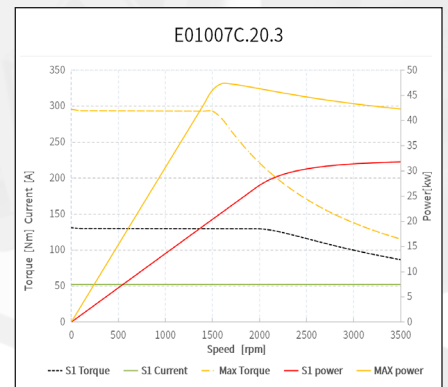
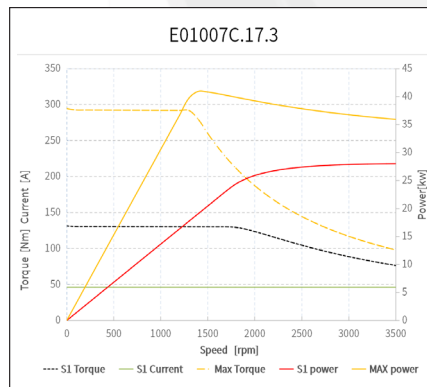
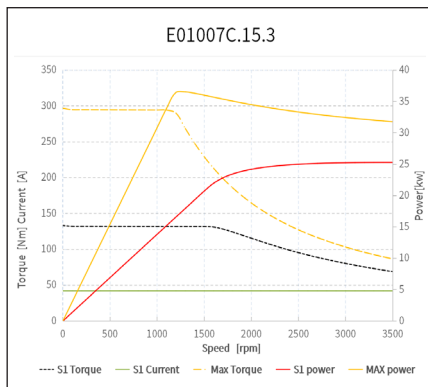
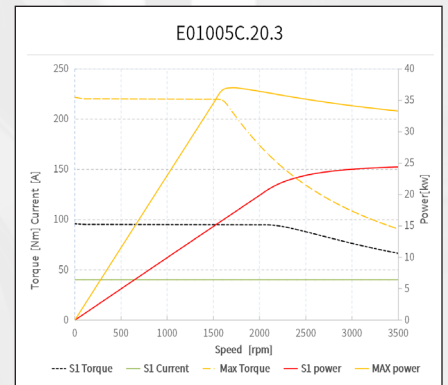
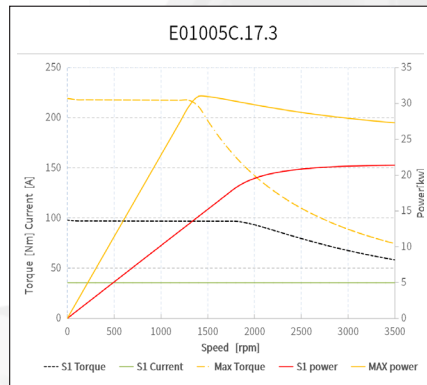
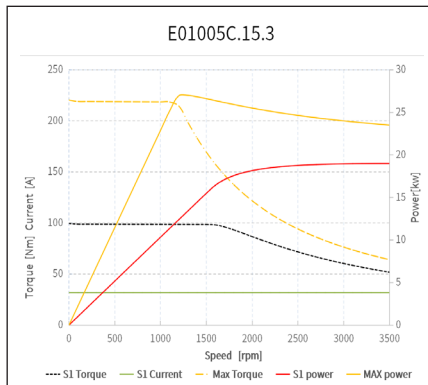
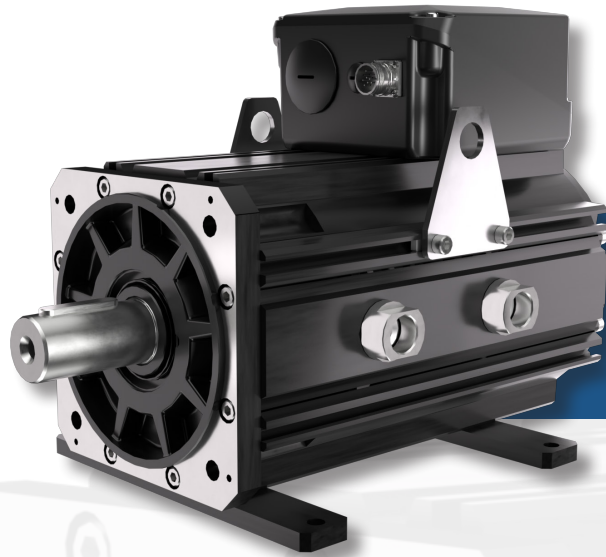
| <div>  <div> 信号插座<br/>Signal Connector<br/>M23 Size 1-17 Pin </div> </div> |                      |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| 针脚号<br>PIN                                                                                                                                                      | 线色<br>WIRE COLOR     | 定义<br>FUNCTION |
| 1                                                                                                                                                               | n.c.                 | n.c.           |
| 2                                                                                                                                                               | n.c.                 | n.c.           |
| 3                                                                                                                                                               | n.c.                 | n.c.           |
| 4                                                                                                                                                               | YELLOW 黄             | SIN-           |
| 5                                                                                                                                                               | RED 红                | COS+           |
| 6                                                                                                                                                               | BLACK 黑              | COS-           |
| 7                                                                                                                                                               | RED / WHITE 红 / 白    | RESX+          |
| 8                                                                                                                                                               | BROWN 棕              | KTY+           |
| 9                                                                                                                                                               | WHITE 白              | KTY-           |
| 10                                                                                                                                                              | YELLOW / WHITE 黄 / 白 | RESX-          |
| 11                                                                                                                                                              | n.c.                 | n.c.           |
| 12                                                                                                                                                              | n.c.                 | n.c.           |
| 13                                                                                                                                                              | n.c.                 | n.c.           |
| 14                                                                                                                                                              | BLUE 蓝               | SIN+           |
| 15                                                                                                                                                              | n.c.                 | n.c.           |
| 16                                                                                                                                                              | BLUE 蓝               | PTC+           |
| 17                                                                                                                                                              | BLUE 蓝               | PTC-           |
| 旋转变压器 Resolver : 1X-BRX                                                                                                                                         |                      |                |

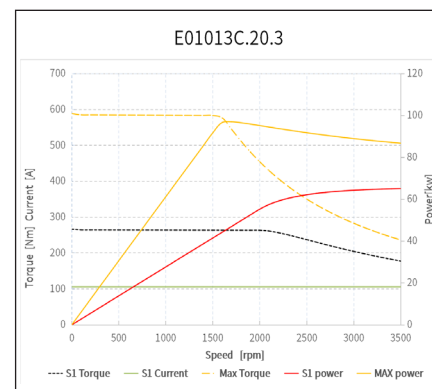
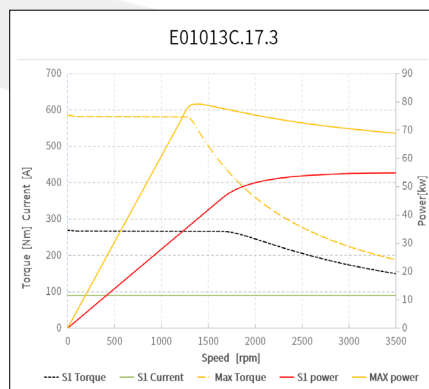
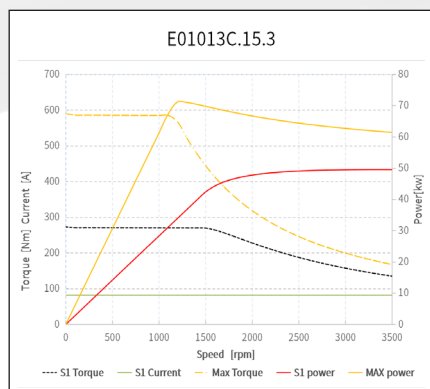
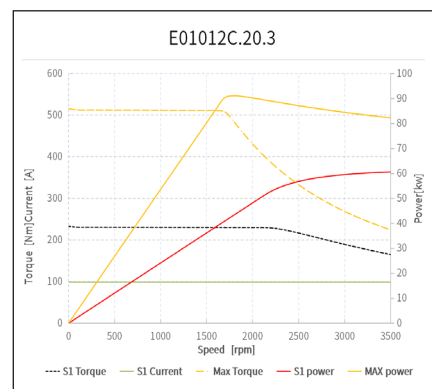
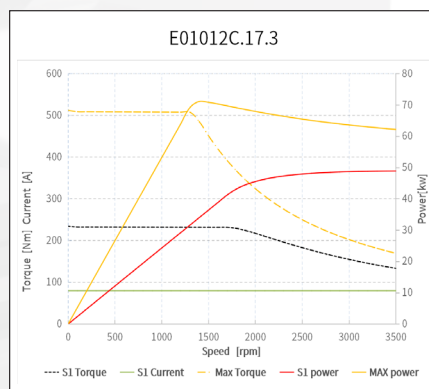
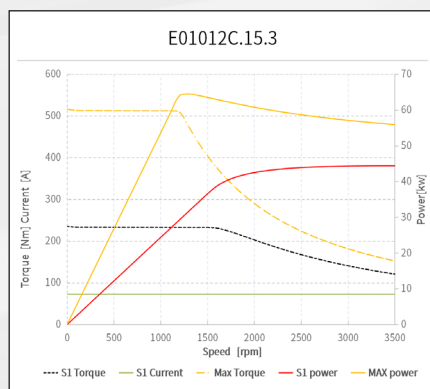
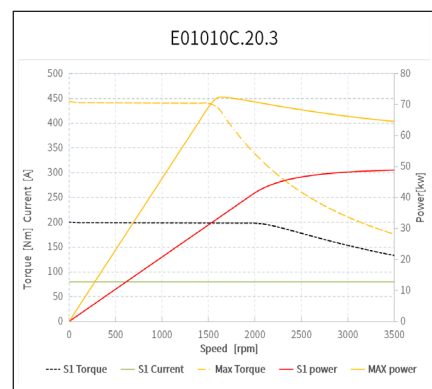
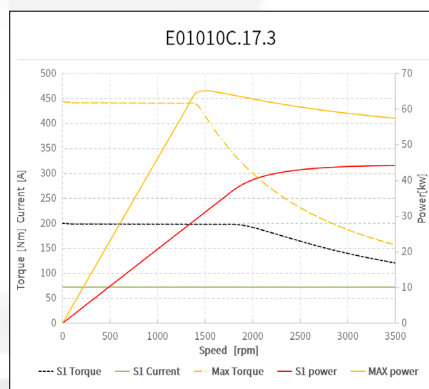
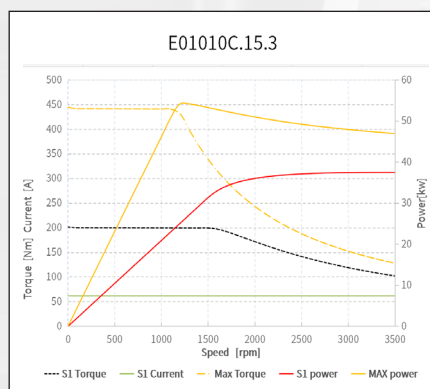
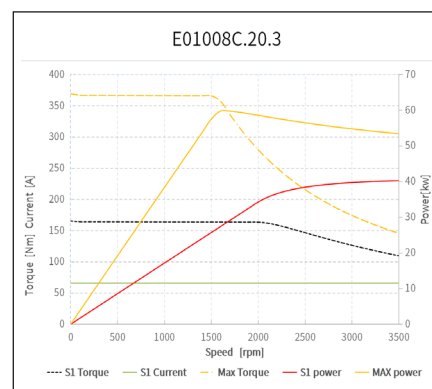
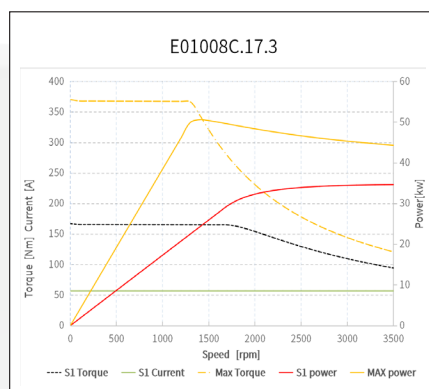
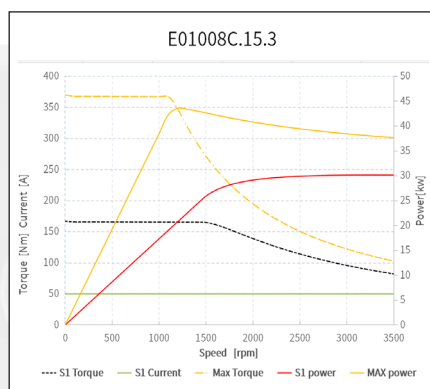


# Performance Curve

## 电机性能曲线 (E010\_\_C)

驱动器电压 Vdrive : 380Vac  
 直流母线电压 Vdcbus: 537Vdc  
 载波频率 PWM frequency:  $\geq 4\text{kHz}$   
 温升 DT: 100K  
 环境温度 Tamb: 30°C





# Technical Data

## Express 系列伺服电机规格 (E012\_\_F)

| 电机型号<br>Motor Code             |                            | E01215F |       |       | E01220F |       |       | E01225F |       |       | E01230F |       |       | E01235F |       |       |
|--------------------------------|----------------------------|---------|-------|-------|---------|-------|-------|---------|-------|-------|---------|-------|-------|---------|-------|-------|
| 额定转速<br>Rated Speed            | wn<br>[rpm]                | 1500    | 1700  | 2000  | 1500    | 1700  | 2000  | 1500    | 1700  | 2000  | 1500    | 1700  | 2000  | 1500    | 1700  | 2000  |
| 额定频率<br>Rated Freq             | Fn<br>[Hz]                 | 100     | 113   | 133   | 100     | 113   | 133   | 100     | 113   | 133   | 100     | 113   | 133   | 100     | 113   | 133   |
| 极数<br>Number of poles          | 2p                         | 8       |       |       |         |       |       |         |       |       |         |       |       |         |       |       |
| 最大速度<br>Max Speed              | wmax<br>[rpm]              | 3500    |       |       |         |       |       |         |       |       |         |       |       |         |       |       |
| 最大频率<br>Max Freq               | Fmax<br>[Hz]               | 233     |       |       |         |       |       |         |       |       |         |       |       |         |       |       |
| 堵转电流<br>Stall Current          | Io<br>[A]                  | 70      | 77    | 85    | 85      | 96    | 109   | 95      | 109   | 127   | 108     | 126   | 151   | 125     | 150   | 187   |
| 额定电流<br>Rated Current          | In<br>[A]                  | 64      | 70    | 75    | 78      | 86    | 95    | 86      | 96    | 109   | 100     | 114   | 134   | 115     | 135   | 164   |
| 堵转扭矩<br>Stall Torque           | To<br>[Nm]                 | 224     |       |       | 279     |       |       | 332     |       |       | 378     |       |       | 428     |       |       |
| 额定扭矩<br>Rated Torque           | Tn<br>[Nm]                 | 206     | 203   | 197   | 255     | 250   | 243   | 300     | 294   | 285   | 351     | 344   | 336   | 395     | 387   | 377   |
| 额定功率<br>Rated Power            | Pn<br>[kW]                 | 32      | 36    | 41    | 40      | 45    | 51    | 47      | 52    | 60    | 55      | 61    | 70    | 62      | 69    | 79    |
| 扭矩常数<br>Torque Constant        | Kt<br>[Nm/A]               | 3.27    | 2.98  | 2.67  | 3.34    | 2.98  | 2.60  | 3.57    | 3.13  | 2.67  | 3.64    | 3.13  | 2.60  | 3.57    | 2.98  | 2.38  |
| 反电动势<br>Back EMF               | EMF<br>[V/krpm]            | 198     | 180   | 162   | 203     | 180   | 158   | 216     | 189   | 162   | 221     | 189   | 158   | 216     | 180   | 144   |
| 绕组线电阻<br>Winding Resistance    | Rw<br>[ohm]                | 0.157   | 0.123 | 0.106 | 0.123   | 0.096 | 0.074 | 0.110   | 0.085 | 0.062 | 0.095   | 0.068 | 0.049 | 0.078   | 0.054 | 0.034 |
| 直轴线电感<br>Direct Inductance     | Ld<br>[mH]                 | 4.1     | 3.4   | 2.7   | 3.4     | 2.7   | 2.1   | 3.2     | 2.5   | 1.8   | 2.9     | 2.1   | 1.5   | 2.4     | 1.7   | 1.1   |
| 交轴线电感<br>Quadrature Inductance | Lq<br>[mH]                 | 9.6     | 7.9   | 6.4   | 8.0     | 6.3   | 4.9   | 7.6     | 5.8   | 4.3   | 6.8     | 5.0   | 3.5   | 5.7     | 1.0   | 2.5   |
| 最大电流<br>Max Current            | I <sub>max</sub><br>[A]    | 155     | 171   | 190   | 190     | 214   | 245   | 210     | 240   | 280   | 240     | 280   | 335   | 280     | 336   | 420   |
| 最大扭矩<br>Max Torque             | T <sub>max</sub><br>[Nm]   | 467     |       |       | 585     |       |       | 700     |       |       | 800     |       |       | 920     |       |       |
| 转动惯量<br>Rotor Inertia          | Jm<br>[kgcm <sup>2</sup> ] | 253     |       |       | 310     |       |       | 370     |       |       | 427     |       |       | 485     |       |       |
| 电机重量<br>Weight                 | M<br>[kg]                  | 102     |       |       | 116     |       |       | 130     |       |       | 144     |       |       | 158     |       |       |

驱动器电压 Vdrive: 380Vac

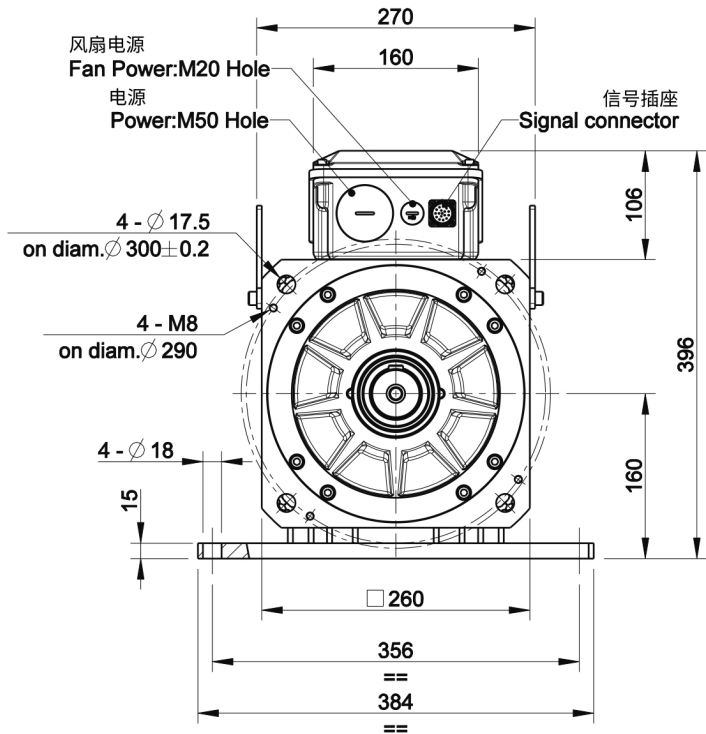
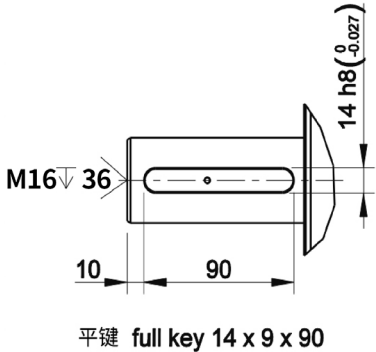
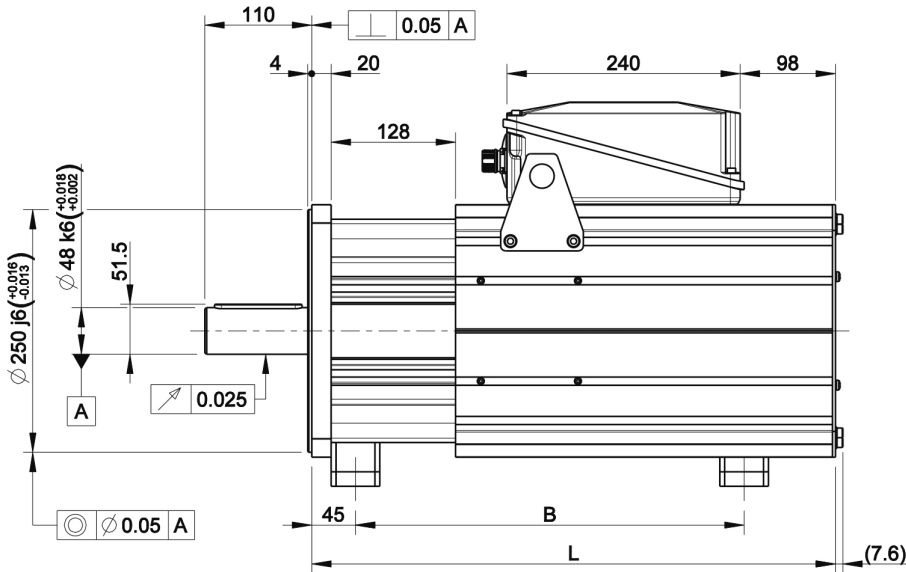
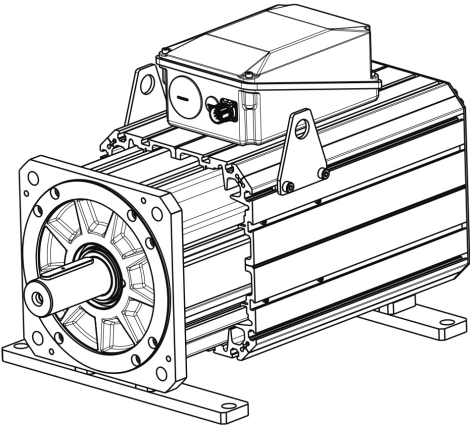
直流母线电压 Vdcbus: 537Vdc

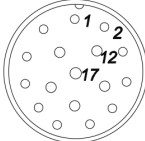
载波频率 PWM frequency: ≥ 4kHz

温升 DT: 100K

环境温度 Tamb : 30°C

|         | B   | L   |
|---------|-----|-----|
| E01215F | 400 | 539 |
| E01220F | 450 | 589 |
| E01225F | 500 | 639 |
| E01230F | 550 | 689 |
| E01235F | 600 | 739 |



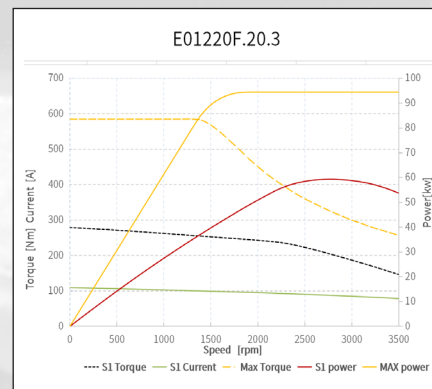
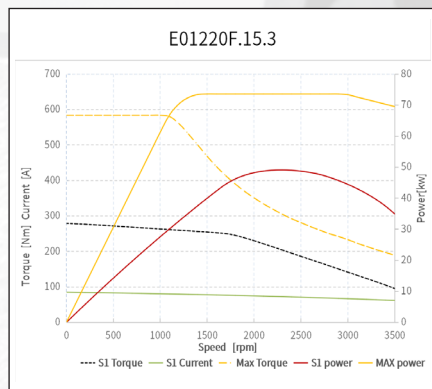
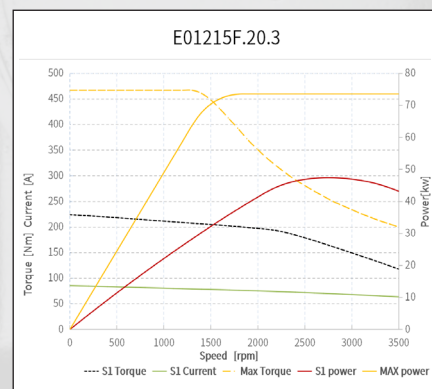
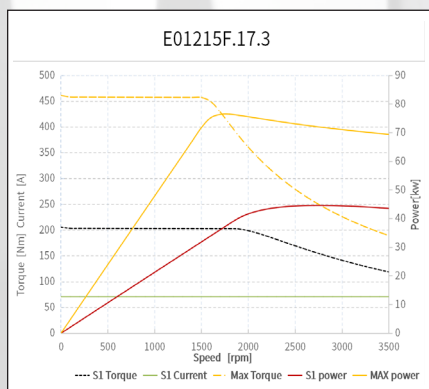
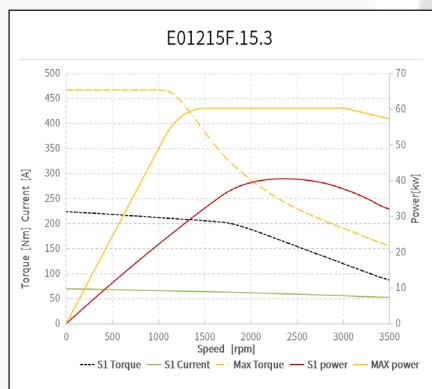
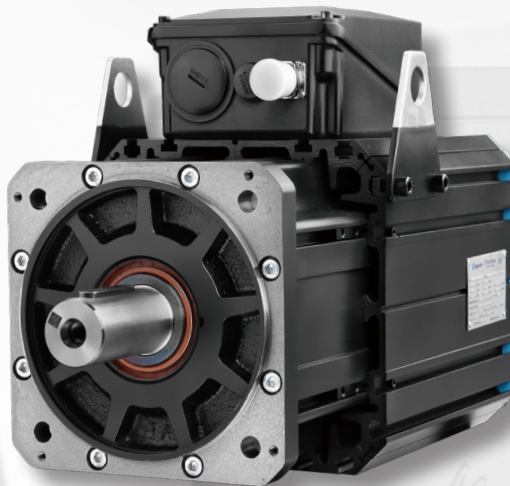
|  <div>           信号插座<br/>           Signal Connector<br/>           M23 Size 1-17 Pin         </div> |                      |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| 针脚号<br>PIN                                                                                                                                                                                 | 线色<br>WIRE COLOR     | 定义<br>FUNCTION |
| 1                                                                                                                                                                                          | n.c.                 | n.c.           |
| 2                                                                                                                                                                                          | n.c.                 | n.c.           |
| 3                                                                                                                                                                                          | n.c.                 | n.c.           |
| 4                                                                                                                                                                                          | YELLOW 黄             | SIN-           |
| 5                                                                                                                                                                                          | RED 红                | COS+           |
| 6                                                                                                                                                                                          | BLACK 黑              | COS-           |
| 7                                                                                                                                                                                          | RED / WHITE 红 / 白    | RESX+          |
| 8                                                                                                                                                                                          | BROWN 棕              | KTY+           |
| 9                                                                                                                                                                                          | WHITE 白              | KTY-           |
| 10                                                                                                                                                                                         | YELLOW / WHITE 黄 / 白 | RESX-          |
| 11                                                                                                                                                                                         | n.c.                 | n.c.           |
| 12                                                                                                                                                                                         | n.c.                 | n.c.           |
| 13                                                                                                                                                                                         | n.c.                 | n.c.           |
| 14                                                                                                                                                                                         | BLUE 蓝               | SIN+           |
| 15                                                                                                                                                                                         | n.c.                 | n.c.           |
| 16                                                                                                                                                                                         | BLUE 蓝               | PTC+           |
| 17                                                                                                                                                                                         | BLUE 蓝               | PTC-           |
| 旋转变压器 Resolver : 1X-BRX                                                                                                                                                                    |                      |                |

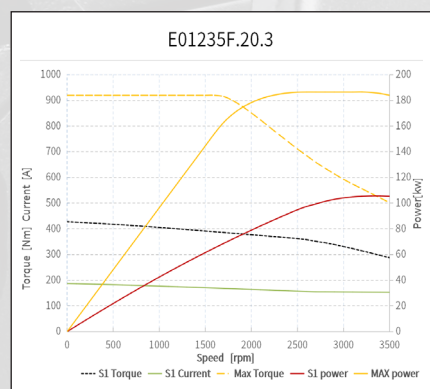
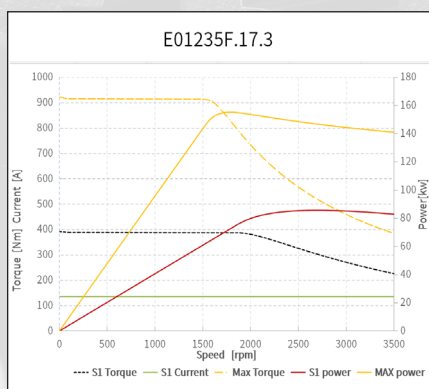
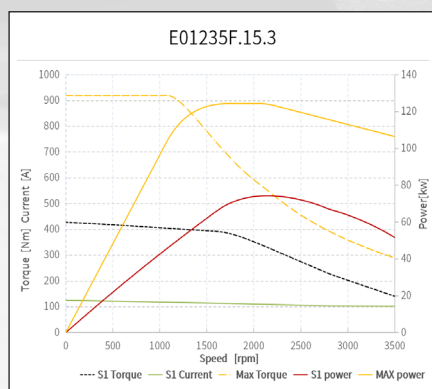
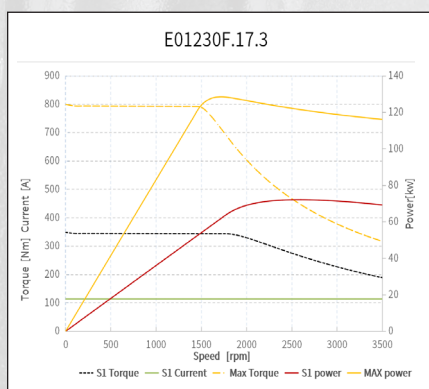
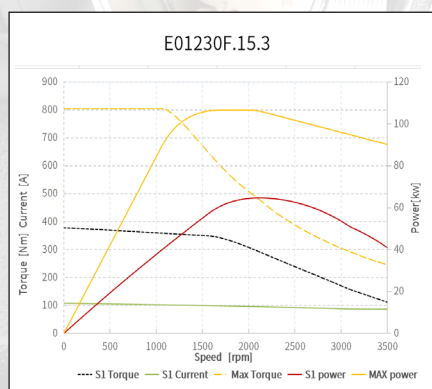
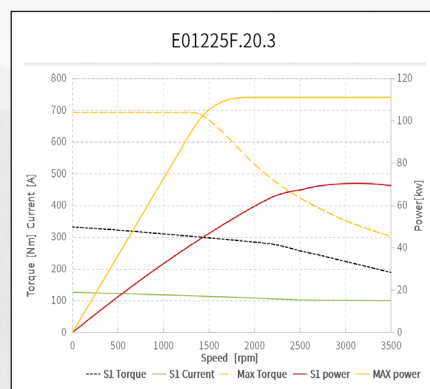
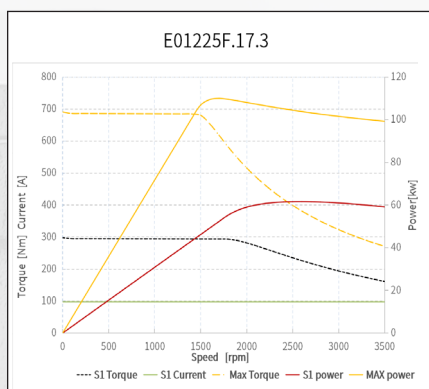
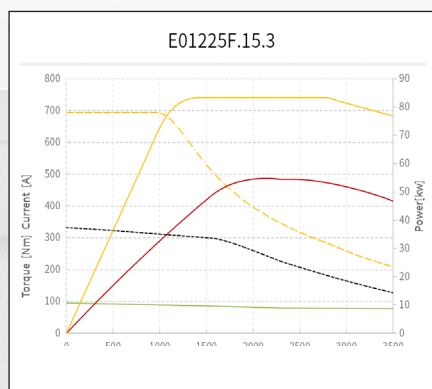


# Performance Curve

## 电机性能曲线 (E012\_\_F)

驱动器电压 Vdrive: 380Vac  
 直流母线电压 Vdcbus: 537Vdc  
 载波频率 PWM frequency:  $\geq 4\text{kHz}$   
 温升 DT: 100K  
 环境温度 Tamb: 30°C





| 电机型号<br>Motor Code             |                                        | E01304F |         |       | E01306F |         |       | E01307F |       |        | E01308F |        |        | E01309F |        |       | E01311F |       |        | E01313F |       |       |
|--------------------------------|----------------------------------------|---------|---------|-------|---------|---------|-------|---------|-------|--------|---------|--------|--------|---------|--------|-------|---------|-------|--------|---------|-------|-------|
| 额定转速<br>Rated Speed            | wn<br>[rpm]                            | 1000    | 1500    | 2000  | 1000    | 1500    | 2000  | 1000    | 1500  | 2000   | 1000    | 1500   | 2000   | 1000    | 1500   | 2000  | 1000    | 1500  | 2000   | 1000    | 1500  | 2000  |
| 额定频率<br>Rated Freq             | Fn<br>[Hz]                             | 66.67   | 100     | 133.3 | 66.67   | 100     | 133.3 | 66.67   | 100   | 133.3  | 66.67   | 100    | 133.3  | 66.67   | 100    | 133.3 | 66.67   | 100   | 133.3  | 66.67   | 100   | 133.3 |
| 极数<br>Number of poles          | 2p                                     | 8       |         |       |         |         |       |         |       |        |         |        |        |         |        |       |         |       |        |         |       |       |
| 最大速度<br>Max Speed              | wmax<br>[rpm]                          | 3500    |         |       |         |         |       |         |       |        |         |        |        |         |        |       |         |       |        |         |       |       |
| 最大频率<br>Max Freq               | Fmax<br>[Hz]                           | 233     |         |       |         |         |       |         |       |        |         |        |        |         |        |       |         |       |        |         |       |       |
| 堵转电流<br>Stall Current          | Io<br>[A]                              | 36.75   | 55.65   | 70.35 | 56.7    | 81.9    | 105   | 68.25   | 97.65 | 132.3  | 76.65   | 110.25 | 147    | 84      | 131.25 | 180.6 | 115.5   | 155.4 | 215.25 | 118.65  | 184.8 | 252   |
| 额定电流<br>Rated Current          | In<br>[A]                              | 35      | 53      | 67    | 54      | 78      | 100   | 65      | 93    | 126    | 73      | 105    | 140    | 80      | 125    | 172   | 110     | 148   | 205    | 113     | 176   | 240   |
| 堵转扭矩<br>Stall Torque           | To<br>[Nm]                             | 194.3   | 193.2   | 182.7 | 294     | 283.5   | 273   | 357     | 333.9 | 336    | 399     | 383.3  | 383.3  | 437.9   | 427.4  | 409.5 | 535.5   | 519.8 | 509.3  | 614.3   | 609   | 588   |
| 额定扭矩<br>Rated Torque           | Tn<br>[Nm]                             | 185     | 184     | 174   | 280     | 270     | 260   | 340     | 318   | 320    | 380     | 365    | 365    | 417     | 407    | 390   | 510     | 495   | 485    | 585     | 580   | 560   |
| 额定功率<br>Rated Power            | Pn<br>[kW]                             | 19.4    | 28.9    | 36.4  | 29.3    | 42.4    | 54.5  | 35.6    | 49.9  | 67     | 39.8    | 57.3   | 76.4   | 43.7    | 63.9   | 81.7  | 53.4    | 77.7  | 101.6  | 61.3    | 91.1  | 117.3 |
| 扭矩常数<br>Torque Constant        | Kt<br>[Nm/A]                           | 4.86    | 3.24    | 2.43  | 4.86    | 3.24    | 2.43  | 4.73    | 3.19  | 2.36   | 4.86    | 3.24   | 2.43   | 4.86    | 3.03   | 2.13  | 4.45    | 3.16  | 2.22   | 4.82    | 3.06  | 2.18  |
| 反电动势<br>Back EMF               | EMF<br>[V/krpm]                        | 294.1   | 196.067 | 146.9 | 294.1   | 196.067 | 146.9 | 285.9   | 192.8 | 142.95 | 294.1   | 195.9  | 147.15 | 293.8   | 183    | 128.5 | 269     | 191   | 134    | 291.7   | 185   | 132   |
| 绕组线电阻<br>Winding Resistance    | Rw<br>[ohm]                            | 0.488   | 0.216   | 0.123 | 0.273   | 0.126   | 0.069 | 0.22    | 0.096 | 0.055  | 0.182   | 0.083  | 0.045  | 0.158   | 0.065  | 0.032 | 0.106   | 0.053 | 0.026  | 0.101   | 0.042 | 0.022 |
| 直轴线电感<br>Direct Inductance     | Ld<br>[mH]                             | 10.86   | 4.82    | 2.35  | 7.24    | 3.22    | 3.7   | 5.86    | 2.29  | 1.47   | 5.43    | 2.07   | 1.25   | 4.14    | 1.57   | 0.76  | 3       | 1.44  | 0.9    | 2.82    | 1.15  | 0.6   |
| 交轴线电感<br>Quadrature Inductance | Lq<br>[mH]                             | 23.56   | 10.47   | 5.57  | 15.71   | 6.98    | 1.55  | 12.73   | 5.26  | 3.18   | 11.78   | 4.93   | 2.41   | 9.57    | 3.7    | 1.75  | 6.3     | 3.4   | 1.73   | 6.59    | 2.69  | 1.36  |
| 最大电流<br>Max Current            | I <sub>max</sub><br>[A]                | 89.7    | 132.5   | 171.7 | 139.7   | 194     | 268.7 | 160     | 229   | 311    | 190     | 257.5  | 350    | 193.1   | 315    | 450   | 280     | 425   | 580    | 281     | 480   | 670   |
| 最大扭矩<br>Max Torque             | T <sub>max</sub><br>[Nm]               | 400     |         |       | 600     |         |       | 700     |       |        | 800     |        |        | 900     |        |       | 1100    |       |        | 1300    |       |       |
| 转动惯量<br>Rotor Inertia          | J <sub>m</sub><br>[kgcm <sup>2</sup> ] | 440     |         |       | 626     |         |       | 718     |       |        | 811     |        |        | 903     |        |       | 1111    |       |        | 1296    |       |       |
| 电机重量<br>Weight                 | M<br>[kg]                              | 128     |         |       | 148     |         |       | 158     |       |        | 169     |        |        | 180     |        |       | 230     |       |        | 263     |       |       |

驱动器电压 Vdrive: 380Vac

直流母线电压 Vdcbus: 537Vdc

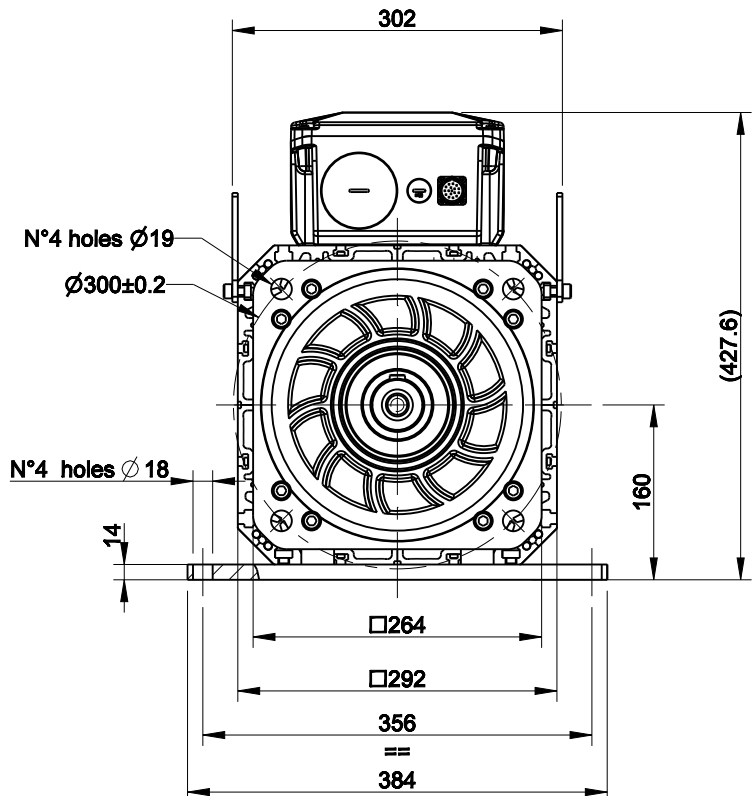
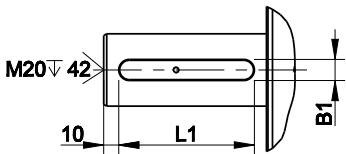
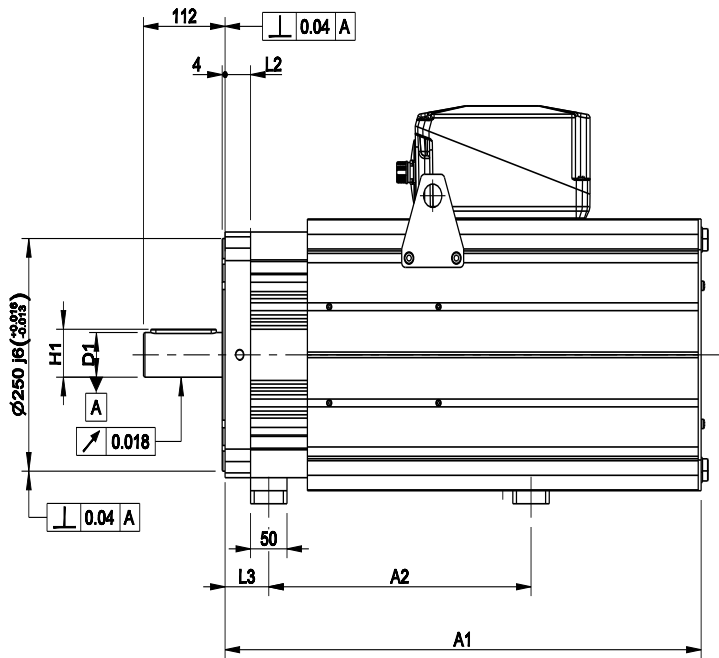
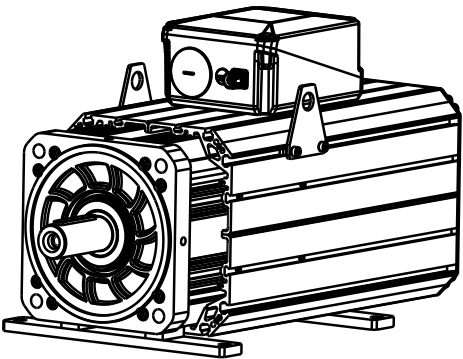
载波频率 PWM frequency: ≥ 4kHz

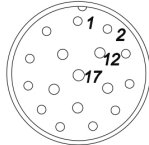
温升 DT: 100K

环境温度 Tamb : 30°C

| 制动器的机械参数 /Technical Data of the Holding Brake |                             |      |
|-----------------------------------------------|-----------------------------|------|
| 制动转矩<br>Holding Torque                        | MBr<br>[Nm]                 | 300  |
| 额定电压 (± 10%)<br>Rated Voltage(±10%)           | Ubr<br>[Vdc]                | 24   |
| 额定电流<br>Rated Current                         | Ibr<br>[A]                  | 1.74 |
| 重量<br>Mass                                    | MBr<br>[Kg]                 | 18   |
| 惯量<br>nertia                                  | JBr<br>[Kgcm <sup>2</sup> ] | 200  |
| 电机增加的长度<br>Additional Motor Length            | Length<br>[mm]              | 80   |

|         | A1    | A2  | L1 | L2 | L3 | B1 | D1   | H1   |
|---------|-------|-----|----|----|----|----|------|------|
| E01304F | 503.5 | 210 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01306F | 563.5 | 270 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01307F | 593.5 | 300 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01308F | 623.5 | 330 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01309F | 653.5 | 360 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01311F | 715.5 | 420 | 90 | 37 | 62 | 18 | 60m6 | 64   |
| E01313F | 775.5 | 480 | 90 | 37 | 62 | 18 | 60m6 | 64   |



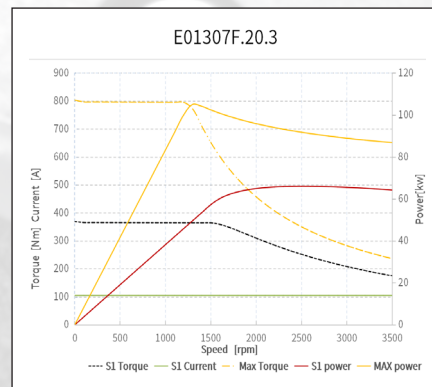
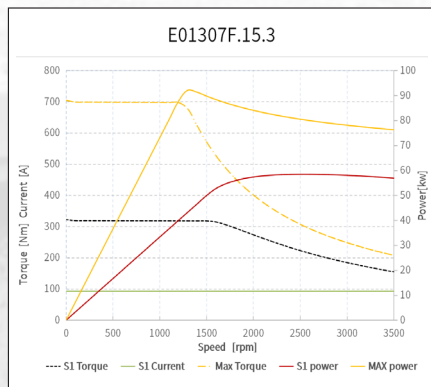
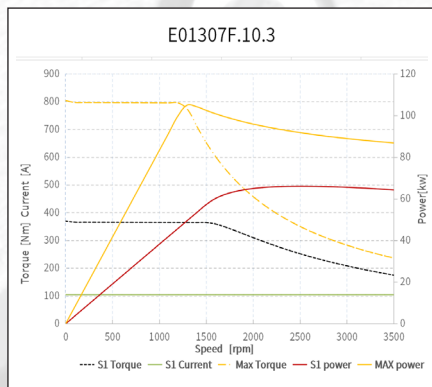
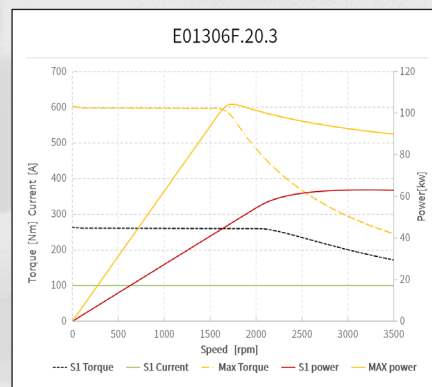
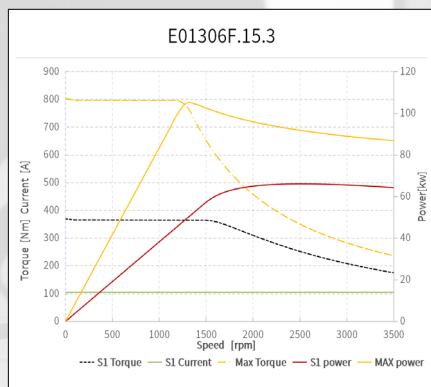
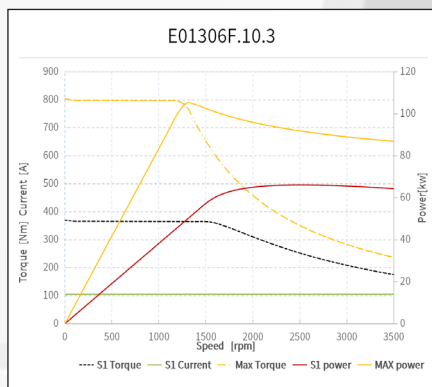
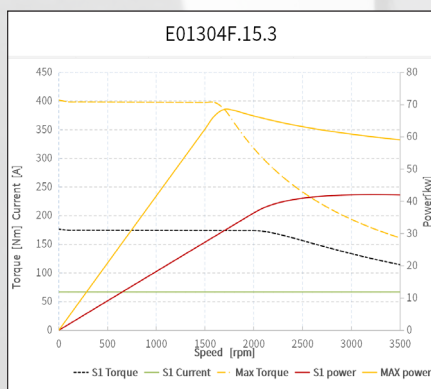
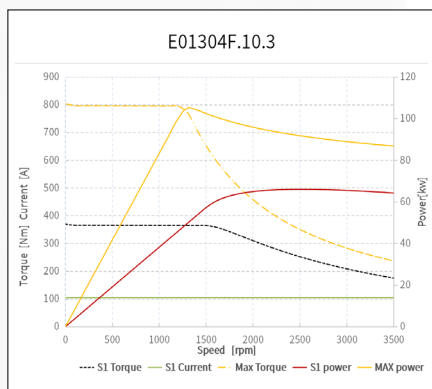
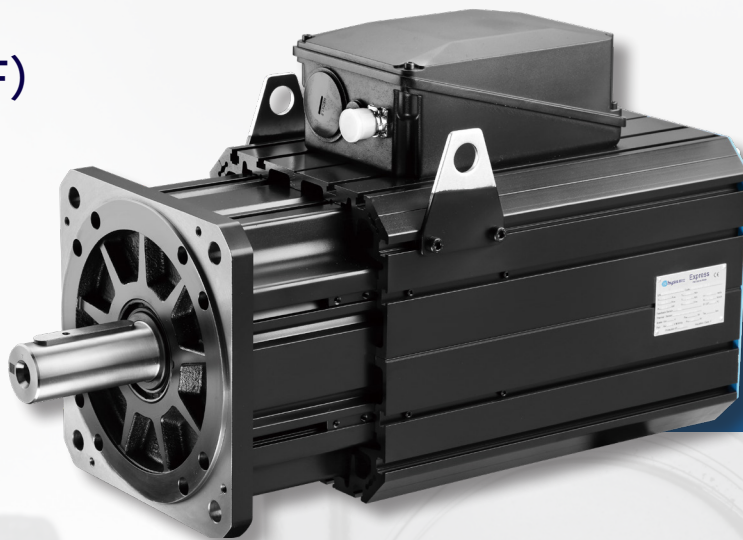
| <div>  <div> 信号插座<br/>Signal Connector<br/>M23 Size 1-17 Pin </div> </div> |                      |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| 针脚号<br>PIN                                                                                                                                                      | 线色<br>WIRE COLOR     | 定义<br>FUNCTION |
| 1                                                                                                                                                               | n.c.                 | n.c.           |
| 2                                                                                                                                                               | n.c.                 | n.c.           |
| 3                                                                                                                                                               | n.c.                 | n.c.           |
| 4                                                                                                                                                               | YELLOW 黄             | SIN-           |
| 5                                                                                                                                                               | RED 红                | COS+           |
| 6                                                                                                                                                               | BLACK 黑              | COS-           |
| 7                                                                                                                                                               | RED / WHITE 红 / 白    | RESX+          |
| 8                                                                                                                                                               | BROWN 棕              | KTY+           |
| 9                                                                                                                                                               | WHITE 白              | KTY-           |
| 10                                                                                                                                                              | YELLOW / WHITE 黄 / 白 | RESX-          |
| 11                                                                                                                                                              | n.c.                 | n.c.           |
| 12                                                                                                                                                              | n.c.                 | n.c.           |
| 13                                                                                                                                                              | n.c.                 | n.c.           |
| 14                                                                                                                                                              | BLUE 蓝               | SIN+           |
| 15                                                                                                                                                              | n.c.                 | n.c.           |
| 16                                                                                                                                                              | BLUE 蓝               | PTC+           |
| 17                                                                                                                                                              | BLUE 蓝               | PTC-           |
| 旋转变压器 Resolver : 1X-BRX                                                                                                                                         |                      |                |

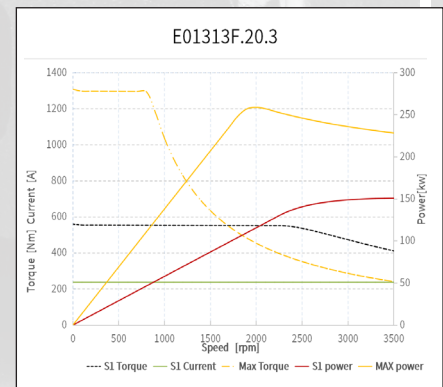
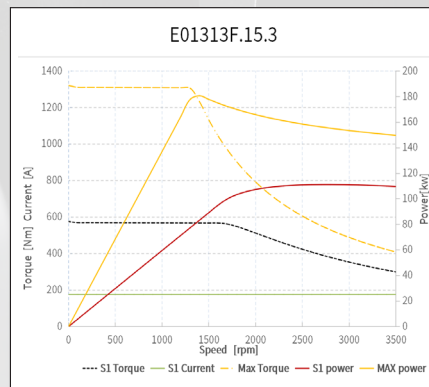
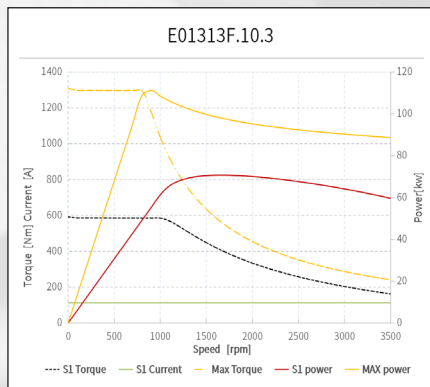
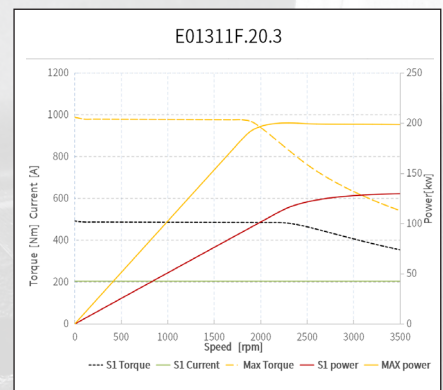
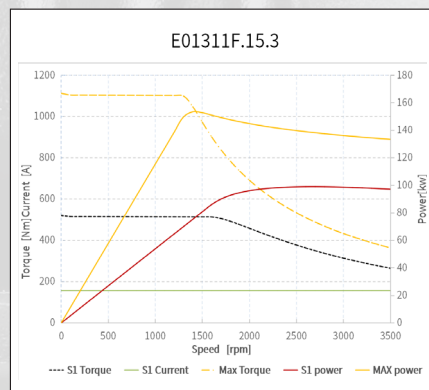
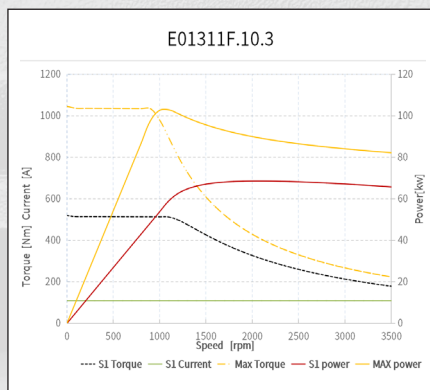
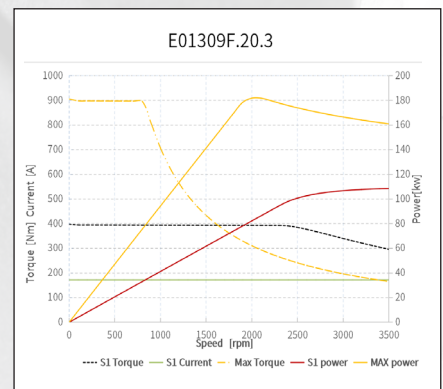
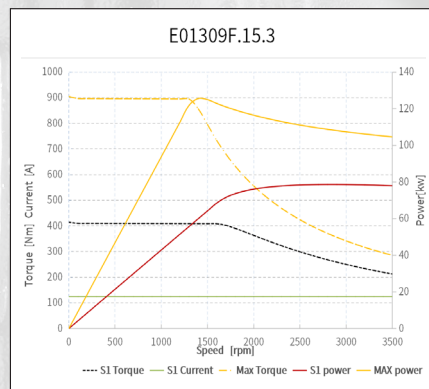
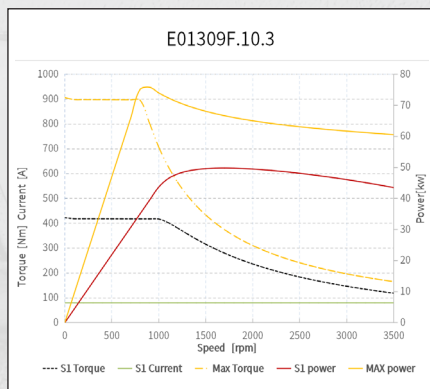
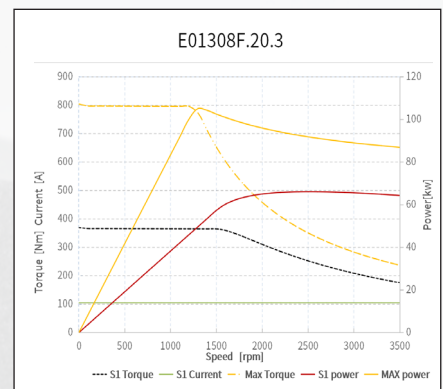
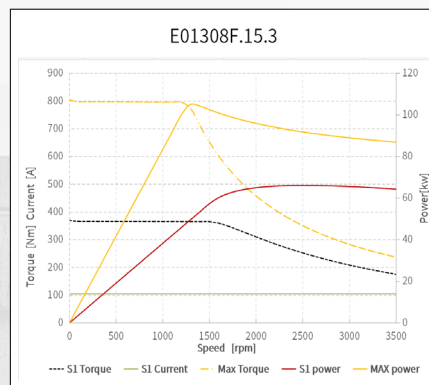
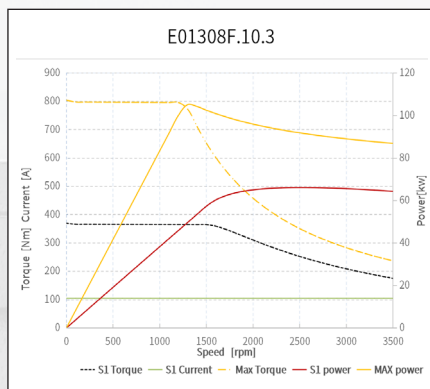


# Performance Curve

## 电机性能曲线 (E013\_\_F)

驱动器电压 Vdrive: 380Vac  
 直流母线电压 Vdcbus: 537Vdc  
 载波频率 PWM frequency:  $\geq 4\text{kHz}$   
 温升 DT: 100K  
 环境温度 Tamb: 30°C





| 电机型号<br>Motor Code             |                            | E01304C |       |       | E01306C |        |        | E01307C |        |       | E01308C |        |        | E01309C |        |        | E01311C |        |       | E01313C |       |       |
|--------------------------------|----------------------------|---------|-------|-------|---------|--------|--------|---------|--------|-------|---------|--------|--------|---------|--------|--------|---------|--------|-------|---------|-------|-------|
| 额定转速<br>Rated Speed            | wn<br>[rpm]                | 1000    | 1500  | 2000  | 1000    | 1500   | 2000   | 1000    | 1500   | 2000  | 1000    | 1500   | 2000   | 1000    | 1500   | 2000   | 1000    | 1500   | 2000  | 1000    | 1500  | 2000  |
| 额定频率<br>Rated Freq             | Fn<br>[Hz]                 | 66.67   | 100   | 133.3 | 66.67   | 100    | 133.3  | 66.67   | 100    | 133.3 | 66.67   | 100    | 133.3  | 66.67   | 100    | 133.3  | 66.67   | 100    | 133.3 | 66.67   | 100   | 133.3 |
| 极数<br>Number of poles          | 2p                         | 8       |       |       |         |        |        |         |        |       |         |        |        |         |        |        |         |        |       |         |       |       |
| 最大速度<br>Max Speed              | wmax<br>[rpm]              | 3500    |       |       |         |        |        |         |        |       |         |        |        |         |        |        |         |        |       |         |       |       |
| 最大频率<br>Max Freq               | Fmax<br>[Hz]               | 233     |       |       |         |        |        |         |        |       |         |        |        |         |        |        |         |        |       |         |       |       |
| 堵转电流<br>Stall Current          | Io<br>[A]                  | 48.3    | 72.8  | 90.3  | 71.9    | 112.35 | 139.65 | 77.7    | 118.65 | 151.2 | 91.35   | 141.75 | 166.95 | 107.1   | 156.45 | 204.75 | 131.25  | 194.25 | 249.9 | 153.3   | 216.3 | 294   |
| 额定电流<br>Rated Current          | In<br>[A]                  | 46      | 69.5  | 86    | 68.5    | 107    | 133    | 74      | 113    | 144   | 87      | 135    | 159    | 102     | 149    | 195    | 125     | 185    | 238   | 146     | 206   | 280   |
| 堵转扭矩<br>Stall Torque           | To<br>[Nm]                 | 228.9   | 221.6 | 219.5 | 342.3   | 339.2  | 330.8  | 392.7   | 388.5  | 383.3 | 446.3   | 441    | 432.6  | 507.2   | 496.7  | 488.3  | 611.1   | 601.7  | 589.1 | 706.7   | 696.2 | 682.5 |
| 额定扭矩<br>Rated Torque           | Tn<br>[Nm]                 | 218     | 211   | 209   | 326     | 323    | 315    | 374     | 370    | 365   | 425     | 420    | 412    | 483     | 473    | 465    | 582     | 573    | 561   | 673     | 663   | 650   |
| 额定功率<br>Rated Power            | Pn<br>[kW]                 | 22.8    | 33.1  | 43.8  | 34.1    | 50.7   | 66     | 39.2    | 58.1   | 76.4  | 44.5    | 66     | 86.3   | 50.6    | 74.3   | 97.4   | 60.9    | 90     | 117.5 | 70.5    | 104.1 | 136.1 |
| 冷却水流量<br>Minimum Flow Rate     | Flow<br>[L/min]            | 15      |       |       | 18      |        |        | 20      |        |       | 23      |        |        | 25      |        |        | 30      |        |       | 35      |       |       |
| 扭矩常数<br>Torque Constant        | Kt<br>[Nm/A]               | 4.45    | 2.83  | 2.29  | 4.45    | 2.83   | 2.23   | 4.72    | 3.06   | 2.36  | 4.58    | 2.96   | 2.43   | 4.45    | 3.01   | 2.25   | 4.45    | 2.96   | 2.23  | 4.38    | 3.06  | 2.18  |
| 反电动势<br>Back EMF               | EMF<br>[V/krpm]            | 269.3   | 171   | 138.7 | 269     | 171    | 134.7  | 285.6   | 185    | 142.8 | 277     | 179    | 146.9  | 269     | 182    | 136    | 269     | 179    | 134.6 | 265     | 185   | 132   |
| 绕组线电阻<br>Winding Resistance    | Rw<br>[ohm]                | 0.43    | 0.176 | 0.111 | 0.24    | 0.097  | 0.058  | 0.224   | 0.093  | 0.053 | 0.173   | 0.072  | 0.049  | 0.15    | 0.067  | 0.038  | 0.107   | 0.048  | 0.026 | 0.087   | 0.043 | 0.022 |
| 直轴线电感<br>Direct Inductance     | Ld<br>[mH]                 | 8.2     | 3.2   | 2.07  | 5.3     | 2.15   | 1.29   | 5.1     | 2.2    | 1.42  | 4.7     | 1.8    | 1.31   | 4.2     | 1.81   | 0.94   | 3.29    | 1.33   | 0.71  | 2.61    | 1.16  | 0.6   |
| 交轴线电感<br>Quadrature Inductance | Lq<br>[mH]                 | 18.2    | 7.5   | 4.97  | 12.3    | 5      | 3.12   | 11.6    | 4.8    | 3.17  | 10.7    | 4.1    | 3.04   | 6.7     | 3.45   | 2.08   | 5.73    | 2.84   | 1.72  | 4.98    | 2.64  | 1.37  |
| 最大电流<br>Max Current            | I <sub>max</sub><br>[A]    | 89.7    | 132.5 | 171.7 | 139.7   | 194    | 268.7  | 160     | 229    | 311   | 190     | 257.5  | 350    | 193.1   | 315    | 450    | 280     | 425    | 580   | 281     | 480   | 670   |
| 最大扭矩<br>Max Torque             | T <sub>max</sub><br>[Nm]   | 400     |       |       | 600     |        |        | 700     |        |       | 800     |        |        | 900     |        |        | 1100    |        |       | 1300    |       |       |
| 转动惯量<br>Rotor Inertia          | Jm<br>[kgcm <sup>2</sup> ] | 440     |       |       | 626     |        |        | 718     |        |       | 811     |        |        | 903     |        |        | 1111    |        |       | 1296    |       |       |
| 电机重量<br>Weight                 | M<br>[kg]                  | 123     |       |       | 146     |        |        | 159     |        |       | 179     |        |        | 190     |        |        | 219     |        |       | 241     |       |       |

驱动器电压 Vdrive: 380Vac

直流母线电压 Vdcbus: 537Vdc

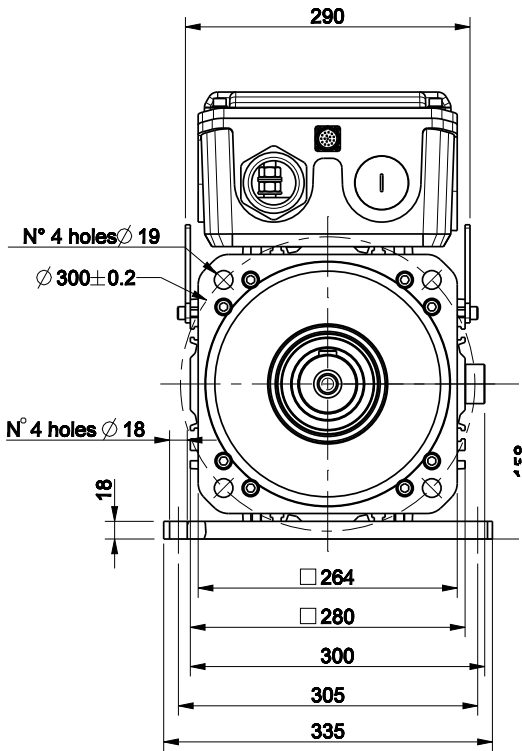
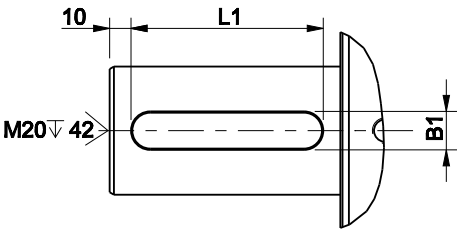
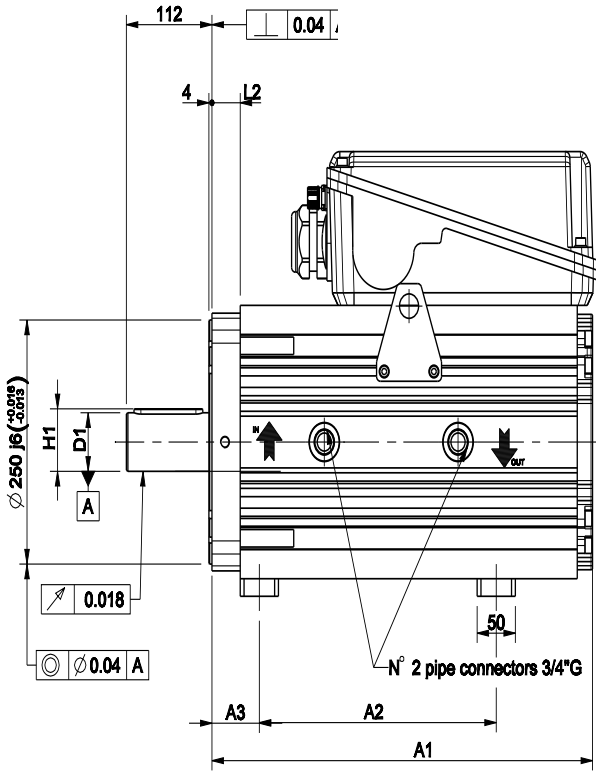
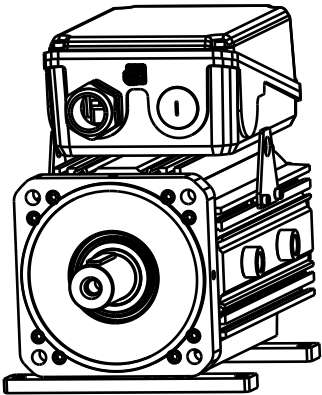
载波频率 PWM frequency: ≥ 4kHz

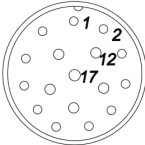
温升 DT: 100K

环境温度 Tamb : 30°C

| 制动器的机械参数 /Technical Data of the Holding Brake |                             |      |
|-----------------------------------------------|-----------------------------|------|
| 制动转矩<br>Holding Torque                        | MBr<br>[Nm]                 | 300  |
| 额定电压 (± 10%)<br>Rated Voltage(± 10%)          | Ubr<br>[Vdc]                | 24   |
| 额定电流<br>Rated Current                         | Ibr<br>[A]                  | 1.74 |
| 重量<br>Mass                                    | MBr<br>[Kg]                 | 18   |
| 惯量<br>nertia                                  | JBr<br>[Kgcm <sup>2</sup> ] | 200  |
| 电机增加的长度<br>Additional Motor Length            | Length<br>[mm]              | 80   |

|         | A1  | A2  | L1 | L2 | L3 | B1 | D1   | H1   |
|---------|-----|-----|----|----|----|----|------|------|
| E01304C | 376 | 190 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01306C | 436 | 250 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01307C | 466 | 280 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01308C | 496 | 310 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01309C | 526 | 340 | 90 | 35 | 60 | 14 | 48j6 | 51.5 |
| E01311C | 588 | 400 | 90 | 37 | 62 | 18 | 60m6 | 64   |
| E01313C | 648 | 460 | 90 | 37 | 62 | 18 | 60m6 | 64   |



| <div>  <div> 信号插座<br/>Signal Connector<br/>M23 Size 1-17 Pin </div> </div> |                      |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| 针脚号<br>PIN                                                                                                                                                      | 线色<br>WIRE COLOR     | 定义<br>FUNCTION |
| 1                                                                                                                                                               | n.c.                 | n.c.           |
| 2                                                                                                                                                               | n.c.                 | n.c.           |
| 3                                                                                                                                                               | n.c.                 | n.c.           |
| 4                                                                                                                                                               | YELLOW 黄             | SIN-           |
| 5                                                                                                                                                               | RED 红                | COS+           |
| 6                                                                                                                                                               | BLACK 黑              | COS-           |
| 7                                                                                                                                                               | RED / WHITE 红 / 白    | RESX+          |
| 8                                                                                                                                                               | BROWN 棕              | KTY+           |
| 9                                                                                                                                                               | WHITE 白              | KTY-           |
| 10                                                                                                                                                              | YELLOW / WHITE 黄 / 白 | RESX-          |
| 11                                                                                                                                                              | n.c.                 | n.c.           |
| 12                                                                                                                                                              | n.c.                 | n.c.           |
| 13                                                                                                                                                              | n.c.                 | n.c.           |
| 14                                                                                                                                                              | BLUE 蓝               | SIN+           |
| 15                                                                                                                                                              | n.c.                 | n.c.           |
| 16                                                                                                                                                              | BLUE 蓝               | PTC+           |
| 17                                                                                                                                                              | BLUE 蓝               | PTC-           |
| 旋转变压器 Resolver : 1X-BRX                                                                                                                                         |                      |                |



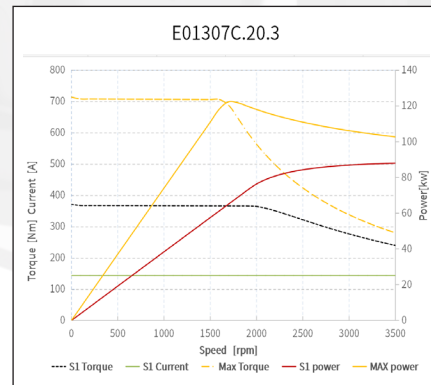
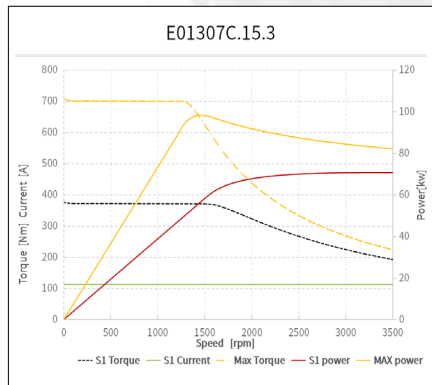
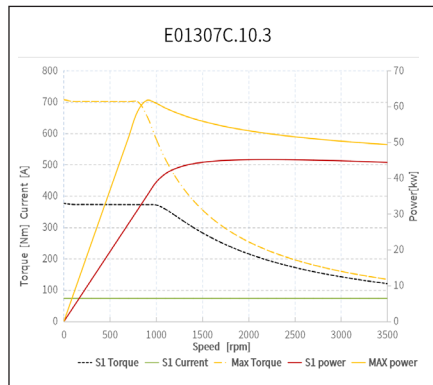
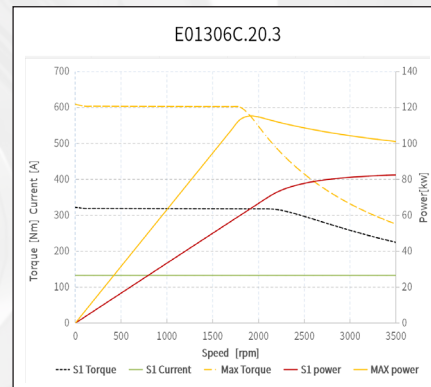
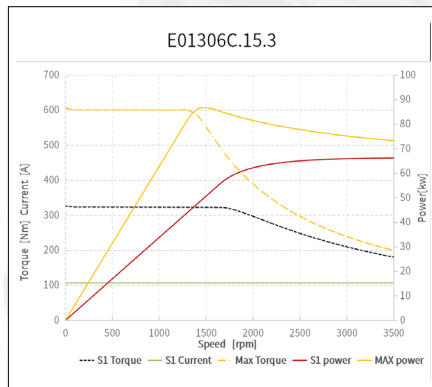
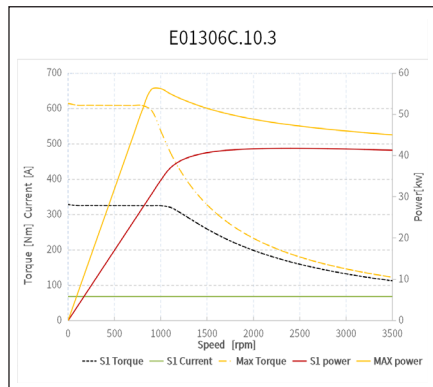
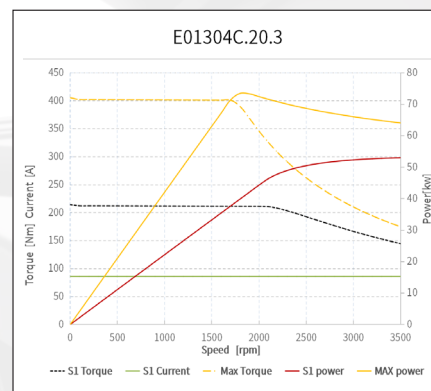
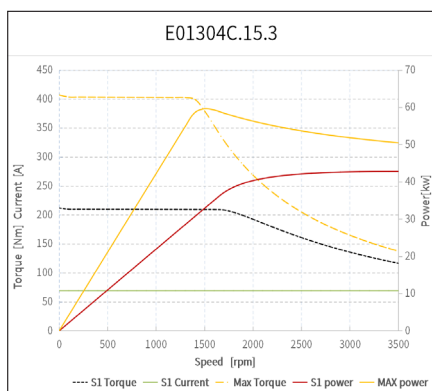
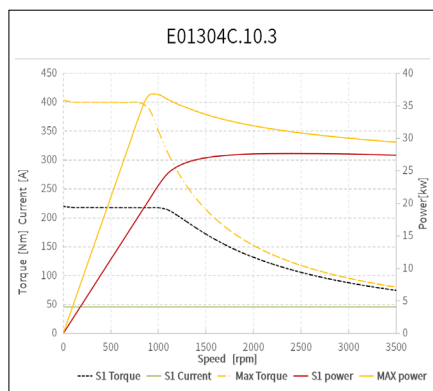
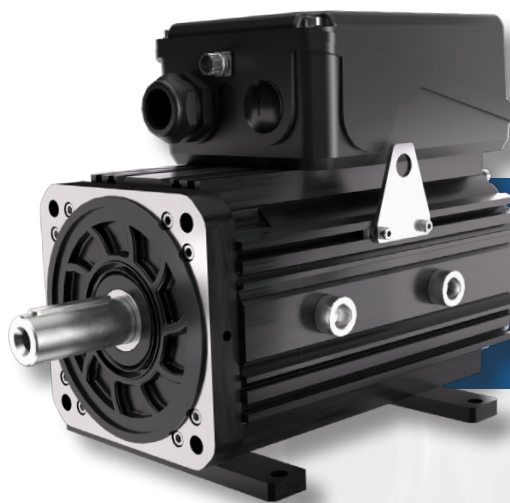
## Performance Curve

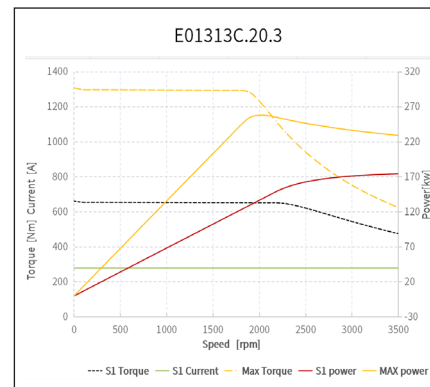
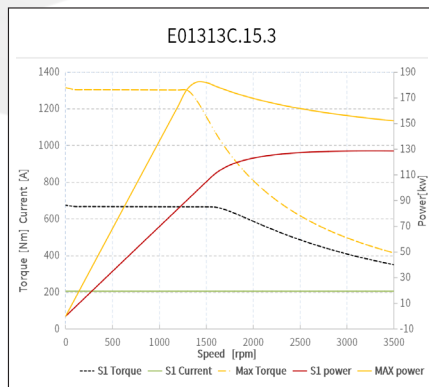
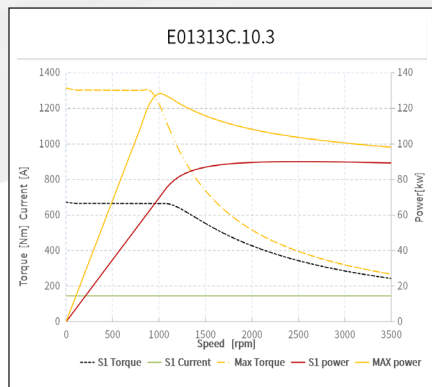
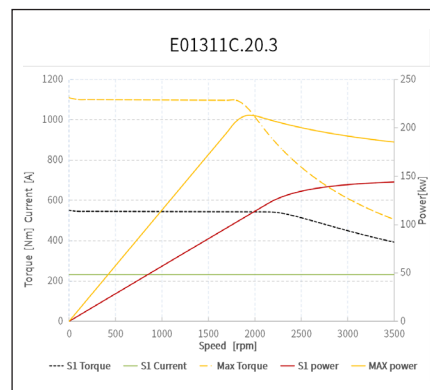
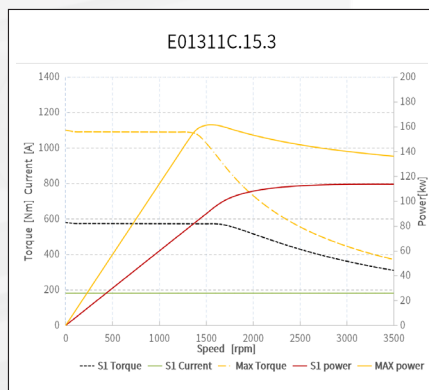
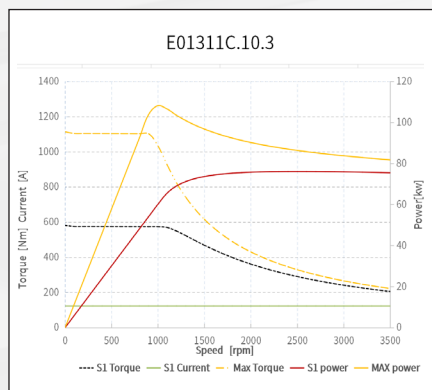
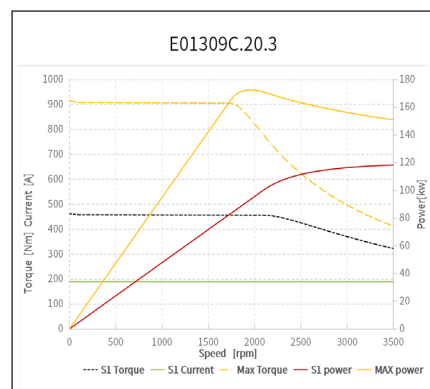
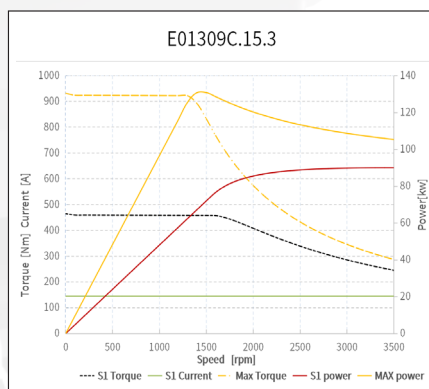
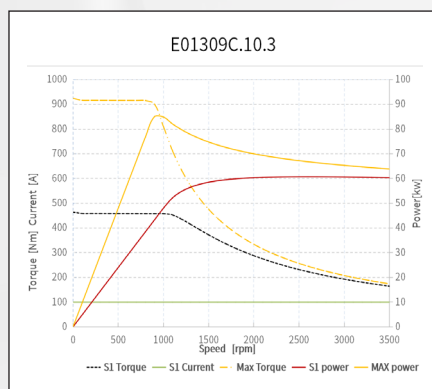
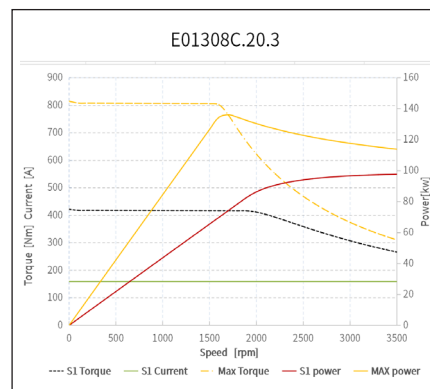
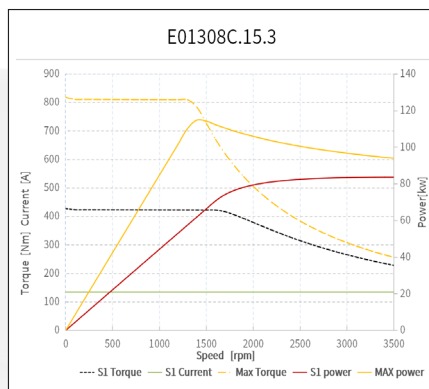
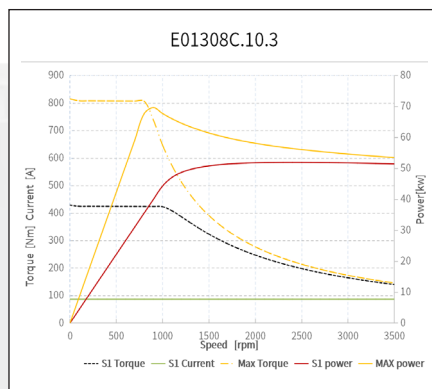
## 电机性能曲线 (E013\_\_C)

直流母线电压 Vdcbus: 537Vdc

温升 DT: 100K

环境温度 Tamb: 30℃





| 电机型号<br>Motor Code             |                         | E01806F |        |      | E01808F |        |      | E01809F |        |        | E01811F |       |        | E01813F |        |        | E01815F |        |       | E01817F |        |        |
|--------------------------------|-------------------------|---------|--------|------|---------|--------|------|---------|--------|--------|---------|-------|--------|---------|--------|--------|---------|--------|-------|---------|--------|--------|
| 额定转速<br>Rated Speed            | wn<br>[rpm]             | 1000    | 1200   | 1500 | 1000    | 1200   | 1500 | 1000    | 1200   | 1500   | 1000    | 1200  | 1500   | 1000    | 1200   | 1500   | 1000    | 1200   | 1500  | 1000    | 1200   | 1500   |
| 额定频率<br>Rated Freq             | Fn [Hz]                 | 100     | 120    | 150  | 100     | 120    | 150  | 100     | 120    | 150    | 100     | 120   | 150    | 100     | 120    | 150    | 100     | 120    | 150   | 100     | 120    | 150    |
| 极数<br>Number of poles          | 2p                      | 12      |        |      |         |        |      |         |        |        |         |       |        |         |        |        |         |        |       |         |        |        |
| 最大速度<br>Max Speed              | wmax<br>[rpm]           | 2000    | 2500   | 3000 | 2000    | 2500   | 3000 | 2000    | 2500   | 3000   | 2000    | 2500  | 3000   | 2000    | 2500   | 3000   | 2000    | 2500   | 3000  | 2000    | 2500   | 3000   |
| 最大频率<br>Max Freq               | Fmax<br>[Hz]            | 200     | 250    | 300  | 200     | 250    | 300  | 200     | 250    | 300    | 200     | 250   | 300    | 200     | 250    | 300    | 200     | 250    | 300   | 200     | 250    | 300    |
| 堵转电流<br>Stall Current          | Io [A]                  | 132     | 152    | 177  | 162     | 187    | 223  | 193     | 218    | 261    | 222     | 267   | 325    | 264     | 325    | 360    | 281     | 353    | 396   | 284     | 370    | 457    |
| 额定电流<br>Rated Current          | In [A]                  | 120     | 138    | 161  | 147     | 170    | 203  | 175     | 198    | 237    | 202     | 243   | 295    | 240     | 295    | 327    | 255     | 321    | 360   | 270     | 352    | 415    |
| 堵转扭矩<br>Stall Torque           | To [Nm]                 | 651     | 642    | 629  | 829     | 827    | 774  | 966     | 930    | 926    | 1169    | 1161  | 1122   | 1343    | 1320   | 1293   | 1478    | 1448   | 1403  | 1544    | 1498   | 1546   |
| 额定扭矩<br>Rated Torque           | Tn [Nm]                 | 592     | 584    | 572  | 754     | 752    | 704  | 878     | 845    | 842    | 1063    | 1055  | 1020   | 1221    | 1200   | 1175   | 1344    | 1316   | 1275  | 1470    | 1427   | 1405   |
| 额定功率<br>Rated Power            | Pn [kW]                 | 62      | 73     | 90   | 79      | 95     | 110  | 92      | 106    | 132    | 111     | 133   | 160    | 128     | 151    | 185    | 141     | 165    | 200   | 154     | 179    | 221    |
| 扭矩常数<br>Torque Constant        | Kt [Nm/A]               | 4.76    | 4.08   | 3.40 | 4.83    | 4.23   | 3.32 | 4.76    | 4.08   | 3.37   | 4.97    | 4.14  | 3.30   | 4.90    | 3.92   | 3.44   | 5.09    | 3.96   | 3.37  | 5.34    | 3.98   | 3.32   |
| 反电动势<br>Back EMF               | EMF [V/krpm]            | 288     | 247    | 206  | 292     | 256    | 201  | 288     | 247    | 204    | 301     | 251   | 199    | 297     | 237    | 208    | 308     | 240    | 204   | 323     | 241    | 201    |
| 绕组线电阻<br>Winding Resistance    | Rw [ohm]                | 0.0903  | 0.0667 | 0.05 | 0.0643  | 0.0484 | 0.03 | 0.0524  | 0.0384 | 0.0267 | 0.044   | 0.031 | 0.0198 | 0.035   | 0.0224 | 0.0171 | 0.032   | 0.0194 | 0.015 | 0.0277  | 0.0156 | 0.0108 |
| 直轴线电感<br>Direct Inductance     | Ld [mH]                 | 1.66    | 1.22   | 0.84 | 1.26    | 0.96   | 0.59 | 1.09    | 0.80   | 0.56   | 0.95    | 0.66  | 0.42   | 0.79    | 0.50   | 0.37   | 0.73    | 0.44   | 0.33  | 0.65    | 0.37   | 0.25   |
| 交轴线电感<br>Quadrature Inductance | Lq [mH]                 | 4.20    | 3.11   | 2.17 | 3.33    | 2.52   | 1.56 | 2.84    | 2.09   | 1.45   | 2.49    | 1.72  | 1.10   | 2.02    | 1.30   | 1.00   | 1.90    | 1.15   | 0.86  | 2.09    | 0.96   | 0.66   |
| 最大电流<br>Max Current            | Imax [A]                | 275     | 315    | 332  | 285     | 330    | 408  | 347     | 405    | 485    | 402     | 483   | 603    | 550     | 685    | 650    | 600     | 765    | 721   | 653     | 870    | 820    |
| 最大扭矩<br>Max Torque             | Tmax [Nm]               | 1270    | 1254   | 1141 | 1420    | 1434   | 1400 | 1680    | 1680   | 1677   | 2040    | 2043  | 2040   | 2660    | 2627   | 2303   | 2999    | 3000   | 2550  | 3545    | 3545   | 2830   |
| 转动惯量<br>Rotor Inertia          | Jm [kgcm <sup>2</sup> ] | 3890    |        |      | 5060    |        |      | 5650    |        |        | 6850    |       |        | 7980    |        |        | 9170    |        |       | 10355   |        |        |
| 电机重量<br>Weight                 | M[kg]                   | 315     |        |      | 357     |        |      | 377     |        |        | 418     |       |        | 460     |        |        | 498     |        |       | 545     |        |        |

驱动器电压 Vdrive : 380Vac

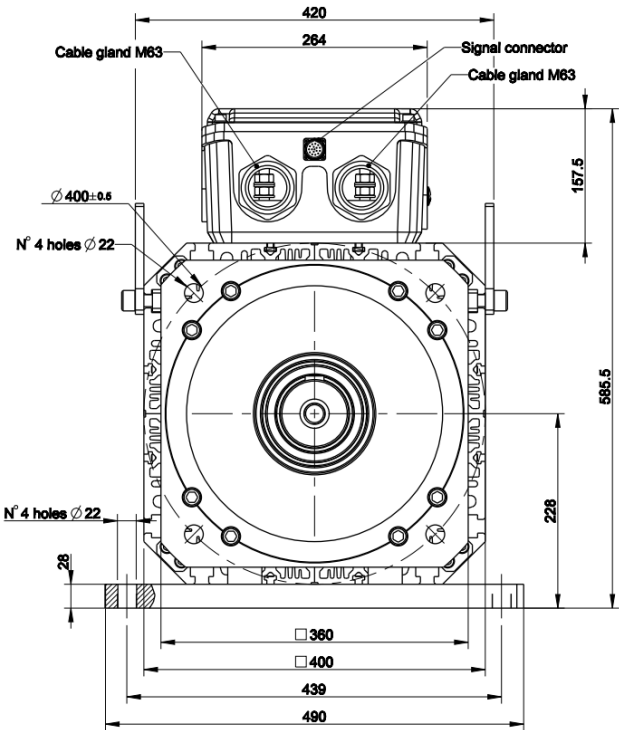
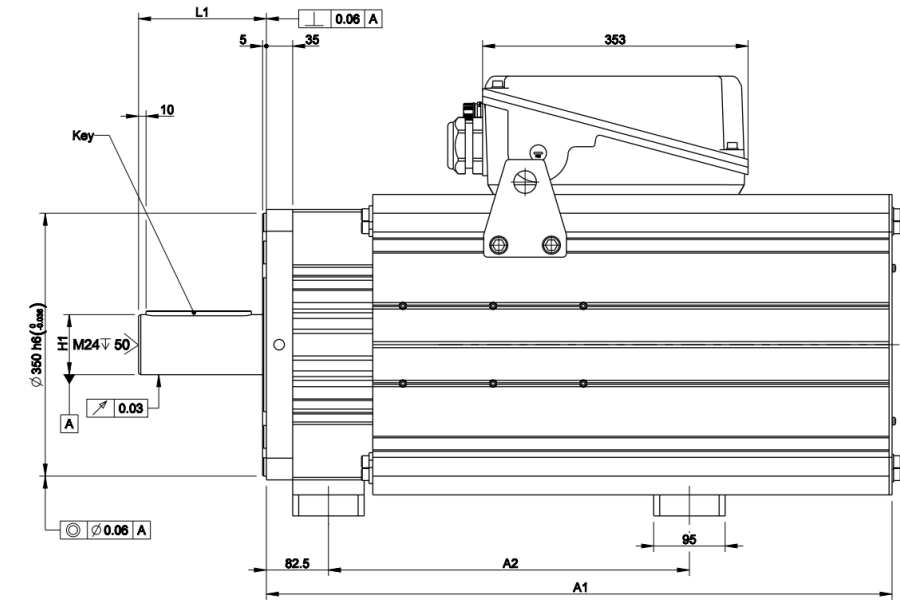
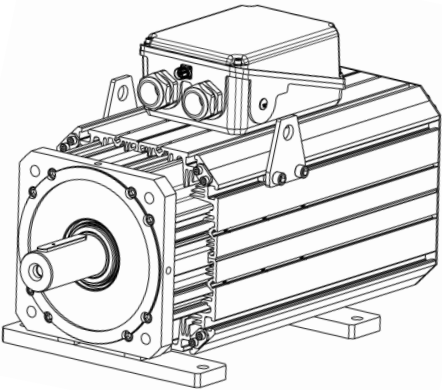
直流母线电压 Vdcbus : 537Vdc

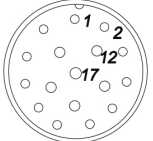
载波频率 PWM frequency: ≥ 4kHz

温升 DT : 100K

环境温度 Tamb : 30°C

|         | A1   | A2  | L1  | H1         | Key                  |
|---------|------|-----|-----|------------|----------------------|
| E01806F | 682  | 330 | 170 | 80m6       | 22x14x140            |
| E01808F | 742  | 390 | 170 | 80m6       | 22x14x140            |
| E01809F | 772  | 420 | 170 | 80m6       | 22x14x140            |
| E01811F | 832  | 480 | 170 | 80m6(90m6) | 22x14x140(25x14x140) |
| E01813F | 892  | 540 | 170 | 90m6       | 25x14x140            |
| E01815F | 962  | 610 | 170 | 90m6       | 25x14x140            |
| E01817F | 1012 | 660 | 170 | 90m6       | 25x14x140            |



|  <div> 信号插座<br/>Signal Connector<br/>M23 Size 1-17 Pin </div> |                      |                |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| 针脚号<br>PIN                                                                                                                                         | 线色<br>WIRE COLOR     | 定义<br>FUNCTION |
| 1                                                                                                                                                  | n.c.                 | n.c.           |
| 2                                                                                                                                                  | n.c.                 | n.c.           |
| 3                                                                                                                                                  | n.c.                 | n.c.           |
| 4                                                                                                                                                  | YELLOW 黄             | SIN-           |
| 5                                                                                                                                                  | RED 红                | COS+           |
| 6                                                                                                                                                  | BLACK 黑              | COS-           |
| 7                                                                                                                                                  | RED / WHITE 红 / 白    | RESX+          |
| 8                                                                                                                                                  | BROWN 棕              | KTY+           |
| 9                                                                                                                                                  | WHITE 白              | KTY-           |
| 10                                                                                                                                                 | YELLOW / WHITE 黄 / 白 | RESX-          |
| 11                                                                                                                                                 | n.c.                 | n.c.           |
| 12                                                                                                                                                 | n.c.                 | n.c.           |
| 13                                                                                                                                                 | n.c.                 | n.c.           |
| 14                                                                                                                                                 | BLUE 蓝               | SIN+           |
| 15                                                                                                                                                 | n.c.                 | n.c.           |
| 16                                                                                                                                                 | BLUE 蓝               | PTC+           |
| 17                                                                                                                                                 | BLUE 蓝               | PTC-           |
| 旋转变压器 Resolver : 1X-BRX                                                                                                                            |                      |                |



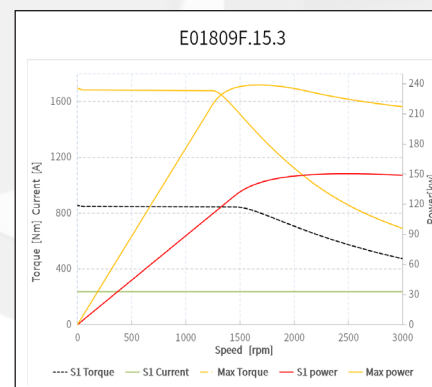
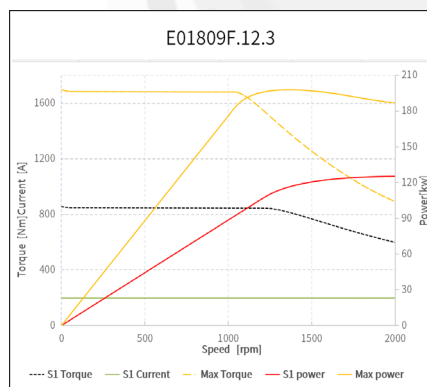
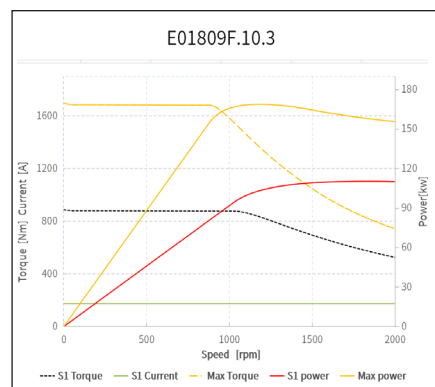
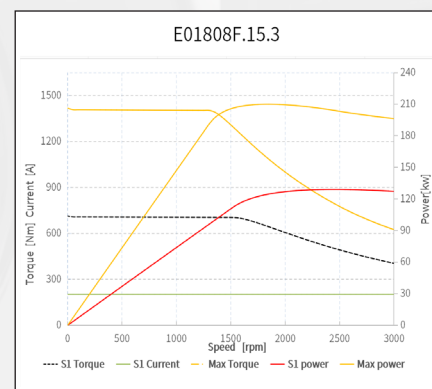
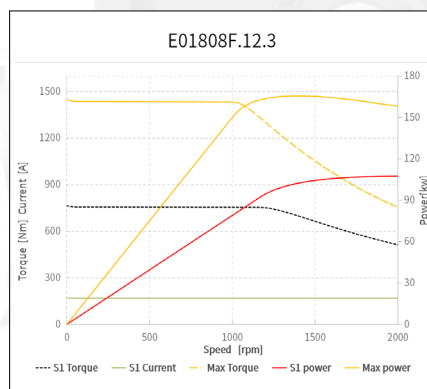
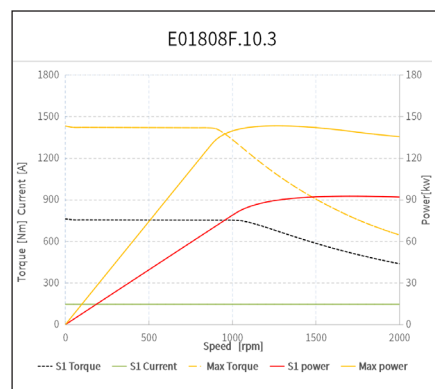
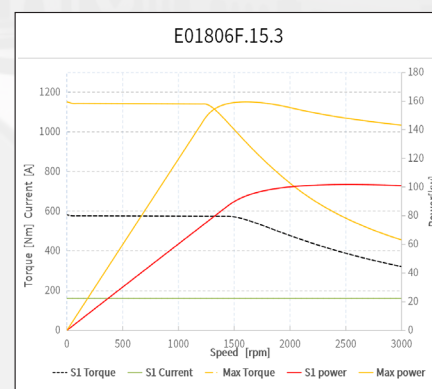
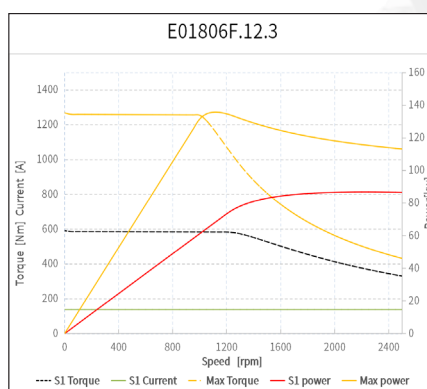
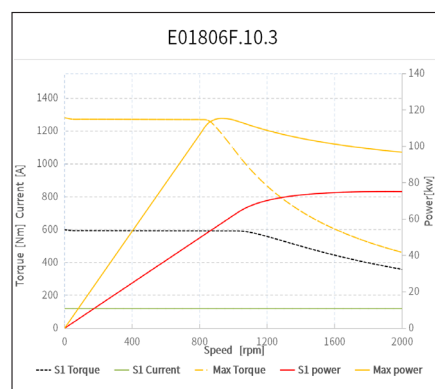
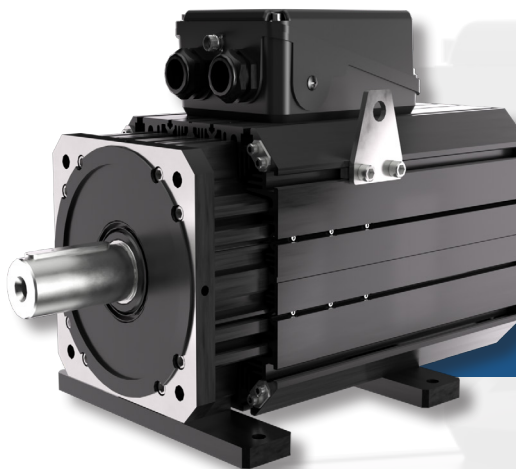
## Performance Curve

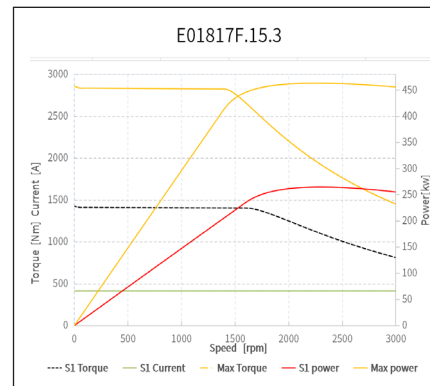
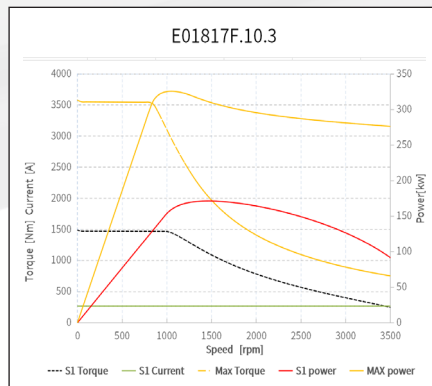
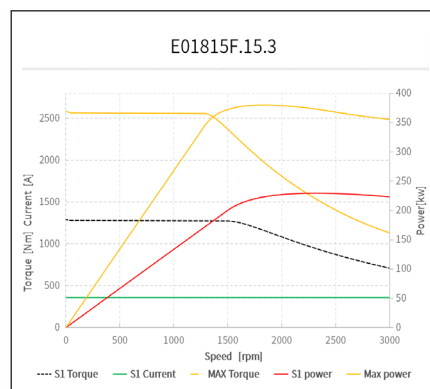
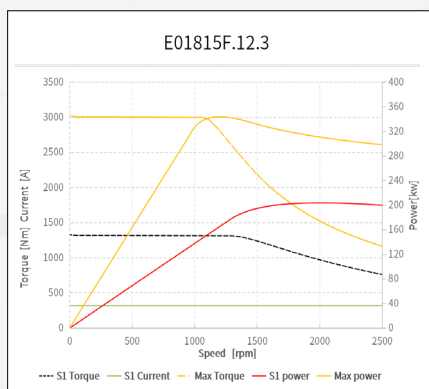
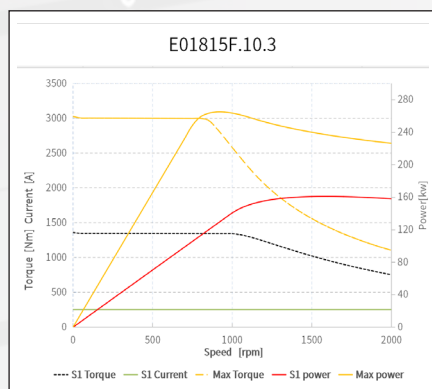
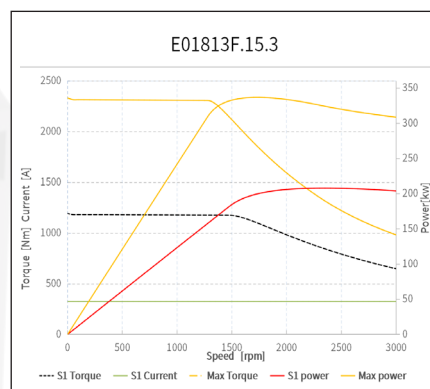
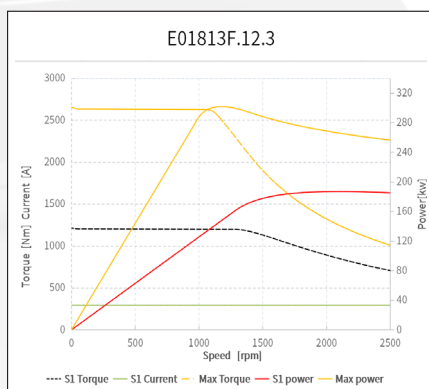
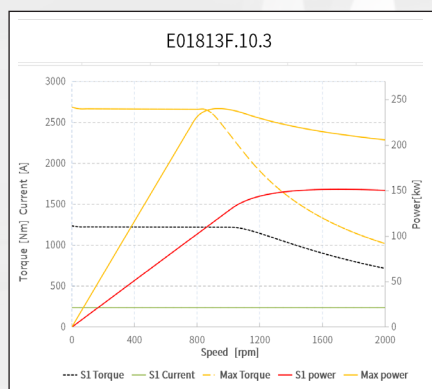
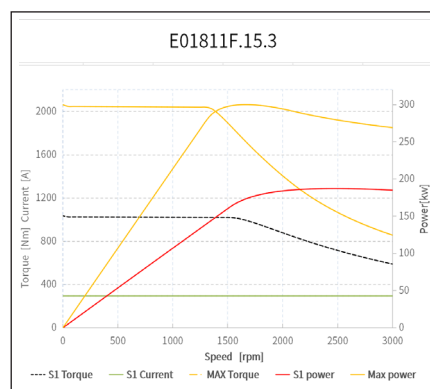
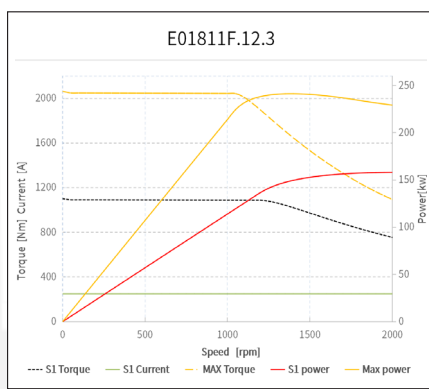
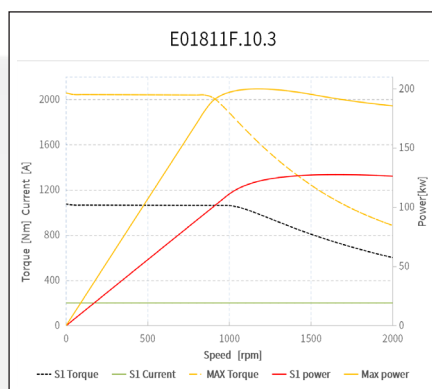
## 电机性能曲线 (E018\_\_F)

直流母线电压 Vdcbus: 537Vdc

温升 DT: 100K

环境温度 Tamb: 30°C





| 电机型号<br>Motor Code             |                         | E01806C |       |       | E01808C |        |        | E01809C |       |        | E01811C |        |         | E01813C |        |        | E01815C |        |        | E01817C |        |        |
|--------------------------------|-------------------------|---------|-------|-------|---------|--------|--------|---------|-------|--------|---------|--------|---------|---------|--------|--------|---------|--------|--------|---------|--------|--------|
| 额定转速<br>Rated Speed            | wn [rpm]                | 1000    | 1200  | 1500  | 1000    | 1200   | 1500   | 1000    | 1200  | 1500   | 1000    | 1200   | 1500    | 1000    | 1200   | 1500   | 1000    | 1200   | 1500   | 1000    | 1200   | 1500   |
| 额定频率<br>Rated Freq             | Fn [Hz]                 | 100     | 120   | 150   | 100     | 120    | 150    | 100     | 120   | 150    | 100     | 120    | 150     | 100     | 120    | 150    | 100     | 120    | 150    | 100     | 120    | 150    |
| 极数<br>Number of poles          | 2p                      | 12      |       |       |         |        |        |         |       |        |         |        |         |         |        |        |         |        |        |         |        |        |
| 最大速度<br>Max Speed              | wmax [rpm]              | 2000    | 2500  | 3000  | 2000    | 2500   | 3000   | 2000    | 2500  | 3000   | 2000    | 2500   | 3000    | 2000    | 2500   | 3000   | 2000    | 2500   | 3000   | 2000    | 2500   | 3000   |
| 最大频率<br>Max Freq               | Fmax [Hz]               | 200     | 250   | 300   | 200     | 250    | 300    | 200     | 250   | 300    | 200     | 250    | 300     | 200     | 250    | 300    | 200     | 250    | 300    | 200     | 250    | 300    |
| 堵转电流<br>Stall Current          | Io [A]                  | 178.5   | 207.9 | 251.0 | 237.3   | 272.0  | 351.2  | 254.1   | 320.3 | 389.6  | 325.5   | 393.8  | 498.75  | 393.8   | 436.8  | 577.5  | 436.8   | 492.5  | 577.5  | 489.3   | 566.0  | 672    |
| 额定电流<br>Rated Current          | In [A]                  | 170     | 198   | 239   | 226     | 259    | 334.5  | 242     | 305   | 371    | 310     | 375    | 475     | 375     | 416    | 550    | 416     | 469    | 550    | 466     | 539    | 640    |
| 堵转扭矩<br>Stall Torque           | To [Nm]                 | 842.1   | 831.1 | 823.2 | 1119.3  | 1108.8 | 1097.3 | 1259    | 1243  | 1232.7 | 1548.8  | 1527.8 | 1499.75 | 1811.3  | 1781.9 | 1761.9 | 2064.3  | 2026.5 | 2001.3 | 2312.1  | 2285.9 | 2254.4 |
| 额定扭矩<br>Rated Torque           | Tn [Nm]                 | 802     | 791.5 | 784   | 1066    | 1056   | 1045   | 1199    | 1184  | 1174   | 1475    | 1455   | 1428    | 1725    | 1697   | 1678   | 1966    | 1930   | 1906   | 2202    | 2177   | 2147   |
| 额定功率<br>Rated Power            | Pn [kW]                 | 84      | 99.5  | 123.1 | 111.6   | 132.7  | 164.1  | 125.5   | 148.8 | 184.4  | 154.5   | 182.8  | 224.3   | 180.6   | 213.2  | 263.6  | 205.9   | 242.5  | 299.4  | 230.6   | 273.5  | 337.2  |
| 冷却水流量<br>Minimum Flow Rate     | Flow [L/min]            | 15      |       |       | 18      |        |        | 18      |       |        | 20      |        |         | 25      |        |        | 25      |        |        | 30      |        |        |
| 扭矩常数<br>Torque Constant        | Kt [Nm/A]               | 4.51    | 3.83  | 3.15  | 4.51    | 3.9    | 3      | 4.73    | 3.72  | 3.04   | 4.54    | 3.71   | 2.89    | 4.39    | 3.9    | 2.93   | 4.51    | 3.94   | 3.38   | 4.47    | 3.83   | 3.19   |
| 反电动势<br>Back EMF               | EMF [V/krpm]            | 272.5   | 231.5 | 190.5 | 272.5   | 236    | 181.5  | 286     | 225   | 184    | 274.5   | 224.5  | 174.9   | 265.7   | 236    | 177    | 272.5   | 238.5  | 204.4  | 270     | 231.5  | 193    |
| 绕组线电阻<br>Winding Resistance    | Rw [ohm]                | 0.082   | 0.06  | 0.040 | 0.056   | 0.042  | 0.025  | 0.052   | 0.033 | 0.022  | 0.038   | 0.025  | 0.016   | 0.029   | 0.023  | 0.013  | 0.025   | 0.019  | 0.014  | 0.021   | 0.016  | 0.011  |
| 直轴线电感<br>Direct Inductance     | Ld [mH]                 | 1.49    | 1.07  | 0.74  | 1.11    | 0.84   | 0.5    | 1.08    | 0.67  | 0.45   | 0.82    | 0.55   | 0.33    | 0.65    | 0.51   | 0.29   | 0.59    | 0.45   | 0.33   | 0.51    | 0.38   | 0.26   |
| 交轴线电感<br>Quadrature Inductance | Lq [mH]                 | 3.83    | 2.73  | 1.88  | 2.86    | 2.17   | 1.29   | 2.75    | 1.74  | 1.17   | 2.14    | 1.43   | 0.85    | 1.69    | 1.33   | 0.75   | 1.54    | 1.18   | 0.87   | 1.33    | 0.97   | 0.68   |
| 最大电流<br>Max Current            | Imax [A]                | 280     | 329.4 | 400   | 373.3   | 431    | 560    | 400     | 509   | 622    | 509     | 622    | 800     | 622.2   | 700    | 933    | 700     | 800    | 933.3  | 800     | 933    | 1120   |
| 最大扭矩<br>Max Torque             | Tmax [Nm]               | 1270    | 1254  | 1141  | 1420    | 1434   | 1400   | 1680    | 1680  | 1677   | 2040    | 2043   | 2040    | 2660    | 2627   | 2303   | 2999    | 3000   | 2550   | 3545    | 3545   | 2830   |
| 转动惯量<br>Rotor Inertia          | Jm [kgcm <sup>2</sup> ] | 3890    |       |       | 5060    |        |        | 5650    |       |        | 6850    |        |         | 7980    |        |        | 9170    |        |        | 10355   |        |        |
| 电机重量<br>Weight                 | M[kg]                   | 269     |       |       | 306     |        |        | 324     |       |        | 363     |        |         | 397     |        |        | 437     |        |        | 474     |        |        |

驱动器电压 Vdrive : 380Vac

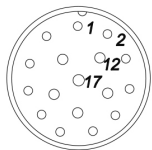
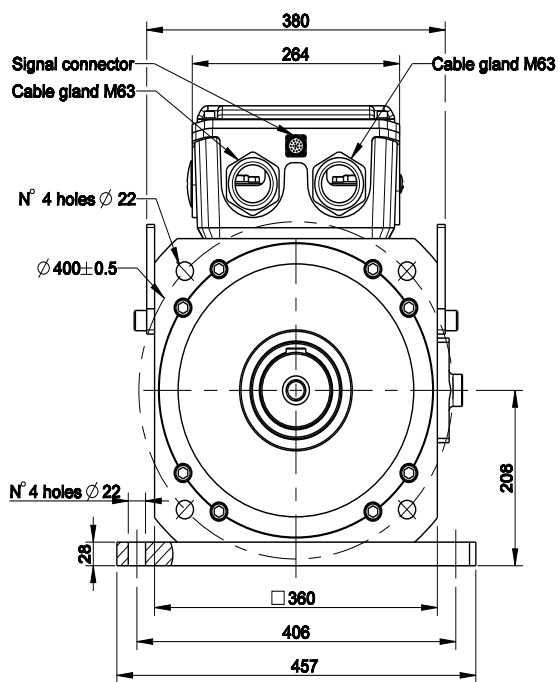
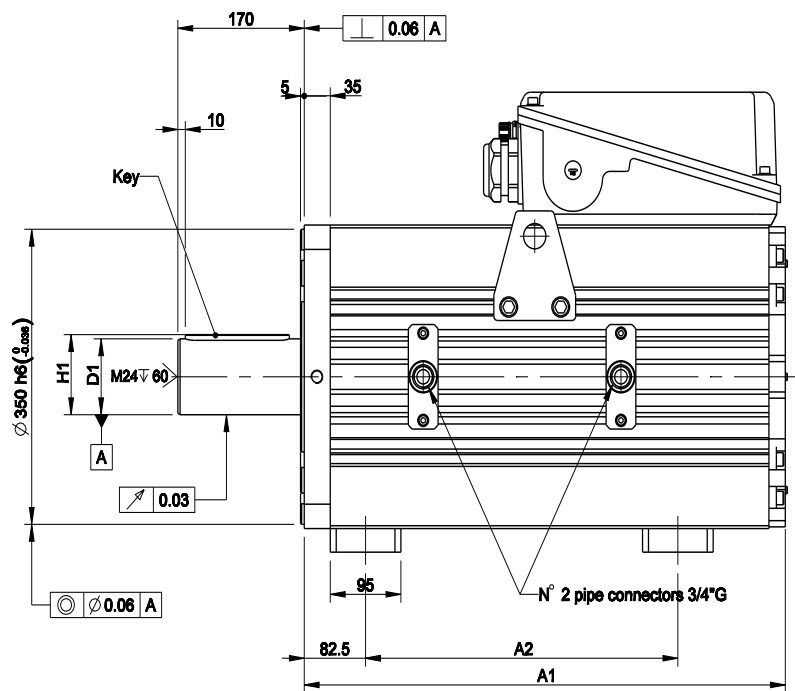
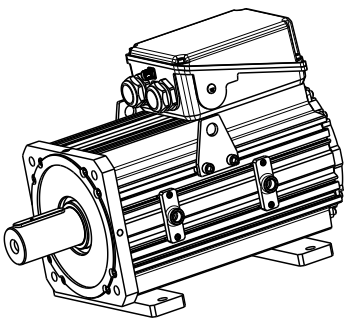
直流母线电压 Vdcbus : 537Vdc

载波频率 PWM frequency:  $\geq 4$ kHz

温升 DT : 100K

环境温度 Tamb : 30°C

|         | A1  | A2  | D1         | H1     | Key                  |
|---------|-----|-----|------------|--------|----------------------|
| E01806C | 497 | 270 | 80m6       | 85     | 22x14x140            |
| E01808C | 557 | 330 | 80m6       | 85     | 22x14x140            |
| E01809C | 587 | 360 | 80m6       | 55     | 22x14x140            |
| E01811C | 647 | 420 | 80m6(90m6) | 85(95) | 22x14x140(25x14x140) |
| E01813C | 707 | 480 | 90m6       | 95     | 25x14x140            |
| E01815C | 767 | 540 | 90m6       | 95     | 25x14x140            |
| E01817C | 827 | 600 | 90m6       | 95     | 25x14x140            |



信号插座  
Signal Connector  
M23 Size 1-17 Pin

| 针脚号<br>PIN | 线色<br>WIRE COLOR     | 定义<br>FUNCTION |
|------------|----------------------|----------------|
| 1          | n.c.                 | n.c.           |
| 2          | n.c.                 | n.c.           |
| 3          | n.c.                 | n.c.           |
| 4          | YELLOW 黄             | SIN-           |
| 5          | RED 红                | COS+           |
| 6          | BLACK 黑              | COS-           |
| 7          | RED / WHITE 红 / 白    | RESX+          |
| 8          | BROWN 棕              | KTY+           |
| 9          | WHITE 白              | KTY-           |
| 10         | YELLOW / WHITE 黄 / 白 | RESX-          |
| 11         | n.c.                 | n.c.           |
| 12         | n.c.                 | n.c.           |
| 13         | n.c.                 | n.c.           |
| 14         | BLUE 蓝               | SIN+           |
| 15         | n.c.                 | n.c.           |
| 16         | BLUE 蓝               | PTC+           |
| 17         | BLUE 蓝               | PTC-           |

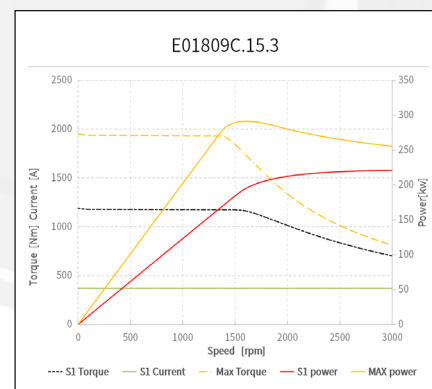
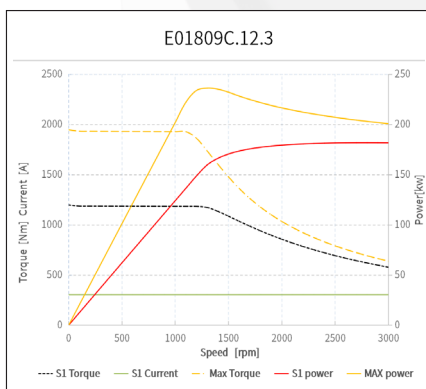
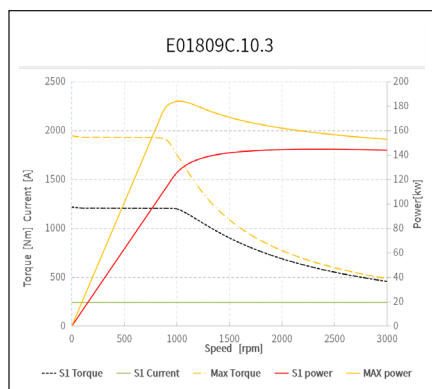
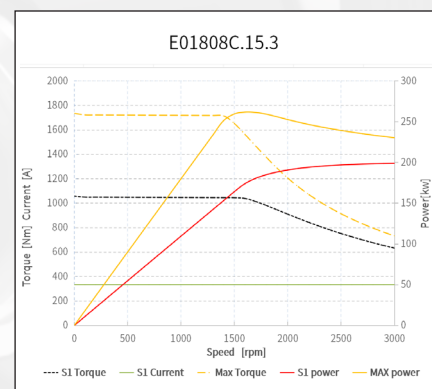
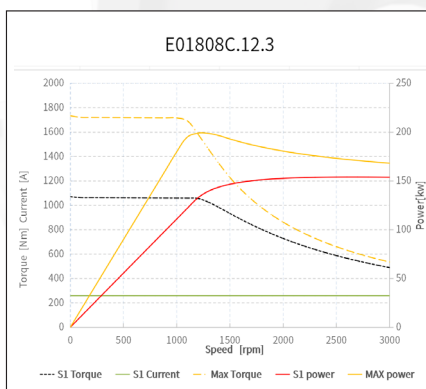
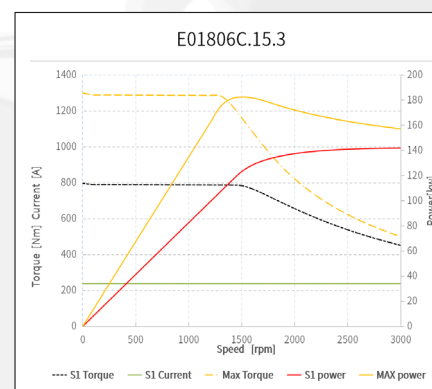
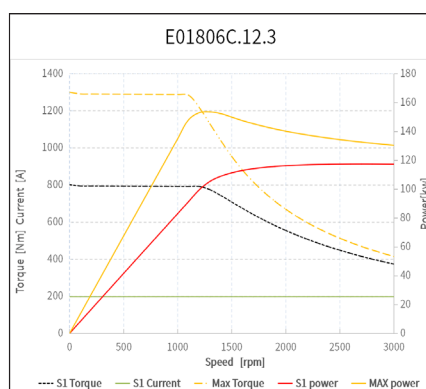
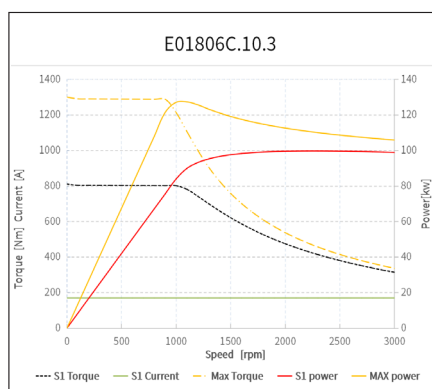
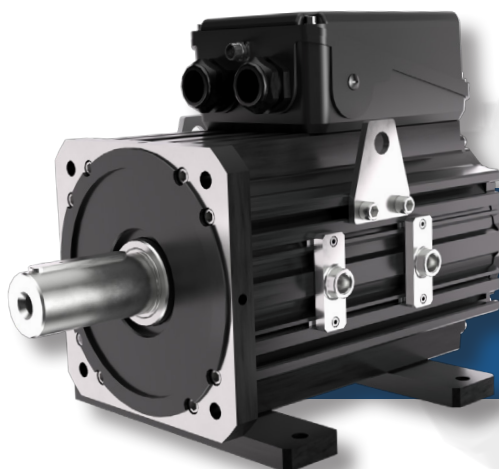
旋转变压器 Resolver : 1X-BRX

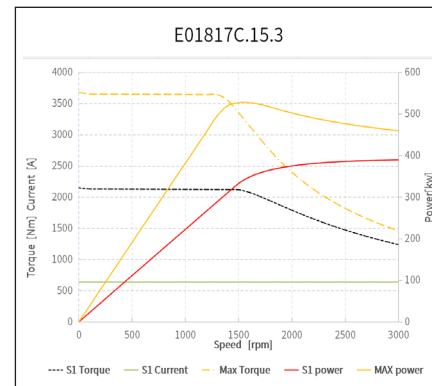
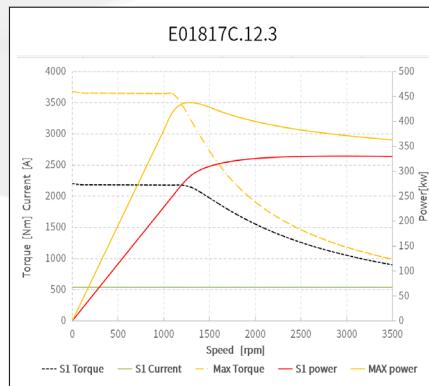
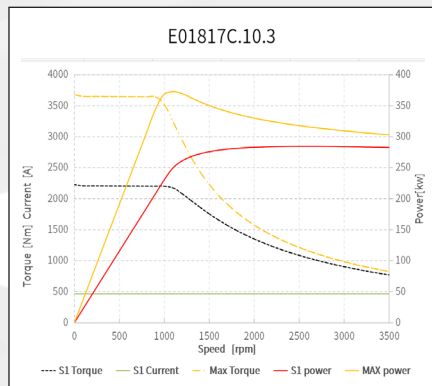
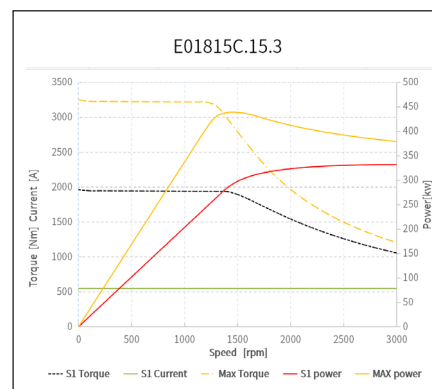
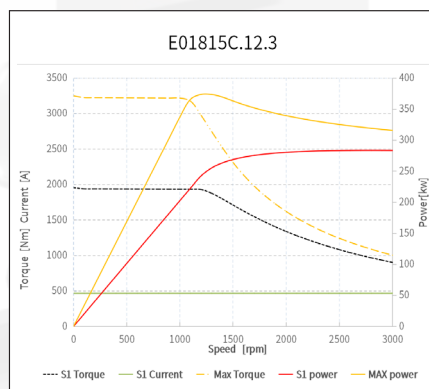
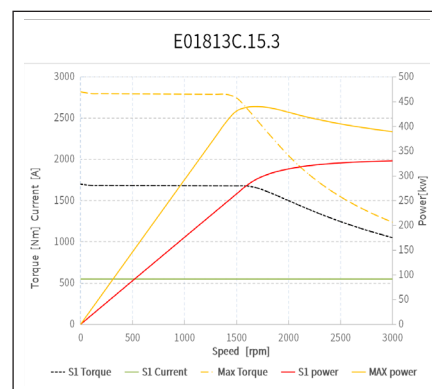
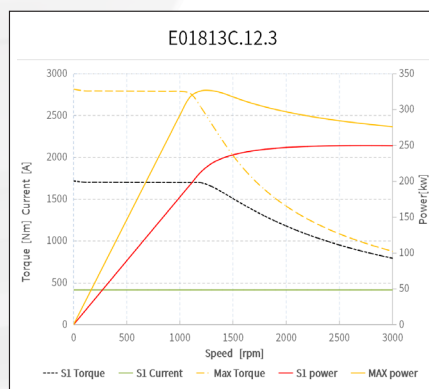
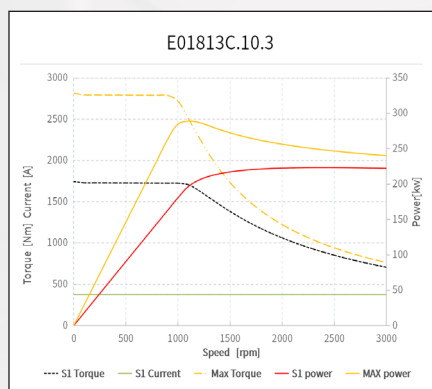
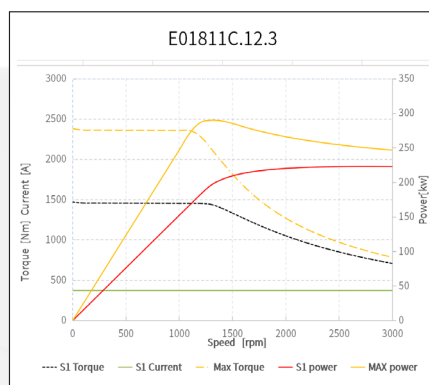
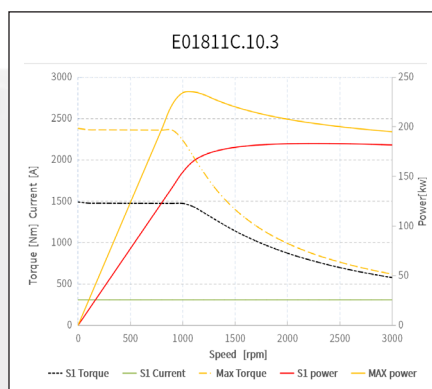


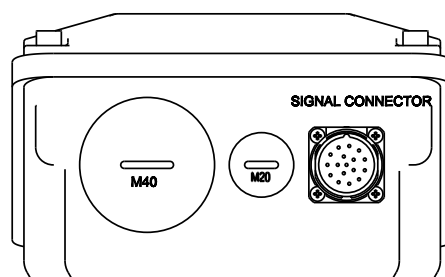
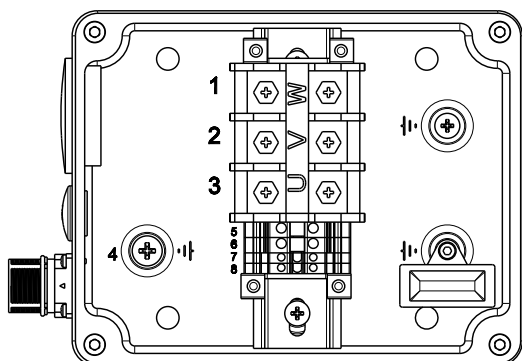
# Performance Curve

## 电机性能曲线 (E018\_\_C)

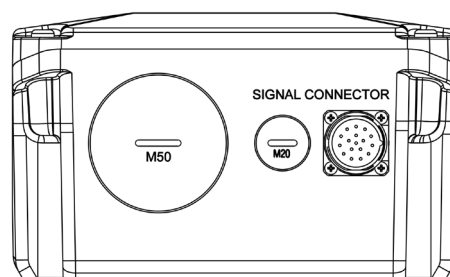
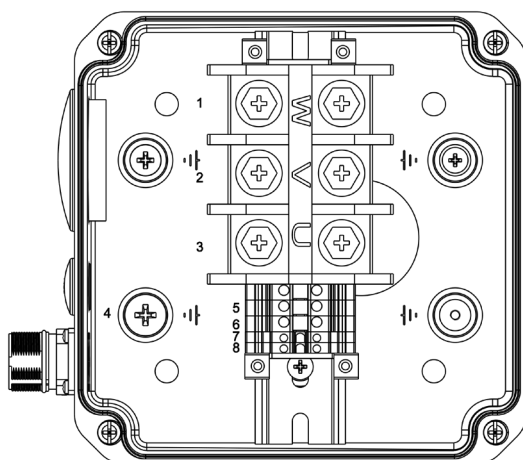
驱动器电压 Vdrive : 380Vac  
 直流母线电压 Vdcbus: 537Vdc  
 载波频率 PWM frequency:  $\geq 4\text{kHz}$   
 温升 DT: 100K  
 环境温度 Tamb: 30°C



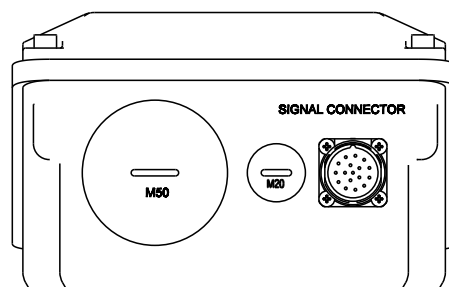
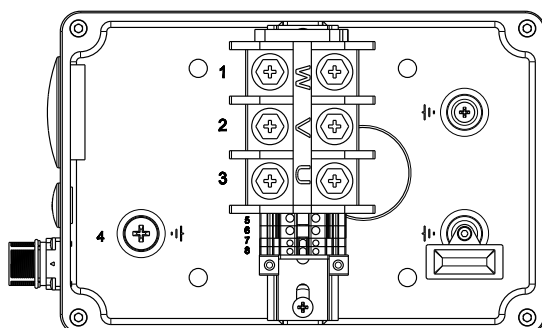




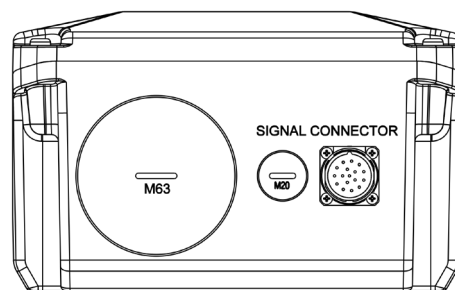
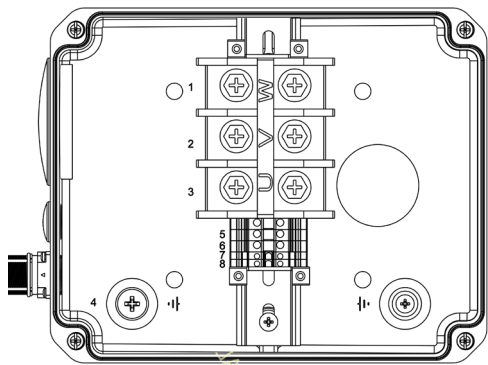
接线盒 180×142  
CONNECTION BOX 180×142



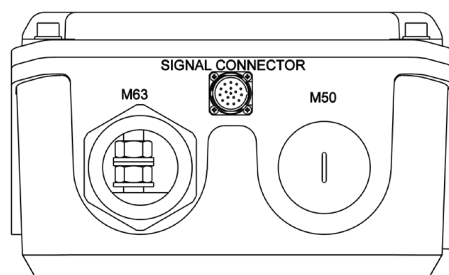
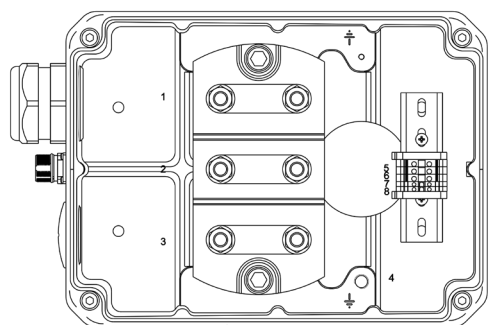
接线盒 175×175  
CONNECTION BOX 175×175



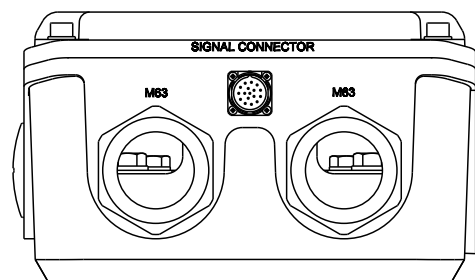
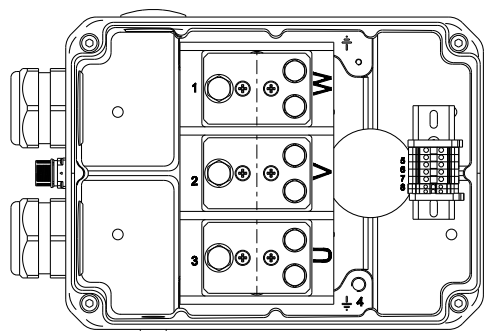
接线盒 240×160  
CONNECTION BOX 240×160



接线盒 240×195  
CONNECTION BOX 240×195



接线盒 353×264  
CONNECTION BOX 353×264



接线盒 353×264  
CONNECTION BOX 353×264

| 接线定义 /Connection box configuration |           |
|------------------------------------|-----------|
| 1                                  | Phase W   |
| 2                                  | Phase V   |
| 3                                  | Phase U   |
| 4                                  | GND       |
| 5                                  | 风扇 /Fan * |
| 6                                  | 风扇 /Fan * |

| 接线定义 /Connection box configuration |                                   |
|------------------------------------|-----------------------------------|
| 7                                  | 制动器 Brake (+ 24V) *               |
| 8                                  | 制动器 Brake (0V) *                  |
| 9                                  | 内部接线用 /Reserved for internal use* |
| 10                                 | 内部接线用 /Reserved for internal use* |
| 11                                 | 内部接线用 /Reserved for internal use* |

(\*) 如果存在的情况下  
If present!



# Motor Connections

## 电机接线

### 信号 Signal

信号插座 /Signal Connector M23-17 Pin

EnDat Type Mx, Nx

| PIN | Function  | AxM Port E1 |
|-----|-----------|-------------|
| 1   | A +       | n.c.        |
| 2   | A -       | n.c.        |
| 3   | DATA +    | 14          |
| 4   | PTC +     | 8           |
| 5   | CLOCK +   | 3           |
| 6   | n.c.      | n.c.        |
| 7   | 0 V       | 1           |
| 8   | KTY84 +   | n.c.        |
| 9   | KTY84 -   | n.c.        |
| 10  | + Vac     |             |
| 11  | B +       | n.c.        |
| 12  | B -       | n.c.        |
| 13  | DATA -    | 9           |
| 14  | CLOCK -   | 4           |
| 15  | 0V sense  | n.c.        |
| 16  | Vac sense | n.c.        |
| 17  | PTC -     | 1           |

信号插座 /Signal Connector M23-17 Pin

Resolver Type R

| PIN | Function    | AxM Port E1 PIN |
|-----|-------------|-----------------|
| 1   | n.c.        | n.c.            |
| 2   | n.c.        | n.c.            |
| 3   | n.c.        | n.c.            |
| 4   | Sin -,1 c/r | 5               |
| 5   | Cos +,1 c/r | 3               |
| 6   | Cos -,1 c/r | 4               |
| 7   | Resex-      | 10              |
| 8   | KTY84 +     | n.c.            |
| 9   | KTY84 -     | n.c.            |
| 10  | Resex -     | 11              |
| 11  | n.c.        | n.c.            |
| 12  | n.c.        | n.c.            |
| 13  | n.c.        | n.c.            |
| 14  | Sin +,1 c/r | 2               |
| 15  | n.c.        | n.c.            |
| 16  | PTC +       | 8               |
| 17  | PTC -       | 1               |

信号插座 /Signal Connector M23-17 Pin

SinCos Encoder Type S1

| PIN | Function      | AxV Port S2 PIN | AxM Port E1 PIN |
|-----|---------------|-----------------|-----------------|
| 1   | A +           | 1               | 7               |
| 2   | A -           | 14              | 12              |
| 3   | I + (index)   | 3               | 14              |
| 4   | Sin -, 1 c/r  | 6               | 5               |
| 5   | Cos +, 1 c/r  | 17              | 3               |
| 6   | Cos -, 1 c/r  | 5               | 4               |
| 7   | 0 V           | 10              | 1               |
| 8   | PTC +         | 11              | 8               |
| 9   | PTC - / KTY - | 13              | 1               |
| 10  | + Vcc (5Vdc)  | 25              | 6               |
| 11  | B +           | 2               | 15              |
| 12  | B -           | 15              | 13              |
| 13  | I - (index -) | 16              | 9               |
| 14  | Sin +, 1 c/r  | 18              | 2               |
| 15  | 0V sense      | n.c.            | n.c.            |
| 16  | + Vcc sense   | n.c.            | n.c.            |
| 17  | KTY +         | n.c.            | n.c.            |

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